ANNEX I

SUMMARY OF PRODUCT CHARACTERISTICS

▼This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

This is a multidose vial which contains 10 doses of 0.5 mL or a single dose vial which contains 1 dose of 0.5 mL.

One dose (0.5 mL) contains 40 micrograms of selvacovatein adjuvanted with SQBA.

Selvacovatein is a SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion heterodimer (B.1.351 and B.1.1.7 strains) produced by recombinant DNA technology using a plasmid expression vector in a CHO cell line.

SQBA adjuvant containing per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Emulsion for injection (injection)
White homogeneous emulsion.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

BIMERVAX is indicated as a booster for active immunisation to prevent COVID-19 in individuals 12 years of age and older who have previously received a mRNA COVID-19 vaccine (see sections 4.2 and 5.1).

The use of this vaccine should be in accordance with official recommendations.

4.2 Posology and method of administration

<u>Posology</u>

Individuals 12 years of age and older
A single intramuscular dose (0.5 mL) of BIMERVAX should be administered at least 6 months after previous mRNA COVID-19 vaccine (see section 5.1).

BIMERVAX may also be given at least 6 months after a previous booster with BIMERVAX.

Immunocompromised individuals
Additional doses may be administered to individuals who are severely immunocompromised in accordance with official recommendations, see section 4.4 and 5.1.

Elderly
No dose adjustment is required in elderly individuals ≥ 65 years of age.

Paediatric population
The safety and efficacy of BIMERVAX in children aged less than 12 years have not yet been established. No data are available.

Method of administration

BIMERVAX is for intramuscular administration only, preferably into the deltoid muscle of the upper arm.

Do not administer this vaccine intravascularly, subcutaneously or intradermally.

The vaccine should not be mixed in the same syringe with any other vaccines or medicinal products.

For precautions to be taken before administering the vaccine, see section 4.4.

For instructions regarding handling and disposal of the vaccine, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Hypersensitivity and anaphylaxis

Events of anaphylaxis have been reported with COVID-19 vaccines. Appropriate medical treatment and supervision should always be readily available in case of an anaphylactic reaction following the administration of the vaccine.

Close observation for at least 15 minutes is recommended following vaccination.

No further dose of the vaccine should be given to those who have experienced anaphylaxis after a prior dose of BIMERVAX.

Anxiety-related reactions

Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation or stress-related reactions may occur in association with vaccination as a psychogenic response to the needle injection. It is important that precautions are in place to avoid injury from fainting.

Concurrent illness

Vaccination should be postponed in individuals suffering from acute severe febrile illness or acute infection. The presence of a minor infection and/or low-grade fever should not delay vaccination.

Thrombocytopenia and coagulation disorders

As with other intramuscular injections, the vaccine should be given with caution in individuals receiving anticoagulant therapy or those with thrombocytopenia or any coagulation disorder (such as

haemophilia), because bleeding or bruising may occur following an intramuscular administration in these individuals.

Immunocompromised individuals

There are limited data available on immunogenicity and safety of the vaccine when administered to immunocompromised individuals, including those receiving immunosuppressant therapy (see section 5.1). The efficacy of BIMERVAX may be lower in immunocompromised individuals.

Duration of protection

The duration of protection afforded by the vaccine is unknown as it is still being determined by ongoing clinical trials.

Limitations of vaccine effectiveness

As with any vaccine, vaccination with BIMERVAX may not protect all vaccine recipients.

Excipients with known effect

Potassium
This vaccine contains less than 1 mmol potassium (39 mg) per dose, that is to say essentially 'potassium-free'.

Sodium
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

Polysorbate 80
This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed.

Concomitant administration of BIMERVAX with other vaccines has not been studied.

4.6 Fertility, pregnancy, and lactation

Pregnancy

There is no experience with the use of BIMERVAX in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy, embryo/foetal development, parturition, or post-natal development (see section 5.3).

Administration of BIMERVAX during pregnancy should only be considered when the potential benefits outweigh any potential risks for the mother and foetus.

Breast-feeding

It is unknown whether BIMERVAX is excreted in human milk.

No effects on the breast-fed newborn/infant are anticipated since the systemic exposure of the breast-feeding woman to BIMERVAX is negligible.

Fertility

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity, see section 5.3.

4.7 Effects on ability to drive and use machines

BIMERVAX has no or negligible influence on the ability to drive and use machines. However, some of the effects mentioned under section 4.8 may temporarily affect the ability to drive or use machines.

4.8 Undesirable effects

Summary of the safety profile

Individuals 18 years of age and older
The most common adverse reactions reported after a booster dose with BIMERVAX in adult individuals who received a primary series with mRNA COVID-19 vaccine, were injection site pain (82.9%), headache (30.9%), fatigue (31.1%) and myalgia (20.7%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

The most common adverse reactions reported after an additional booster dose of BIMERVAX as a fourth dose were injection site pain (79.9%), headache (25.0%) and fatigue (25.0%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

Adolescents 12 through 17 years of age
The most common adverse reactions reported after a booster dose of BIMERVAX in adolescents were injection site pain (77.5%), headache (28.3%), fatigue (29.3%) and malaise (22.5%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 2 days following vaccination and were mild to moderate in severity.

Tabulated list of adverse reactions

The safety profile presented below is based on pooled safety data generated in two phase 2b and phase 3 clinical trials with a total of 3 156 individuals 18 years of age and older, that received one booster dose of BIMERVAX at least 3 months after a previous COVID-19 vaccine. The median duration of the safety follow-up was 12 months for a 99.4% of the individuals, and 6 months for a 0.6% of the individuals.

The safety of an additional booster dose of BIMERVAX as a fourth dose was assessed in 288 individuals, 18 years of age and older, who had completed either 3 doses of COVID-19 mRNA vaccine (tozinameran) or 2 doses of COVID-19 mRNA vaccine (tozinameran) and 1 dose of BIMERVAX, and received an additional booster dose with BIMERVAX between 6 and 12 months after the third previous dose.

The safety of a booster dose of BIMERVAX in adolescents aged 12 through 17 years is based on safety data from the phase 3 clinical trial and the ongoing phase 2b clinical trial. A total of 276 participants, with and without medical history of prior SARS-CoV-2 infection, received a booster dose of BIMERVAX at least 3 months after the last dose of the primary series.

Adverse reactions observed during clinical trials are listed below according to the following frequency categories: very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1000 to < 1/100), rare (≥ 1/10 000 to < 1/1000), very rare (< 1/10 000) and not known (cannot be estimated from the available data).

Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

Table 1: Adverse reactions from BIMERVAX clinical trials in individuals 12 years of age and older

System organ class	Very common	Common	Uncommon	Rare	Not known
Blood and lymphatic system disorders		Lymphadenopathy[a]			
Nervous system disorders	Headache		Dizziness Somnolence	Paraesthesia Hypoaesthesia	
Cardiac disorders					Pericarditis[c]
Gastrointestinal disorders		Diarrhoea Vomiting Nausea		Odynophagia Abdominal pain[b]	
Skin and subcutaneous tissue disorders			Pruritus	Urticaria Cold sweats Rash Erythema	
Musculoskeletal and connective tissue disorders	Myalgia		Arthralgia		
General disorders and administration site conditions	Injection site pain Fatigue	Injection site swelling Injection site erythema Injection site induration Pyrexia Axillary pain	Asthenia Chills Malaise Injection site pruritus	Injection site bruising Injection site hypersensitivity	

[a] This term also included events reported as lymphadenitis
[b] This term also included events reported as upper and lower abdominal pain
[c] Based on a single event during clinical trials

Paediatric population

Injection site induration, malaise, axillary pain and arthralgia occurred at higher frequencies in adolescents compared to adults, with the frequency being very common in adolescents.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V and include batch/Lot number if available.

4.9 Overdose

In the event of overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Vaccines, Covid-19 vaccines, ATC code: J07BN04

Mechanism of action

BIMERVAX is a recombinant protein vaccine whose active substance (antigen) is SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion dimer. Following administration, an immune response is generated, both at a humoral and cellular level, against the SARS-CoV-2 RBD antigen. Neutralising antibodies against the RBD domain of SARS-CoV-2 prevent RBD binding to its cellular target ACE2, thus blocking membrane fusion and viral infection. Moreover, BIMERVAX induces antigen-specific T-cell immune response, which may contribute to protection to COVID-19.

Efficacy

Efficacy of BIMERVAX has been inferred by immunobridging of immune responses to an authorised COVID-19 vaccine, for which vaccine efficacy has been established.

Immunogenicity

Individuals 16 years of age and older
The immunogenicity of BIMERVAX was evaluated in one pivotal phase 2b multi-centre clinical trial (Study HIPRA-HH-2) and in one phase 3 multi-centre clinical trial (Study HIPRA-HH-5).

HIPRA-HH-2
Study HIPRA-HH-2 is a phase 2b, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess immunogenicity and safety of a booster vaccination with BIMERVAX compared to COVID-19 mRNA vaccine (tozinameran), in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment. This phase 2b clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 12 weeks, as well as individuals with previous COVID-19 infection. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

A total of 765 subjects were vaccinated; 513 subjects received BIMERVAX, and 252 subjects received the COVID-19 mRNA vaccine (tozinameran). A total of 751 subjects were analysed (504 BIMERVAX subjects and 247 COVID-19 mRNA vaccine subjects) excluding those who tested positive for COVID-19 within 14 days of the booster. Randomisation was stratified by age group (18-64 versus ≥ 65 years). The median age was 42 years (range: 19 to 76 years), with similar age ranges in both vaccine arms, including 7.4% and 7.1% of subjects 65 years of age and older in the BIMERVAX and COVID-19 mRNA vaccine groups, respectively.

Immunogenicity of a booster dose of BIMERVAX was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain, Beta, Delta and Omicron BA.1 variants. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (tozinameran)/BIMERVAX. Non-inferiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio is < 1.4. Superiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 2, GMT ratio column).

Table 2: Post-booster GMT ratio for BIMERVAX versus COVID-19 mRNA vaccine (tozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 (D614G strain), Beta, Delta and Omicron BA.1 at days 14, 28, 98 and 182 post-booster dose (per protocol population)

	BIMERVAX N=504		COVID-19 mRNA vaccine (tozinameran) N=247		COVID-19 mRNA vaccine (tozinameran) / BIMERVAX
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Day 14 post-booster					
D614G strain	1 949.44	1 696.03, 2 240.72	3 302.34	2 793.60, 3 903.73	1.69 (1.44, 2.00)
Beta	4 268.18	3 701.04, 4 922.21	2 608.59	2 188.98, 3 108.63	0.61 (0.51, 0.73)
Delta	1 459.98	1 282.22, 1 662.37	1 473.73	1 253.18, 1 733.10	1.01 (0.85, 1.20)
Omicron BA.1	2032.63	1773.66, 2329.40	1 209.23	1 019.34, 1 434.50	0.59 (0.50, 0.71)
Day 28 post-booster					
D614G strain	2 241.24	1 949.80, 2 576.24	2 947.35	2 494.84, 3 481.94	1.32 (1.12, 1.55)
Beta	3 754.90	3 255.80, 4 330.50	2 437.02	2 046.38, 2 902.22	0.65 (0.54, 0.78)
Delta	1 706.85	1 498.96, 1 943.58	1 508.08	1 283.26, 1 772.30	0.88 (0.74, 1.05)
Omicron BA.1	1 516.12	1 322.89, 1 737.58	987.53	833.05, 1 170.66	0.65 (0.54, 0.78)
Day 98 post-booster (N: BIMERVAX: 78; N: tozinameran: 42 as per protocol subset)					
D614G strain	1 193.17	931.14, 1 528.94	1 054.61	761.88, 1 459.83	0.88 (0.60, 1.30)
Beta	1 980.37	1 526.63, 2 568.98	1 150.92	815.99, 1 623.32	0.58 (0.39, 0.88)
Delta	1 981.10	1 547.00, 2 537.02	1 014.07	730.25, 1 408.20	0.51 (0.35, 0.76)
Omicron BA.1	668.25	514.73, 867.56	400.71	283.27, 566.83	0.60 (0.40, 0.91)
Day 182 post-booster					
D614G strain	1 213.44	1 055.38, 1 395.17	752.09	636.46, 888.74	0.62 (0.53, 0.73)
Beta	2 554.58	2 214.40, 2 947.01	1 774.54	1 489.68, 2113.88	0.69 (0.58, 0.83)
Delta	2 306.86	2 025.18, 2 627.72	1 256.46	1 068.85, 1 477.02	0.54 (0.46, 0.65)
Omicron BA.1	882.67	769.93, 1 011.91	667.30	562.74, 791.28	0.76 (0.63, 0.91)

N: number of participants in the population per-protocol.
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

The immunogenicity of an additional booster dose of BIMERVAX was assessed in a total of 288 individuals 18 years of age and older. Individuals had previously completed either a series of 2 doses of COVID-19 mRNA vaccine (tozinameran) and one dose of BIMERVAX (Cohort 1) or 3 doses of COVID-19 mRNA vaccine (tozinameran) (Cohort 2), and received an additional booster dose with BIMERVAX between 6 and 12 months after the previous dose. Of these, 190 subjects were analysed in the efficacy population (80 subjects in Cohort 1 and 110 subjects in Cohort 2). The median age was 49 years (range: 20 to 82 years), with similar age ranges in both Cohorts, including 11.5% of subjects 65 years of age and older.

Immunogenicity of BIMERVAX as an additional booster dose was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 variants. GMT ratio is the result of the GMT values (ID_{50}) of 3 doses of COVID-19 mRNA vaccine (tozinameran)/an additional booster dose of BIMERVAX administered after 3 doses of COVID-19 mRNA vaccine (tozinameran) or administered after 2 doses of COVID-19 mRNA and one dose of BIMERVAX. Superiority of the additional booster dose with BIMERVAX was met if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio was < 1 (see Table 3, GMT ratio column).

Table 3: Neutralising antibody levels (PBNA) and GMT ratio after an additional booster dose with BIMERVAX, administered either after a primary series with mRNA COVID-19 vaccine and a booster dose of BIMERVAX (cohort 1) or after a primary series with mRNA COVID-19 vaccine and a booster dose of mRNA COVID-19 vaccine (cohort 2), against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 at days 14, 98 and 182 post-booster dose (per protocol population)

	Cohort 1 **2 doses COVID-19 mRNA+2 doses of BIMERVAX**			**Cohort 2** **3 doses COVID-19 mRNA+1 dose of BIMERVAX**		
	Post-dose 3 **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=80**	**GMT** **Ratio** **(95%CI)**	**Post-dose 3** **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=110**	**GMT** **Ratio** **(95%CI)**
Day 14 post-booster						
Beta	2 547.34 (1 741.36, 3 726.35)	5 790.20 (4 371.05, 7 670.09)	0.44 (0.28, 0.68)	2 783.85 (1 975.09, 3 923.79)	6 383.89 (5 057.19, 8 058.64)	0.44 (0.31, 0.62)
Delta	1 565.21 (1 041.33, 2 352.66)	5 199.90 (3 752.82, 7 204.97)	0.30 (0.20, 0.46)	1 637.19 (1 130.5, 2 370.9)	4 085.85 (3 057.24, 5 460.52)	0.40 (0.28, 0.57)
Omicron BA.1	1 528.68 (970.94, 2 406.80)	3 580.61 (2 492.90, 5 142.92)	0.43 (0.27, 0.69)	1 739.02 (1 121.56, 2 696.41)	4 049.01 (2 795.38, 5 864.84)	0.43 (0.28, 0.65)
Omicron BA.4/5	1 094.55 (720.53, 1 662.72)	2 945.40 (2 216.80, 3 913.50)	0.37 (0.22, 0.62)	1 295.76 (845.10, 1 986.75)	2 506.46 (1 849.64, 3 396.52)	0.52 (0.34, 0.78)
Day 98 post-booster						
Beta	1 544.65 (773.99, 3 082.64)	4 609.95 (3 474.24, 6 116.91)	0.34 (0.16, 0.69)	1 601.47 (849.42, 3 019.37)	3 743.39 (2 951.87, 4 747.14)	0.43 (0.23, 0.81)
Delta	1 330.09 (672.40, 2 631.08)	1 864.55 (1 343.99, 2 586.73)	0.71 (0.36, 1.43)	1 102.65 (569.19, 2 136.06)	1 746.82 (1 305.89, 2 336.63)	0.63 (0.33, 1.22)
Omicron BA.1	461.12 (214.68, 990.45)	2 110.41 (1 467.27, 3 035.45)	0.22 (0.10, 0.48)	520.63 (242.27, 1 118.79)	1 980.84 (1 371.69, 2 860.50)	0.26 (0.12, 0.56)
Omicron BA.4/5	ND	1 886.95 (1 418.08, 2 510.85)	ND	ND	1 574.26 (1 156.85, 2 142.28)	ND
Day 182 post-booster						
Beta	809.61 (555.69, 1 179.56)	2 415.77 (1 814.55, 3 216.20)	0.34 (0.22, 0.52)	890.39 (633.9, 1 250.6)	2 088.80 (1 643.29, 2 655.08)	0.43 (0.30, 0.60)
Delta	732.92 (489.25, 1 097.95)	1 309.33 (941.50, 1 820.86)	0.56 (0.37, 0.85)	771.85 (534.93, 1 113.71)	1 337.38 (999.37, 1 789.72)	0.58 (0.40, 0.83)
Omicron BA.1	357.34 (227.83, 560.47)	1 756.94 (1 218.19, 2 533.97)	0.20 (0.13, 0.33)	404.87 (262.13, 625.33)	1 900.74 (1 315.82, 2 745.67)	0.21 (0.14, 0.32)
Omicron BA.4/5	ND	1 836.26 (1 373.92, 2 454.19)	ND	ND	1 604.42 (1 179.06, 2 183.22)	ND

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; ND: not determined

HIPRA-HH-5
This study is an ongoing open label, single arm, multicentre, phase 3 clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX for the prevention of COVID-19 in subjects vaccinated with several primary vaccine schedules, with or without previous non-severe COVID-19 infections. BIMERVAX was administered at least 91 days after the last dose or at least 30 days after the COVID-19 infection. This phase 3 clinical trial excluded individuals who were pregnant as well as individuals who were immunocompromised or had received immunosuppressants within 12 weeks. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

The interim report includes data from a total of 2 646 subjects who were vaccinated with BIMERVAX as a booster dose in healthy individuals (at least 16 years old) previously vaccinated with different COVID-19 vaccines (mRNA COVID-19 vaccines: tozinameran and elasomeran, and adenovirus-vector vaccines (COVID-19 Vaccine (ChAdOx1-S [recombinant]) and COVID-19 vaccine (Ad26.COV2-S [recombinant]). Of these, 230 (8%) subjects were included in the immunogenicity population. In the immunogenicity analysis, the population of the COVID-19 mRNA vaccine (tozinameran)/COVID-19 mRNA vaccine (tozinameran) vaccine group were all subjects between 16-17 years old.

Overall, the median age was 34.4 years (range: 16 to 85 years of age). Subjects were balanced between genders, 52.49% male and 47.47% female.

Immunogenicity was measured by Pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, Delta and Omicron BA.1. Data on GMT (geometric mean titre: ID_{50}) at baseline (prior to the administration of the booster dose) and at Day 14 (2 weeks after the administration of the booster dose) are provided in the following table.

