

Devote **Biotech** Today Create **Health** Tomorrow



About BCHT

Changchun BCHT Biotechnology Co. is an innovative biopharmaceutical enterprise dedicated to the prevention and treatment of infectious diseases. Since its establishment in 2004, BCHT has established a sound R&D system, production quality control system and sales system. At present, BCHT has its own vaccine manufacturing base, covering 225,700 square meters in total. On the basis of core technology R&D and industrialization, BCHT has built stable sales model, high market recognition and good social image. The company initially offered to the public and successfully listed on the Science and Technology Innovation Board in June, 2021.

Contact Us:

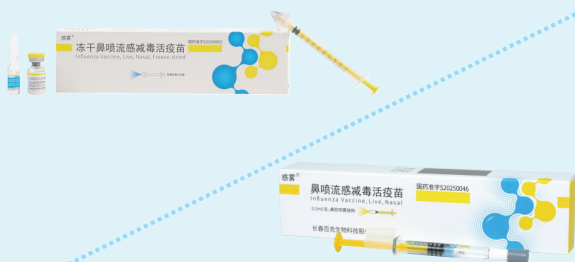
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感甘®: Leading varicella vaccine in China--trusted by millions



- 0.5ml/vial, 1 vial/human dose (with one ampoule or prefilled syringe of sterile water for injection)
- Eligible for varicella-susceptible at **12 months and above**
- Only varicella vaccine with a shelf life up to **36 months**
- The first **gelatin-free** varicella vaccine in China

感雾®: Painless inoculation, Broad prevention, Full protection, Rapid immune response



- 0.2ml/vial, 1 vial/human dose (with one ampoule of sterile water for inhalation, and one single-use nasal sprayer)/ one pre-filled nasal sprayer)
- Eligible for influenza-susceptible at **3-17 years old**
- **Trivalent influenza vaccine**, administered **by nasal spray**
- **Only influenza vaccine in China** that uses **SPF (Specific Pathogen Free)** eggs for production

感维®: The world's first [Herpes Zoster Vaccine, Live for people aged 40 years old and above]



- 0.5ml/vial, 1 vial/human dose (with one prefilled syringe of sterile water for injection)
- Eligible for herpes zoster-susceptible at **40 years old and above**
- **Only one injection**, adjuvant-free with a simple formulation

Product Pipeline

Product Name	Status	Product Name	Status
Diphtheria, Tetanus and Pertussis (Acellular, Component) Vaccine (Adsorbed)	Phase III clinical trial	Herpes Simplex Virus type 2 Vaccine, mRNA	Phase I clinical trial
Natural Human Anti-Rabies Virus Monoclonal Antibody CBBI Injection	Phase II clinical trial	Haemophilus Influenzae Type b Conjugate Vaccine, Freeze-dried	IND Approved
Fully Human Anti-Tetanus Toxin Monoclonal Antibody A82/B86 Injection Cocktail	Phase I clinical trial	Recombinant Zoster Vaccine (CHO cell)	IND Approved
Rabies Vaccine (Human Diploid Cell) for Human Use, Freeze-dried	Phase I clinical trial	Influenza Vaccine (Split Virion, Inactivated, Adjuvanted)	IND
		Human Monoclonal Antibody against RSV/RSV Vaccine	Pre-clinical study

HIGH GUARDAIN FULL DEDICATION

感甘®: Leading varicella vaccine in China--trusted by millions



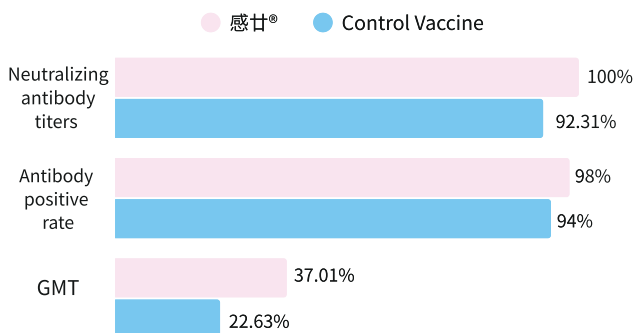
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High titer, better protection:

Study shows that inoculating the high-titer varicella vaccine can **reduce breakthrough cases by nearly 75%**.¹

感甘® contains live attenuated varicella-zoster virus **not less than 3.3 IgPFU (2000 PFU)**.

A post-marketing study was conducted to observe geometric mean titer (GMT) and positive rate of varicella antibody after 11 years of subjects of primary immunization of 感甘®, and its immune persistence was evaluated.²



感甘® still has good immunogenicity after 11 years of primary immunization and better performance on immune persistence than control group.²

First approved varicella vaccine with two-dose immunization for people ≥ 12 months in China:



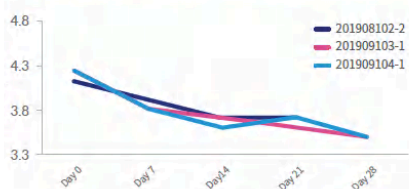
感甘® is the first varicella vaccine in China to propose a two-dose immunization program, and is the first varicella vaccine approved by the NMPA for people over 12 months with two-dose immunization program.^{3,4}

- **One dose of basic immunization for children of 1-12 years old.**
 - **Two dose of basic immunization for children of 13 years old and above.**
- Two doses of the vaccine with 4-8 weeks interval.

