Instituto Politécnico Nacional
"La Técnica al Servicio de la Patria"

Release No. 54
Mexico City, December 18th, 2024

IPN, Texas, and Oxford Universities Develop Vaccine Against Mayaro Virus

- **Arturo Reyes Sandoval, Director General of IPN, collaborated as a Senior Researcher with a select group to advance efforts in combating this mosquito-borne disease.**
- **Currently, no approved vaccine exists to inhibit the effects of the virus in humans, such as severe chronic arthritis.**

El The Instituto Politécnico Nacional (IPN), in collaboration with the University of Oxford and the University of Texas Medical Branch (UTMB), has developed a new vaccine against the emerging Mayaro virus. This virus is related to chikungunya and is transmitted by the same mosquito that carries the dengue virus.

IPN, along with other international institutions and renowned researchers, contributed to the development of a vaccine against the Mayaro virus, which is transmitted by mosquitoes of the Aedes genus. This virus causes outbreaks of fever and chronic arthritis and is present in the Americas.

A team of researchers conducted fieldwork and experimental studies to create a vaccine capable of countering the virus, with the IPN recognized for its contributions to this field.

Como As part of this effort, Arturo Reyes Sandoval, Director General of IPN, participated as a Senior Researcher in the project.

According to specialized articles on scientific research and advancements, the Mayaro virus is an emerging alphavirus transmitted by mosquitoes that causes severe chronic arthritis in humans and poses a potential risk in countries with Aedes mosquitoes.

An article titled "Recombinant Immunogenic Mayaro Virus-Like Particles Presenting a Native Glycoprotein Assembly" published in npj Vaccines, a journal associated with Nature, highlights the risks posed by the virus and the progress made in these efforts.

In the article, IPN is listed as one of the participating institutions, alongside Oxford and Texas universities, as well as the University of Bonn in Germany, the University of Helsinki in Finland, and the University of Sao Paulo in Brazil, among others.

Since Mayaro has been isolated from Aedes mosquitoes, the publication notes growing concerns that it could adapt and emerge in urban transmission cycles due to the widespread presence of Aedes mosquitoes across the Americas, potentially spreading through mosquitoes from Italy.

The article emphasizes that there are currently no authorized vaccines or specific treatments for Mayaro virus infections.

"Recent advances in molecular technology have demonstrated the efficacy of several vaccine platforms, particularly virus-like particles (VLPs), as evidenced by the successful application of a multivalent vaccine against the human papillomavirus (HPV)," the specialized publication highlights.

The results cited in the article demonstrated that the chikungunya vaccine induced a rapid and robust immune response with a favorable safety profile. These observations support the potential of Mayaro VLPs as viable vaccine candidates.

Young Chan David Kim, an Oxford University researcher and former doctoral and postdoctoral student of Arturo Reyes Sandoval, expressed gratitude to the scientists who contributed to the research and publication.

===000===