



MANUFACTURING VACCINES. JUST WHAT MATTERS.

THE ULTRAFIL® PURIFICATION PROCESS



ULTRAFIL

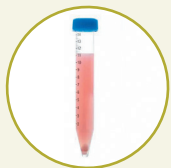
Purification Technology

KEY POINTS

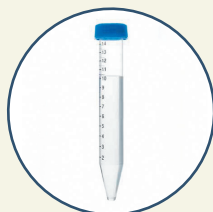
- ◆ ULTRAFIL purification technology is a unique antigen filtration process utilized in the manufacturing of Vetera® and Calvenza® equine vaccines.
- ◆ ULTRAFIL purification technology eliminates undesirable cellular components that may interfere with the horse's immune response and may cause increased reactions such as heat, swelling and inflammation at the injection site.

THE VIRUS GROWTH PROCESS

Viruses have to be grown in cell cultures. Cell cultures are maintained with growth media containing nutrients, serum, enzymes, buffers and energy. After the growing process, what remains is a vessel full of live virus, dead cells and a host of by-products.



Manufacturer X



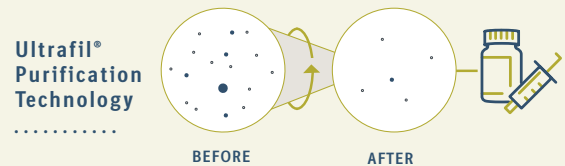
Vetera



Manufacturer Y

ULTRAFIL purification technology helps to minimize undesirable cellular components and extraneous protein which may contribute to injection site reactions.

THE PURIFICATION PROCESS



ULTRAFIL purification technology is a unique antigen filtration process that eliminates undesirable cellular components and extraneous protein to minimize potential unintended consequences such as heat, swelling and inflammation at the injection site. During the process each antigen is purified independently to maintain specific antigenic properties that are important for the development of a protective immune response.

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VETERA® AND CALVENZA® VACCINES

This unique technology is utilized in the manufacturing of VETERA and CALVENZA equine vaccines further contributing to the safety of the product giving you and your client a peace of mind.



MANUFACTURING VACCINES. JUST WHAT MATTERS.



CARBIMMUNE
Adjuvant Formulation

CARBIMMUNE® CARBOXYPOLYMER ADJUVANT FORMULATIONS FOR VETERA® AND CALVENZA® EQUINE VACCINES

IDEAL PROPERTIES OF AN ADJUVANT

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Adjuvants in vaccines are ingredients that contribute to the immune response to the antigens in the vaccine. Adjuvants enhance antigen presentation to the immune system, improve antigen stability, and may act as immunomodulators, stimulating both 'arms' of the immune system: humoral and cell mediated immunity.

A SAFE AND EFFECTIVE FORMULATION THAT HAS PROVEN TO BE AN EXTREMELY VERSATILE AND USER-FRIENDLY ADJUVANT SYSTEM FOR EQUINE VACCINES.

CARBIMMUNE is the proprietary adjuvant formulation used in VETERA and CALVENZA vaccines. CARBIMMUNE adjuvant system allows a dual-phase antigen presentation to elicit high levels of humoral antibody and cellular immunity, as well as rapid onset of immunity following vaccination.

Phase one antigens are loosely dispersed throughout the carboxypolymer matrix and available for immediate macrophage contact while phase two antigens that are bound tightly are made available in a sustained manner contributing to a longer duration of immunity. CARBIMMUNE is free of sensitizing material of animal or plant origin and it is tissue friendly. This minimizes the possibility of both systemic and local injection site reactions.

CARBIMMUNE has been shown to be safe and effective with a wide array of antigens and multiple formulations in VETERA and CALVENZA vaccines.

