



ORAL CHOLERA VACCINE

Prequalified by World Health Organization

Euvichol®

Euvichol® - Plus

Euvichol® - S





For health that lasts a lifetime

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V Plant

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EuBiologics USA

*Cambridge Innovation Center(CIC),
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About EuBiologics

● Outbreak ● Endemic ● No Reported Case ● Import / Sporadic / Other

EuBiologics, a biopharmaceutical company based in South Korea, has built a pipeline of vaccines to improve global public health and supplied safe and effective vaccines. In addition, it provides a CRMO (Contract Research and Manufacturing Organization) service for biopharmaceuticals.

Leveraging its platform technologies for vaccine development, i.e. protein conjugation technology (EuVCT), immune enhancement technology (EuIMT) and antigen display technology (SNAP), EuBiologics is under development of typhoid conjugate vaccine (EuTYPH-C), quadrivalent meningococcal conjugate vaccine (EuNmCV-4), pentavalent meningococcal conjugate vaccine (EuNmCV-5) and 15-valent pneumococcal conjugate vaccine (EuPCV-15). In addition, we're in development of vaccines targeting high income countries, i.e. respiratory syncytial virus vaccine (EuRSV), herpes zoster vaccine (EuHZV), cervical cancer vaccine (HPV) and Alzheimer's vaccine (AD), leveraging immune enhancement technology (EuIMT) and antigen display technology (SNAP) using protein or peptide antigens.

As we have a state of the art GMP manufacturing facilities with highly qualified professionals with expertise and experiences in manufacturing and quality, we provide a customized CRMO services at various stages. We can provide non-clinical trial materials, drugs or vaccines at clinical and commercialization according to the requirements of customers in compliance with the latest international regulatory standards.

EuBiologics commercialized its oral cholera vaccines (OCVs); Euvichol[®], Euvichol[®]-Plus and Euvichol[®]-S, and the OCVs have been supplied to 46 countries for outbreak responses or preventive campaigns. EuBiologics can provide adjuvants (EcML) and carrier proteins (rCRM197) for vaccine development upon proposal.



[www.youtube.com/
watch?v=9_xHGtNnbQQ](https://www.youtube.com/watch?v=9_xHGtNnbQQ)

www.eubiologics.com/eng



Introduction to Oral Cholera Vaccine

EuBiologics was entitled as the 2nd manufacturer of oral cholera vaccine (OCV) through the Bill & Melinda Gates Foundation's (BMGF) Cholera Vaccine Initiative (CHOVI) program, and had been technology transferred by the International Vaccine Institute (IVI) in 2010. Five years later, Euvichol® was prequalified by WHO, and currently three types of products are commercialized.

Euvichol®

- 1 Placed the 3rd WHO Pre-qualified (PQ) OCV worldwide in December 2015
- 2 Manufactured since 2016



Glass vial presentation (Tear-off type Cap)

Euvichol®-Plus

- 1 The world's first plastic tube type of OCV, WHO PQ in August 2017
- 2 Leachable and Extractable tested plastic tube
- 3 Volume and weight reduction by 30% and 50% compared to the glass vial type
- 4 More convenient for storage, transportation, administration, and waste disposal
- 5 Manufactured since January 2018



Plastic tube presentation (Unbreakable and light package)

SIMPLIFIED

Euvichol® - S

- 1 New product that simplifies the antigen production process than Euvichol® and Euvichol®-Plus
- 2 WHO PQ in April 2024
- 3 Manufactured since October 2024

Plastic tube presentation (Unbreakable and light package)

