PRESS RELEASE

Transgene and NEC announce positive preliminary data from Phase I studies of TG4050, a novel individualized neoantigen cancer vaccine

- ✓ *Positive initial data generated in the first six patients treated with TG4050 demonstrate the strong potential of this individualized immunotherapy in ovarian cancer and head and neck cancer.*
  - *TG4050 induced robust anti-tumor cellular immune responses against multiple neoantigen targets in all evaluable patients (4/4).*
  - *TG4050 monotherapy was also associated with the first signs of clinical activity.*
- ✓ *TG4050 was well tolerated, with no related Serious Adverse Events reported across the two studies to date.*
- ✓ *Additional patients are being enrolled, with the aim to treat up to 43 patients across the two multicenter trials (USA, UK, France).*
- ✓ *Further data will be released at a major oncology conference over the coming months and will provide the insight needed to prepare Phase II trials.*

Webcasts tomorrow with Key Opinion Leaders on November 23, 2021, at 8:30 a.m. CET in French and at 3 p.m. CET (8:00 a.m. ET) in English (details at the end of the release).

Strasbourg, France & Tokyo, Japan, November 22, 2021, 5:45 pm CET **- Transgene (Euronext Paris: TNG), a biotech company that designs and develops virus-based immunotherapies for the treatment of cancer, and NEC Corporation (NEC; TSE: 6701), a leader in IT, network and AI technologies, today announce positive preliminary immunogenicity and clinical data on TG4050, their jointly developed individualized neoantigen cancer vaccine. TG4050 is the first candidate based on Transgene's *myvac*® platform. Powered by NEC's cutting-edge AI capabilities, it is being evaluated in two ongoing multicenter Phase I trials in patients with ovarian cancer and head and neck cancer.**

"We are extremely pleased to demonstrate the ability of TG4050 to effectively prime the immune system of the first patients who received this novel treatment and observe first signals of clinical activity. We believe this establishes the potential role of TG4050 as a new approach for individualized cancer vaccination. TG4050 appears to demonstrate a favorable safety profile thus far. We have also confirmed the feasibility of the 'needle to needle' process with these two multicenter international Phase I trials, using our own manufacturing facility. Strikingly, when supported by NEC's powerful prediction tool, the myvac® *viral vector used in TG4050, which has been genetically optimized to improve immunogenicity and peptides presentation, induced robust and consistent response against class I and class II epitopes. We are working hard to complete the studies to further confirm these findings and generate additional immune and clinical data. We are very excited by the potential of TG4050 and hope to share additional data at a major oncology congress in 2022. Based on the additional data, we will identify the most appropriate path to take TG4050 forward,"* commented **Hedi Ben Brahim, Chairman and CEO of Transgene**.

"We are very excited to see early signs of clinical activity in the TG4050 clinical trials that uses our AI-driven neoantigen prediction system. NEC's proprietary machine learning algorithms are built upon decades of AI expertise, enabling us to prioritize and map the most immunogenic neoantigens on personalized vaccine blueprints. The safety profile and early immunogenicity data against multiple patient-specific tumor targets in the first patients is a testimony of TG4050's potential and of the complementary synergies between the two companies. This milestone illustrates the central role of expanding the AI approach for individualized cancer immunotherapy. As we previously stated, NEC and Transgene share a common goal to harness the power of data and develop new targeted therapies in oncology. We continue to be hopeful that TG4050 will make a significant difference in the lives of patients throughout the world," commented ***Motoo Nishihara, Executive Vice President, CTO (Chief Technical Officer) and Member of the Board, NEC Corporation***.

Prof. Christian H. Ottensmeier, MD, PhD, Professor of Immuno-Oncology, at University of Liverpool and Prof. Jean-Pierre Delord, MD, PhD, General Manager of IUCT Oncopole of Toulouse, will share their insights on these early results in two upcoming webcasts, respectively in English and in French (see details at the end of the release)**.**

TG4050 IS AN INDIVIDUALIZED NEOANTIGEN VACCINE TAILORED FOR EACH PATIENT.

This individualized immunotherapy is based on Transgene's advanced virus engineering platform *myvac*® and NEC's deep expertise in artificial intelligence (AI). TG4050 is based on an MVA viral vector which is designed to educate the immune system against each patient's most relevant tumor targets (up to 30 patient-specific neoantigens). These mutations are identified by next generation sequencing (NGS) and selected using NEC's proprietary AI-based immunogenicity prediction system. The main goal of the vaccine is to elicit a strong and long-lasting immune response against tumor antigens by targeting class I and class II epitopes. These two types of responses have been established as key factors in driving a sustained anti-tumor response.

DATA WERE GENERATED FROM 6 PATIENTS THAT HAVE BEEN TREATED WITH TG4050 ACROSS THE TWO PHASE I CLINICAL TRIALS.

The two studies are designed to assess biological and clinical activity of TG4050 given alone. In particular, the studies were designed to provide insights on the capacity of the selected target neoantigens to induce immune responses against these epitopes and, ultimately, to correlate clinical outcome with biological responses in two indications with significantly different genomic profiles.

