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Interview
THE LEADER OF R&D
Institut Pasteur Korea is raising the bar for research and development in Korea’s biotech sector

Founded in 1887, Institut Pasteur is a world-renowned organization known for its contributions to improving human health through groundbreaking scientific research. Today, 33 Institut Pasteur institutions around the world make up the Institut Pasteur International Network (Network), scientifically contributing to the prevention and treatment of infectious disease.

Institut Pasteur Korea (IPK) has been at the forefront in contributing to Korea's biotechnology industry since 2004. With a mission to eliminate the global threat of infectious disease for the benefit of mankind, IPK has proudly served the local and national community through extensive research and development (R&D) and educational programs. Invest Korea Express met Roberto Bruzzone, CEO of IPK, to find out more about IPK and R&D activities taking place in Korea.

Please tell us about your institute's history and its vision.
For more than a decade, IPK has been a major contributor to Korea's biotech industry, working successfully to develop multi-disciplinary R&D and translate the application of fundamental discovery-based research in order to enhance human, animal and environmental health. IPK is focused on drug discovery research, addressing global public health issues and contributing to Korea's future scientific resources through education and technology transfer.

IPK has had a number of success stories in technology, scientific research and business in our short history. We created a first-in-Korea, unique cell-based phenotypic screening technology platform for drug discovery. This innovative approach led to the discovery of Q203, a novel clinical candidate for tuberculosis (TB) treatment, which has a novel mechanism of action and is highly effective against both multi-drug-resistant (MDR) and extensively drug-resistant (XDR) bacteria. Q203, is a Korean first-in-class drug and one of the few drugs effective against MDR and XDR. It recently concluded Phase I clinical trials in the U.S and the FDA designated it as an Orphan Drug (fast track approval, marketing benefits and tax incentives).

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THE LEADER OF R&D (cont.)

IPK also found success in the business arena by spinning off Qurient. In 2008, IPK invested in Qurient which transitions validated targets to drug candidates. IPK licensed Q203 to Qurient for development. Earlier this year, Qurient became a public company trading on Korea securities Dealers Automated Quotation (KOSDAQ) with a value of KRW 151.77 billion (USD 128.85 million). This is a remarkable return on investment for a research institute that has only been a part of the Korean bio industry since 2004.

What made the Institut Pasteur want to establish a branch in Korea?

In the early 2000s, the Network expanded into Asia due to its increasing impact on the global economy, global health, and demand for scientific discoveries. Many of the institutions located in Southeast Asia carry out microbiological surveillance. This combined with Korea's strong technology background and wealth of scientific human resources capable of conducting research added great value to the overall Network, making Korea a logical choice to be a hub and a connector for the institutions in Asia.

What are the major R&D activities that the institute is taking part in in Korea?

The majority of the Network institutions are located in areas that frequently experience outbreaks in order to react in real time and analyze the impact of infectious disease on local populations. The proximity to sites of infection allow for surveillance, initial analysis and administering vaccines, however these front line field labs in Africa and S.E. Asia are not yet fully equipped for more in-depth research. That is where a hub institution like IPK comes into play. We have the technology and personnel to accelerate our understanding of disease mechanisms and validating novel therapeutic options.

Is the institute working with any Korean companies or partners to carry out its R&D activities?

IPK recognizes the importance of collaborating with domestic universities and biotech companies as they play a key role in the research and development of novel drugs and understands the future of drug development hinges on the innovative and cooperative efforts of all industries. In 2015, we conducted co-research activities with KAIST, Yonsei University, Asan Medical Center, Sung Kyun Kwan University, Chungnam National University, Konkuk University, and POSTECH. Also, one of the advantages of working in a tech cluster like Pangyo Techno Valley is the ability to build close ties and collaborate with nearby biotech companies on tailor-made projects on selected diseases with the objective of filling the gaps of therapeutic options.

What are some of the long-term trends in R&D in your field?

In recent years, there has been debate over the merits of basic vs. applied science and a global change to the research funding structure that directs budget away from basic science and towards applied research. IPK offers a hybrid concept, translational research that combines both categories. Translational research aims to facilitate the application of basic scientific discoveries to the treatment and prevention of disease. This meets the public and governments' need to demonstrate tangible benefits in exchange for funding that fuels basic research, which provides essential ideas, insights, and discoveries for practical application. This approach also somewhat addresses impatience with the pace of basic scientific discoveries result in new treatments.

Were there any challenges the institute faced while trying to establish a branch in Korea?

Drug discovery, from initial discovery of a promising compound to final medication, is an expensive and lengthy process. One of the first hurdles to overcome is to secure funding for research. It can be difficult to find funding in favorable economic conditions, but for non-profit organizations like IPK, an economic downturn can have a negative impact. Unfavorable economic conditions mean donors and government funding declines but the threat of infectious diseases does not diminish and the need for new drugs remains. The effects of a reduced budget can be felt for years even after the return of a healthy economy. Also because it is a lengthy process, perseverance is required to see tangible results. Development of new technological innovations and novel protocols has sped up the process, but discoveries are not 100 percent guaranteed to happen like clockwork.

How can Korea become a more ideal investment destination for R&D?

As a non-profit organization, continued investment by local and national government is crucial for IPK to continue its drug discovery activities. IPK's initial success was only made possible due to the long-sighted investment and commitment by the Korean government that allowed IPK to take risks, intimately linked to innovation, and assemble a team of talented scientists that were given the time and space to produce tangible results in drug discovery and business development. Advancing IPK's infrastructure and human resources has ripple effects big and small. On a micro level we are responsible for the health and well-being of our employees, we offer competitively priced screening services for collaborations with other non-profit entities, and generate revenue for Korean vendors and the Pangyo Techno Valley retail community. On a macro level, look at Q203 and the subsequent spin off of Qurient. IPK nurtured the development of a new for-profit biotech venture firm that is now public and has a robust pipeline of new drugs with an estimated sales of KRW 9.2 billion (USD 8 million) this year. But to keep the innovation engine moving forward, we need to expand technology, infrastructure and attract more scientific research talent to ensure that Korea develops a truly international mix of scientists who can thrive in this dynamic leading edge environment.

What is your forecast of the country’s R&D industry?

Positive. Korea has made enormous strides in developing science and technology and the government's concerted effort to diversify the Korean economy and embrace innovation-driven industries will strengthen its position and deliver new growth engines, open new markets, jobs and financial gains. The pieces for stimulating scientific R&D are there; a strong technology base, an abundant pool of highly educated individuals and mature scientific innovation industries: academia, research institutes and pharma.

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