

Acceleration of bio-drug development via public-private partnership: the role of Osong New Drug Development Center.

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At Osong located in the center of Republic of Korea, the First Osong Bio-Health Science Technopolis with size of 4,633,000 m² (1,111 acres, 1.4 million pyung), was launched in 2010 to promote medical research and bio-health industry. Osong Medical Innovation Foundation commenced with a mission to develop the Osong hi-tech medical cluster into a global biomedical hub by providing comprehensive R&D infrastructure for developing new bio drugs and hi-tech medical apparatus of international standards. As a first step, the Foundation established two main research and development centers, New Drug Development Center(NDDC) and Medical Device Development Center, and two additional centers including Laboratory Animal Center and Clinical Drug Manufacturing Center to support the R&D activities of the former centers.

Global pharmaceutical sales will reach approximately \$1.12 trillion in 2022 and biologic drugs continue to grow to represent 20% of the total market value. The growth is driven mainly by monoclonal antibodies, with seven out of the top ten top selling drugs in 2016 being biologics. However, Korean pharmaceutical industry faces the disadvantage at the global competition and the difficulty enhancing the capability of its own R&D. The NDDC has been established to level up the quality of the bio-drug development in Korea while translating a lead to a preclinical candidate, which is a critical step for the bio-drug development. The success of this research will be achieved not only based on the productive translation but also on the careful strategy oriented to the eventual goal of a drug which is need of an anxious patient. To develop a new drug candidate, the Center prepares an integrated support system and executes the role as bridge between government, industry, academia and institutions. Thus, the Center will secure its own technology of a global standard through domestic and international research collaboration, and will support the consumer-customized joint research projects in the area of various human diseases.