Table 4: Neutralising antibody Geometric Mean Titres (GMT) at 14 days post-booster with BIMERVAX in individuals 16 years of age and older-per protocol analysis

	mRNA primed (tozinameran) 16-17 years old N=11		**Ad-vector primed (ChAdOx1-S recombinant) ≥ 18 years old N=40**		**mRNA primed (elasomeran) ≥ 18 years old N=171**	
	GMT	95% CI	GMT	95% CI	GMT	95% CI
Pre-booster						
D614G strain	720.10	356.96; 1 452.64	288.58	194.56; 428.02	657.49	499.52; 865.43
Beta	471.68	208.39; 1 067.60	539.49	345.97; 841.26	497.77	376.98; 657.26
Delta	803.84	376.27; 1 717.26	283.75	182.43; 441.35	914.68	657.97; 1 271.55
Omicron BA.1	257.99	99.98; 665.71	159.34	94.02; 270.05	221.62	155.51; 315.84
Day 14 post-booster						
D614G strain	4 753.65	2 356.45; 9 589.48	2 298.81	1 549.89; 3 409.63	4437.27	3 371.158; 5 840.55
Beta	8 820.74	3 897.14; 19 964.72	5 009.47	3 212.53; 7 811.54	6857.95	5 193.76; 9 055.38
Delta	7 564.79	3 541.05; 16 160.76	2 600.31	1 671.78; 4 044.56	5811.47	4 180.44; 8 078.87
Omicron BA.1	5 757.43	2 231.25; 14 856.19	1 847.41	1 090.05; 3 131.00	4379.81	3 073.24; 6 241.85

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals

Adolescents 12 through 17 years of age
The immunogenicity of BIMERVAX in individuals 12 through 17 years of age was evaluated in the ongoing phase 2b multi-centre clinical trial (Study HIPRA-HH-3).

HIPRA-HH-3
This study is an ongoing open label, uncontrolled, single-arm, multicentre, non-inferiority, phase 2b clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX in adolescents 12 through 17 years of age. BIMERVAX was administered at least 6 months after the last dose of the primary series. HIPRA-HH-3 study excluded adolescents who were pregnant as well as adolescents who were immunocompromised or who have received immunosuppressants within 90 days. Participants with known history of SARS-CoV-2 infection were excluded from the immunogenicity analysis.

At the time of the interim analysis a total of 240 adolescent participants were vaccinated with a booster dose of BIMERVAX. Of these, 88 individuals were eligible for the immunogenicity analysis. The primary immunogenicity analysis, measured by Pseudovirion-based neutralisation assay (PBNA), compared geometric mean titres (GMT) of neutralising antibodies against Omicron BA.1 with those observed in young adult participants (aged 18 to 25 years) from the pivotal phase 2b study in adults (HIPRA-HH-2) at Baseline and at Day 14 (2 weeks after the administration of the booster dose). Both groups of participants included in the analysis had no previous documented medical history of SARS-CoV-2 infection.

Data on neutralising antibody tires against Omicron BA.1 at Baseline (prior to the administration of the booster dose) and at Day 14 after vaccination are provided in the following table.

Table 5: Neutralising antibody titres against Omicron BA.1 at day 14 post-booster with BIMERVAX in adolescents aged 12 to 17 years (immunogenicity population)

	Statistics	Adolescents (12-15 years old) N = 61	Adolescents (16-17 years old) N = 27	Total (12-17 years old) N= 88
Baseline	**Geometric mean**	1 240.77	1 457.30	1 303.54
	95 % CI	894.78; 1 720.55	984.9; 2 156.3	1 016.05; 1 672.39
Day 14	**Geometric mean**	22 970.81	26 792.00	24 081.34
	95 % CI	18 033.27; 29 260.25	20 150.31; 35 622.86	19 741.36; 29 375.43
	GMFR	18.51	18.38	18.47
	95 % CI	13.28; 25.81	13.15; 25.71	14.41; 23.69
	≥ 4- fold change from baseline, n (%)	54 (88.5)	27 (100)	81 (92)
	95 % CI	77.8; 95.3	87.2; 100	84.3; 96.7

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMFR = Geometric Mean Fold Rise; CI: Confidence intervals

Elderly population

The immunogenicity of BIMERVAX has been shown in the elderly population (≥ 65 years old) including 38 (7.4%) of individuals receiving BIMERVAX.

Immunocompromised population

The immunogenicity and safety of a booster dose of BIMERVAX were evaluated in a phase 2b/3, open label, single arm, multi-centre clinical trial (HIPRA-HH-4) in adults with pre-existing immunosuppressive conditions, including people living with human immunodeficiency virus (HIV) infection with persistent CD4 T-cell counts < 400/mm^3 within last 6 months, kidney transplant on

maintenance immunosuppressive therapy, haemodialysis/peritoneal dialysis, primary antibody deficiencies on IgG replacement therapy and auto-immune disease on treatment with rituximab/ocrelizumab. The booster dose of BIMERVAX was administered at least 91 days after 3 previous doses of COVID-19 vaccine or after 2 doses plus a documented history of COVID-19. Participants with history of COVID-19 disease were allowed to be included if diagnosed at least 91 days before enrolment.

A total of 238 individuals were vaccinated with a booster dose of BIMERVAX and a total of 228 participants were analysed, excluding those who tested positive for COVID-19 within 14 days of the booster. The median age was 56 years old (range: 21 to 90 years of age).

Immunogenicity was measured by pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, and Omicron BA.1 and BA.4/5 up to 12 months post-booster dose in all immunosuppressive conditions studied, except in individuals living with confirmed HIV infection in which immunogenicity was measured by virus neutralisation assay (VNA) against SARS-CoV-2 (D614G) strain and against Omicron BA.2. A booster dose of BIMERVAX enhanced humoral immune response in all immunosuppressive conditions, except in individuals with auto-immune disease on rituximab/ocrelizumab therapy. However, a comparison to immunocompetent individuals to inform about the magnitude of the potential difference as regards immune responses was not conducted. Therefore, the clinical relevance of the reported immune responses in immunocompromised individuals is unknown.

Paediatric population

The European medicines Agency has deferred the obligation to submit the results of studies with BIMERVAX in one or more subsets of the paediatric population in the prevention of COVID-19 (see section 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

Not applicable.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of repeated dose toxicity.

Genotoxicity and carcinogenicity

BIMERVAX has not been evaluated for its genotoxic or carcinogenic potential. The components of the vaccine are not expected to have genotoxic or carcinogenic potential.

Reproductive toxicity

A developmental and reproductive toxicity study was performed in female and male rats prior to mating and during gestation. BIMERVAX was administered intramuscularly (equivalent to a full human dose) to female rats in four occasions, 21 and 14 days prior to mating and on gestation days 9 and 19. Males received three administrations, 35, 28 and 6 days prior to mating. No vaccine-related adverse effects on fertility, pregnancy/lactation, or development of the embryo/foetus and offspring were observed.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Disodium phosphate dodecahydrate
Potassium dihydrogen phosphate

Sodium chloride
Potassium chloride
Water for injections

For adjuvant, see section 2.

6.2 Incompatibilities

This medicinal product must not be mixed with other medicinal products or diluted.

6.3 Shelf life

Unopened multidose vial

21 months at 2 ºC – 8 ºC.

Punctured multidose vial

Chemical and physical in-use stability has been demonstrated for 6 hours at 2 ºC – 8 ºC from the time of first needle puncture.

From a microbiological point of view, after first opening (first needle puncture), the vaccine should be used immediately. If not used immediately, in-use storage times and conditions are the responsibility of the user.

Single dose vial

1 year at 2 ºC – 8 ºC.

6.4 Special precautions for storage

Store in a refrigerator (2 °C – 8 °C).
Do not freeze.

Keep the vials in the outer carton in order to protect from light.

For storage conditions of the multidose vial after first opening of the medicinal product, see section 6.3.

6.5 Nature and contents of container

Multidose vial

5 mL of emulsion in a multidose vial (type I glass) closed with a type I elastomeric stopper and an aluminium seal fitted with a plastic flip-off cap.

Each multidose vial contains: 10 doses of 0.5 mL

Pack size: 10 multidose vials.

Single dose vial

0.5 mL of emulsion in a single dose vial (type I glass) closed with a type I elastomeric stopper and an aluminium seal fitted with a plastic flip-off cap.

Each single dose vial contains 1 dose of 0.5 mL

Pack sizes: 5, 10 or 20 single dose vials.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

Handling instructions and administration

The vaccine should be handled by a healthcare professional using aseptic technique to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.
- After first puncture of the multidose vial, record the discard date and time (6 hours after first puncture) on the designated area of the vial label.

Inspect the vial

- Gently swirl the vial before the dose withdrawal and also in between each dose withdrawal for the multidose vial. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that a maximum of 10 doses (multidose vial) or 1 dose (single dose vial) of 0.5 mL each can be extracted. Discard any remaining vaccine in single dose vial or in the multidose vial after 10 doses have been extracted.
- Each 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Once the vaccine is loaded in the syringe, it is stable up to at least 6 hours either under refrigerated conditions or at room temperature (< 25 ºC).
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Storage after first needle puncture of the multidose vial

- After first puncture, store the opened multidose vial at 2 °C to 8 °C for up to 6 hours.

Discard the vaccine if not used within 6 hours after first puncture of the multidose vial, see section 6.3.

Disposal

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

8. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/001
EU/1/22/1709/002
EU/1/22/1709/003
EU/1/22/1709/004

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 30 March 2023

10. DATE OF REVISION OF THE TEXT

Detailed information on this medicinal product is available on the website of the European Medicines Agency https://www.ema.europa.eu

▼This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX XBB.1.16 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

This is a single dose vial which contains 1 dose of 0.5 mL.

One dose (0.5 mL) contains 40 micrograms of damlecovatein adjuvanted with SQBA.

Damlecovatein is a SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion homodimer (Omicron XBB.1.16 – XBB.1.16 strain) produced by recombinant DNA technology using a plasmid expression vector in a CHO cell line.

SQBA adjuvant containing per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Emulsion for injection (injection)
White homogeneous emulsion.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

BIMERVAX XBB.1.16 is indicated for active immunisation to prevent COVID-19 caused by SARS-CoV-2 in individuals 12 years of age and older.

The use of this vaccine should be in accordance with official recommendations.

4.2 Posology and method of administration

Posology

Individuals 12 years of age and older
A single intramuscular dose (0.5 mL) of BIMERVAX XBB.1.16 should be administered regardless of prior COVID-19 vaccination status (see section 5.1).

For individuals who have previously been vaccinated with a COVID-19 vaccine, BIMERVAX XBB.1.16 should be administered at least 6 months after the most recent dose of a COVID-19 vaccine.

Immunocompromised individuals
Additional doses may be administered to individuals who are severely immunocompromised in accordance with official recommendations, see section 4.4 and 5.1.

Elderly
No dose adjustment is required in elderly individuals ≥ 65 years of age.

Paediatric population
The safety and efficacy of BIMERVAX XBB.1.16 in children aged less than 12 years have not yet been established. No data are available.

Method of administration

BIMERVAX XBB.1.16 is for intramuscular administration only, preferably into the deltoid muscle of the upper arm.

Do not administer this vaccine intravascularly, subcutaneously or intradermally.

The vaccine should not be mixed in the same syringe with any other vaccines or medicinal products.

For precautions to be taken before administering the vaccine, see section 4.4.

For instructions regarding handling and disposal of the vaccine, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Hypersensitivity and anaphylaxis

Events of anaphylaxis have been reported with COVID-19 vaccines. Appropriate medical treatment and supervision should always be readily available in case of an anaphylactic reaction following the administration of the vaccine.

Close observation for at least 15 minutes is recommended following vaccination.

No further dose of the vaccine should be given to those who have experienced anaphylaxis after a prior dose of BIMERVAX.

Anxiety-related reactions

Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation or stress-related reactions may occur in association with vaccination as a psychogenic response to the needle injection. It is important that precautions are in place to avoid injury from fainting.

Concurrent illness

Vaccination should be postponed in individuals suffering from acute severe febrile illness or acute infection. The presence of a minor infection and/or low-grade fever should not delay vaccination.

Thrombocytopenia and coagulation disorders

As with other intramuscular injections, the vaccine should be given with caution in individuals receiving anticoagulant therapy or those with thrombocytopenia or any coagulation disorder (such as

haemophilia), because bleeding or bruising may occur following an intramuscular administration in these individuals.

Immunocompromised individuals

There are limited data available on immunogenicity and safety of the vaccine when administered to immunocompromised individuals, including those receiving immunosuppressant therapy (see section 5.1). The efficacy of BIMERVAX XBB.1.16 may be lower in immunocompromised individuals.

Duration of protection

The duration of protection afforded by the vaccine is unknown as it is still being determined by ongoing clinical trials.

Limitations of vaccine effectiveness

As with any vaccine, vaccination with BIMERVAX XBB.1.16 may not protect all vaccine recipients.

Excipients with known effect

Potassium
This vaccine contains less than 1 mmol potassium (39 mg) per dose, that is to say essentially 'potassium-free'.

Sodium
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

Polysorbate 80
This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed.

Concomitant administration of BIMERVAX XBB.1.16 with other vaccines has not been studied.

4.6 Fertility, pregnancy, and lactation

Pregnancy

There is no experience with the use of BIMERVAX XBB.1.16 in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy, embryo/foetal development, parturition, or post-natal development (see section 5.3).

Administration of BIMERVAX XBB.1.16 during pregnancy should only be considered when the potential benefits outweigh any potential risks for the mother and foetus.

Breast-feeding

It is unknown whether BIMERVAX XBB.1.16 is excreted in human milk.

No effects on the breast-fed newborn/infant are anticipated since the systemic exposure of the breast-feeding woman to BIMERVAX XBB.1.16 is negligible.

Fertility

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity, see section 5.3.

4.7 Effects on ability to drive and use machines

BIMERVAX XBB.1.16 has no or negligible influence on the ability to drive and use machines. However, some of the effects mentioned under section 4.8 may temporarily affect the ability to drive or use machines.

4.8 Undesirable effects

Summary of the safety profile

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 18 years of age and older
The most common adverse reactions reported after a booster dose with BIMERVAX in adult individuals who received a primary series with mRNA COVID-19 vaccine, were injection site pain (82.9%), headache (30.9%), fatigue (31.1%) and myalgia (20.7%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

The most common adverse reactions reported after an additional booster dose of BIMERVAX as a fourth dose were injection site pain (79.9%), headache (25.0%) and fatigue (25.0%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

Adolescents 12 through 17 years of age
The most common adverse reactions reported after a booster dose of BIMERVAX in adolescents were injection site pain (77.5%), headache (28.3%), fatigue (29.3%) and malaise (22.5%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 2 days following vaccination and were mild to moderate in severity.

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The safety of BIMERVAX XBB.1.16 is inferred from the safety data of the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) vaccine and the safety data from the clinical trial of the adapted BIMERVAX XBB.1.16 vaccine.

The overall safety profile for the BIMERVAX XBB.1.16 booster dose was similar to that seen after the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) booster dose. The most common adverse reactions reported were injection site pain (68.11%), headache (23.42%), fatigue (19.60%) and myalgia (13.62%). Most adverse reactions were mild to moderate in severity. No new adverse reactions were identified for the BIMERVAX XBB.1.16 booster dose.

Tabulated list of adverse reactions

The safety profile presented below is based on pooled safety data generated in two phase 2b and phase 3 clinical trials with a total of 3 156 individuals 18 years of age and older, that received one booster dose of BIMERVAX at least 3 months after a previous COVID-19 vaccine. The median duration of the safety follow-up was 12 months for a 99.4% of the individuals, and 6 months for a 0.6% of the individuals.

The safety of an additional booster dose of BIMERVAX as a fourth dose was assessed in 288 individuals, 18 years of age and older, who had completed either 3 doses of COVID-19 mRNA

vaccine (tozinameran) or 2 doses of COVID-19 mRNA vaccine (tozinameran) and 1 dose of BIMERVAX, and received an additional booster dose with BIMERVAX between 6 and 12 months after the third previous dose.

The safety of a booster dose of BIMERVAX in adolescents aged 12 through 17 years is based on safety data from the phase 3 clinical trial and the ongoing phase 2b clinical trial. A total of 276 participants, with and without medical history of prior SARS-CoV-2 infection, received a booster dose of BIMERVAX at least 3 months after the last dose of the primary series.

The safety of a booster dose of BIMERVAX XBB.1.16 was assessed in an ongoing phase 2b/3 clinical trial in individuals 18 years of age and older fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before receiving a booster dose with BIMERVAX XBB.1.16. From this study, safety data is available for 602 individuals who received a booster dose of BIMERVAX XBB.1.16 with a median follow-up time of 6 month.

Adverse reactions observed during clinical trials are listed below according to the following frequency categories: very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1000 to < 1/100), rare (≥ 1/10 000 to < 1/1000), very rare (< 1/10 000) and not known (cannot be estimated from the available data).

Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

Table 1: Adverse reactions from BIMERVAX clinical trials in individuals 12 years of age and older

System organ class	Very common	Common	Uncommon	Rare	Not known
Blood and lymphatic system disorders		Lymphadenopathy[a]			
Nervous system disorders	Headache		Dizziness Somnolence	Paraesthesia Hypoaesthesia	
Cardiac disorders					Pericarditis[c]
Gastrointestinal disorders		Diarrhoea Vomiting Nausea		Odynophagia Abdominal pain[b]	
Skin and subcutaneous tissue disorders			Pruritus	Urticaria Cold sweats Rash Erythema	
Musculoskeletal and connective tissue disorders	Myalgia		Arthralgia		
General disorders and administration site conditions	Injection site pain Fatigue	Injection site swelling Injection site erythema Injection site induration Pyrexia Axillary pain	Asthenia Chills Malaise Injection site pruritus	Injection site bruising Injection site hypersensitivity	

[a] This term also included events reported as lymphadenitis
[b] This term also included events reported as upper and lower abdominal pain
[c] Based on a single event during clinical trials

Paediatric population

Injection site induration, malaise, axillary pain and arthralgia occurred at higher frequencies in adolescents compared to adults, with the frequency being very common in adolescents.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V and include batch/Lot number if available.

4.9 Overdose

In the event of overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Vaccines, Covid-19 vaccines, ATC code: J07BN04

Mechanism of action

BIMERVAX is a recombinant protein vaccine whose active substance (antigen) is SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion dimer. Following administration, an immune response is generated, both at a humoral and cellular level, against the SARS-CoV-2 RBD antigen. Neutralising antibodies against the RBD domain of SARS-CoV-2 prevent RBD binding to its cellular target ACE2, thus blocking membrane fusion and viral infection. Moreover, BIMERVAX induces antigen-specific T-cell immune response, which may contribute to protection to COVID-19.

Efficacy

Efficacy of damlecovatein has been inferred by immunobridging of immune responses to an authorised XBB adapted COVID-19 vaccine, for which vaccine efficacy has been established.

Immunogenicity

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The immunogenicity of damlecovatein was evaluated in the clinical trial HIPRA-HH-14, a Phase 2b/3, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess the safety, tolerability and immunogenicity of a booster vaccination with damlecovatein compared to COVID-19 mRNA vaccine (raxtozinameran) adapted vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment.

This phase 2b/3 clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 90 days, received any previous Omicron XBB adapted vaccine as well as individuals with COVID-19 infection diagnosed in the previous 6 months. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

At the cut-off date of the Interim Analysis, a total of 800 individuals had been vaccinated. A total of 599 subjects were included in the immunogenicity analysis (406 subjects vaccinated with damlecovatein and 193 subjects vaccinated with COVID-19 mRNA vaccine (raxtozinameran). Participants were stratified before randomisation by age group and by number of doses previously received (3 or ≥ 4 doses). The median age was 45 years (range: 18 to 88 years), with similar age ranges in both vaccine arms, including 13.6% and 11.7% of subjects 60 years of age and older in the

damlecovatein and COVID-19 mRNA vaccine (raxtozinameran) groups, respectively. Most subjects had received either 3 (66.9%) or 4 (33.0%) previous mRNA COVID-19 vaccine doses.

