Press Release

Ministry of Science and ICT

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Biofoundry Infrastructure Establishment Project Passes Preliminary Feasibility Study

- KRW 126.3 billion to be invested over 5 years from 2025
- Core infrastructure biofoundry to be established to accelerate innovation of synthetic biology
- Expected to lead future bioeconomy by strengthening synthetic biology-based biomanufacturing capabilities

The Ministry of Science and ICT (Minister Lee Jong Ho, MSIT) and the Ministry of Trade, Industry and Energy (Minister Ahn Dukgeun, MOTIE) announced that the "Biofoundry Infrastructure and Utilization Base Establishment Project" has passed the preliminary feasibility study at the National Research and Development Project Evaluation Committee meeting held on January 16. The project, spanning 5 years from 2025 to 2029, will be conducted with a total budget of 126.3 billion won.

Synthetic biology, technologies that apply engineering principles to biological science to design and manufacture living systems such as DNA, proteins, and artificial cells, is gaining attention as a core technology that will lead the future bioeconomy by replacing traditional manufacturing industries centered on petroleum chemicals with environmentally friendly biomanufacturing bases. Leading countries such as the United States, the United Kingdom, Japan, and China have adopted synthetic biology as a national strategic technology and are expanding investment and support for securing technological leadership.

In line with fostering synthetic biology, the Korean government selected synthetic biology as one of the key technologies under the national strategic technologies in 2022 and announced the "National Strategy to Foster Synthetic Biology." Following this, last October,

the MSIT announced the "Strategy to Develop and Disseminate Core Synthetic Biology Technologies," laying the groundwork for Korea to grow into a leader in synthetic biology.

Importantly, Biofoundry, a core infrastructure accelerating synthetic biology technological innovation, is recognized as an essential research facility that determines national biomanufacturing competitiveness, with countries around the world striving to establish biofoundry. In this regard, the Korean government has planned the project to enhance synthetic biology technological competitiveness and establish a foundation for accelerating biomanufacturing by establishing and utilizing biofoundry infrastructure. Based on the results of the preliminary feasibility study by the National Research and Development Project Evaluation Committee, the government will proceed with the construction of biofoundry infrastructure from 2025 to 2029 under the "Biofoundry Infrastructure and Utilization Base Establishment Project."

Biofoundry, integrating artificial intelligence and robotics technology, can automate and accelerate the entire process of synthetic biology, significantly enhancing research and development speed and efficiency. By establishing a public biofoundry facility and providing supportive services such as experiment automation and high-speed analysis for researchers in the domestic synthetic biology field, it is expected to shorten research and development and commercialization periods and contribute to securing national synthetic biology technological competitiveness.

The project plans to start construction of a dedicated Biofoundry Center in 2025, develop core workflows that can be automated and standardized at each stage of synthetic biology research processes, and establish an integrated biofoundry platform for efficient operation of the infrastructure by 2029.

※ Project milestones: Commencement of center construction in 2025 and completion in 2027, development of core workflows for each stage of synthetic biology research processes from 2025 onwards, establishment of integrated biofoundry platform from 2025

The Biofoundry Establishment Project is jointly planned by MSIT and MOTIE, and a

"(tentatively named) National Biofoundry Project Team" will be formed to lead the project.

Noh Gyeong-won, Deputy Minister of Research and Development Policy at MSIT, emphasized, "With the passage of the preliminary feasibility study, now we can start the biofoundry construction, which can significantly innovate bio-research. We have laid the foundation for achieving growth surge into a global biology powerhouse by enhancing synthetic biology technological competitiveness and biomanufacturing capabilities." Deputy Minister Noh also stated, "In addition to establishing biofoundry infrastructure, we plan to concurrently pursue the acquisition of biofoundry-based technologies and the development of homegrown core equipment to build a globally competitive biofoundry."

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