

## **VERO SF TECHNOLOGY PLATFORM: STRATEGY FOR RAPID AND EFFECTIVE VACCINE DEVELOPMENT ; FLAVIVIRUS VACCINES CASE STUDY**

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As a world leader in vaccine development, *Sanofi Pasteur* has acquired a strong expertise in the development and manufacturing of Vero SF-based vaccines, including against diseases of the Flavivirus family.

To develop this innovative platform and provide a fast response to new viral epidemics, the vaccine manufacturing process development strategies have considerably evolved over the past decade. Toolboxes dedicated to high-throughput development have been designed and optimized to provide rapid response and effective vaccine availability.

For the sake of speed and efficiency, development strategies have been reorganized by platforms. These platforms, such as screening, modelling, process monitoring, bioreactor, have themselves been completely redesigned to allow fast implementation of all development phases up to industrial scale.

Major investments have been made in automated bioreactors and on-line analytics that enable high-throughput studies to support process definition, product characterization, ultimately moving to scale up and clinical manufacturing. Additional focus has been placed on chemically defined media definition, suitable for both cell culture and viral amplification, thus allowing higher generic development and simpler process optimization.

Part of the platform considers automated bioreactors Ambr15 and 250 implemented and combined to scale up models up to 200 Liters. These models have been characterized to reduce time dedicated to scale-up studies and validation. Overall development timelines have been greatly reduced and the optimization phases reduced by a few months.

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