Immunogenicity of a booster dose of damlecovatein was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA), against SARS-CoV-2 Omicron XBB.1.16 (primary endpoint of efficacy) and Omicron XBB.1.5, and binding antibodies at Baseline and at Day 14. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (raxtozinameran) / damlecovatein. Non-inferiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.5. Superiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 2, GMT ratio column). Superiority of damlecovatein was met for all the variants tested.

Table 2: Post-booster GMT ratio for BIMERVAX XBB.1.16 (damlecovatein) versus COVID-19 mRNA vaccine (raxtozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 Omicron XBB.1.16 and XBB.1.5 at Baseline and at Day 14 post-booster dose

	BIMERVAX XBB.1.16 (damlecovatein) N=406		**COVID-19 mRNA vaccine (raxtozinameran) N=193**		**COVID-19 mRNA vaccine (raxtozinameran) / BIMERVAX XBB.1.16**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Baseline					
Omicron XBB.1.16	152.46	134.72 - 172.54	161.57	136.40 - 191.37	1.06 (0.87 - 1.29)
Omicron XBB.1.5	151.93	134.89 - 171.13	167.89	142.04 - 198.44	1.11 (0.90 - 1.35)
Day 14 post-booster					
Omicron XBB.1.16	1 946.38	1 708.44 – 2 217.46	1 512.21	1 261.72 – 1 812.44	0.78 (0.63 - 0.96)
Omicron XBB.1.5	1 888.89	1 676.98 – 2 127.57	1 486.03	1 257.25 – 1 756.45	0.79 (0.64 - 0.96)

N: number of participants in the mITT population
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 16 years of age and older
The immunogenicity of BIMERVAX was evaluated in one pivotal phase 2b multi-centre clinical trial (Study HIPRA-HH-2) and in one phase 3 multi-centre clinical trial (Study HIPRA-HH-5).

HIPRA-HH-2
Study HIPRA-HH-2 is a phase 2b, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess immunogenicity and safety of a booster vaccination with BIMERVAX compared to COVID-19 mRNA (tozinameran) vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment. This phase 2b clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 12 weeks, as well as individuals with previous COVID-19 infection. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

A total of 765 subjects were vaccinated; 513 subjects received BIMERVAX, and 252 subjects received the COVID-19 mRNA vaccine (tozinameran). A total of 751 subjects were analysed (504 BIMERVAX subjects and 247 COVID-19 mRNA vaccine subjects) excluding those who tested positive for COVID-19 within 14 days of the booster. Randomisation was stratified by age group (18-

64 versus ≥ 65 years). The median age was 42 years (range: 19 to 76 years), with similar age ranges in both vaccine arms, including 7.4% and 7.1% of subjects 65 years of age and older in the BIMERVAX and COVID-19 mRNA vaccine groups, respectively.

Immunogenicity of a booster dose of BIMERVAX was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain, Beta, Delta and Omicron BA.1 variants. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (tozinameran)/BIMERVAX. Non-inferiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio is < 1.4. Superiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 3, GMT ratio column).

Table 3: Post-booster GMT ratio for BIMERVAX versus COVID-19 mRNA vaccine (tozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 (D614G strain), Beta, Delta and Omicron BA.1 at days 14, 28, 98 and 182 post-booster dose (per protocol population)

	BIMERVAX N=504		**COVID-19 mRNA vaccine (tozinameran) N=247**		**COVID-19 mRNA vaccine (tozinameran) / BIMERVAX**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Day 14 post-booster					
D614G strain	1 949.44	1 696.03, 2 240.72	3 302.34	2 793.60, 3 903.73	1.69 (1.44, 2.00)
Beta	4 268.18	3 701.04, 4 922.21	2 608.59	2 188.98, 3 108.63	0.61 (0.51, 0.73)
Delta	1 459.98	1 282.22, 1 662.37	1 473.73	1 253.18, 1 733.10	1.01 (0.85, 1.20)
Omicron BA.1	2032.63	1773.66, 2329.40	1 209.23	1 019.34, 1 434.50	0.59 (0.50, 0.71)
Day 28 post-booster					
D614G strain	2 241.24	1 949.80, 2 576.24	2 947.35	2 494.84, 3 481.94	1.32 (1.12, 1.55)
Beta	3 754.90	3 255.80, 4 330.50	2 437.02	2 046.38, 2 902.22	0.65 (0.54, 0.78)
Delta	1 706.85	1 498.96, 1 943.58	1 508.08	1 283.26, 1 772.30	0.88 (0.74, 1.05)
Omicron BA.1	1 516.12	1 322.89, 1 737.58	987.53	833.05, 1 170.66	0.65 (0.54, 0.78)
Day 98 post-booster (N: BIMERVAX: 78; N: tozinameran: 42 as per protocol subset)					
D614G strain	1 193.17	931.14, 1 528.94	1 054.61	761.88, 1 459.83	0.88 (0.60, 1.30)
Beta	1 980.37	1 526.63, 2 568.98	1 150.92	815.99, 1 623.32	0.58 (0.39, 0.88)
Delta	1 981.10	1 547.00, 2 537.02	1 014.07	730.25, 1 408.20	0.51 (0.35, 0.76)
Omicron BA.1	668.25	514.73, 867.56	400.71	283.27, 566.83	0.60 (0.40, 0.91)
Day 182 post-booster					
D614G strain	1 213.44	1 055.38, 1 395.17	752.09	636.46, 888.74	0.62 (0.53, 0.73)
Beta	2 554.58	2 214.40, 2 947.01	1 774.54	1 489.68, 2113.88	0.69 (0.58, 0.83)
Delta	2 306.86	2 025.18, 2 627.72	1 256.46	1 068.85, 1 477.02	0.54 (0.46, 0.65)
Omicron BA.1	882.67	769.93, 1011.91	667.30	562.74, 791.28	0.76 (0.63, 0.91)

N: number of participants in the population per-protocol.

Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

The immunogenicity of an additional booster dose of BIMERVAX was assessed in a total of 288 individuals 18 years of age and older. Individuals had previously completed either a series of 2 doses of COVID-19 mRNA (tozinameran) vaccine and one dose of BIMERVAX (Cohort 1) or 3 doses of COVID-19 mRNA (tozinameran) vaccine (Cohort 2), and received an additional booster dose with BIMERVAX between 6 and 12 months after the previous dose. Of these, 190 subjects were analysed in the efficacy population (80 subjects in Cohort 1 and 110 subjects in Cohort 2). The median age was 49 years (range: 20 to 82 years), with similar age ranges in both Cohorts, including 11.5% of subjects 65 years of age and older.

Immunogenicity of BIMERVAX as an additional booster dose was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 variants. GMT ratio is the result of the GMT values (ID_{50}) of 3 doses of COVID-19 mRNA vaccine (tozinameran)/an additional booster dose of BIMERVAX administered after 3 doses of COVID-19 mRNA vaccine (tozinameran) or administered after 2 doses of COVID-19 mRNA and one dose of BIMERVAX. Superiority of the additional booster dose with BIMERVAX was met if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio was < 1 (see Table 4, GMT ratio column).

Table 4: Neutralising antibody levels (PBNA) and GMT ratio after an additional booster dose with BIMERVAX, administered either after a primary series with mRNA COVID-19 vaccine and a booster dose of BIMERVAX (cohort 1) or after a primary series with mRNA COVID-19 vaccine and a booster dose of mRNA COVID-19 vaccine (cohort 2), against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 at days 14, 98 and 182 post-booster dose (per protocol population)

	Cohort 1 **2 doses COVID-19 mRNA+2 doses of BIMERVAX**			**Cohort 2** **3 doses COVID-19 mRNA+1 dose of BIMERVAX**		
	Post-dose 3 **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=80**	**GMT** **Ratio** **(95%CI)**	**Post-dose 3** **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=110**	**GMT** **Ratio** **(95%CI)**
Day 14 post-booster						
Beta	2 547.34 (1 741.36, 3 726.35)	5 790.20 (4 371.05, 7 670.09)	0.44 (0.28, 0.68)	2 783.85 (1 975.09, 3 923.79)	6 383.89 (5 057.19, 8 058.64)	0.44 (0.31, 0.62)
Delta	1 565.21 (1 041.33, 2 352.66)	5 199.90 (3 752.82, 7 204.97)	0.30 (0.20, 0.46)	1 637.19 (1 130.5, 2 370.9)	4 085.85 (3 057.24, 5 460.52)	0.40 (0.28, 0.57)
Omicron BA.1	1 528.68 (970.94, 2 406.80)	3 580.61 (2 492.90, 5 142.92)	0.43 (0.27, 0.69)	1 739.02 (1 121.56, 2 696.41)	4 049.01 (2 795.38, 5 864.84)	0.43 (0.28, 0.65)
Omicron BA.4/5	1 094.55 (720.53, 1 662.72)	2 945.40 (2 216.80, 3 913.50)	0.37 (0.22, 0.62)	1 295.76 (845.10, 1 986.75)	2 506.46 (1 849.64, 3 396.52)	0.52 (0.34, 0.78)
Day 98 post-booster						
Beta	1 544.65 (773.99, 3 082.64)	4 609.95 (3 474.24, 6 116.91)	0.34 (0.16, 0.69)	1 601.47 (849.42, 3 019.37)	3 743.39 (2 951.87, 4 747.14)	0.43 (0.23, 0.81)
Delta	1 330.09 (672.40, 2 631.08)	1 864.55 (1 343.99, 2 586.73)	0.71 (0.36, 1.43)	1 102.65 (569.19, 2 136.06)	1 746.82 (1 305.89, 2 336.63)	0.63 (0.33, 1.22)
Omicron BA.1	461.12 (214.68, 990.45)	2 110.41 (1 467.27, 3 035.45)	0.22 (0.10, 0.48)	520.63 (242.27, 1 118.79)	1 980.84 (1 371.69, 2 860.50)	0.26 (0.12, 0.56)
Omicron BA.4/5	ND	1 886.95 (1 418.08, 2 510.85)	ND	ND	1 574.26 (1 156.85, 2 142.28)	ND
Day 182 post-booster						
Beta	809.61 (555.69, 1 179.56)	2 415.77 (1 814.55, 3 216.20)	0.34 (0.22, 0.52)	890.39 (633.9, 1 250.6)	2 088.80 (1 643.29, 2 655.08)	0.43 (0.30, 0.60)

Delta	732.92 (489.25, 1 097.95)	1 309.33 (941.50, 1 820.86)	0.56 (0.37, 0.85)	771.85 (534.93, 1 113.71)	1 337.38 (999.37, 1 789.72)	0.58 (0.40, 0.83)
Omicron BA.1	357.34 (227.83, 560.47)	1 756.94 (1 218.19, 2 533.97)	0.20 (0.13, 0.33)	404.87 (262.13, 625.33)	1 900.74 (1 315.82, 2 745.67)	0.21 (0.14, 0.32)
Omicron BA.4/5	ND	1 836.26 (1 373.92, 2 454.19)	ND	ND	1 604.42 (1 179.06, 2 183.22)	ND

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; ND: not determined

HIPRA-HH-5
This study is an ongoing open label, single arm, multicentre, phase 3 clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX for the prevention of COVID-19 in subjects vaccinated with several primary vaccine schedules, with or without previous non-severe COVID-19 infections. BIMERVAX was administered at least 91 days after the last dose or at least 30 days after the COVID-19 infection. This phase 3 clinical trial excluded individuals who were pregnant as well as individuals who were immunocompromised or had received immunosuppressants within 12 weeks. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

The interim report includes data from a total of 2 646 subjects who were vaccinated with BIMERVAX as a booster dose in healthy individuals (at least 16 years old) previously vaccinated with different COVID-19 vaccines (mRNA COVID-19 vaccines: tozinameran and elasomeran, and adenovirus-vector vaccines (COVID-19 Vaccine (ChAdOx1-S [recombinant]) and COVID-19 vaccine (Ad26.COV2-S [recombinant]). Of these, 230 (8%) subjects were included in the immunogenicity population. In the immunogenicity analysis, the population of the COVID-19 mRNA vaccine (tozinameran)/COVID-19 mRNA vaccine (tozinameran) vaccine group were all subjects between 16-17 years old.

Overall, the median age was 34.4 years (range: 16 to 85 years of age). Subjects were balanced between genders, 52.49% male and 47.47% female.

Immunogenicity was measured by Pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, Delta and Omicron BA.1. Data on GMT (geometric mean titre: ID_{50}) at baseline (prior to the administration of the booster dose) and at Day 14 (2 weeks after the administration of the booster dose) are provided in the following table.

Table 5: Neutralising antibody Geometric Mean Titres (GMT) at 14 days post-booster with BIMERVAX in individuals 16 years of age and older-per protocol analysis

	mRNA primed (tozinameran) 16-17 years old N=11		**Ad-vector primed (ChAdOx1-S recombinant) ≥ 18 years old N=40**		**mRNA primed (elasomeran) ≥ 18 years old N=171**	
	GMT	95% CI	GMT	95% CI	GMT	95% CI
Pre-booster						
D614G strain	720.10	356.96; 1 452.64	288.58	194.56; 428.02	657.49	499.52; 865.43
Beta	471.68	208.39; 1 067.60	539.49	345.97; 841.26	497.77	376.98; 657.26
Delta	803.84	376.27; 1 717.26	283.75	182.43; 441.35	914.68	657.97; 1 271.55
Omicron BA.1	257.99	99.98; 665.71	159.34	94.02; 270.05	221.62	155.51; 315.84
Day 14 post-booster						
D614G strain	4 753.65	2 356.45; 9 589.48	2 298.81	1 549.89; 3 409.63	4437.27	3 371.158; 5 840.55

Beta	8 820.74	3 897.14; 19 964.72	5 009.47	3 212.53; 7 811.54	6857.95	5 193.76; 9 055.38
Delta	7 564.79	3 541.05; 16 160.76	2 600.31	1 671.78; 4 044.56	5811.47	4 180.44; 8 078.87
Omicron BA.1	5 757.43	2 231.25; 14 856.19	1 847.41	1 090.05; 3 131.00	4379.81	3 073.24; 6 241.85

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals

Adolescents 12 through 17 years of age
The immunogenicity of BIMERVAX in individuals 12 through 17 years of age was evaluated in the ongoing phase 2b multi-centre clinical trial (Study HIPRA-HH-3).

HIPRA-HH-3
This study is an ongoing open label, uncontrolled, single-arm, multicentre, non-inferiority, phase 2b clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX in adolescents 12 through 17 years of age. BIMERVAX was administered at least 6 months after the last dose of the primary series. HIPRA-HH-3 study excluded adolescents who were pregnant as well as adolescents who were immunocompromised or who have received immunosuppressants within 90 days. Participants with known history of SARS-CoV-2 infection were excluded from the immunogenicity analysis.

At the time of the interim analysis a total of 240 adolescent participants were vaccinated with a booster dose of BIMERVAX. Of these, 88 individuals were eligible for the immunogenicity analysis. The primary immunogenicity analysis, measured by Pseudovirion-based neutralisation assay (PBNA), compared geometric mean titres (GMT) of neutralising antibodies against Omicron BA.1 with those observed in young adult participants (aged 18 to 25 years) from the pivotal phase 2b study in adults (HIPRA-HH-2) at Baseline and at Day 14 (2 weeks after the administration of the booster dose). Both groups of participants included in the analysis had no previous documented medical history of SARS-CoV-2 infection.

Data on neutralising antibody titres against Omicron BA.1 at Baseline (prior to the administration of the booster dose) and at Day 14 after vaccination are provided in the following table.

Table 6: Neutralising antibody titres against Omicron BA.1 at day 14 post-booster with BIMERVAX in adolescents aged 12 to 17 years (immunogenicity population)

	Statistics	**Adolescents (12-15 years old) N = 61**	**Adolescents (16-17 years old) N = 27**	**Total (12-17 years old) N= 88**
Baseline	**Geometric mean**	1 240.77	1 457.30	1 303.54
	95 % CI	894.78; 1 720.55	984.9; 2 156.3	1 016.05; 1 672.39
Day 14	**Geometric mean**	22 970.81	26 792.00	24 081.34
	95 % CI	18 033.27; 29 260.25	20 150.31; 35 622.86	19 741.36; 29 375.43
	GMFR	18.51	18.38	18.47
	95 % CI	13.28; 25.81	13.15; 25.71	14.41; 23.69
	≥ 4- fold change from baseline, n (%)	54 (88.5)	27 (100)	81 (92)
	95 % CI	77.8; 95.3	87.2; 100	84.3; 96.7

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMFR= Geometric Mean Fold Rise; CI: Confidence intervals

Elderly population

The immunogenicity of BIMERVAX XBB.1.16 has been shown in the elderly population (≥ 65 years old).

Immunocompromised population

The immunogenicity and safety of a booster dose of BIMERVAX were evaluated in a phase 2b/3, open label, single arm, multi-centre clinical trial (HIPRA-HH-4) in adults with pre-existing immunosuppressive conditions, including people living with human immunodeficiency virus (HIV) infection with persistent CD4 T-cell counts < 400/mm^3 within last 6 months, kidney transplant on maintenance immunosuppressive therapy, haemodialysis/peritoneal dialysis, primary antibody deficiencies on IgG replacement therapy and auto-immune disease on treatment with rituximab/ocrelizumab. The booster dose of BIMERVAX was administered at least 91 days after 3 previous doses of COVID-19 vaccine or after 2 doses plus a documented history of COVID-19. Participants with history of COVID-19 disease were allowed to be included if diagnosed at least 91 days before enrolment.

A total of 238 individuals were vaccinated with a booster dose of BIMERVAX and a total of 228 participants were analysed excluding those who tested positive for COVID-19 within 14 days of the booster. The median age was 56 years old (range: 21 to 90 years of age).

Immunogenicity was measured by pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, and Omicron BA.1 and BA.4/5 up to 12 months post-booster dose in all immunosuppressive conditions studied, except in individuals living with confirmed HIV infection in which immunogenicity was measured by virus neutralisations assay (VNA) against SARS-CoV-2 (D614G) strain and against Omicron BA.2. A booster dose of BIMERVAX enhanced humoral immune response in all immunosuppressive conditions, except in individuals with auto-immune disease on rituximab/ocrelizumab therapy. However, a comparison to immunocompetent individuals to inform about the magnitude of the potential difference as regards immune responses was not conducted. Therefore, the clinical relevance of the reported immune responses in immunocompromised individuals is unknown.

Paediatric population

The European Medicines Agency has deferred the obligation to submit the results of studies with BIMERVAX in one or more subsets of the paediatric population in the prevention of COVID-19 (see section 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

Not applicable.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of repeated dose toxicity.

Genotoxicity and carcinogenicity

BIMERVAX XBB.1.16 has not been evaluated for its genotoxic or carcinogenic potential. The components of the vaccine are not expected to have genotoxic or carcinogenic potential.

Reproductive toxicity

A developmental and reproductive toxicity study was performed in female and male rats prior to mating and during gestation. BIMERVAX was administered intramuscularly (equivalent to a full human dose) to female rats in four occasions, 21 and 14 days prior to mating and on gestation days 9

and 19. Males received three administrations, 35, 28 and 6 days prior to mating. No vaccine-related adverse effects on fertility, pregnancy/lactation, or development of the embryo/foetus and offspring were observed.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Disodium phosphate dodecahydrate
Potassium dihydrogen phosphate
Sodium chloride
Potassium chloride
Water for injections

For adjuvant, see section 2.

6.2 Incompatibilities

This medicinal product must not be mixed with other medicinal products or diluted.

6.3 Shelf life

1 year at 2 ºC – 8 ºC.

6.4 Special precautions for storage

Store in a refrigerator (2 °C – 8 °C).
Do not freeze.

Keep the vials in the outer carton in order to protect from light.