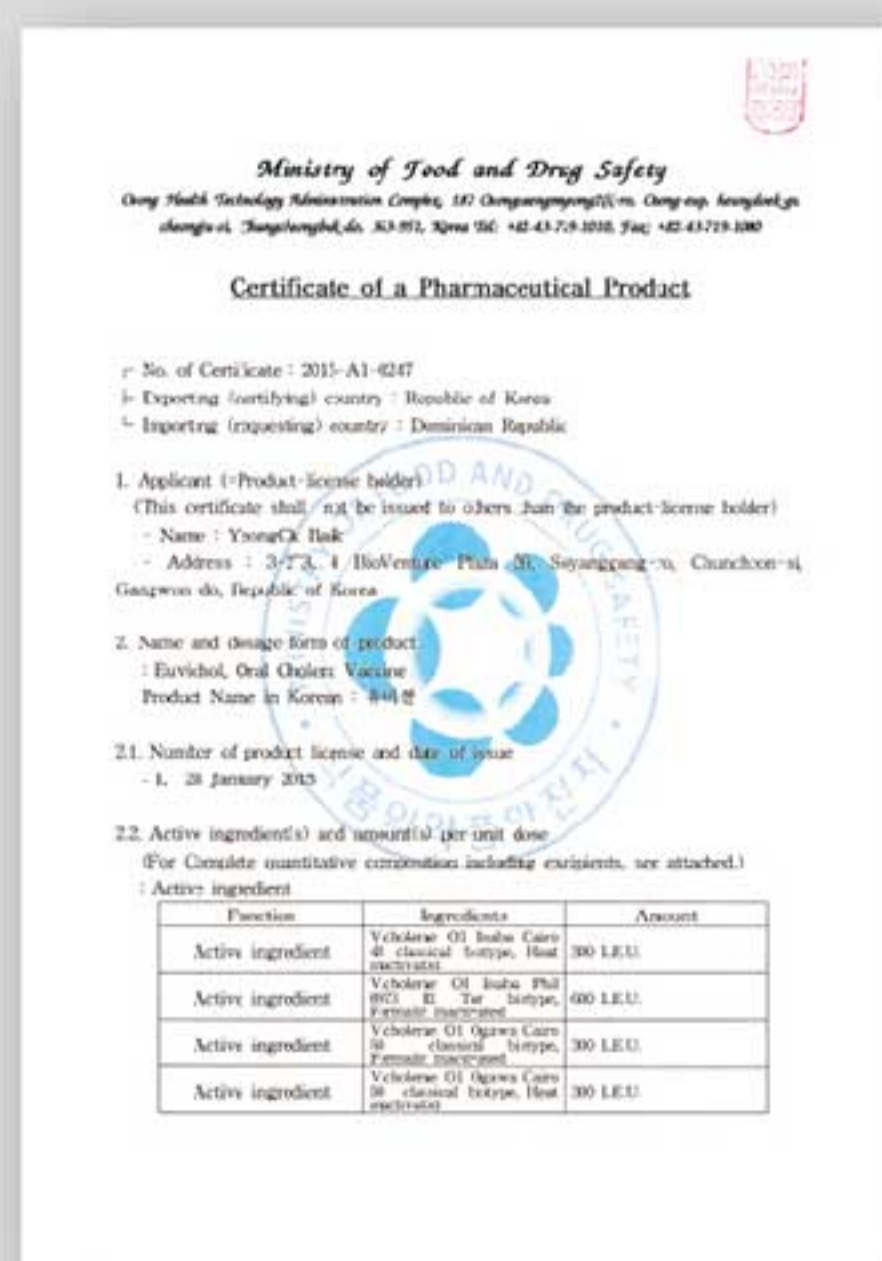


Product Components

Products	Euvichol® / Euvichol®-Plus	Euvichol® - S
Strain	LPS Quantity (Unit: L.E.U.*)	
V. cholerae O1 Inaba Cairo 48 (H)	300	900
V. cholerae O1 Inaba Phil 6973 El Tor (F)	600	
V. cholerae O1 Ogawa Cairo 50 (F)	300	600
V. cholerae O1 Ogawa Cairo 50(H)	300	
V. cholerae O139 4260B (F)	600	—
Appearance	Yellow or slightly yellow, cloudy solution containing inactivated cholera bacteria	
Dosage and Administration	Administer orally twice at two-week intervals	
Indication	Prevention of cholera caused by Vibrio cholerae serogroup O1 in children, adolescents, and adults over 1 year of age.	
Storage temperature	2 to 8 °C	
Shelf life	24 months	

(*L.E.U.: Lipopolysaccharide ELISA Unit (H): Heat inactivated (F): Formalin inactivated)