The varicella vaccine with the longest validity period in the world:

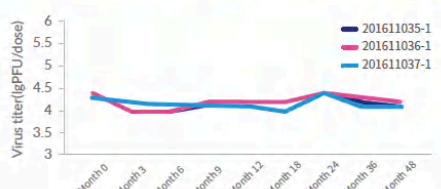
In 2010, the validity period of 感甘® has been extended the to **36 months**.^{5,6}

Virus titer for accelerated stability study at 37°C



* At 37°C for 28 days, the virus titer of three batches remained above 3.3IgPFU/ dose.

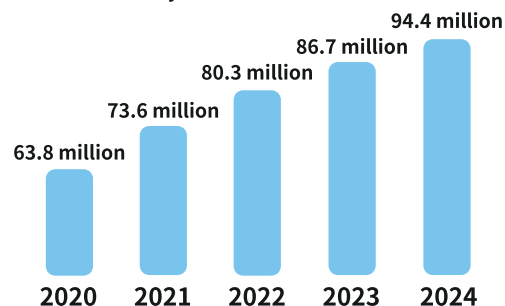
Virus titer for placing at 2-8°C for different time



* At 2-8°C for 42 months, the virus titer of three batches remained above 3.3IgPFU/ dose.

Excellent quality, leading sales:

Since 感甘® launched in 2008, the batch release amount is nearly **100 million doses**.



感甘®

Varicella Vaccine, Live



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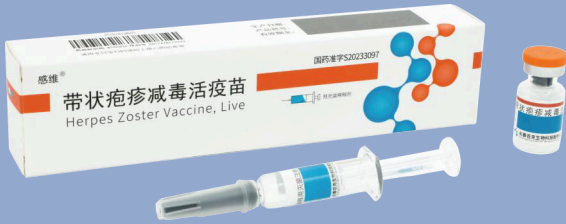
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Reference:

1. Varis T, Vesikari T. Efficacy of high-titer live attenuated varicella vaccine in healthy young children[J]. The Journal of Infectious Diseases, 1996 Nov; 174(Suppl 3):S330-S334.
2. Lirong Huang, Sha Jin, Zhao Geng, etc. Study on immune persistence of Varicella Vaccine, Live for 11 years after primary immunization [J]. Chinese Journal of Immunology, 2020, 36(20):2558-2561.
3. China Food and Drug Administration. Drug clinical trial approval. 2010-02-21.
4. Changchun BCHT Biotechnology Co. Directions for Use of Varicella Vaccine, Live.
5. The validity period is changed to 36 months. Approval of Supplementary Drug Application.

ONE DOSE IMMUNIZATION SAFE AND SECURE

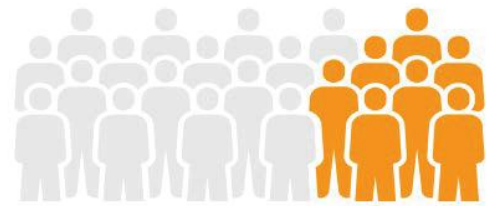
感维®: The world's first [Herpes Zoster Vaccine, Live for people aged 40 years old and above]



- 1 vial/human dose (with one prefilled syringe of sterile water for injection)
- Eligible for herpes zoster-susceptible at 40 years old and above
- Only one injection, adjuvant-free with a simple formulation

About Herpes zoster (Shingles) and Postherpetic neuralgia (PHN):

Herpes zoster is an acute infectious dermatosis caused by a decrease in the body's resistance and the reactivation of varicella-zoster virus (VZV), which is latent in the body after the initial infection.¹ Its risk factors: aging, cellular immune deficiency and systemic diseases.²



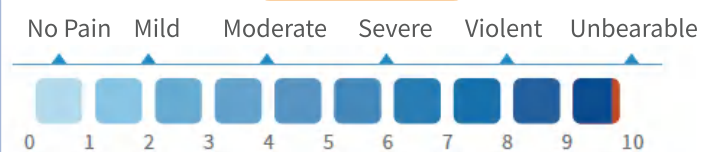
Herpes zoster is a common disease among older individuals, with a lifetime risk of 10% to 30% that rises to 50% among those living to ≥ 85 years.³

PHN is the most common complication of herpes zoster:

The incidence of PHN increases with age, and in patients with herpes zoster ≥ 40 years old is as high as 61%-92%.⁴

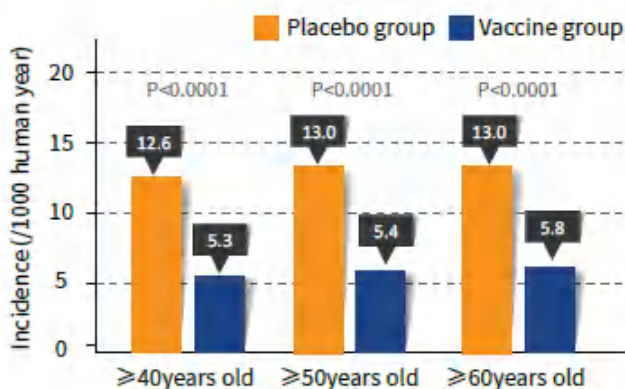
PHN is a severe pain that lasts for 10 years or more.⁵