6.5 Nature and contents of container

0.5 mL of emulsion in a single dose vial (type I glass) closed with a type I elastomeric stopper and an aluminium seal fitted with a plastic flip-off cap.

Each single dose vial contains 1 dose of 0.5 mL.

Pack sizes: 5, 10 or 20 single dose vials.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

<u>Handling instructions and administration</u>

The vaccine should be handled by a healthcare professional using aseptic technique to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use in a single dose vial.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that a 0.5 mL dose can be extracted. Discard any remaining vaccine in the vial after a 0.5 mL dose has been extracted.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Disposal

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

8. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/005
EU/1/22/1709/006
EU/1/22/1709/007

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 30 March 2023

10. DATE OF REVISION OF THE TEXT

Detailed information on this medicinal product is available on the website of the European Medicines Agency https://www.ema.europa.eu

▼This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX LP.8.1 emulsion for injection
BIMERVAX LP.8.1 emulsion for injection in pre-filled syringe
COVID-19 Vaccine (recombinant, adjuvanted)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

This is a single dose vial or a pre-filled syringe which contains 1 dose of 0.5 mL.

One dose (0.5 mL) contains 40 micrograms of meracovatein adjuvanted with SQBA.

Meracovatein is a SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion homodimer (Omicron LP.8.1 – LP.8.1 strain) produced by recombinant DNA technology using a plasmid expression vector in a CHO cell line.

SQBA adjuvant containing per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Emulsion for injection (injection)
White homogeneous emulsion.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

BIMERVAX LP.8.1 is indicated for active immunisation to prevent COVID-19 caused by SARS-CoV-2 in individuals 12 years of age and older.

The use of this vaccine should be in accordance with official recommendations.

4.2 Posology and method of administration

Posology

Individuals 12 years of age and older
A single intramuscular dose (0.5 mL) of BIMERVAX LP.8.1 should be administered regardless of prior COVID-19 vaccination status (see section 5.1).

For individuals who have previously been vaccinated with a COVID-19 vaccine, BIMERVAX LP.8.1 should be administered at least 6 months after the most recent dose of a COVID-19 vaccine.

Immunocompromised individuals
Additional doses may be administered to individuals who are severely immunocompromised in accordance with official recommendations, see section 4.4 and 5.1.

Elderly
No dose adjustment is required in elderly individuals ≥ 65 years of age.

Paediatric population
The safety and efficacy of BIMERVAX LP.8.1 in children aged less than 12 years have not yet been established. No data are available.

Method of administration

BIMERVAX LP.8.1 is for intramuscular administration only, preferably into the deltoid muscle of the upper arm.

Do not administer this vaccine intravascularly, subcutaneously or intradermally.

The vaccine should not be mixed in the same syringe with any other vaccines or medicinal products.

For precautions to be taken before administering the vaccine, see section 4.4.

For instructions regarding handling and disposal of the vaccine, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Hypersensitivity and anaphylaxis

Events of anaphylaxis have been reported with COVID-19 vaccines. Appropriate medical treatment and supervision should always be readily available in case of an anaphylactic reaction following the administration of the vaccine.

Close observation for at least 15 minutes is recommended following vaccination.

No further dose of the vaccine should be given to those who have experienced anaphylaxis after a prior dose of BIMERVAX.

Anxiety-related reactions

Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation or stress-related reactions may occur in association with vaccination as a psychogenic response to the needle injection. It is important that precautions are in place to avoid injury from fainting.

Concurrent illness

Vaccination should be postponed in individuals suffering from acute severe febrile illness or acute infection. The presence of a minor infection and/or low-grade fever should not delay vaccination.

Thrombocytopenia and coagulation disorders

As with other intramuscular injections, the vaccine should be given with caution in individuals receiving anticoagulant therapy or those with thrombocytopenia or any coagulation disorder (such as

haemophilia), because bleeding or bruising may occur following an intramuscular administration in these individuals.

Immunocompromised individuals

There are limited data available on immunogenicity and safety of the vaccine when administered to immunocompromised individuals, including those receiving immunosuppressant therapy (see section 5.1). The efficacy of BIMERVAX LP.8.1 may be lower in immunocompromised individuals.

Duration of protection

The duration of protection afforded by the vaccine is unknown as it is still being determined by ongoing clinical trials.

Limitations of vaccine effectiveness

As with any vaccine, vaccination with BIMERVAX LP.8.1 may not protect all vaccine recipients.

Excipients with known effect

Potassium
This vaccine contains less than 1 mmol potassium (39 mg) per dose, that is to say essentially 'potassium-free'.

Sodium
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

Polysorbate 80
This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed.

Concomitant administration of BIMERVAX LP.8.1 with other vaccines has not been studied.

4.6 Fertility, pregnancy, and lactation

Pregnancy

There is no experience with the use of BIMERVAX LP.8.1 in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy, embryo/foetal development, parturition, or post-natal development (see section 5.3).

Administration of BIMERVAX LP.8.1 during pregnancy should only be considered when the potential benefits outweigh any potential risks for the mother and foetus.

Breast-feeding

It is unknown whether BIMERVAX LP.8.1 is excreted in human milk.

No effects on the breast-fed newborn/infant are anticipated since the systemic exposure of the breast-feeding woman to BIMERVAX LP.8.1 is negligible.

Fertility

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity, see section 5.3.

4.7 Effects on ability to drive and use machines

BIMERVAX LP.8.1 has no or negligible influence on the ability to drive and use machines. However, some of the effects mentioned under section 4.8 may temporarily affect the ability to drive or use machines.

4.8 Undesirable effects

Summary of the safety profile

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 18 years of age and older
The most common adverse reactions reported after a booster dose with BIMERVAX in adult individuals who received a primary series with mRNA COVID-19 vaccine, were injection site pain (82.9%), headache (30.9%), fatigue (31.1%) and myalgia (20.7%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

The most common adverse reactions reported after an additional booster dose of BIMERVAX as a fourth dose were injection site pain (79.9%), headache (25.0%) and fatigue (25.0%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

Adolescents 12 through 17 years of age
The most common adverse reactions reported after a booster dose of BIMERVAX in adolescents were injection site pain (77.5%), headache (28.3%), fatigue (29.3%) and malaise (22.5%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 2 days following vaccination and were mild to moderate in severity.

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The safety of BIMERVAX XBB.1.16 is inferred from the safety data of the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) vaccine and the safety data from the clinical trial of the adapted BIMERVAX XBB.1.16 vaccine.

The overall safety profile for the BIMERVAX XBB.1.16 booster dose was similar to that seen after the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) booster dose. The most common adverse reactions reported were injection site pain (68.11%), headache (23.42%), fatigue (19.60%) and myalgia (13.62%). Most adverse reactions were mild to moderate in severity. No new adverse reactions were identified for the BIMERVAX XBB.1.16 booster dose.

BIMERVAX LP.8.1 (Omicron LP.8.1-adapted BIMERVAX)

The safety of BIMERVAX LP.8.1 is inferred from safety data of BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) vaccine and from the Omicron XBB.1.16-adapted BIMERVAX vaccine.

Tabulated list of adverse reactions

The safety profile presented below is based on pooled safety data generated in two phase 2b and phase 3 clinical trials with a total of 3 156 individuals 18 years of age and older, that received one booster dose of BIMERVAX at least 3 months after a previous COVID-19 vaccine. The median duration of

the safety follow-up was 12 months for a 99.4% of the individuals, and 6 months for a 0.6% of the individuals.

The safety of an additional booster dose of BIMERVAX as a fourth dose was assessed in 288 individuals, 18 years of age and older, who had completed either 3 doses of COVID-19 mRNA vaccine (tozinameran) or 2 doses of COVID-19 mRNA vaccine (tozinameran) and 1 dose of BIMERVAX, and received an additional booster dose with BIMERVAX between 6 and 12 months after the third previous dose.

The safety of a booster dose of BIMERVAX in adolescents aged 12 through 17 years is based on safety data from the phase 3 clinical trial and the ongoing phase 2b clinical trial. A total of 276 participants, with and without medical history of prior SARS-CoV-2 infection, received a booster dose of BIMERVAX at least 3 months after the last dose of the primary series.

The safety of a booster dose of BIMERVAX XBB.1.16 was assessed in an ongoing phase 2b/3 clinical trial in individuals 18 years of age and older fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before receiving a booster dose with BIMERVAX XBB.1.16. From this study, safety data is available for 602 individuals who received a booster dose of BIMERVAX XBB.1.16 with a median follow-up time of 6 month.

Adverse reactions observed during clinical trials are listed below according to the following frequency categories: very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1000 to < 1/100), rare (≥ 1/10 000 to < 1/1000), very rare (< 1/10 000) and not known (cannot be estimated from the available data).

Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

Table 1: Adverse reactions from BIMERVAX clinical trials in individuals 12 years of age and older

System organ class	Very common	Common	Uncommon	Rare	Not known
Blood and lymphatic system disorders		Lymphadenopathy[a]			
Nervous system disorders	Headache		Dizziness Somnolence	Paraesthesia Hypoaesthesia	
Cardiac disorders					Pericarditis[c]
Gastrointestinal disorders		Diarrhoea Vomiting Nausea		Odynophagia Abdominal pain[b]	
Skin and subcutaneous tissue disorders			Pruritus	Urticaria Cold sweats Rash Erythema	
Musculoskeletal and connective tissue disorders	Myalgia		Arthralgia		
General disorders and administration site conditions	Injection site pain Fatigue	Injection site swelling Injection site erythema Injection site induration Pyrexia Axillary pain	Asthenia Chills Malaise Injection site pruritus	Injection site bruising Injection site hypersensitivity	

[a] This term also included events reported as lymphadenitis
[b] This term also included events reported as upper and lower abdominal pain
[c] Based on a single event during clinical trials

Paediatric population

Injection site induration, malaise, axillary pain and arthralgia occurred at higher frequencies in adolescents compared to adults, with the frequency being very common in adolescents.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V and include batch/Lot number if available.

4.9 Overdose

In the event of overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Vaccines, Covid-19 vaccines, ATC code: J07BN04

Mechanism of action

BIMERVAX is a recombinant protein vaccine whose active substance (antigen) is SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion dimer. Following administration, an immune response is generated, both at a humoral and cellular level, against the SARS-CoV-2 RBD antigen. Neutralising antibodies against the RBD domain of SARS-CoV-2 prevent RBD binding to its cellular target ACE2, thus blocking membrane fusion and viral infection. Moreover, BIMERVAX induces antigen-specific T-cell immune response, which may contribute to protection to COVID-19.

Efficacy

The efficacy of BIMERVAX and BIMERVAX XBB.1.16 has been inferred by immunobridging of immune response to an authorised COVID-19 vaccine, for which efficacy is established. The efficacy of BIMERVAX LP.8.1 is inferred from the immunogenicity data of prior BIMERVAX vaccines.

Immunogenicity

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The immunogenicity of damlecovatein was evaluated in the clinical trial HIPRA-HH-14, a Phase 2b/3, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess the safety, tolerability and immunogenicity of a booster vaccination with damlecovatein compared to COVID-19 mRNA vaccine (raxtozinameran) adapted vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment.

This phase 2b/3 clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 90 days, received any previous Omicron XBB adapted vaccine as well as individuals with COVID-19 infection diagnosed in the previous 6 months. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

At the cut-off date of the Interim Analysis, a total of 800 individuals had been vaccinated. A total of 599 subjects were included in the immunogenicity analysis (406 subjects vaccinated with damlecovatein and 193 subjects vaccinated with COVID-19 mRNA vaccine (raxtozinameran).

Participants were stratified before randomisation by age group and by number of doses previously received (3 or ≥ 4 doses). The median age was 45 years (range: 18 to 88 years), with similar age ranges in both vaccine arms, including 13.6% and 11.7% of subjects 60 years of age and older in the damlecovatein and COVID-19 mRNA vaccine (raxtozinameran) groups, respectively. Most subjects had received either 3 (66.9%) or 4 (33.0%) previous mRNA COVID-19 vaccine doses.

Immunogenicity of a booster dose of damlecovatein was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA), against SARS-CoV-2 Omicron XBB.1.16 (primary endpoint of efficacy) and Omicron XBB.1.5, and binding antibodies at Baseline and at Day 14. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (raxtozinameran) / damlecovatein. Non-inferiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.5. Superiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 2, GMT ratio column). Superiority of damlecovatein was met for all the variants tested.

Table 2: Post-booster GMT ratio for BIMERVAX XBB.1.16 (damlecovatein) versus COVID-19 mRNA vaccine (raxtozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 Omicron XBB.1.16 and XBB.1.5 at Baseline and at Day 14 post-booster dose

	BIMERVAX XBB.1.16 (damlecovatein) N=406		**COVID-19 mRNA vaccine (raxtozinameran) N=193**		**COVID-19 mRNA vaccine (raxtozinameran) / BIMERVAX XBB.1.16**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Baseline					
Omicron XBB.1.16	152.46	134.72 - 172.54	161.57	136.40 - 191.37	1.06 (0.87 - 1.29)
Omicron XBB.1.5	151.93	134.89 - 171.13	167.89	142.04 - 198.44	1.11 (0.90 - 1.35)
Day 14 post-booster					
Omicron XBB.1.16	1 946.38	1 708.44 – 2 217.46	1 512.21	1 261.72 – 1 812.44	0.78 (0.63 - 0.96)
Omicron XBB.1.5	1 888.89	1 676.98 – 2 127.57	1 486.03	1 257.25 – 1 756.45	0.79 (0.64 - 0.96)

N: number of participants in the mITT population
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 16 years of age and older
The immunogenicity of BIMERVAX was evaluated in one pivotal phase 2b multi-centre clinical trial (Study HIPRA-HH-2) and in one phase 3 multi-centre clinical trial (Study HIPRA-HH-5).

HIPRA-HH-2
Study HIPRA-HH-2 is a phase 2b, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess immunogenicity and safety of a booster vaccination with BIMERVAX compared to COVID-19 mRNA (tozinameran) vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment. This phase 2b clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 12 weeks, as well as individuals with previous COVID-19 infection. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

A total of 765 subjects were vaccinated; 513 subjects received BIMERVAX, and 252 subjects received the COVID-19 mRNA vaccine (tozinameran). A total of 751 subjects were analysed (504 BIMERVAX subjects and 247 COVID-19 mRNA vaccine subjects) excluding those who tested positive for COVID-19 within 14 days of the booster. Randomisation was stratified by age group (18-64 versus ≥ 65 years). The median age was 42 years (range: 19 to 76 years), with similar age ranges in both vaccine arms, including 7.4% and 7.1% of subjects 65 years of age and older in the BIMERVAX and COVID-19 mRNA vaccine groups, respectively.

Immunogenicity of a booster dose of BIMERVAX was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain, Beta, Delta and Omicron BA.1 variants. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (tozinameran)/BIMERVAX. Non-inferiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio is < 1.4. Superiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 3, GMT ratio column).

Table 3: Post-booster GMT ratio for BIMERVAX versus COVID-19 mRNA vaccine (tozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 (D614G strain), Beta, Delta and Omicron BA.1 at days 14, 28, 98 and 182 post-booster dose (per protocol population)

	BIMERVAX N=504		**COVID-19 mRNA vaccine (tozinameran) N=247**		**COVID-19 mRNA vaccine (tozinameran) / BIMERVAX**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Day 14 post-booster					
D614G strain	1 949.44	1 696.03, 2 240.72	3 302.34	2 793.60, 3 903.73	1.69 (1.44, 2.00)
Beta	4 268.18	3 701.04, 4 922.21	2 608.59	2 188.98, 3 108.63	0.61 (0.51, 0.73)
Delta	1 459.98	1 282.22, 1 662.37	1 473.73	1 253.18, 1 733.10	1.01 (0.85, 1.20)
Omicron BA.1	2032.63	1773.66, 2329.40	1 209.23	1 019.34, 1 434.50	0.59 (0.50, 0.71)
Day 28 post-booster					
D614G strain	2 241.24	1 949.80, 2 576.24	2 947.35	2 494.84, 3 481.94	1.32 (1.12, 1.55)
Beta	3 754.90	3 255.80, 4 330.50	2 437.02	2 046.38, 2 902.22	0.65 (0.54, 0.78)
Delta	1 706.85	1 498.96, 1 943.58	1 508.08	1 283.26, 1 772.30	0.88 (0.74, 1.05)
Omicron BA.1	1 516.12	1 322.89, 1 737.58	987.53	833.05, 1 170.66	0.65 (0.54, 0.78)
Day 98 post-booster (N: BIMERVAX: 78; N: tozinameran: 42 as per protocol subset)					
D614G strain	1 193.17	931.14, 1 528.94	1 054.61	761.88, 1 459.83	0.88 (0.60, 1.30)
Beta	1 980.37	1 526.63, 2 568.98	1 150.92	815.99, 1 623.32	0.58 (0.39, 0.88)
Delta	1 981.10	1 547.00, 2 537.02	1 014.07	730.25, 1 408.20	0.51 (0.35, 0.76)
Omicron BA.1	668.25	514.73, 867.56	400.71	283.27, 566.83	0.60 (0.40, 0.91)
Day 182 post-booster					
D614G strain	1 213.44	1 055.38, 1 395.17	752.09	636.46, 888.74	0.62 (0.53, 0.73)
Beta	2 554.58	2 214.40, 2 947.01	1 774.54	1 489.68, 2113.88	0.69 (0.58, 0.83)

Delta	2 306.86	2 025.18, 2 627.72	1 256.46	1 068.85, 1 477.02	0.54 (0.46, 0.65)
Omicron BA.1	882.67	769.93, 1 011.91	667.30	562.74, 791.28	0.76 (0.63, 0.91)

N: number of participants in the population per-protocol.
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

The immunogenicity of an additional booster dose of BIMERVAX was assessed in a total of 288 individuals 18 years of age and older. Individuals had previously completed either a series of 2 doses of COVID-19 mRNA (tozinameran) vaccine and one dose of BIMERVAX (Cohort 1) or 3 doses of COVID-19 mRNA (tozinameran) vaccine (Cohort 2), and received an additional booster dose with BIMERVAX between 6 and 12 months after the previous dose. Of these, 190 subjects were analysed in the efficacy population (80 subjects in Cohort 1 and 110 subjects in Cohort 2). The median age was 49 years (range: 20 to 82 years), with similar age ranges in both Cohorts, including 11.5% of subjects 65 years of age and older.

Immunogenicity of BIMERVAX as an additional booster dose was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 variants. GMT ratio is the result of the GMT values (ID_{50}) of 3 doses of COVID-19 mRNA vaccine (tozinameran)/an additional booster dose of BIMERVAX administered after 3 doses of COVID-19 mRNA vaccine (tozinameran) or administered after 2 doses of COVID-19 mRNA and one dose of BIMERVAX. Superiority of the additional booster dose with BIMERVAX was met if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio was < 1 (see Table 4, GMT ratio column).

