

Nanotech in modern vaccines

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Avian influenza (AI), caused by the avian influenza virus type "A", is a disease that can affect poultry for human consumption and some strains can cause high mortality rates (33-100 %). In Mexico, a pandemic was registered in 2009 due to the influenza virus AH1N1. The existing vaccines (W/O and O/W) for AI are administered repeatedly generating deposits, fibrosis, stress, pain, among others, which leads to lower production, lower weight and economic losses for the producer, as well as price increase for the market. These may contain some adjuvants that cause inflammation at the site of application and are associated with symptoms of apathy, lethargy and temporary lameness. In recent years, modified-release nanotechnology systems have become an area of global interest. A promising option is the so-called "sensitive stimulus" polymers, which change their structure and functions in response to external stimuli, with which they are intended to reduce the side effects associated with multidose therapies, so at Laboratorio Avimex we are exploring this field to generate safe and effective vaccines, which are projected into the future, which is a great contribution to animal and human health.

Speaker Biography

Fabio Vengoechea is a Colombian researcher whom graduated from the undergraduate program in Chemistry from the Quindio's University (Colombia, 2008). He has completed his PhD from Autonomous University of the State of Morelos (Mexico, 2013). He has explored the synthesis of nano and biomaterials with biocompatible catalyst organometallic systems. He has experience in microstructural biopolymers and design of nanopolymers, by methods such as GPC, homonuclear decoupling NMR, TEM and SEM. He has postdoctoral studies at the Institute of Chemistry of National Autonomus University of Mexico, where he was working in synthesis of palladium organometallic catalyst for the production of molecules with broad structural diversity with UGI reactions. Currently, he is coordinator of Laboratory of Nanotechnology at Laboratorios Avimex, where he is working in the development of modified-release vaccines and antibiotics. He has published 8 papers in reputed journals. He likes to combine science and sports, since he has competed as high performance triathlete in regional teams in Colombia and Mexico.

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