Euvichol Certificates



The Certificate of a Pharmaceutical Product from MFDS

*MFDS _ Ministry of Food and Drug Safety, Korea



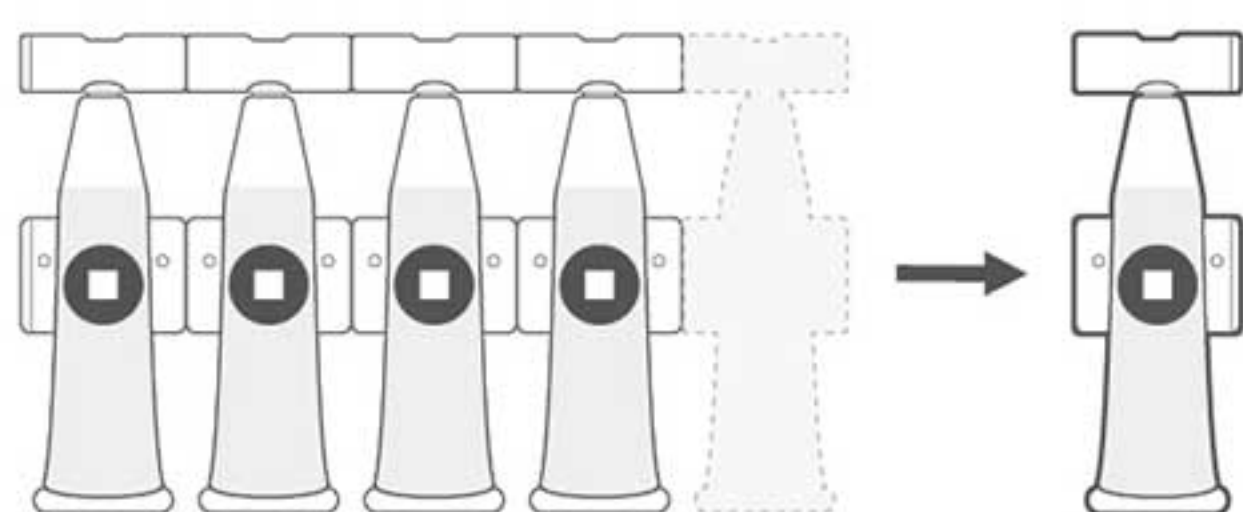
WHO PQ Letter

Oral Cholera Vaccine

- ✓ The OCVs were prequalified by World Health Organization and have been supplied to cholera epidemic or endemic areas around the world through UN agencies including UNICEF. Euvichol-Plus is registered for military and government use in South Korea.
- ✓ As of July 2024, the total quantity of OCVs supplied has exceeded 150 million doses. Since the initial supply of OCV products in 2016, any significant safety issues have not been reported.
- ✓ Both Euvichol-Plus and Euvichol-S are conveniently administered without additional mixing or reconstitution. Please refer to the below instruction.

Instruction for User Euvichol[®]-Plus & Euvichol[®]-S

Step 1.