Table 4: Neutralising antibody levels (PBNA) and GMT ratio after an additional booster dose with BIMERVAX, administered either after a primary series with mRNA COVID-19 vaccine and a booster dose of BIMERVAX (cohort 1) or after a primary series with mRNA COVID-19 vaccine and a booster dose of mRNA COVID-19 vaccine (cohort 2), against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 at days 14, 98 and 182 post-booster dose (per protocol population)

	Cohort 1 **2 doses COVID-19 mRNA+2 doses of BIMERVAX**			**Cohort 2** **3 doses COVID-19 mRNA+1 dose of BIMERVAX**		
	Post-dose 3 **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=80**	**GMT** **Ratio** **(95%CI)**	**Post-dose 3** **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=110**	**GMT** **Ratio** **(95%CI)**
Day 14 post-booster						
Beta	2 547.34 (1 741.36, 3 726.35)	5 790.20 (4 371.05, 7 670.09)	0.44 (0.28, 0.68)	2 783.85 (1 975.09, 3 923.79)	6 383.89 (5 057.19, 8 058.64)	0.44 (0.31, 0.62)
Delta	1 565.21 (1 041.33, 2 352.66)	5 199.90 (3 752.82, 7 204.97)	0.30 (0.20, 0.46)	1 637.19 (1 130.5, 2 370.9)	4 085.85 (3 057.24, 5 460.52)	0.40 (0.28, 0.57)
Omicron BA.1	1 528.68 (970.94, 2 406.80)	3 580.61 (2 492.90, 5 142.92)	0.43 (0.27, 0.69)	1 739.02 (1 121.56, 2 696.41)	4 049.01 (2 795.38, 5 864.84)	0.43 (0.28, 0.65)
Omicron BA.4/5	1 094.55 (720.53, 1 662.72)	2 945.40 (2 216.80, 3 913.50)	0.37 (0.22, 0.62)	1 295.76 (845.10, 1 986.75)	2 506.46 (1 849.64, 3 396.52)	0.52 (0.34, 0.78)
Day 98 post-booster						
Beta	1 544.65 (773.99, 3 082.64)	4 609.95 (3 474.24, 6 116.91)	0.34 (0.16, 0.69)	1 601.47 (849.42, 3 019.37)	3 743.39 (2 951.87, 4 747.14)	0.43 (0.23, 0.81)
Delta	1 330.09 (672.40, 2 631.08)	1 864.55 (1 343.99, 2 586.73)	0.71 (0.36, 1.43)	1 102.65 (569.19, 2 136.06)	1 746.82 (1 305.89, 2 336.63)	0.63 (0.33, 1.22)
Omicron BA.1	461.12 (214.68, 990.45)	2 110.41 (1 467.27, 3 035.45)	0.22 (0.10, 0.48)	520.63 (242.27, 1 118.79)	1 980.84 (1 371.69, 2 860.50)	0.26 (0.12, 0.56)

Omicron BA.4/5	ND	1 886.95 (1 418.08, 2 510.85)	ND	ND	1 574.26 (1 156.85, 2 142.28)	ND
Day 182 post-booster						
Beta	809.61 (555.69, 1 179.56)	2 415.77 (1 814.55, 3 216.20)	0.34 (0.22, 0.52)	890.39 (633.9, 1 250.6)	2 088.80 (1 643.29, 2 655.08)	0.43 (0.30, 0.60)
Delta	732.92 (489.25, 1 097.95)	1 309.33 (941.50, 1 820.86)	0.56 (0.37, 0.85)	771.85 (534.93, 1 113.71)	1 337.38 (999.37, 1 789.72)	0.58 (0.40, 0.83)
Omicron BA.1	357.34 (227.83, 560.47)	1 756.94 (1 218.19, 2 533.97)	0.20 (0.13, 0.33)	404.87 (262.13, 625.33)	1 900.74 (1 315.82, 2 745.67)	0.21 (0.14, 0.32)
Omicron BA.4/5	ND	1 836.26 (1 373.92, 2 454.19)	ND	ND	1 604.42 (1 179.06, 2 183.22)	ND

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; ND: not determined

HIPRA-HH-5
This study is an ongoing open label, single arm, multicentre, phase 3 clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX for the prevention of COVID-19 in subjects vaccinated with several primary vaccine schedules, with or without previous non-severe COVID-19 infections. BIMERVAX was administered at least 91 days after the last dose or at least 30 days after the COVID-19 infection. This phase 3 clinical trial excluded individuals who were pregnant as well as individuals who were immunocompromised or had received immunosuppressants within 12 weeks. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

The interim report includes data from a total of 2 646 subjects who were vaccinated with BIMERVAX as a booster dose in healthy individuals (at least 16 years old) previously vaccinated with different COVID-19 vaccines (mRNA COVID-19 vaccines: tozinameran and elasomeran, and adenovirus-vector vaccines (COVID-19 Vaccine (ChAdOx1-S [recombinant]) and COVID-19 vaccine (Ad26.COV2-S [recombinant]). Of these, 230 (8%) subjects were included in the immunogenicity population. In the immunogenicity analysis, the population of the COVID-19 mRNA vaccine (tozinameran)/COVID-19 mRNA vaccine (tozinameran) vaccine group were all subjects between 16-17 years old.

Overall, the median age was 34.4 years (range: 16 to 85 years of age). Subjects were balanced between genders, 52.49% male and 47.47% female.

Immunogenicity was measured by Pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, Delta and Omicron BA.1. Data on GMT (geometric mean titre: ID_{50}) at baseline (prior to the administration of the booster dose) and at Day 14 (2 weeks after the administration of the booster dose) are provided in the following table.

Table 5: Neutralising antibody Geometric Mean Titres (GMT) at 14 days post-booster with BIMERVAX in individuals 16 years of age and older-per protocol analysis

	mRNA primed (tozinameran) 16-17 years old N=11		**Ad-vector primed (ChAdOx1-S recombinant) ≥ 18 years old N=40**		**mRNA primed (elasomeran) ≥ 18 years old N=171**	
	GMT	95% CI	GMT	95% CI	GMT	95% CI
Pre-booster						
D614G strain	720.10	356.96; 1 452.64	288.58	194.56; 428.02	657.49	499.52; 865.43
Beta	471.68	208.39; 1 067.60	539.49	345.97; 841.26	497.77	376.98; 657.26
Delta	803.84	376.27; 1 717.26	283.75	182.43; 441.35	914.68	657.97; 1 271.55

Omicron BA.1	257.99	99.98; 665.71	159.34	94.02; 270.05	221.62	155.51; 315.84
Day 14 post-booster						
D614G strain	4 753.65	2 356.45; 9 589.48	2 298.81	1 549.89; 3 409.63	4437.27	3 371.158; 5 840.55
Beta	8 820.74	3 897.14; 19 964.72	5 009.47	3 212.53; 7 811.54	6857.95	5 193.76; 9 055.38
Delta	7 564.79	3 541.05; 16 160.76	2 600.31	1 671.78; 4 044.56	5811.47	4 180.44; 8 078.87
Omicron BA.1	5 757.43	2 231.25; 14 856.19	1 847.41	1 090.05; 3 131.00	4379.81	3 073.24; 6 241.85

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals

Adolescents 12 through 17 years of age
The immunogenicity of BIMERVAX in individuals 12 through 17 years of age was evaluated in the ongoing phase 2b multi-centre clinical trial (Study HIPRA-HH-3).

HIPRA-HH-3
This study is an ongoing open label, uncontrolled, single-arm, multicentre, non-inferiority, phase 2b clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX in adolescents 12 through 17 years of age. BIMERVAX was administered at least 6 months after the last dose of the primary series. HIPRA-HH-3 study excluded adolescents who were pregnant as well as adolescents who were immunocompromised or who have received immunosuppressants within 90 days. Participants with known history of SARS-CoV-2 infection were excluded from the immunogenicity analysis.

At the time of the interim analysis a total of 240 adolescent participants were vaccinated with a booster dose of BIMERVAX. Of these, 88 individuals were eligible for the immunogenicity analysis. The primary immunogenicity analysis, measured by Pseudovirion-based neutralisation assay (PBNA), compared geometric mean titres (GMT) of neutralising antibodies against Omicron BA.1 with those observed in young adult participants (aged 18 to 25 years) from the pivotal phase 2b study in adults (HIPRA-HH-2) at Baseline and at Day 14 (2 weeks after the administration of the booster dose). Both groups of participants included in the analysis had no previous documented medical history of SARS-CoV-2 infection.

Data on neutralising antibody titres against Omicron BA.1 at Baseline (prior to the administration of the booster dose) and at Day 14 after vaccination are provided in the following table.

Table 6: Neutralising antibody titres against Omicron BA.1 at day 14 post-booster with BIMERVAX in adolescents aged 12 to 17 years (immunogenicity population)

	Statistics	**Adolescents (12-15 years old) N = 61**	**Adolescents (16-17 years old) N = 27**	**Total (12-17 years old) N= 88**
Baseline	**Geometric mean**	1 240.77	1 457.30	1 303.54
	95 % CI	894.78; 1 720.55	984.9; 2 156.3	1 016.05; 1 672.39
Day 14	**Geometric mean**	22 970.81	26 792.00	24 081.34
	95 % CI	18 033.27; 29 260.25	20 150.31; 35 622.86	19 741.36; 29 375.43
	GMFR	18.51	18.38	18.47
	95 % CI	13.28; 25.81	13.15; 25.71	14.41; 23.69
	≥ 4- fold change from baseline, n (%)	54 (88.5)	27 (100)	81 (92)
	95 % CI	77.8; 95.3	87.2; 100	84.3; 96.7

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMFR= Geometric Mean Fold Rise; CI: Confidence intervals

Elderly population

The immunogenicity of BIMERVAX was shown in the elderly population (≥ 65 years old).

Immunocompromised population

The immunogenicity and safety of a booster dose of BIMERVAX were evaluated in a phase 2b/3, open label, single arm, multi-centre clinical trial (HIPRA-HH-4) in adults with pre-existing immunosuppressive conditions, including people living with human immunodeficiency virus (HIV) infection with persistent CD4 T-cell counts < 400/mm^3 within last 6 months, kidney transplant on maintenance immunosuppressive therapy, haemodialysis/peritoneal dialysis, primary antibody deficiencies on IgG replacement therapy and auto-immune disease on treatment with rituximab/ocrelizumab. The booster dose of BIMERVAX was administered at least 91 days after 3 previous doses of COVID-19 vaccine or after 2 doses plus a documented history of COVID-19. Participants with history of COVID-19 disease were allowed to be included if diagnosed at least 91 days before enrolment.

A total of 238 individuals were vaccinated with a booster dose of BIMERVAX and a total of 228 participants were analysed excluding those who tested positive for COVID-19 within 14 days of the booster. The median age was 56 years old (range: 21 to 90 years of age).

Immunogenicity was measured by pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, and Omicron BA.1 and BA.4/5 up to 12 months post-booster dose in all immunosuppressive conditions studied, except in individuals living with confirmed HIV infection in which immunogenicity was measured by virus neutralisations assay (VNA) against SARS-CoV-2 (D614G) strain and against Omicron BA.2. A booster dose of BIMERVAX enhanced humoral immune response in all immunosuppressive conditions, except in individuals with auto-immune disease on rituximab/ocrelizumab therapy. However, a comparison to immunocompetent individuals to inform about the magnitude of the potential difference as regards immune responses was not conducted. Therefore, the clinical relevance of the reported immune responses in immunocompromised individuals is unknown.

Paediatric population

The European Medicines Agency has deferred the obligation to submit the results of studies with BIMERVAX in one or more subsets of the paediatric population in the prevention of COVID-19 (see section 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

Not applicable.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of repeated dose toxicity.

Genotoxicity and carcinogenicity

BIMERVAX LP.8.1 has not been evaluated for its genotoxic or carcinogenic potential. The components of the vaccine are not expected to have genotoxic or carcinogenic potential.

Reproductive toxicity

A developmental and reproductive toxicity study was performed in female and male rats prior to mating and during gestation. BIMERVAX was administered intramuscularly (equivalent to a full human dose) to female rats in four occasions, 21 and 14 days prior to mating and on gestation days 9 and 19. Males received three administrations, 35, 28 and 6 days prior to mating. No vaccine-related adverse effects on fertility, pregnancy/lactation, or development of the embryo/foetus and offspring were observed.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Disodium phosphate dodecahydrate
Potassium dihydrogen phosphate
Sodium chloride
Potassium chloride
Water for injections

For adjuvant, see section 2.

6.2 Incompatibilities

This medicinal product must not be mixed with other medicinal products or diluted.

6.3 Shelf life

15 months at 2 ºC – 8 ºC.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

6.4 Special precautions for storage

Store in a refrigerator (2 °C – 8 °C).
Do not freeze.

Keep the product in the outer carton in order to protect from light.

6.5 Nature and contents of container

Single dose vial

0.5 mL of emulsion in a single dose vial (type I glass) closed with a type I elastomeric stopper and an aluminium seal fitted with a plastic flip-off cap.

Each single dose vial contains 1 dose of 0.5 mL.

Pack sizes: 1, 10 or 20 single dose vials.

Not all pack sizes may be marketed.

Pre-filled syringe

0.5 mL of emulsion in a pre-filled syringe (type I glass) with a plunger stopper (chlorobutyl rubber) and an integrated tip cap (polyisoprene rubber) without needle.

Each pre-filled syringe contains 1 dose of 0.5 mL.

Pack sizes: 1 or 10 pre-filled syringes.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

Handling instructions and administration

The vaccine should be handled by a healthcare professional using aseptic technique to ensure the sterility of each dose.

Instructions applicable to single dose vials

Preparation for use

- The vaccine comes ready to use in a single dose vial.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that a 0.5 mL dose can be extracted. Discard any remaining vaccine in the vial after a 0.5 mL dose has been extracted.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Instructions applicable to pre-filled syringes

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the pre-filled syringe from the outer carton.

Inspect the pre-filled syringe

- Gently swirl the pre-filled syringe before the dose withdrawal. Do not shake.
- Before use, check the tightness of the closing system.
- Each pre-filled syringe contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.
- Do not administer the vaccine if the pre-filled syringe is damaged.

Administer the vaccine

- Needles are not included in the pre-filled syringe cartons.

- Use a sterile needle for intramuscular injection.
- With the tip cap upright, remove the tip cap by twisting counterclockwise until it releases. Remove the cap in a slow, steady motion. Do not pull on it while turning.
- Attach the needle by twisting in a clockwise direction until the needle locks on the syringe.
- Uncap the needle when ready for administration.
- Administer the entire dose intramuscularly.

Disposal

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

8. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/008
EU/1/22/1709/009
EU/1/22/1709/010
EU/1/22/1709/011
EU/1/22/1709/012

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 30 March 2023

10. DATE OF REVISION OF THE TEXT

Detailed information on this medicinal product is available on the website of the European Medicines Agency https://www.ema.europa.eu

▼This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX XFG.1.1 emulsion for injection
BIMERVAX XFG.1.1 emulsion for injection in pre-filled syringe
COVID-19 Vaccine (recombinant, adjuvanted)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

This is a single dose vial or a pre-filled syringe which contains 1 dose of 0.5 mL.

One dose (0.5 mL) contains 40 micrograms of SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion homodimer* (Omicron XFG.1.1 - XFG.1.1) adjuvanted with SQBA.

*Produced by recombinant DNA technology using a plasmid expression vector in a CHO cell line.

SQBA adjuvant containing per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Emulsion for injection (injection)
White homogeneous emulsion.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

BIMERVAX XFG.1.1 is indicated for active immunisation to prevent COVID-19 caused by SARS-CoV-2 in individuals 12 years of age and older.

The use of this vaccine should be in accordance with official recommendations.

4.2 Posology and method of administration

Posology

Individuals 12 years of age and older
A single intramuscular dose (0.5 mL) of BIMERVAX XFG.1.1 should be administered regardless of prior COVID-19 vaccination status (see section 5.1).

For individuals who have previously been vaccinated with a COVID-19 vaccine, BIMERVAX XFG.1.1 should be administered at least 6 months after the most recent dose of a COVID-19 vaccine.

Immunocompromised individuals
Additional doses may be administered to individuals who are severely immunocompromised in accordance with official recommendations, see section 4.4 and 5.1.

Elderly
No dose adjustment is required in elderly individuals ≥ 65 years of age.

Paediatric population
The safety and efficacy of BIMERVAX XFG.1.1 in children aged less than 12 years have not yet been established. No data are available.

Method of administration

BIMERVAX XFG.1.1 is for intramuscular administration only, preferably into the deltoid muscle of the upper arm.

Do not administer this vaccine intravascularly, subcutaneously or intradermally.

The vaccine should not be mixed in the same syringe with any other vaccines or medicinal products.

For precautions to be taken before administering the vaccine, see section 4.4.

For instructions regarding handling and disposal of the vaccine, see section 6.6.

4.3 Contraindications

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Hypersensitivity and anaphylaxis

Events of anaphylaxis have been reported with COVID-19 vaccines. Appropriate medical treatment and supervision should always be readily available in case of an anaphylactic reaction following the administration of the vaccine.

Close observation for at least 15 minutes is recommended following vaccination.

No further dose of the vaccine should be given to those who have experienced anaphylaxis after a prior dose of BIMERVAX.

Anxiety-related reactions

Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation or stress-related reactions may occur in association with vaccination as a psychogenic response to the needle injection. It is important that precautions are in place to avoid injury from fainting.

Concurrent illness

Vaccination should be postponed in individuals suffering from acute severe febrile illness or acute infection. The presence of a minor infection and/or low-grade fever should not delay vaccination.

Thrombocytopenia and coagulation disorders

As with other intramuscular injections, the vaccine should be given with caution in individuals receiving anticoagulant therapy or those with thrombocytopenia or any coagulation disorder (such as

haemophilia), because bleeding or bruising may occur following an intramuscular administration in these individuals.

Immunocompromised individuals

There are limited data available on immunogenicity and safety of the vaccine when administered to immunocompromised individuals, including those receiving immunosuppressant therapy (see section 5.1). The efficacy of BIMERVAX XFG.1.1 may be lower in immunocompromised individuals.

Duration of protection

The duration of protection afforded by the vaccine is unknown as it is still being determined by ongoing clinical trials.

Limitations of vaccine effectiveness

As with any vaccine, vaccination with BIMERVAX XFG.1.1 may not protect all vaccine recipients.

Excipients with known effect

Potassium
This vaccine contains less than 1 mmol potassium (39 mg) per dose, that is to say essentially 'potassium-free'.

Sodium
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

Polysorbate 80
This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions.

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed.

Concomitant administration of BIMERVAX XFG.1.1 with other vaccines has not been studied.

4.6 Fertility, pregnancy, and lactation

Pregnancy

There is no experience with the use of BIMERVAX XFG.1.1 in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to pregnancy, embryo/foetal development, parturition, or post-natal development (see section 5.3).

Administration of BIMERVAX XFG.1.1 during pregnancy should only be considered when the potential benefits outweigh any potential risks for the mother and foetus.

Breast-feeding

It is unknown whether BIMERVAX XFG.1.1 is excreted in human milk.

No effects on the breast-fed newborn/infant are anticipated since the systemic exposure of the breast-feeding woman to BIMERVAX XFG.1.1 is negligible.

Fertility

Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity, see section 5.3.

4.7 Effects on ability to drive and use machines

BIMERVAX XFG.1.1 has no or negligible influence on the ability to drive and use machines. However, some of the effects mentioned under section 4.8 may temporarily affect the ability to drive or use machines.

4.8 Undesirable effects

Summary of the safety profile

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 18 years of age and older
The most common adverse reactions reported after a booster dose with BIMERVAX in adult individuals who received a primary series with mRNA COVID-19 vaccine, were injection site pain (82.9%), headache (30.9%), fatigue (31.1%) and myalgia (20.7%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

The most common adverse reactions reported after an additional booster dose of BIMERVAX as a fourth dose were injection site pain (79.9%), headache (25.0%) and fatigue (25.0%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 3 days following vaccination and were mild to moderate in severity.

Adolescents 12 through 17 years of age
The most common adverse reactions reported after a booster dose of BIMERVAX in adolescents were injection site pain (77.5%), headache (28.3%), fatigue (29.3%) and malaise (22.5%). The median duration of local and systemic adverse reactions was 1 to 3 days. Most adverse reactions occurred within 2 days following vaccination and were mild to moderate in severity.

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The safety of BIMERVAX XBB.1.16 is inferred from the safety data of the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) vaccine and the safety data from the clinical trial of the adapted BIMERVAX XBB.1.16 vaccine.

