

NEC and Transgene announce a collaboration in the field of individualized cancer immunotherapy, leveraging NEC's AI and Transgene's myvac™ platform

Tokyo, Japan and Strasbourg, France, October 30, 2018 - 8:00 am CET - [NEC Corporation](#) (NEC; TSE: 6701) and [Transgene](#) (Euronext Paris: TNG) today announced the signing of a Memorandum of Understanding (MOU) for a strategic collaboration aimed at the treatment of solid cancers. The companies will cooperate in clinically assessing the predictive capabilities of NEC's artificial intelligence (AI) and the therapeutic potential of Transgene's *myvac*™ (*1) MVA-based viral vector platform in an individualized immunotherapy for the treatment of solid cancers. The experimental products from this collaboration are expected to enter clinical trials in 2019.

NEC and Transgene will co-invest in the first stage of development of an individualized immunotherapy, which includes clinical trials focusing on ovarian cancer and HPV-negative head and neck cancer.

Immunotherapy is rapidly becoming the treatment of choice to fight cancer as it activates the patient's own immune system to attack cancer cells.

NEC and Transgene have capitalized on the recent progress in AI and advances in genome sequencing to create an individualized immunotherapy, which is adapted to the unique characteristics of each patient's mutational landscape as well as their predicted immune responses. The product is based on a viral vector (MVA) developed by Transgene with a proven clinical safety track record and that is known for its efficient immunogenicity and anti-tumor efficacy in patients.

The viral vector will be used to target neoantigens identified using NEC's proprietary algorithm. NEC has been developing solutions in the drug discovery field for close to two decades. NEC's neoantigen prediction system (*2) was developed and validated based on publicly available databases, as well as internal wet lab datasets, some of which were already used to identify clinically relevant antigens in other oncology indications.

These planned clinical trials leverage the world-leading expertise and technologies of a network of companies and research centers, including:

- Transgene's unrivaled MVA-based, viral vector technology and the *myvac*™ platform, and
- NEC's cutting-edge AI technology, "NEC the WISE" (*3), for identifying and prioritizing patient-specific neoantigens.

“The emerging personalized medicine field holds great potential for the application of NEC’s core technology, and we are pleased to be working with Transgene with the goal of developing state-of-the-art personalized immunotherapies,” said Motoo Nishihara, Senior Vice President, Head of NEC Laboratories.

“Engaging the body’s own immune system in the fight against cancer has shown great promise and sparked unprecedented interest among oncology drug makers. This makes it imperative for NEC to become part of the immunotherapy race as soon as possible,” said Osamu Fujikawa, Senior Vice President, Business Innovation Unit, NEC Corporation.

“This collaboration brings together artificial intelligence and our expertise in viral vector engineering to enable the development of a truly innovative treatment based on the *myvac*[™] platform. We believe that our collaboration with NEC will allow us to provide an efficacious and robust therapy for the many patients who have solid tumors and could benefit from this cutting-edge individualized approach, and to successfully advance the development of the *myvac*[™] platform to the market” said Éric Quéméneur, Pharm.D., Ph.D., Executive VP, Chief Scientific Officer of Transgene.

Notes:

*1) *myvac*[™]

myvac[™] is a viral vector (MVA) based, individualized immunotherapy platform that has been developed by Transgene to target solid tumors. The *myvac*[™]-derived products are designed to stimulate the patient’s immune system, recognize and destroy tumors using the patient’s own cancer specific genetic mutations. Transgene has set up an innovative network that combines bioengineering, digital transformation, established vectorization know-how and unique manufacturing capabilities.

*2) NEC’s Neoantigen Prediction System

NEC’s neoantigen prediction utilizes its proprietary AI, such as graph-based relational learning, which is combined with other sources of data to discover candidate neoantigen targets. NEC comprehensively evaluates the candidate neoantigens with a primary focus placed on its in-house MHC-binding affinity prediction. These allow NEC to effectively prioritize the numerous candidate neoantigens identified in a single patient.

*3) NEC the WISE



“NEC the WISE” is a term for the Company’s cutting-edge portfolio of AI technologies.

Press release:

NEC announces new AI technology brand, “NEC the WISE”

http://www.nec.com/en/press/201607/global_20160719_01.html

NEC’s AI Research:

<http://www.nec.com/en/global/rd/crl/ai/index.html>

About NEC Corporation

NEC Corporation is a leader in the integration of IT and network technologies that benefit businesses and people around the world. The NEC Group globally provides "Solutions for Society" that promote the safety, security efficiency and fairness of society. Under the company's corporate message of "Orchestrating a brighter world," NEC aims to help solve a wide range of challenging issues and to create new social value for the changing world of tomorrow. For more information, visit NEC at <http://www.nec.com>.

The logo features a stylized orange and blue graphic element resembling a musical instrument or a signal, followed by the text "Orchestrating a brighter world" in a sans-serif font. "Orchestrating" is in blue, and "a brighter world" is in orange.

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About Transgene

Transgene (Euronext: TNG) is a publicly traded French biotechnology company focused on designing and developing targeted immunotherapies for the treatment of cancer and infectious diseases. Transgene's programs utilize viral vector technology with the goal of indirectly or directly killing infected or cancerous cells. The Company's lead clinical-stage programs are: TG4010, a therapeutic vaccine against non-small cell lung cancer, Pexa-Vec, an oncolytic virus against liver cancer, and TG4001, a therapeutic vaccine against HPV-positive head and neck cancers. The Company has several other programs in clinical development, including TG1050 (a therapeutic vaccine for the treatment of chronic hepatitis B) and TG6002 (an oncolytic virus for the treatment of solid tumors).

With its proprietary Invir.IO™, Transgene builds on its expertise in viral vectors engineering to design a new generation of multifunctional oncolytic viruses.

myvac™, an individualized MVA-based immunotherapy platform designed to integrate neoantigens, completes this innovative research portfolio.

Additional information about Transgene is available at www.transgene.fr

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Transgene disclaimer

This press release contains forward-looking statements, which are subject to numerous risks and uncertainties, which could cause actual results to differ materially from those anticipated. The occurrence of any of these risks could have a significant negative outcome for the Company's activities, perspectives, financial situation, results, regulatory authorities' agreement with development phases, and development. The Company's ability to commercialize its products depends on but is not limited to the following factors: positive pre-clinical data may not be predictive of human clinical results, the success of clinical studies, the ability to obtain financing and/or partnerships for product manufacturing, development and commercialization, and marketing approval by government regulatory authorities. For a discussion of risks and uncertainties which could cause the Company's actual results, financial condition, performance, or achievements to differ from those contained in the forward-looking statements, please refer to the Risk Factors ("Facteurs de Risque") section of the Document de

Référence, available on the AMF website (<http://www.amf-france.org>) or on Transgene's website (www.transgene.fr). Forward-looking statements speak only as of the date on which they are made and Transgene undertakes no obligation to update these forward-looking statements, even if new information becomes available in the future.

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