



## **Nihon Medi-Physics' Strategic Move for Contribution to Cancer Treatment**

**New R&D infrastructure on its way to handle alpha-emitter nuclides**

### **FOR IMMEDIATE RELEASE**

**March 26, 2019 Tokyo, Japan** – Nihon Medi-Physics (NMP), the leading radiopharmaceutical company in nuclear medicine in Japan, is realizing the breakthrough cancer treatment with Theranostics\*<sup>1</sup>, the fusion of therapeutics and diagnostics.

NMP's strategic plans to materialize the concept of "Theranostics" is concurrent development of novel radiolabeled therapeutic and diagnostic agents using one common molecule.

In late 2017, NMP won a grant by the second Cyclic Innovation for Clinical Empowerment (CiCLE\*<sup>2</sup>) organized and run by the Japan Agency for Medical Research and Development (AMED) with the research theme "Development of therapeutic agents with alpha-emitting radionuclide and companion diagnostic\*<sup>3</sup> agents in parallel with establishment of new drug development base to make the concept of Theranostics into a reality".

Today, NMP is advancing the Theranostics research theme through invitation-based collaborations and alliances with academic and private organizations in and outside Japan. The company has decided to invest in R&D infrastructure so that the partnerships will fully utilize the new R&D facility for the goal of the "Realization of Theranostics." The research site, currently under construction is scheduled to open in September 2019.

The site will play an indispensable role in the research activities by manufacturing alpha-emitters and evaluating the labeled agents for "Theranostics". The common molecule such as an antibody is a core structure for both agents and functions as a Drug Delivery System (DDS)\*<sup>4</sup>. Based on this concept, NMP can prepare a therapeutic or diagnostic agent by changing radioisotopes to label the common molecule, for instance, alpha-emitters\*<sup>5</sup> such as Actinium-225 (<sup>225</sup>Ac) for therapeutic agents, and gamma-emitters such as Zirconium-89 (<sup>89</sup>Zr) for diagnostic agents.

Through NMP's long-standing experience in radiopharmaceutical manufacturing operations, the company has cultivated advanced skills to handle various radioactive nuclides. Today, Nihon Medi-Physics' technology strategies and R&D investment will definitely further accelerate its active alliances with partners and help achieve its ultimate goal, "Realization of Theranostics".

## **Nihon Medi-Physics Co., Ltd.**

Nihon Medi-Physics Co., Ltd. (NMP) is a leading company for radiopharmaceuticals in Japan, with dedicated R&D, manufacturing, and stable, reliable distribution. By capitalizing on its forerunning technological capabilities and reputation in advancing the diagnostic nuclear medicine field, NMP continuously challenges innovative breakthroughs in Theranostics, and is a leader of nuclear medicine in Japan. Further, NMP builds continuous value to its core business assets by investing in R&D, establishing collaborative partnerships, and contributing to the health and well-being of societies.

## **Sources**

1. Theranostics: A term to denote the fusion of therapeutics and diagnostics.
2. CiCLE : One of the grant programs by the Japan Agency for Medical Research (AMED) for promoting the establishment of infrastructure to respond to medical needs, the creation of an environment for open innovation and venture development based on industry-academiagovernment collaboration. See AMED website for more information: <https://www.amed.go.jp/en/program/list/07/01/001.html>
3. Companion diagnostic: This is a preliminary diagnostic test used as a companion to a therapeutic drug to determine its applicability to a specific person to further enhance the efficacy and safety of a specific drug.
4. Drug Delivery System: Engineering technologies and systems to deliver the drug in minimum quantity to targeted organ or tissue, etc. at the right timing by controlling pharmacokinetic of the drug so that the maximum outcome can be obtained.
5. Alpha emitters: In comparison with other types of radiation, alpha emitters are very strong in destroying targeted cancer cells. At the same time, its short path length in human tissue minimizes irradiation of surrounding healthy tissues. Therefore alpha emitters like <sup>225</sup>Ac are attracting a lot of attention globally as radionuclides to be used in cancer treatment.

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Personalized medicine  
Precision medicine  
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Cancer  
Cancer Cure  
Cancer Diagnostic Agents  
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Companion diagnostic  
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