The overall safety profile for the BIMERVAX XBB.1.16 booster dose was similar to that seen after the BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) booster dose. The most common adverse reactions reported were injection site pain (68.11%), headache (23.42%), fatigue (19.60%) and myalgia (13.62%). Most adverse reactions were mild to moderate in severity. No new adverse reactions were identified for the BIMERVAX XBB.1.16 booster dose.

BIMERVAX XFG.1.1 (Omicron XFG.1.1-adapted BIMERVAX)

The safety of BIMERVAX XFG.1.1 is inferred from safety data of BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains) vaccine and from the Omicron XBB.1.16-adapted BIMERVAX vaccine.

Tabulated list of adverse reactions

The safety profile presented below is based on pooled safety data generated in two phase 2b and phase 3 clinical trials with a total of 3 156 individuals 18 years of age and older, that received one booster dose of BIMERVAX at least 3 months after a previous COVID-19 vaccine. The median duration of

the safety follow-up was 12 months for a 99.4% of the individuals, and 6 months for a 0.6% of the individuals.

The safety of an additional booster dose of BIMERVAX as a fourth dose was assessed in 288 individuals, 18 years of age and older, who had completed either 3 doses of COVID-19 mRNA vaccine (tozinameran) or 2 doses of COVID-19 mRNA vaccine (tozinameran) and 1 dose of BIMERVAX, and received an additional booster dose with BIMERVAX between 6 and 12 months after the third previous dose.

The safety of a booster dose of BIMERVAX in adolescents aged 12 through 17 years is based on safety data from the phase 3 clinical trial and the ongoing phase 2b clinical trial. A total of 276 participants, with and without medical history of prior SARS-CoV-2 infection, received a booster dose of BIMERVAX at least 3 months after the last dose of the primary series.

The safety of a booster dose of BIMERVAX XBB.1.16 was assessed in an ongoing phase 2b/3 clinical trial in individuals 18 years of age and older fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before receiving a booster dose with BIMERVAX XBB.1.16. From this study, safety data is available for 602 individuals who received a booster dose of BIMERVAX XBB.1.16 with a median follow-up time of 6 month.

Adverse reactions observed during clinical trials are listed below according to the following frequency categories: very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1000 to < 1/100), rare (≥ 1/10 000 to < 1/1000), very rare (< 1/10 000) and not known (cannot be estimated from the available data).

Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

Table 1: Adverse reactions from BIMERVAX clinical trials in individuals 12 years of age and older

System organ class	Very common	Common	Uncommon	Rare	Not known
Blood and lymphatic system disorders		Lymphadenopathy[a]			
Nervous system disorders	Headache		Dizziness Somnolence	Paraesthesia Hypoaesthesia	
Cardiac disorders					Pericarditis[c]
Gastrointestinal disorders		Diarrhoea Vomiting Nausea		Odynophagia Abdominal pain[b]	
Skin and subcutaneous tissue disorders			Pruritus	Urticaria Cold sweats Rash Erythema	
Musculoskeletal and connective tissue disorders	Myalgia		Arthralgia		
General disorders and administration site conditions	Injection site pain Fatigue	Injection site swelling Injection site erythema Injection site induration Pyrexia Axillary pain	Asthenia Chills Malaise Injection site pruritus	Injection site bruising Injection site hypersensitivity	

[a] This term also included events reported as lymphadenitis
[b] This term also included events reported as upper and lower abdominal pain
[c] Based on a single event during clinical trials

Paediatric population

Injection site induration, malaise, axillary pain and arthralgia occurred at higher frequencies in adolescents compared to adults, with the frequency being very common in adolescents.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V and include batch/Lot number if available.

4.9 Overdose

In the event of overdose, monitoring of vital functions and possible symptomatic treatment is recommended.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Vaccines, Covid-19 vaccines, ATC code: J07BN04

Mechanism of action

BIMERVAX is a recombinant protein vaccine whose active substance (antigen) is SARS-CoV-2 virus recombinant spike (S) protein receptor binding domain (RBD) fusion dimer. Following administration, an immune response is generated, both at a humoral and cellular level, against the SARS-CoV-2 RBD antigen. Neutralising antibodies against the RBD domain of SARS-CoV-2 prevent RBD binding to its cellular target ACE2, thus blocking membrane fusion and viral infection. Moreover, BIMERVAX induces antigen-specific T-cell immune response, which may contribute to protection to COVID-19.

Efficacy

The efficacy of BIMERVAX and BIMERVAX XBB.1.16 has been inferred by immunobridging of immune response to an authorised COVID-19 vaccine, for which efficacy is established. The efficacy of BIMERVAX XFG.1.1 is inferred from the immunogenicity data of prior BIMERVAX vaccines.

Immunogenicity

BIMERVAX XBB.1.16 (Omicron XBB.1.16-adapted BIMERVAX)

The immunogenicity of damlecovatein was evaluated in the clinical trial HIPRA-HH-14, a Phase 2b/3, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess the safety, tolerability and immunogenicity of a booster vaccination with damlecovatein compared to COVID-19 mRNA vaccine (raxtozinameran) adapted vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment.

This phase 2b/3 clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 90 days, received any previous Omicron XBB adapted vaccine as well as individuals with COVID-19 infection diagnosed in the previous 6 months. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

At the cut-off date of the Interim Analysis, a total of 800 individuals had been vaccinated. A total of 599 subjects were included in the immunogenicity analysis (406 subjects vaccinated with damlecovatein and 193 subjects vaccinated with COVID-19 mRNA vaccine (raxtozinameran).

Participants were stratified before randomisation by age group and by number of doses previously received (3 or ≥ 4 doses). The median age was 45 years (range: 18 to 88 years), with similar age ranges in both vaccine arms, including 13.6% and 11.7% of subjects 60 years of age and older in the damlecovatein and COVID-19 mRNA vaccine (raxtozinameran) groups, respectively. Most subjects had received either 3 (66.9%) or 4 (33.0%) previous mRNA COVID-19 vaccine doses.

Immunogenicity of a booster dose of damlecovatein was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA), against SARS-CoV-2 Omicron XBB.1.16 (primary endpoint of efficacy) and Omicron XBB.1.5, and binding antibodies at Baseline and at Day 14. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (raxtozinameran) / damlecovatein. Non-inferiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.5. Superiority of damlecovatein to COVID-19 mRNA vaccine (raxtozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 2, GMT ratio column). Superiority of damlecovatein was met for all the variants tested.

Table 2: Post-booster GMT ratio for BIMERVAX XBB.1.16 (damlecovatein) versus COVID-19 mRNA vaccine (raxtozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 Omicron XBB.1.16 and XBB.1.5 at Baseline and at Day 14 post-booster dose

	BIMERVAX XBB.1.16 (damlecovatein) N=406		**COVID-19 mRNA vaccine (raxtozinameran) N=193**		**COVID-19 mRNA vaccine (raxtozinameran) / BIMERVAX XBB.1.16**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Baseline					
Omicron XBB.1.16	152.46	134.72 - 172.54	161.57	136.40 - 191.37	1.06 (0.87 - 1.29)
Omicron XBB.1.5	151.93	134.89 - 171.13	167.89	142.04 - 198.44	1.11 (0.90 - 1.35)
Day 14 post-booster					
Omicron XBB.1.16	1 946.38	1 708.44 – 2 217.46	1 512.21	1 261.72 – 1 812.44	0.78 (0.63 - 0.96)
Omicron XBB.1.5	1 888.89	1 676.98 – 2 127.57	1 486.03	1 257.25 – 1 756.45	0.79 (0.64 - 0.96)

N: number of participants in the mITT population
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

BIMERVAX (original, heterodimer B.1.351 and B.1.1.7 strains)

Individuals 16 years of age and older
The immunogenicity of BIMERVAX was evaluated in one pivotal phase 2b multi-centre clinical trial (Study HIPRA-HH-2) and in one phase 3 multi-centre clinical trial (Study HIPRA-HH-5).

HIPRA-HH-2
Study HIPRA-HH-2 is a phase 2b, double-blind, randomised, active-controlled, multi-centre, non-inferiority clinical trial to assess immunogenicity and safety of a booster vaccination with BIMERVAX compared to COVID-19 mRNA (tozinameran) vaccine, in adults fully vaccinated against COVID-19 with a mRNA vaccine at least 6 months before enrolment. This phase 2b clinical trial excluded individuals who were pregnant, individuals who were immunocompromised or had received immunosuppressants within 12 weeks, as well as individuals with previous COVID-19 infection. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

A total of 765 subjects were vaccinated; 513 subjects received BIMERVAX, and 252 subjects received the COVID-19 mRNA vaccine (tozinameran). A total of 751 subjects were analysed (504 BIMERVAX subjects and 247 COVID-19 mRNA vaccine subjects) excluding those who tested positive for COVID-19 within 14 days of the booster. Randomisation was stratified by age group (18-64 versus ≥ 65 years). The median age was 42 years (range: 19 to 76 years), with similar age ranges in both vaccine arms, including 7.4% and 7.1% of subjects 65 years of age and older in the BIMERVAX and COVID-19 mRNA vaccine groups, respectively.

Immunogenicity of a booster dose of BIMERVAX was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain, Beta, Delta and Omicron BA.1 variants. GMT ratio is the result of the GMT values (ID_{50}) of COVID-19 mRNA vaccine (tozinameran)/BIMERVAX. Non-inferiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio is < 1.4. Superiority of BIMERVAX to COVID-19 mRNA vaccine (tozinameran) is concluded if the upper limit of the 2-sided 95% Confidence Interval of the GMT ratio is < 1.0 (see Table 3, GMT ratio column).

Table 3: Post-booster GMT ratio for BIMERVAX versus COVID-19 mRNA vaccine (tozinameran) with neutralisation titres (PBNA) against SARS-CoV-2 (D614G strain), Beta, Delta and Omicron BA.1 at days 14, 28, 98 and 182 post-booster dose (per protocol population)

	BIMERVAX N=504		**COVID-19 mRNA vaccine (tozinameran) N=247**		**COVID-19 mRNA vaccine (tozinameran) / BIMERVAX**
	GMT	95% CI	GMT	95% CI	GMT Ratio; (95% CI)
Day 14 post-booster					
D614G strain	1 949.44	1 696.03, 2 240.72	3 302.34	2 793.60, 3 903.73	1.69 (1.44, 2.00)
Beta	4 268.18	3 701.04, 4 922.21	2 608.59	2 188.98, 3 108.63	0.61 (0.51, 0.73)
Delta	1 459.98	1 282.22, 1 662.37	1 473.73	1 253.18, 1 733.10	1.01 (0.85, 1.20)
Omicron BA.1	2032.63	1773.66, 2329.40	1 209.23	1 019.34, 1 434.50	0.59 (0.50, 0.71)
Day 28 post-booster					
D614G strain	2 241.24	1 949.80, 2 576.24	2 947.35	2 494.84, 3 481.94	1.32 (1.12, 1.55)
Beta	3 754.90	3 255.80, 4 330.50	2 437.02	2 046.38, 2 902.22	0.65 (0.54, 0.78)
Delta	1 706.85	1 498.96, 1 943.58	1 508.08	1 283.26, 1 772.30	0.88 (0.74, 1.05)
Omicron BA.1	1 516.12	1 322.89, 1 737.58	987.53	833.05, 1 170.66	0.65 (0.54, 0.78)
Day 98 post-booster (N: BIMERVAX: 78; N: tozinameran: 42 as per protocol subset)					
D614G strain	1 193.17	931.14, 1 528.94	1 054.61	761.88, 1 459.83	0.88 (0.60, 1.30)
Beta	1 980.37	1 526.63, 2 568.98	1 150.92	815.99, 1 623.32	0.58 (0.39, 0.88)
Delta	1 981.10	1 547.00, 2 537.02	1 014.07	730.25, 1 408.20	0.51 (0.35, 0.76)
Omicron BA.1	668.25	514.73, 867.56	400.71	283.27, 566.83	0.60 (0.40, 0.91)
Day 182 post-booster					
D614G strain	1 213.44	1 055.38, 1 395.17	752.09	636.46, 888.74	0.62 (0.53, 0.73)
Beta	2 554.58	2 214.40, 2 947.01	1 774.54	1 489.68, 2113.88	0.69 (0.58, 0.83)

Delta	2 306.86	2 025.18, 2 627.72	1 256.46	1 068.85, 1 477.02	0.54 (0.46, 0.65)
Omicron BA.1	882.67	769.93, 1 011.91	667.30	562.74, 791.28	0.76 (0.63, 0.91)

N: number of participants in the population per-protocol.
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; PBNA = pseudovirion-based neutralisation assay

The immunogenicity of an additional booster dose of BIMERVAX was assessed in a total of 288 individuals 18 years of age and older. Individuals had previously completed either a series of 2 doses of COVID-19 mRNA (tozinameran) vaccine and one dose of BIMERVAX (Cohort 1) or 3 doses of COVID-19 mRNA (tozinameran) vaccine (Cohort 2), and received an additional booster dose with BIMERVAX between 6 and 12 months after the previous dose. Of these, 190 subjects were analysed in the efficacy population (80 subjects in Cohort 1 and 110 subjects in Cohort 2). The median age was 49 years (range: 20 to 82 years), with similar age ranges in both Cohorts, including 11.5% of subjects 65 years of age and older.

Immunogenicity of BIMERVAX as an additional booster dose was based on an assessment of geometric mean titres (GMT) of neutralising antibodies, measured by a pseudovirion-based neutralisation assay (PBNA) against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 variants. GMT ratio is the result of the GMT values (ID_{50}) of 3 doses of COVID-19 mRNA vaccine (tozinameran)/an additional booster dose of BIMERVAX administered after 3 doses of COVID-19 mRNA vaccine (tozinameran) or administered after 2 doses of COVID-19 mRNA and one dose of BIMERVAX. Superiority of the additional booster dose with BIMERVAX was met if the upper limit of the 2 sided 95% Confidence Interval (CI) of the GMT ratio was < 1 (see Table 4, GMT ratio column).

Table 4: Neutralising antibody levels (PBNA) and GMT ratio after an additional booster dose with BIMERVAX, administered either after a primary series with mRNA COVID-19 vaccine and a booster dose of BIMERVAX (cohort 1) or after a primary series with mRNA COVID-19 vaccine and a booster dose of mRNA COVID-19 vaccine (cohort 2), against Beta, Delta, Omicron BA.1 and Omicron BA.4/5 at days 14, 98 and 182 post-booster dose (per protocol population)

	Cohort 1 **2 doses COVID-19 mRNA+2 doses of BIMERVAX**			**Cohort 2** **3 doses COVID-19 mRNA+1 dose of BIMERVAX**		
	Post-dose 3 **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=80**	**GMT** **Ratio** **(95%CI)**	**Post-dose 3** **GMT** **(95% CI)** **N=38**	**Post-dose 4** **GMT** **(95% CI)** **N=110**	**GMT** **Ratio** **(95%CI)**
Day 14 post-booster						
Beta	2 547.34 (1 741.36, 3 726.35)	5 790.20 (4 371.05, 7 670.09)	0.44 (0.28, 0.68)	2 783.85 (1 975.09, 3 923.79)	6 383.89 (5 057.19, 8 058.64)	0.44 (0.31, 0.62)
Delta	1 565.21 (1 041.33, 2 352.66)	5 199.90 (3 752.82, 7 204.97)	0.30 (0.20, 0.46)	1 637.19 (1 130.5, 2 370.9)	4 085.85 (3 057.24, 5 460.52)	0.40 (0.28, 0.57)
Omicron BA.1	1 528.68 (970.94, 2 406.80)	3 580.61 (2 492.90, 5 142.92)	0.43 (0.27, 0.69)	1 739.02 (1 121.56, 2 696.41)	4 049.01 (2 795.38, 5 864.84)	0.43 (0.28, 0.65)
Omicron BA.4/5	1 094.55 (720.53, 1 662.72)	2 945.40 (2 216.80, 3 913.50)	0.37 (0.22, 0.62)	1 295.76 (845.10, 1 986.75)	2 506.46 (1 849.64, 3 396.52)	0.52 (0.34, 0.78)
Day 98 post-booster						
Beta	1 544.65 (773.99, 3 082.64)	4 609.95 (3 474.24, 6 116.91)	0.34 (0.16, 0.69)	1 601.47 (849.42, 3 019.37)	3 743.39 (2 951.87, 4 747.14)	0.43 (0.23, 0.81)
Delta	1 330.09 (672.40, 2 631.08)	1 864.55 (1 343.99, 2 586.73)	0.71 (0.36, 1.43)	1 102.65 (569.19, 2 136.06)	1 746.82 (1 305.89, 2 336.63)	0.63 (0.33, 1.22)
Omicron BA.1	461.12 (214.68, 990.45)	2 110.41 (1 467.27, 3 035.45)	0.22 (0.10, 0.48)	520.63 (242.27, 1 118.79)	1 980.84 (1 371.69, 2 860.50)	0.26 (0.12, 0.56)

Omicron BA.4/5	ND	1 886.95 (1 418.08, 2 510.85)	ND	ND	1 574.26 (1 156.85, 2 142.28)	ND
Day 182 post-booster						
Beta	809.61 (555.69, 1 179.56)	2 415.77 (1 814.55, 3 216.20)	0.34 (0.22, 0.52)	890.39 (633.9, 1 250.6)	2 088.80 (1 643.29, 2 655.08)	0.43 (0.30, 0.60)
Delta	732.92 (489.25, 1 097.95)	1 309.33 (941.50, 1 820.86)	0.56 (0.37, 0.85)	771.85 (534.93, 1 113.71)	1 337.38 (999.37, 1 789.72)	0.58 (0.40, 0.83)
Omicron BA.1	357.34 (227.83, 560.47)	1 756.94 (1 218.19, 2 533.97)	0.20 (0.13, 0.33)	404.87 (262.13, 625.33)	1 900.74 (1 315.82, 2 745.67)	0.21 (0.14, 0.32)
Omicron BA.4/5	ND	1 836.26 (1 373.92, 2 454.19)	ND	ND	1 604.42 (1 179.06, 2 183.22)	ND

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals; ND: not determined

HIPRA-HH-5
This study is an ongoing open label, single arm, multicentre, phase 3 clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX for the prevention of COVID-19 in subjects vaccinated with several primary vaccine schedules, with or without previous non-severe COVID-19 infections. BIMERVAX was administered at least 91 days after the last dose or at least 30 days after the COVID-19 infection. This phase 3 clinical trial excluded individuals who were pregnant as well as individuals who were immunocompromised or had received immunosuppressants within 12 weeks. Individuals were also required a minimum interval of 3 months after receipt of any immunotherapy (monoclonal antibodies, plasma) prior to the study.

The interim report includes data from a total of 2 646 subjects who were vaccinated with BIMERVAX as a booster dose in healthy individuals (at least 16 years old) previously vaccinated with different COVID-19 vaccines (mRNA COVID-19 vaccines: tozinameran and elasomeran, and adenovirus-vector vaccines (COVID-19 Vaccine (ChAdOx1-S [recombinant]) and COVID-19 vaccine (Ad26.COV2-S [recombinant]). Of these, 230 (8%) subjects were included in the immunogenicity population. In the immunogenicity analysis, the population of the COVID-19 mRNA vaccine (tozinameran)/COVID-19 mRNA vaccine (tozinameran) vaccine group were all subjects between 16-17 years old.

Overall, the median age was 34.4 years (range: 16 to 85 years of age). Subjects were balanced between genders, 52.49% male and 47.47% female.

Immunogenicity was measured by Pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, Delta and Omicron BA.1. Data on GMT (geometric mean titre: ID_{50}) at baseline (prior to the administration of the booster dose) and at Day 14 (2 weeks after the administration of the booster dose) are provided in the following table.