Pain Rating Scale

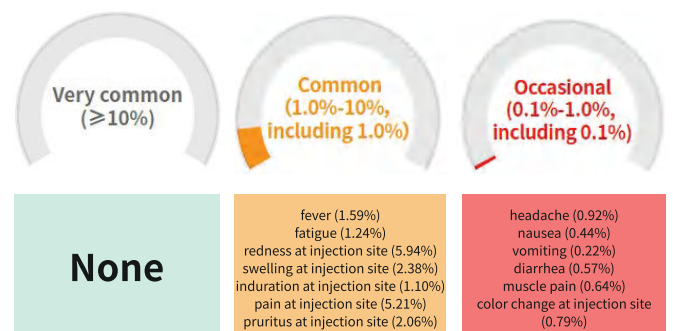


- Level 7-8: pain of uterine contraction at the most intense during childbirth.
- Level 10: neuralgia and trigeminal neuralgia caused by herpes zoster.⁶

Active booster immune response, Low incidence of adverse reactions:



In Phase III clinical trial of 感维®, it shows that 感维® can reduce the incidence of herpes zoster at different ages.⁷ The primary endpoint is protection rate against herpes zoster 30 days after vaccination.



The Phase III clinical trial of 感维® shows no serious adverse reactions within 13 months after inoculation in subjects at or above 40 years old.⁷

感维®

Herpes Zoster Vaccine, Live



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1. Expert Consensus Working Group on Herpes Zoster, Dermatologist Branch, Chinese Medical Doctor Association. Chinese Journal of Dermatology, 2013, 51(6):403-408.
2. Sauerbrei A. Eur J Clin Microbiol Infect Dis, 2016, 35(5):723-734.
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4. Jiang Wei, et al. Chinese Vaccine and Immune, 2019, 25(04):432-435.
5. Johnson RW, et al. BMC Med. 2010 Jun 21;8:37.
6. Experts Explain the Grading of Human Pain Sensation, www.chinanews.com.cn, 2012.08.29.
7. Phase III Clinical Study Report of Herpes Zoster Vaccine, Live

ONE SPRAY TRIPLE IMMUNITY

感雾®: Painless inoculation, Broad prevention, Full protection, Rapid immune response



- 1 vial/human dose (with one pre-filled nasal sprayer)
- Eligible for influenza-susceptible at **3-17 years old**
- **Trivalent influenza vaccine**, administered **by nasal spray**
- **Only influenza vaccine in China** that uses **SPF (Specific Pathogen Free)** eggs for production

Multiple advantages of live attenuated influenza vaccine (感雾®):

	感雾®	Inactivated influenza vaccines
Type of vaccine	live attenuated influenza vaccine	Influenza virus subunit vaccine Influenza vaccine (split virion), inactivated
Method of inoculation	Nasal spray inoculation	Intramuscular injection
Protection duration¹	At least 1 year	6-8 months
Scope of protection^{2,3,4,5}	Prevent three types of influenza epidemic viruses matched with vaccine strains Prevent N variants of influenza variant viruses Has cross-protective effects	Prevent influenza epidemic viruses matched with the vaccine strains No protective effect against influenza variant viruses
Excipient	No inactivator, No split agent, No preservatives	Contain inactivator All contain split agent except for influenza vaccine (whole virion), inactivated

Authorized exclusively in China by the World Health Organization (WHO):

In response to the threat posed by an influenza pandemic, WHO launched a 10-year Global Action Plan for Influenza Vaccines (GAP).

感雾® is a GAP in cooperation with WHO.

BCHT has the exclusive production rights in China.



感雾® can provide quick⁶ and comprehensive⁷ protection:

After the influenza viruses invade the human body, it is widely present in mucosal areas such as the nasal cavity and respiratory tract, as well as in body fluids and cells. 感雾® can quickly stimulate a triple immune response, providing the defense against the viruses in different areas **within 3 days**:



Nasal inoculation generates **mucosal immunity** (IgA antibodies), forming the first defense in the nasal cavity.



Generate **humoral immunity** (IgG antibodies) to eliminate influenza viruses in body fluids.



Generate **cellular immunity** (T cells) to eliminate influenza viruses in cells.



Alternative: Lyophilized Powder

感雾®

Influenza Vaccine, Live, Nasal



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1. JC de Jong, AM Palache, WE Beyer, et al. Haemagglutination-inhibiting antibody to influenza virus. *Developments in Biologicals*, 2003, 115:63-73.
2. Mohn G I, Smith I, Sjursen H, et al. Immune responses after live attenuated influenza vaccination. *Human Vaccines and Immunotherapeutics*, 2018, 14(3):571-578.
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6. Hammitt LL, Bartlett JP, Li S, et al. Kinetics of viral shedding and immune responses in adults following administration of cold-adapted influenza vaccine. *Vaccine*, 2009, 27(52):7359-7366.
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