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ASIA EDITION

“Making mRNA vaccines in Asia can potentially bring more affordable vaccines to the world”

02 August 2023 | Opinion

According to a recent study sponsored by Merck, a leading science and technology company, mRNA technology is a game-changer for Asia-Pacific (APAC) vaccine manufacturers. Josephine Cheng, Senior Consultant, Process Solutions APAC at the Life Science business sector of Merck tells us about the booming mRNA landscape in Asia Pacific.

What are the key opportunities and challenges for APAC vaccine manufacturers in adopting and utilising mRNA technology?

According to the market study, availability of skilled personnel and expertise in technology transfer, and high cost of consumables and materials are the key challenges cited by vaccine manufacturers in APAC. Regardless, there is still booming interest as vaccine developers and manufacturers are actively pursuing to establish mRNA capability due to its ability to accelerate cancer and vaccine research and manufacturing. As stated by one of the interviewees, the vaccine industry is rigorously heading toward mRNA vaccines. The reason behind this trend is the exceptional versatility and scope of innovation with mRNA.

With the growing interest and investment in mRNA technology globally, what competitive advantages or unique contributions does the APAC region bring to the field?

Asia has around 60 per cent of the global population with diverse ethnicities, genetic backgrounds, and disease profiles. Developing mRNA vaccines in Asia would make sure the vaccines are more tailored to the diversity and be more effective towards the Asian population.

There are also various government initiatives to support the country's self-sufficiency concept, with the intention to uplevel the manufacturing technologies, speed up the vaccine go-to-market time, and ensure sufficient vaccines are accessible for the population for the next pandemic.

Asia has long been the world factory of many essential vaccines, especially India, producing more than half of the global vaccine volume every year. The manufacturing capacity and the capacity expansion plans we are seeing today will continue to make Asia an important place to contribute to public health. Making mRNA vaccines in Asia can also potentially lower the manufacturing cost and bring more affordable mRNA vaccines to the world, especially in (low-and-middle-income countries (LMICs).

And lastly, APAC has generally a big focus on the IT industry, with South Korea, China, India, Taiwan, and Japan being the powerhouse and accelerators for the world's leading tech companies, especially in the semiconductor industry. Now with the breakthrough in AI technologies, we can expect the utilisation and combination with these high-tech technologies, to do better machine learning, and be one step closer to personalised medicine, which is also the direction of mRNA therapeutic research.

What are the specific challenges or limitations that researchers and developers need to overcome to ensure the widespread and successful implementation of mRNA in the APAC region?

The complex IP landscape in the mRNA field is one of the main challenges and it can be a little intimidating. This is where a collective effort between developers/ researchers and regulatory authorities is so important to overcome any obstacles.

In addition, public awareness of mRNA is important to improve public acceptance and uptake of mRNA vaccines and drugs, which will help to ensure successful and widespread implementation in the APAC region, through awareness campaigns and national programmes with extensive safety and efficacy data.

How do you envision the future of mRNA technology in the APAC region?

We are already seeing mRNA global key players such as Moderna, BioNTech, and Sanofi setting up manufacturing sites or research and development centres in Asia. Additionally, the major vaccine makers are actively investing in mRNA technologies in APAC. We are optimistic about the mRNA technology evolution in this region, starting with prophylactic (preventive) vaccines and followed by therapeutic treatments.

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