Table 5: Neutralising antibody Geometric Mean Titres (GMT) at 14 days post-booster with BIMERVAX in individuals 16 years of age and older-per protocol analysis

	mRNA primed (tozinameran) 16-17 years old N=11		**Ad-vector primed (ChAdOx1-S recombinant) ≥ 18 years old N=40**		**mRNA primed (elasomeran) ≥ 18 years old N=171**	
	GMT	95% CI	GMT	95% CI	GMT	95% CI
Pre-booster						
D614G strain	720.10	356.96; 1 452.64	288.58	194.56; 428.02	657.49	499.52; 865.43
Beta	471.68	208.39; 1 067.60	539.49	345.97; 841.26	497.77	376.98; 657.26
Delta	803.84	376.27; 1 717.26	283.75	182.43; 441.35	914.68	657.97; 1 271.55

Omicron BA.1	257.99	99.98; 665.71	159.34	94.02; 270.05	221.62	155.51; 315.84
Day 14 post-booster						
D614G strain	4 753.65	2 356.45; 9 589.48	2 298.81	1 549.89; 3 409.63	4437.27	3 371.158; 5 840.55
Beta	8 820.74	3 897.14; 19 964.72	5 009.47	3 212.53; 7 811.54	6857.95	5 193.76; 9 055.38
Delta	7 564.79	3 541.05; 16 160.76	2 600.31	1 671.78; 4 044.56	5811.47	4 180.44; 8 078.87
Omicron BA.1	5 757.43	2 231.25; 14 856.19	1 847.41	1 090.05; 3 131.00	4379.81	3 073.24; 6 241.85

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMT = Geometric Mean Titre; CI: Confidence intervals

Adolescents 12 through 17 years of age
The immunogenicity of BIMERVAX in individuals 12 through 17 years of age was evaluated in the ongoing phase 2b multi-centre clinical trial (Study HIPRA-HH-3).

HIPRA-HH-3
This study is an ongoing open label, uncontrolled, single-arm, multicentre, non-inferiority, phase 2b clinical trial to assess the safety and immunogenicity of a booster vaccination with BIMERVAX in adolescents 12 through 17 years of age. BIMERVAX was administered at least 6 months after the last dose of the primary series. HIPRA-HH-3 study excluded adolescents who were pregnant as well as adolescents who were immunocompromised or who have received immunosuppressants within 90 days. Participants with known history of SARS-CoV-2 infection were excluded from the immunogenicity analysis.

At the time of the interim analysis a total of 240 adolescent participants were vaccinated with a booster dose of BIMERVAX. Of these, 88 individuals were eligible for the immunogenicity analysis. The primary immunogenicity analysis, measured by Pseudovirion-based neutralisation assay (PBNA), compared geometric mean titres (GMT) of neutralising antibodies against Omicron BA.1 with those observed in young adult participants (aged 18 to 25 years) from the pivotal phase 2b study in adults (HIPRA-HH-2) at Baseline and at Day 14 (2 weeks after the administration of the booster dose). Both groups of participants included in the analysis had no previous documented medical history of SARS-CoV-2 infection.

Data on neutralising antibody titres against Omicron BA.1 at Baseline (prior to the administration of the booster dose) and at Day 14 after vaccination are provided in the following table.

Table 6: Neutralising antibody titres against Omicron BA.1 at day 14 post-booster with BIMERVAX in adolescents aged 12 to 17 years (immunogenicity population)

	Statistics	Adolescents (12-15 years old) N = 61	Adolescents (16-17 years old) N = 27	Total (12-17 years old) N= 88
Baseline	**Geometric mean**	1 240.77	1 457.30	1 303.54
	95 % CI	894.78; 1 720.55	984.9; 2 156.3	1 016.05; 1 672.39
Day 14	**Geometric mean**	22 970.81	26 792.00	24 081.34
	95 % CI	18 033.27; 29 260.25	20 150.31; 35 622.86	19 741.36; 29 375.43
	GMFR	18.51	18.38	18.47
	95 % CI	13.28; 25.81	13.15; 25.71	14.41; 23.69
	≥ 4- fold change from baseline, n (%)	54 (88.5)	27 (100)	81 (92)
	95 % CI	77.8; 95.3	87.2; 100	84.3; 96.7

N: Number of participants with available data for the relevant endpoint
Abbreviations: GMFR= Geometric Mean Fold Rise; CI: Confidence intervals

Elderly population

The immunogenicity of BIMERVAX was shown in the elderly population (≥ 65 years old).

Immunocompromised population

The immunogenicity and safety of a booster dose of BIMERVAX were evaluated in a phase 2b/3, open label, single arm, multi-centre clinical trial (HIPRA-HH-4) in adults with pre-existing immunosuppressive conditions, including people living with human immunodeficiency virus (HIV) infection with persistent CD4 T-cell counts < 400/mm^3 within last 6 months, kidney transplant on maintenance immunosuppressive therapy, haemodialysis/peritoneal dialysis, primary antibody deficiencies on IgG replacement therapy and auto-immune disease on treatment with rituximab/ocrelizumab. The booster dose of BIMERVAX was administered at least 91 days after 3 previous doses of COVID-19 vaccine or after 2 doses plus a documented history of COVID-19. Participants with history of COVID-19 disease were allowed to be included if diagnosed at least 91 days before enrolment.

A total of 238 individuals were vaccinated with a booster dose of BIMERVAX and a total of 228 participants were analysed excluding those who tested positive for COVID-19 within 14 days of the booster. The median age was 56 years old (range: 21 to 90 years of age).

Immunogenicity was measured by pseudovirion-based neutralisation assay (PBNA) against SARS-CoV-2 (D614G) strain and against Beta, and Omicron BA.1 and BA.4/5 up to 12 months post-booster dose in all immunosuppressive conditions studied, except in individuals living with confirmed HIV infection in which immunogenicity was measured by virus neutralisations assay (VNA) against SARS-CoV-2 (D614G) strain and against Omicron BA.2. A booster dose of BIMERVAX enhanced humoral immune response in all immunosuppressive conditions, except in individuals with auto-immune disease on rituximab/ocrelizumab therapy. However, a comparison to immunocompetent individuals to inform about the magnitude of the potential difference as regards immune responses was not conducted. Therefore, the clinical relevance of the reported immune responses in immunocompromised individuals is unknown.

Paediatric population

The European Medicines Agency has deferred the obligation to submit the results of studies with BIMERVAX in one or more subsets of the paediatric population in the prevention of COVID-19 (see section 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

Not applicable.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of repeated dose toxicity.

Genotoxicity and carcinogenicity

BIMERVAX XFG.1.1 has not been evaluated for its genotoxic or carcinogenic potential. The components of the vaccine are not expected to have genotoxic or carcinogenic potential.

Reproductive toxicity

A developmental and reproductive toxicity study was performed in female and male rats prior to mating and during gestation. BIMERVAX was administered intramuscularly (equivalent to a full human dose) to female rats in four occasions, 21 and 14 days prior to mating and on gestation days 9 and 19. Males received three administrations, 35, 28 and 6 days prior to mating. No vaccine-related adverse effects on fertility, pregnancy/lactation, or development of the embryo/foetus and offspring were observed.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Disodium phosphate dodecahydrate
Potassium dihydrogen phosphate
Sodium chloride
Potassium chloride
Water for injections

For adjuvant, see section 2.

6.2 Incompatibilities

This medicinal product must not be mixed with other medicinal products or diluted.

6.3 Shelf life

15 months at 2 ºC – 8 ºC.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

6.4 Special precautions for storage

Store in a refrigerator (2 °C – 8 °C).
Do not freeze.

Keep the product in the outer carton in order to protect from light.

6.5 Nature and contents of container

Single dose vial

0.5 mL of emulsion in a single dose vial (type I glass) closed with a type I elastomeric stopper and an aluminium seal fitted with a plastic flip-off cap.

Each single dose vial contains 1 dose of 0.5 mL.

Pack sizes: 1, 10 or 20 single dose vials.

Not all pack sizes may be marketed.

Pre-filled syringe

0.5 mL of emulsion in a pre-filled syringe (type I glass) with a plunger stopper (chlorobutyl rubber) and an integrated tip cap (polyisoprene rubber) without needle.

Each pre-filled syringe contains 1 dose of 0.5 mL.

Pack sizes: 1 or 10 pre-filled syringes.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

Handling instructions and administration

The vaccine should be handled by a healthcare professional using aseptic technique to ensure the sterility of each dose.

Instructions applicable to single dose vials

Preparation for use

- The vaccine comes ready to use in a single dose vial.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that a 0.5 mL dose can be extracted. Discard any remaining vaccine in the vial after a 0.5 mL dose has been extracted.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Instructions applicable to pre-filled syringes

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 ºC to 8 ºC and kept within the outer carton to protect from light.
- Immediately prior to use, remove the pre-filled syringe from the outer carton.

Inspect the pre-filled syringe

- Gently swirl the pre-filled syringe. Do not shake.
- Before use, check the tightness of the closing system.
- Each pre-filled syringe contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.
- Do not administer the vaccine if the pre-filled syringe is damaged.

Administer the vaccine

- Needles are not included in the pre-filled syringe cartons.

- Use a sterile needle for intramuscular injection.
- With the tip cap upright, remove the tip cap by twisting counterclockwise until it releases. Remove the cap in a slow, steady motion. Do not pull on it while turning.
- Attach the needle by twisting in a clockwise direction until the needle locks on the syringe.
- Uncap the needle when ready for administration.
- Administer the entire dose intramuscularly.

Disposal

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

8. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/013
EU/1/22/1709/014
EU/1/22/1709/015
EU/1/22/1709/016
EU/1/22/1709/017

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 30 March 2023

10. DATE OF REVISION OF THE TEXT

Detailed information on this medicinal product is available on the website of the European Medicines Agency https://www.ema.europa.eu

ANNEX II

A. MANUFACTURER OF THE BIOLOGICAL ACTIVE SUBSTANCE(S) AND MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE

B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE

C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION

D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT

A. MANUFACTURER OF THE BIOLOGICAL ACTIVE SUBSTANCE(S) AND MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE

Name and address of the manufacturer of the biological active substance(s)

Laboratorios Hipra, S.A.
Ctra. C-63, Km 48,300. Polígono
Industrial El Rieral,
17170 Amer (Girona)
Spain

Name and address of the manufacturer(s) responsible for batch release

Laboratorios Hipra, S.A.
Avda La Selva nº135
17170 Amer (Girona)
Spain

B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE

Medicinal product subject to medical prescription.

- **Official batch release**

In accordance with Article 114 of Directive 2001/83/EC, the official batch release will be undertaken by a state laboratory or a laboratory designated for that purpose.

C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION

- **Periodic safety update reports (PSURs)**

The requirements for submission of PSURs for this medicinal product are set out in the list of Union reference dates (EURD list) provided for under Article 107c(7) of Directive 2001/83/EC and any subsequent updates published on the European medicines web-portal.

D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT

- **Risk management plan (RMP)**

The marketing authorisation holder (MAH) shall perform the required pharmacovigilance activities and interventions detailed in the agreed RMP presented in Module 1.8.2 of the marketing authorisation and any agreed subsequent updates of the RMP.

An updated RMP should be submitted:

- At the request of the European Medicines Agency;
- Whenever the risk management system is modified, especially as the result of new information being received that may lead to a significant change to the benefit/risk profile or as the result of an important (pharmacovigilance or risk minimisation) milestone being reached.

ANNEX III

LABELLING AND PACKAGE LEAFLET

A. LABELLING

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (MULTIDOSE VIAL)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
selvacovatein

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of selvacovatein adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
10 multidose vials
Each vial contains 10 doses of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use
Read the package leaflet before use

QR code to be included
For more information, scan or visit www.hipracovidvaccine.com

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator
Do not freeze.
Keep the vials in the outer carton in order to protect from light.
After first puncture, store at 2 ºC – 8º C, use within 6 hours.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/001

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
SN
NN

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

MULTIDOSE VIAL LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
selvacovatein
IM

2. METHOD OF ADMINISTRATION

Intramuscular use

QR code to be included
For more information, scan or visit www.hipracovidvaccine.com

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

10 doses of 0.5 mL

6. OTHER

Discard Date/Time:

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (5, 10 or 20 SINGLE DOSE VIALS)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
selvacovatein

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of selvacovatein adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
5 single dose vials
10 single dose vials
20 single dose vials

Each vial contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Single use
Intramuscular use
Read the package leaflet before use

QR code to be included.
For more information, scan or visit http://www.hipracovidvaccine.com

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator
Do not freeze.
Keep the vials in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/002 5 single-dose vials (1 dose per vial)
EU/1/22/1709/003 10 single-dose vials (1 dose per vial)
EU/1/22/1709/004 20 single-dose vials (1 dose per vial)

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
SN
NN

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

SINGLE DOSE VIAL LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
selvacovatein
IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose of 0.5 mL

6. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (5, 10 or 20 SINGLE DOSE VIALS)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX XBB.1.16 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
damlecovatein

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of damlecovatein adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
5 single dose vials
10 single dose vials
20 single dose vials

Each vial contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use.
Read the package leaflet before use.

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator.
Do not freeze.
Keep the vials in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/005 5 single-dose vials (1 dose per vial)
EU/1/22/1709/006 10 single-dose vials (1 dose per vial)
EU/1/22/1709/007 20 single-dose vials (1 dose per vial)

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
SN
NN

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

SINGLE DOSE VIAL LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX XBB.1.16 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
damlecovatein
IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose of 0.5 mL

6. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (1, 10 or 20 SINGLE DOSE VIALS)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX LP.8.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
meracovatein

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of meracovatein adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
1 single dose vial
10 single dose vials
20 single dose vials

Each vial contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use.
Read the package leaflet before use.

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator.
Do not freeze.
Keep the vials in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/008 10 single-dose vials (1 dose per vial)
EU/1/22/1709/009 20 single-dose vials (1 dose per vial)
EU/1/22/1709/010 1 single-dose vial (1 dose per vial)

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

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MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

SINGLE DOSE VIAL LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX LP.8.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
meracovatein
IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose (0.5 mL)

6. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (1 or 10 PRE-FILLED SYRINGES)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX LP.8.1 emulsion for injection in pre-filled syringe
COVID-19 Vaccine (recombinant, adjuvanted)
meracovatein

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of meracovatein adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
1 pre-filled syringe
10 pre-filled syringes

Each pre-filled syringe contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use.
Read the package leaflet before use.

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator.
Do not freeze.
Keep the product in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/011 1 pre-filled syringe
EU/1/22/1709/012 10 pre-filled syringes

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
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MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

PRE-FILLED SYRINGE LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX LP.8.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)
meracovatein
IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose (0.5 mL)

6. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (1, 10 or 20 SINGLE DOSE VIALS)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX XFG.1.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of SARS-CoV-2 virus recombinant protein RBD fusion homodimer (XFG.1.1 – XFG.1.1) adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
1 single dose vial
10 single dose vials
20 single dose vials

Each vial contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use.
Read the package leaflet before use.

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator.
Do not freeze.
Keep the vials in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/013 10 single-dose vials (1 dose per vial)
EU/1/22/1709/014 20 single-dose vials (1 dose per vial)
EU/1/22/1709/015 1 single-dose vial (1 dose per vial)

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
SN
NN

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

SINGLE DOSE VIAL LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX XFG.1.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)

IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose (0.5 mL)

6. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

OUTER CARTON (1 or 10 PRE-FILLED SYRINGES)

1. NAME OF THE MEDICINAL PRODUCT

BIMERVAX XFG.1.1 emulsion for injection in pre-filled syringe
COVID-19 Vaccine (recombinant, adjuvanted)

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each dose (0.5 mL) contains 40 micrograms of SARS-CoV-2 virus recombinant protein RBD fusion homodimer (XFG.1.1 – XFG.1.1) adjuvanted with SQBA.

SQBA adjuvant contains squalene, polysorbate 80, sorbitan trioleate, sodium citrate, citric acid and water for injections.

3. LIST OF EXCIPIENTS

Excipients: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections
See leaflet for further information.

4. PHARMACEUTICAL FORM AND CONTENTS

Emulsion for injection
1 pre-filled syringe
10 pre-filled syringes

Each pre-filled syringe contains 1 dose of 0.5 mL

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Intramuscular use.
Read the package leaflet before use.

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

Store in a refrigerator.
Do not freeze.
Keep the product in the outer carton in order to protect from light.

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/22/1709/016 1 pre-filled syringe
EU/1/22/1709/017 10 pre-filled syringes

13. BATCH NUMBER

Batch

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Justification for not including Braille accepted.

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC
SN
NN

MINIMUM PARTICULARS TO APPEAR ON SMALL IMMEDIATE PACKAGING UNITS

PRE-FILLED SYRINGE LABEL

1. NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION

BIMERVAX XFG.1.1 emulsion for injection
COVID-19 Vaccine (recombinant, adjuvanted)

IM

2. METHOD OF ADMINISTRATION

Intramuscular use

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Batch

5. CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT

1 dose (0.5 mL)

6. OTHER

B. PACKAGE LEAFLET

Package leaflet: Information for the user

BIMERVAX emulsion for injection
COVID-19 vaccine (recombinant, adjuvanted)
selvacovatein

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX is and what it is used for
2. What you need to know before you receive BIMERVAX
3. How BIMERVAX is given
4. Possible side effects
5. How to store BIMERVAX
6. Contents of the pack and other information

1. What BIMERVAX is and what it is used for

BIMERVAX is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX is given to individuals 12 years of age and older who have previously received a mRNA COVID-19 vaccine.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX

BIMERVAX should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);

- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX.

As with any vaccine, BIMERVAX may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX in children younger than 12 years of age.

Other medicines and BIMERVAX
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX is given

Individuals 12 years of age and older
BIMERVAX will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX as a single dose at least 6 months after a previous vaccination series with mRNA COVID-19 vaccine or after a previous BIMERVAX booster dose.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:
- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX:

Very common (may affect more than 1 in 10 people)
- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)
- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)
- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)
- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given

- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)
- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep vials in outer carton in order to protect from light.
After first puncture of a multidose vial, store at 2 °C – 8 °C, use within 6 hours.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX contains

- One dose (0.5 mL) contains 40 micrograms of selvacovatein adjuvanted with SQBA.

- Selvacovatein is SARS-CoV-2 virus recombinant spike (S) protein RBD fusion heterodimer (B.1.351 and B.1.1.7 strains) produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

Multidose vial

5 mL of emulsion is provided in a vial with a rubber stopper and a plastic flip-off top.

Each multidose vial contains 10 doses of 0.5 mL.

Pack size: 10 multidose vials.

Single dose vial

0.5 mL of emulsion is provided in a vial with a rubber stopper and a plastic flip-off top.

Each single dose vial contains 1 dose of 0.5 mL

Pack sizes: 5, 10 or 20 single dose vials.

Not all pack sizes may be marketed.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

This leaflet was last revised in

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: https://www.ema.europa.eu

Scan the code with a mobile device to get the package leaflet in different languages.

QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.
- After first puncture of the multidose vial, record the discard date and time (6 hours after first puncture) on the designated area of the vial label.