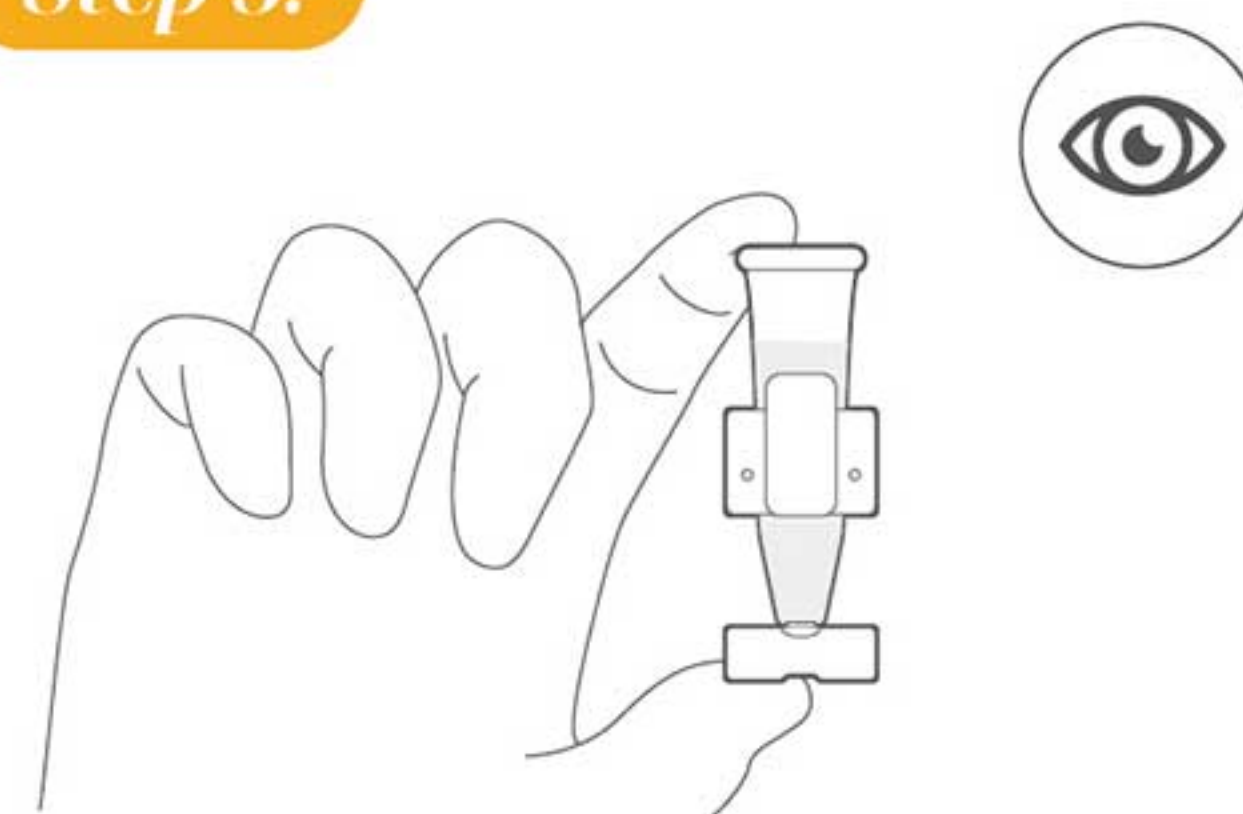
Grab one strip (five units of single-dose tube administration per individual) from the carton. Take one tube from the strip.

Step 2.



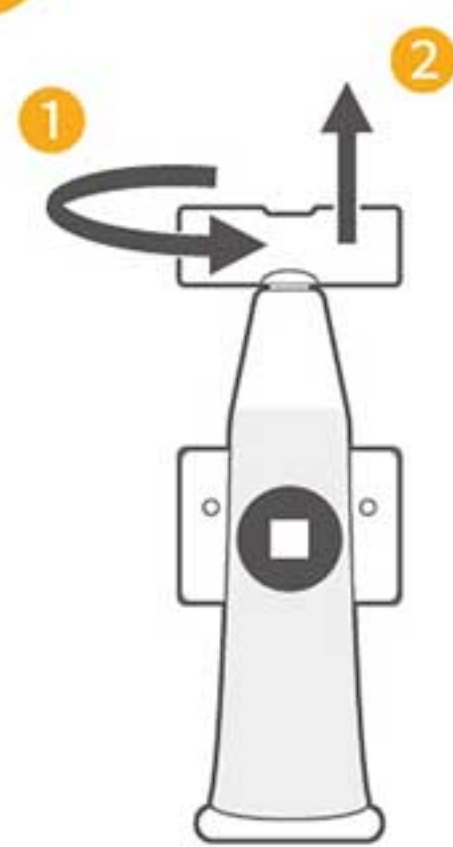
Place the top and bottom of the tube with your thumb and index finger. Shake vigorously up and down at least five times.

Step 3.



Flip the tube upside down and inspect with bare eyes. Ensure no sediments have settled at the bottom of the tube.

Step 4.



Hold the lower part of the tube body firmly with your thumb and index finger and remove the cap from the tube.

Step 5.



Squeeze the tube at least three times for oral administration. Allow air to flow into the tube between each squeeze to empty the tube inside.

Step 6.



Inspect the tube is empty after administration to ensure no remaining liquid.

