

New avian influenza vaccine formulation: 100% protection for chickens!

Description

New influenza A virus (IAV) vaccine formulation based on 2 recombinant viral proteins derived from a low pathogenic IAV H5N1 strain: HA1 globular head region of hemagglutinin, combined with M2e ectodomain of the matrix protein 2 beared by nanoparticles. After IM immunization-boost, the chicken groups were challenged with a highly pathogenic IAV H5N1 strain. The HA1 + M2e nanoparticle vaccine formulations have protected 100% of challenged animals, with no significant lesions, and prevented shedding of the H5N1 virus in the environment.



Type of expected transfer

Licensing-out of the patent, know-how, biological material

Advantages

1) Recombinant proteins; standard production and purification processes. 2) Cost of Goods. 3) Stability (lyophilisate). 4) Complete protection, no mortality, no clinical signs. 5) No viral shedding. 6) Cross-protection against H5Nx viruses. 7) Easily interchangeable viral immunogenic sequences. 8) Patent application filed; technology cluster. 9) Vaccine monitoring using a DIVA approach - differentiate between vaccinated and infected animals

Possible applications

1) Vaccination of poultry farms against high pathogenic A influenza viruses. 2) Veterinary vaccination against mammalian Influenza A viruses. 3) Prophylaxis against Influenza A viruses infecting humans.

Key words

Influenza A virus, H5N1, avian flu, vaccine, HA1, M2e nanoparticle

TRL Scale

1 2 3 4 5 6 7 8 9

Development level

EP23306715.6 patent application filed in the 5th of October 2023 by INRAE, UVSQ, UQAM et ACIA.

Laboratories:

Virologie et Immunologie Moléculaires, VIM

Researchers:

Christophe CHEVALIER, team Influenza Virus,
INRAE Jouy-en-Josas, France

Contact:

INRAE Transfert – Franck LE GUERHIER, PhD,
Licensing-out Officer Franck.leguerhier@inrae.fr
+33 (0)6 37 66 90 87

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