Inspect the vial

- Gently swirl the vial before the dose withdrawal and also in between each dose withdrawal for the multidose vial. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that a maximum of ten (10) doses (multidose vial) or one dose (single dose vial) of 0.5 mL each can be extracted. Discard any remaining vaccine in single dose vial or in the multidose vial after 10 doses have been extracted.
- Each 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Once the vaccine is loaded in the syringe, it is stable up to at least 6 hours either under refrigerated conditions or at room temperature (< 25 ºC).
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Discard

- After first puncture the multidose vial, store the opened multidose vial at 2 ºC to 8 ºC for up to 6 hours. Discard the vaccine if not used within 6 hours after first puncture of the multidose vial.
- Discard any remaining vaccine in single dose vial or in the multidose vial after 10 doses have been extracted.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

Package leaflet: Information for the user

BIMERVAX XBB.1.16 emulsion for injection
COVID-19 vaccine (recombinant, adjuvanted)
damlecovatein

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX XBB.1.16 is and what it is used for
2. What you need to know before you receive BIMERVAX XBB.1.16
3. How BIMERVAX XBB.1.16 is given
4. Possible side effects
5. How to store BIMERVAX XBB.1.16
6. Contents of the pack and other information

1. What BIMERVAX XBB.1.16 is and what it is used for

BIMERVAX XBB.1.16 is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX XBB.1.16 is given to individuals 12 years of age and older.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX XBB.1.16

BIMERVAX XBB.1.16 should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX XBB.1.16 if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);
- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX XBB.1.16.

As with any vaccine, BIMERVAX XBB.1.16 may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX XBB.1.16 is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX XBB.1.16 in children younger than 12 years of age.

Other medicines and BIMERVAX XBB.1.16
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX XBB.1.16 listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX XBB.1.16 contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX XBB.1.16 is given

Individuals 12 years of age and older
BIMERVAX XBB.1.16 will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX XBB.1.16 as a single dose at least 6 months after a previous dose of a COVID-19 vaccine.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX XBB.1.16, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:

- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX XBB.1.16:

Very common (may affect more than 1 in 10 people)

- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)

- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)

- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)

- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given
- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)

- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX XBB.1.16

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep the vials in the outer carton in order to protect from light.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX XBB.1.16 contains

- One dose (0.5 mL) contains 40 micrograms of damlecovatein adjuvanted with SQBA.

- Damlecovatein is SARS-CoV-2 virus recombinant spike (S) protein RBD fusion homodimer (Omicron XBB.1.16 – XBB.1.16 strain) produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX XBB.1.16 contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX XBB.1.16 looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

0.5 mL of emulsion is provided in a vial with a rubber stopper and a plastic flip-off top.

Each single dose vial contains 1 dose of 0.5 mL

Pack sizes: 5, 10 or 20 single dose vials.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

This leaflet was last revised in

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: https://www.ema.europa.eu

Scan the code with a mobile device to get the package leaflet in different languages.

QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX XBB.1.16 intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that one dose of 0.5 mL can be extracted. Discard any remaining vaccine in the vial.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

Package leaflet: Information for the user

BIMERVAX LP.8.1 emulsion for injection
COVID-19 vaccine (recombinant, adjuvanted)
meracovatein

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX LP.8.1 is and what it is used for
2. What you need to know before you receive BIMERVAX LP.8.1
3. How BIMERVAX LP.8.1 is given
4. Possible side effects
5. How to store BIMERVAX LP.8.1
6. Contents of the pack and other information

1. What BIMERVAX LP.8.1 is and what it is used for

BIMERVAX LP.8.1 is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX LP.8.1 is given to individuals 12 years of age and older.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX LP.8.1

BIMERVAX LP.8.1 should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX LP.8.1 if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);
- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX LP.8.1.

As with any vaccine, BIMERVAX LP.8.1 may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX LP.8.1 is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX LP.8.1 in children younger than 12 years of age.

Other medicines and BIMERVAX LP.8.1
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX LP.8.1 listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX LP.8.1 contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX LP.8.1 is given

Individuals 12 years of age and older
BIMERVAX LP.8.1 will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX LP.8.1 as a single dose at least 6 months after a previous dose of a COVID-19 vaccine.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX LP.8.1, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:

- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX LP.8.1:

Very common (may affect more than 1 in 10 people)

- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)

- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)

- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)

- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given
- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)

- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX LP.8.1

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep the vials in the outer carton in order to protect from light.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX LP.8.1 contains

- One dose (0.5 mL) contains 40 micrograms of meracovatein adjuvanted with SQBA.

- Meracovatein is SARS-CoV-2 virus recombinant spike (S) protein RBD fusion homodimer (Omicron LP.8.1 – LP.8.1 strain) produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX LP.8.1 contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX LP.8.1 looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

0.5 mL of emulsion is provided in a vial with a rubber stopper and a plastic flip-off top.

Each single dose vial contains 1 dose of 0.5 mL

Pack sizes: 1, 10 or 20 single dose vials.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

This leaflet was last revised in

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: https://www.ema.europa.eu

Scan the code with a mobile device to get the package leaflet in different languages.

QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX LP.8.1 intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that one dose of 0.5 mL can be extracted. Discard any remaining vaccine in the vial.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

Package leaflet: Information for the user

BIMERVAX LP.8.1 emulsion for injection in pre-filled syringe
COVID-19 vaccine (recombinant, adjuvanted)
meracovatein

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX LP.8.1 is and what it is used for
2. What you need to know before you receive BIMERVAX LP.8.1
3. How BIMERVAX LP.8.1 is given
4. Possible side effects
5. How to store BIMERVAX LP.8.1
6. Contents of the pack and other information

1. What BIMERVAX LP.8.1 is and what it is used for

BIMERVAX LP.8.1 is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX LP.8.1 is given to individuals 12 years of age and older.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX LP.8.1

BIMERVAX LP.8.1 should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX LP.8.1 if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);
- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX LP.8.1.

As with any vaccine, BIMERVAX LP.8.1 may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX LP.8.1 is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX LP.8.1 in children younger than 12 years of age.

Other medicines and BIMERVAX LP.8.1
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX LP.8.1 listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX LP.8.1 contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX LP.8.1 is given

Individuals 12 years of age and older
BIMERVAX LP.8.1 will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX LP.8.1 as a single dose at least 6 months after a previous dose of a COVID-19 vaccine.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX LP.8.1, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:

- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX LP.8.1:

Very common (may affect more than 1 in 10 people)

- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)

- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)

- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)

- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given
- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)

- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX LP.8.1

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep the product in the outer carton in order to protect from light.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX LP.8.1 contains

- One dose (0.5 mL) contains 40 micrograms of meracovatein adjuvanted with SQBA.

- Meracovatein is SARS-CoV-2 virus recombinant spike (S) protein RBD fusion homodimer (Omicron LP.8.1 – LP.8.1 strain) produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX LP.8.1 contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX LP.8.1 looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

0.5 mL of emulsion in a pre-filled syringe (type I glass) with a plunger stopper (chlorobutyl rubber) and an integrated tip cap (polyisoprene rubber) without needle.

Each pre-filled syringe contains 1 dose of 0.5 mL

Pack sizes: 1 or 10 pre-filled syringes.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

This leaflet was last revised in

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: https://www.ema.europa.eu

Scan the code with a mobile device to get the package leaflet in different languages.

QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX LP.8.1 intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the pre-filled syringe from the outer carton.

Inspect the pre-filled syringe

- Gently swirl the pre-filled syringe before the dose withdrawal. Do not shake.
- Before use, check the tightness of the closing system.
- Each pre-filled syringe contains a white homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.
- Do not administer the vaccine if the pre-filled syringe is damaged.

Administer the vaccine

- Needles are not included in the pre-filled syringe cartons.
- Use a sterile needle of appropriate gauge for intramuscular injection.
- With the tip cap upright, remove the tip cap by twisting counterclockwise until it releases. Remove the cap in a slow, steady motion. Do not pull on it while turning.
- Attach the needle by twisting in a clockwise direction until the needle locks on the syringe.
- Uncap the needle when ready for administration.
- Administer the entire dose intramuscularly.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

Package leaflet: Information for the user

BIMERVAX XFG.1.1 emulsion for injection
COVID-19 vaccine (recombinant, adjuvanted)

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX XFG.1.1 is and what it is used for
2. What you need to know before you receive BIMERVAX XFG.1.1
3. How BIMERVAX XFG.1.1 is given
4. Possible side effects
5. How to store BIMERVAX XFG.1.1
6. Contents of the pack and other information

1. What BIMERVAX XFG.1.1 is and what it is used for

BIMERVAX XFG.1.1 is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX XFG.1.1 is given to individuals 12 years of age and older.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX XFG.1.1

BIMERVAX XFG.1.1 should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX XFG.1.1 if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);
- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX XFG.1.1.

As with any vaccine, BIMERVAX XFG.1.1 may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX XFG.1.1 is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX XFG.1.1 in children younger than 12 years of age.

Other medicines and BIMERVAX XFG.1.1
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX XFG.1.1 listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX XFG.1.1 contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX XFG.1.1 is given

Individuals 12 years of age and older
BIMERVAX XFG.1.1 will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX XFG.1.1 as a single dose at least 6 months after a previous dose of a COVID-19 vaccine.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX XFG.1.1, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:

- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX XFG.1.1:

Very common (may affect more than 1 in 10 people)

- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)

- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)

- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)

- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given
- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)

- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX XFG.1.1

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep the vials in the outer carton in order to protect from light.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX XFG.1.1 contains

- One dose (0.5 mL) contains 40 micrograms of SARS-CoV-2 virus recombinant spike (S) protein RBD fusion homodimer* (Omicron XFG.1.1 – XFG.1.1) adjuvanted with SQBA.

*Produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX XFG.1.1 contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX XFG.1.1 looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

0.5 mL of emulsion is provided in a vial with a rubber stopper and a plastic flip-off top.

Each single dose vial contains 1 dose of 0.5 mL

Pack sizes: 1, 10 or 20 single dose vials.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

This leaflet was last revised in

Other sources of information

Detailed information on this medicine is available on the European Medicines Agency web site: https://www.ema.europa.eu

Scan the code with a mobile device to get the package leaflet in different languages.

QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX XFG.1.1 intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the vaccine vial from the outer carton.

Inspect the vial

- Gently swirl the vial before the dose withdrawal. Do not shake.
- Each vial contains a white and homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.

Administer the vaccine

- An overfill is included in each vial to ensure that one dose of 0.5 mL can be extracted. Discard any remaining vaccine in the vial.
- One 0.5 mL dose is withdrawn into a sterile needle and sterile syringe to be administered by intramuscular injection, preferably in the deltoid muscle of the upper arm.
- Do not mix the vaccine in the same syringe with any other vaccines or medicinal products.
- Do not pool excess vaccine from multiple vials.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

Package leaflet: Information for the user

BIMERVAX XFG.1.1 emulsion for injection in pre-filled syringe
COVID-19 vaccine (recombinant, adjuvanted)

▼This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effect you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you recieve this vaccine because it contains important information for you.
- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What BIMERVAX XFG.1.1 is and what it is used for
2. What you need to know before you receive BIMERVAX XFG.1.1
3. How BIMERVAX XFG.1.1 is given
4. Possible side effects
5. How to store BIMERVAX XFG.1.1
6. Contents of the pack and other information

1. What BIMERVAX XFG.1.1 and what it is used for

BIMERVAX XFG.1.1 is a vaccine used to prevent COVID-19 caused by the SARS-CoV-2 virus.

BIMERVAX XFG.1.1 is given to individuals 12 years of age and older.

The vaccine stimulates the immune system (the body's natural defences) to produce specific antibodies that work against the virus, giving protection against COVID-19. None of the ingredients in this vaccine can cause COVID-19.

2. What you need to know before you receive BIMERVAX XFG.1.1

BIMERVAX XFG.1.1 should not be given
- if you are allergic to the active substance or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions
Talk to your doctor, pharmacist or nurse before receiving BIMERVAX XFG.1.1 if:
- you have ever had a severe or life-threatening allergic reaction after receiving any other vaccine injection;
- you have ever fainted following any needle injection;
- you have a high temperature (over 38 °C) or severe infection. However, you can have your vaccination if you have a mild fever or upper airway infection like a cold;
- you have bleeding problems, you bruise easily or you use a medicine to prevent blood clots (anticoagulant medicine);
- your immune system does not work properly (immunodeficiency) or you are taking medicines that weaken the immune system (such as high-dose corticosteroids, immunosuppressants, or cancer medicines).

If any of the above apply to you (or you are not sure), talk to your doctor, pharmacist, or nurse before you are given BIMERVAX XFG.1.1.

As with any vaccine, BIMERVAX XFG.1.1 may not fully protect all those who receive it, and it is not known how long you will be protected.

Children
BIMERVAX XFG.1.1 is not recommended for children aged below 12 years. Currently, there is no information available on the use of BIMERVAX XFG.1.1 in children younger than 12 years of age.

Other medicines and BIMERVAX XFG.1.1
Tell your doctor, pharmacist, or nurse if you are taking, have recently taken, or might take any other medicines or vaccines.

Pregnancy and breastfeeding
If you are pregnant or breastfeeding, think you may be pregnant, or are planning to have a baby, ask your doctor, pharmacist, or nurse for advice before you receive this vaccine.

Driving and using machines
Some of the side effects of BIMERVAX XFG.1.1 listed in section 4 (Possible side effects) may temporarily reduce your ability to drive and use machines. Wait until any effects of the vaccine have worn off before you drive or use machines.

BIMERVAX XFG.1.1 contains sodium, potassium and polysorbate
This vaccine contains less than 1 mmol sodium (23 mg) per dose, that is to say essentially 'sodium-free'.

This vaccine contains less than 1 mmol potassium (39 mg) per 0.5 mL dose, that is to say, essentially 'potassium-free'.

This vaccine contains 1.18 mg of polysorbate 80 in each dose. Polysorbates may cause allergic reactions. Tell your doctor if you have any known allergies.

3. How BIMERVAX XFG.1.1 is given

Individuals 12 years of age and older
BIMERVAX XFG.1.1 will be given to you as 0.5 mL injection into a muscle of your upper arm.

It is recommended that you receive BIMERVAX XFG.1.1 as a single dose at least 6 months after a previous dose of a COVID-19 vaccine.

After the injection, your doctor, pharmacist or nurse will watch over you for around 15 minutes to monitor for signs of an allergic reaction.

If you have any further questions on the use of BIMERVAX XFG.1.1, ask your doctor, pharmacist or nurse.

Immunocompromised individuals
If your immune system does not work properly additional doses may be administered in line with official recommendations.

4. Possible side effects

Like all medicines, this vaccine can cause side effects, although not everybody gets them.

Most of the side effects occur within 3 days of getting the vaccine and go away within a few days of appearing. If symptoms persist, contact your doctor, pharmacist or nurse.

Get urgent medical attention if you get symptoms of a severe allergic reaction shortly after vaccination. Such symptoms may include:

- feeling faint or light-headed
- changes in your heartbeat
- shortness of breath
- wheezing
- swelling of your lips, face, or throat
- itchy swelling under the skin (hives) or rash
- feeling sick (nausea) or vomiting
- stomach pain

The following side effects may occur with BIMERVAX XFG.1.1:

Very common (may affect more than 1 in 10 people)

- headache
- pain where the injection is given
- feeling very tired (fatigue)
- muscle pain

Common (may affect up to 1 in 10 people)

- redness, swelling or tenderness where the injection is given
- feeling sick (nausea) or getting sick (vomiting)
- diarrhoea
- fever
- enlarged lymph nodes
- axillary pain

Uncommon (may affect up to 1 in 100 people)

- chills or feeling feverish
- dizziness
- itching where the injection is given
- joint pain
- feeling weak or lack of energy
- feeling sleepy
- itchy skin
- generally feeling unwell

Rare (may affect up to 1 in 1 000 people)

- cold sweating
- unusual feeling in the skin, such as tingling or a crawling feeling (paraesthesia)
- decreased feeling of sensitivity, especially in the skin (hypoaesthesia)
- abdominal pain
- pain when swallowing
- allergic reactions such as hives, rash or itching
- bruise where the injection is given
- hypersensitivity where the injection is given

Not known (cannot be estimated from available data, based on a single case during clinical trials)

- inflammation of the lining outside the heart (pericarditis), which can result in breathless, palpitations or chest pain

Reporting of side effects
If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V and include batch/Lot number if available. By reporting side effects, you can help provide more information on the safety of this vaccine.

5. How to store BIMERVAX XFG.1.1

Keep this medicine out of the sight and reach of children.

Your doctor, pharmacist, or nurse is responsible for storing this vaccine and disposing of any unused product correctly. The following information about storage, expiry, use and handling as well as disposal is intended for healthcare professionals.

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

Store in a refrigerator (2 °C – 8 °C). Do not freeze. Keep the product in the outer carton in order to protect from light.

Before use, the vaccine may be taken out of the refrigerator once for a maximum period of 24 hours at temperature not above 25ºC.

Information on handling are described in the section intended for healthcare professionals at the end of the package leaflet.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

6. Contents of the pack and other information

What BIMERVAX XFG.1.1 contains

- One dose (0.5 mL) contains 40 micrograms of SARS-CoV-2 virus recombinant spike (S) protein RBD fusion homodimer* (Omicron XFG.1.1 – XFG.1.1) adjuvanted with SQBA.

*Produced by recombinant DNA technology.

- SQBA is included in this vaccine as an adjuvant to accelerate and improve the protective effects of the vaccine. SQBA contains per 0.5 mL dose: squalene (9.75 mg), polysorbate 80 (1.18 mg), sorbitan trioleate (1.18 mg), sodium citrate (0.66 mg), citric acid (0.04 mg) and water for injections.

- The other ingredients (excipients) are: disodium phosphate dodecahydrate, potassium dihydrogen phosphate, sodium chloride, potassium chloride and water for injections. BIMERVAX XFG.1.1 contains potassium, sodium and polysorbate (see section 2).

What BIMERVAX XFG.1.1 looks like and contents of the pack

The vaccine is a white homogeneous emulsion for injection.

0.5 mL of emulsion in a pre-filled syringe (type I glass) with a plunger stopper (chlorobutyl rubber) and an integrated tip cap (polyisoprene rubber) without needle.

Each pre-filled syringe contains 1 dose of 0.5 mL

Pack sizes: 1 or 10 pre-filled syringes.

Marketing Authorisation Holder

Hipra Human Health, S.L.U.
Avda. la Selva, 135
17170 Amer (Girona)
SPAIN

Manufacturer

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
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This leaflet was last revised in

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QR code to be included

Or visit the URL: www.hipracovidvaccine.com

The following information is intended for healthcare professionals only:

Administer BIMERVAX XFG.1.1 intramuscularly, preferably into the deltoid muscle of the upper arm.

Traceability

In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded.

Handling instructions and administration

Do not use this vaccine after the expiry date which is stated on the label after EXP. The expiry date refers to the last day of that month.

This vaccine should be handled by a healthcare professional using aseptic techniques to ensure the sterility of each dose.

Preparation for use

- The vaccine comes ready to use.
- Unopened vaccine should be stored at 2 °C to 8 °C and kept within the outer carton to protect from light.
- Immediately prior to use, remove the pre-filled syringe from the outer carton.

Inspect the pre-filled syringe

- Gently swirl the pre-filled syringe. Do not shake.
- Before use, check the tightness of the closing system.
- Each pre-filled syringe contains a white homogeneous emulsion.
- Visually inspect the vaccine for particulate matter and/or discolouration prior to administration. Do not administer the vaccine if any of these are present.
- Do not administer the vaccine if the pre-filled syringe is damaged.

Administer the vaccine

- Needles are not included in the pre-filled syringe cartons.
- Use a sterile needle of appropriate gauge for intramuscular injection.
- With the tip cap upright, remove the tip cap by twisting counterclockwise until it releases. Remove the cap in a slow, steady motion. Do not pull on it while turning.
- Attach the needle by twisting in a clockwise direction until the needle locks on the syringe.
- Uncap the needle when ready for administration.
- Administer the entire dose intramuscularly.

Disposal

- Any unused medicinal product or waste material should be disposed of in accordance with local requirements.