

•Vaccine firms and governments remain focused on more traditional platforms in the near term•

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The COVID-19 pandemic helped usher in a new era of vaccines and expanded the roster of modalities that can be applied to address some of the world's most infectious diseases. Manufacturers continue to leverage more modern, leading-edge technologies to develop more advanced vaccine modalities such as mRNA and viral vectors. In an interaction with BioSpectrum Asia, Josephine Cheng, Senior Modality Expert, APAC Process Solutions, Life Science Business of Merck throws light on the evolving vaccine market in Asia-Pacific.



What trends are shaping the next generation of vaccine manufacturing in the Asia-Pacific (APAC) region?

Traditional vaccine types such as inactivated viruses and recombinant protein/subunit will remain an important part of the landscape due to a strong history of investment, efficacy, and regulatory success. Most vaccine producers will want to produce different biologic modalities in parallel, even if cautiousness is required for entering a new field.

Vaccine manufacturers are actively planning for expansion and next generation vaccine facilities will undoubtedly incorporate the concepts defined by bioprocessing 4.0.

A significant barrier is that the manufacturing process will need to be fully digitalized as regulatory authorities rely on data and parameters recorded during production for verification and approval.

Most of the vaccine manufacturers; a lot of them are our key customers in the region are also expanding their capabilities towards the novel modalities platforms, in particular mRNA.

Do you see any challenges with using mRNA technology to make vaccines, especially in APAC?

The pipelines we see in APAC are mostly in the early stage. About 29 per cent of the global mRNA molecule pipelines originate in APAC. Since the passing of COVID-19, the urgency of rushing into establishing new platforms, and correspondingly the funding for vaccines, has also decreased.

That being said, even though the production scale is small at this stage, because vaccine manufacturers are still establishing their capability. mRNA technology is still very promising and it is the modality chosen by the Coalition for Epidemic Preparedness Innovations (CEPI) for future pandemic preparedness because of its broad applicability and speed from identifying the infectious agent to vaccine.

Vaccine manufacturers and governments remain focused on more traditional vaccine platforms in the near term, such as inactivated vaccines, while at the same time interested in expanding capability to mRNA technologies to build a sustainable business and continuation of vaccine supply.

The mRNA Technology Transfer Programme, initiated by the World Health Organization (WHO) and Medicines Patent Pool (MPP) in 2021, was established to tackle global inequities in vaccine manufacturing in response to the COVID-19 pandemic. Could you share a bit more on how this initiative has benefited APAC vaccine production?

Merck is deeply involved in this MPP-led mRNA technology transfer programme which has 15 global partners to receive platform technology developed at the global centre of excellence in South Africa - Afrigen. In APAC, we have biopharma/bioprocessing companies from countries including Indonesia, Pakistan, Vietnam, Bangladesh and India in the process of getting trained and getting the technology transferred from Afrigen. I see this as one of the most successful mRNA global programmes that is really addressing the needs of local manufacturing. For a lot of these countries, this would be the first time they are setting up mRNA capability. This means in the future, should they want to tackle another pandemic, or local outbreaks, they will have the capability to make mRNA vaccines themselves instead of waiting in line for vaccine donations. This is not only meaningful for the receiving countries, but also improves global health equality.

Your views on the evolving vaccine market in APAC?

The future of vaccines in APAC will incorporate mRNA vaccines. Established vaccine manufacturers in China and India are already producing the essential vaccines, as defined by the WHO, for domestic and LMIC (lower middle income countries). Many of them are now looking to access global markets, and also developing new technology platforms like mRNA and recombinant protein vaccines.

Ayesha Siddiqui