The two Phase I clinical trials are exploring the activity of repeated injections of TG4050 as monotherapy in patients with minimal residual disease:

- In the **ovarian cancer trial**, patients receive the vaccine at first signs of asymptomatic relapse of their high grade, advanced-stage disease (after surgery and first-line chemotherapy). Asymptomatic relapse is defined as the detection of elevated CA-125 (tumor marker of ovarian cancer frequently associated with a relapse) or as low volume radiological disease. The first patient was dosed in August 2020. **Data have been generated from four patients treated in this trial**.
- Patients with **HPV-negative, advanced-stage head and neck cancer** are at high risk of relapse after surgery and adjuvant therapy. In the trial, they are randomized after completion of this primary treatment to receive vaccination (early treatment arm) or to receive TG4050 at relapse (delayed vaccination arm). In this trial, the first patient was dosed in January 2021. As of today, **six patients were randomized in this trial, two in the early treatment arm and four in the delayed vaccination arm.**

Overall the data discussed today were obtained from the first six patients who received TG4050 across the two trials. The primary endpoints of these trials include safety and feasibility. Secondary endpoints include biological activity of the therapeutic vaccine TG4050.

CELLULAR IMMUNE RESPONSE WAS EVALUABLE FOR 4 OF THE PATIENTS TREATED WITH TG4050.

T-cell responses for each targeted mutation were assessed after 9 weeks of treatment with TG4050 and compared to baseline for the 4 patients for which evaluable samples were available. Neoepitope immunoreactive T-cells were quantified by *ex vivo* IFNgamma ELISPOT.

- **All 4 patients developed a robust T-cell response against multiple targeted mutations (neoantigens)** with a median of 10 positive responses per patient, confirming the capability of the AI to accurately select immunogenic neoantigens across the two selected indications.
- **T-cell responses were observed for class I and class II epitopes.** They consisted of ***de novo*** **responses** in 64% of observed responses (onset of responses that were absent at baseline) and **amplifications of preexisting responses** for 36% of vaccine responses.
- Additionally, **the development of these adaptive responses was concomitant with maturation and activation of the patients' circulating immune cells**, suggesting that the vaccine is able to effectively prime the immune system.

Compared to previously reported neoantigen studies, these data reinforce the rationale for TG4050's prediction system and support the validation of the MVA vector as an efficient platform for anti-tumor vaccination.

All immune assessments were conducted by the clinical immunology laboratory of Institut Curie (Paris).

FIRST SIGNALS OF CLINICAL ACTIVITY ARE EXTREMELY PROMISING FOR TG4050.

In the ovarian cancer trial (n=4), one patient treated after an elevation of CA-125 experienced a normalization of CA-125 without clinical progression during 9 months until death from an unrelated chronic illness. Another patient with radiological lesions is stable and is still under treatment with TG4050 9 months after the first injection.

In the head and neck trial early treatment arm (n=2), **the two patients** have been treated with TG4050 for 10 and 5 months respectively and are stable. Their treatment is ongoing**.**

To date, the vaccine has been well tolerated and no related Serious Adverse Events have been reported across the two studies. Adverse events are consistent with previous observations made with the MVA viral vector. They mainly consist of mild and transient symptoms, mostly injection site reactions.

HIGHLY ENCOURAGING DATA POINT TO BE SHARED WITH THE COMMUNITY AND BE SUPPORTED BY ADDITIONAL DATA.

Additional data will be generated in the coming months. Transgene expects to present them at a major oncology conference in 2022.

In both clinical studies, enrollment and patient dosing are progressing in line with our expectations. Overall, Transgene plans to treat 13 patients in the ovarian cancer trial and 30 patients in the head and neck trial.

A conference call **in English** is scheduled tomorrow, **on November 23, 2021, at 3:00 p.m. CET (9:00 a.m. ET) with Transgene's management and Prof. Christian H. Ottensmeier, MD, PhD, Professor of Immuno-Oncology, at University of Liverpool**.

Webcast link to English language conference call:
https://channel.royalcast.com/landingpage/transgene/20211123_2/
Participant telephone numbers:
France: +33 (0) 1 70 37 71 66
United Kingdom: +44 (0) 33 0551 0200
United States: +1 212 999 6659
Confirmation code: Transgene

A conference call **in French** is scheduled tomorrow, **on November 23, 2021, at 8:30 a.m. CET with Transgene's management and Prof. Jean-Pierre Delord, MD, PhD, General Manager of IUCT Oncopole of Toulouse**.

Webcast link to French language conference call:
https://channel.royalcast.com/landingpage/transgene/20211123_1/
Participant telephone numbers:
France: +33 (0) 1 70 37 71 66
United Kingdom: +44 (0) 33 0551 0200
United States: +1 212 999 6659
Confirmation code: Transgene

Replays will be available on the Transgene website (www.transgene.fr) following the live events.

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About the clinical trials

TG4050 is being evaluated in two Phase I clinical trials for patients with ovarian cancer (NCT03839524) and HPV-negative head and neck cancers (NCT04183166).

