



TEC0060 / P0020

A vaccine consisting in a dendrimeric peptide for the prevention of foot-and-mouth disease (FMD) in animals.

BACKGROUND

Foot-and-mouth disease (FMD) is the economically most devastating animal disease worldwide. Caused by the highly contagious FMD virus (FMDV), it affects mostly cattle and swine but also sheep, goats, deer, and other cloven-hoofed ruminants. FMD causes fever and vesicle lesions, followed by ulcers in the mouth, teats, and hooves, all of those resulting in severe losses in meat and milk production. Conventional FMD vaccines have disadvantages such as a cold chain requirement to preserve stability, the need for periodic revaccinations, or the inability to differentiate infected from vaccinated animals (DIVA) and, last but not least, the risk of infectious virus release during production, often with catastrophic consequences (e.g., the UK 2007 outbreak).

THE TECHNOLOGY

Multidisciplinary research from three institutions (UPF, CSIC & INIA) has optimized a previous tetravalent peptide version of the vaccine (EP2053056). The new design is a branched construction on which both B (bivalent) and T peptide epitopes of FMDV are displayed.

ADVANTAGES

- Ready access by efficient peptide synthesis methods
- Easily adaptable to display epitopes from other serotypes/isolates
- Simple handling and storage, no need for cold chain preservation.
- Full DIVA compliance: infected/vaccinated animals easily differentiated
- Immune response (seroconversion, antibody titers, T-cell stimulation) superior to previous tetrameric version.

STATE OF DEVELOPMENT

Immunization experiments in mice and pigs with a 100% protection. Further field trials with significant numbers of target animals to validate the vaccine are under way.

INTELLECTUAL PROPERTY

Chinese and Argentinean patent applications, covering the bivalent peptide dendrimer vaccine as well as a process for preparing the construct, have been filed.

MARKET OPPORTUNITY

FMD is a severe threat for animal farming, given its highly infectious nature. It is estimated that the FMD vaccine global market for 2013 is up to 500M\$.



COMMERCIAL OPPORTUNITY

Seeking to out-license the technology to a strategic partner with the capabilities to complete animal trials and proceed to register the vaccine as a result of a licensing agreement

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KEYWORDS

Foot-and-mouth disease (FMD), veterinary vaccine, dendrimeric peptide.

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