In a first Phase I trial, TG4050 is being administered to patients with HPV-negative head and neck cancer. A personalized treatment is created for each patient after they complete surgery and while they receive an adjuvant therapy. Half of the participants receive their vaccine immediately after they complete their adjuvant treatment. The other half is given TG4050 as an additional treatment at the time of recurrence of the disease. This randomized study is evaluating the treatment benefits of TG4050 in patients who have a high risk of relapse. Up to 30 patients will receive TG4050 in France, in the UK and in the USA. The principal investigator of the trial is Prof. Christian Ottensmeier, MD, PhD, Consultant Medical Oncologist at the Clatterbridge Cancer Centre and Professor of Immuno-Oncology at the University of Liverpool. In France, the clinical trial is being conducted, at Institut Curie, Paris, by Prof. Christophe Le Tourneau, MD, PhD, Head of the Department of Drug Development and Innovation (D3i) and at the IUCT-Oncopole, Toulouse, by Prof. Jean-Pierre Delord. In the USA, the trial is being led by Dr. Yujie Zhao, MD, PhD, at the Mayo Clinic. Endpoints of the trial include safety, feasibility and biological activity of the therapeutic vaccine.

In parallel, a Phase I clinical trial of TG4050 is enrolling patients with ovarian cancer. The first patient has been dosed in the USA. This second trial is including patients after surgery and first-line chemotherapy. Dr. Matthew Block, MD, PhD, Consultant Medical Oncology, Consultant Immunology and Associate Professor of Oncology at the Mayo Clinic (USA) is the principal investigator of the trial; in France, the trial is being conducted by Prof. Le Tourneau, MD, PhD, at Institut Curie and by Dr. Alexandra Martinez, MD, Associate Head of Surgical Department, at IUCT-Oncopole. Endpoints of the trial include safety, feasibility and biological activity of the therapeutic vaccine.

About *myvac®*

myvac® is a viral vector (MVA – *Modified Vaccinia Ankara*) based, individualized immunotherapy platform that has been developed by Transgene to target solid tumors. *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. Transgene has been awarded "Investment for the Future" funding from Bpifrance for the development of its platform *myvac®*. TG4050 is the first *myvac®*-derived product being evaluated in clinical trials.
Click **here** to watch a short video on *myvac®*.

About TG4050

TG4050 is an individualized immunotherapy being developed for solid tumors that is based on Transgene's *myvac®* technology and powered by NEC's longstanding artificial intelligence (AI) expertise. This virus-based therapeutic vaccine encodes neoantigens (patient-specific mutations) identified and selected by NEC's Neoantigen Prediction System. The prediction system is based on more than two decades of expertise in AI and has been trained on proprietary data allowing it to accurately prioritize and select the most immunogenic sequences.
TG4050 is designed to stimulate the immune system of patients in order to induce a T-cell response that is able to recognize and destroy tumor cells based on their own neoantigens. This individualized immunotherapy is developed and produced for each patient.

About NEC's Neoantigen Prediction System

NEC's neoantigen prediction system utilizes its proprietary AI, such as graph-based relational learning, trained on multiple sources of biological data to discover candidate neoantigen targets. These targets are carefully analyzed using proprietary machine learning algorithms that include in-house HLA binding and antigen presentation AI tools to evaluate the likelihood of eliciting a robust and clinically relevant T cell response. With NEC OncoImmunity now onboard, NEC continues to strengthen its top class neoantigen prediction pipelines with the aim of maximizing the therapeutic benefits of personalized cancer immunotherapy for patients worldwide. For more information, visit NEC at www.nec.com. For additional information, please also visit NEC OncoImmunity at https://www.oncoimmunity.com/

About Transgene

Transgene (Euronext: TNG) is a biotechnology company focused on designing and developing targeted immunotherapies for the treatment of cancer. Transgene's programs utilize viral vector technology with the goal of indirectly or directly killing cancer cells.
The Company's clinical-stage programs consist of two therapeutic vaccines (TG4001 for the treatment of HPV-positive cancers, and TG4050, the first individualized therapeutic vaccine based on the *myvac®* platform) as well as two oncolytic viruses (TG6002 for the treatment of solid tumors, and BT-001, the first oncolytic virus based on the Invir.IO™ platform). With Transgene's *myvac®* platform, therapeutic vaccination enters the field of precision medicine with a novel immunotherapy that is fully tailored to each individual. The *myvac®* approach allows the generation of a virus-based immunotherapy that encodes patient-specific mutations identified and selected by Artificial Intelligence capabilities provided by its partner NEC.
With its proprietary platform Invir.IO™, Transgene is building on its viral vector engineering expertise to design a new generation of multifunctional oncolytic viruses. Transgene has an ongoing Invir.IO™ collaboration with AstraZeneca.
Additional information about Transgene is available at: www.transgene.fr
Follow us on Twitter: @TransgeneSA

About NEC Corporation

NEC Corporation has established itself as a leader in the integration of IT and network technologies while promoting the brand statement of "Orchestrating a brighter world." NEC enables businesses and communities to adapt to rapid changes taking place in both society and the market as it provides for the social values of safety, security, fairness and

efficiency to promote a more sustainable world where everyone has the chance to reach their full potential. For more information, visit NEC at http://www.nec.com.

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 Universal Registration Document, 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.