Transgene unveils *myvac*™, an individualized immunotherapy against solid tumors

- myvac™ *is a viral vector-based, individualized immunotherapy that has been developed to target solid tumors*
- myvac™ *stimulates the patient's immune system to recognize and destroy tumors using their own cancer specific genetic mutations*
- myvac™ *is a highly innovative approach that combines the use of the tumor's neoantigens*[1] *with the Transgene's viral vector expertise*
- *First patient to be treated in 2019*

Strasbourg, France, September 24, 2018, 5:45 pm CET - **Transgene (Euronext Paris: TNG) a biotechnology company that designs and develops virus-based immunotherapies against cancers and infectious diseases, announces *myvac*™, an individualized, viral vector-based immunotherapy against cancer that will enter clinical development in 2019.**

myvac™, an individualized, MVA-based immunotherapy

myvac™ is designed to stimulate and educate the immune system of patients to recognize and destroy tumor cells. The personalized immunotherapy product is based on the mutations that are identified in the patient's own tumor. These mutations are highly relevant targets since they lead to the expression of tumor neoantigens which are known to trigger a stronger immune response than "classic"[2] tumor antigens.

Once administered to the patient, *myvac*™ triggers a cascade of immune responses against a variety of targets found in the cancer cells.

The neoantigens which are the basis for the *myvac*™ approach are identified by sequencing and selected using artificial intelligence algorithms, and then integrated into the genome of the viral vector (MVA).

myvac™ differs from autologous treatments since no biological material from the patient is used in the manufacturing process and as such is much easier to manufacture; it is a truly individualized approach that uses the information that is specific to the characteristics of each patient's tumor.

Transgene has combined its expertise in viral vectors with highly innovative technologies to develop *myvac*™.

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[1] Tumor neoantigens: genetic mutations of tumor cells that are specific to the patient. Unlike "classic" tumor antigens that sign the identity of a type of tumor, neoantigens are unique.

[2] Chen DS, Mellman I., *Elements of cancer immunity and the cancer-immune set point,* Nature (2017) 541:321–30.10.1038/nature21349

myvac™ features several key advantages:

- **It is expected to deliver the benefits of an individualized treatment without the disadvantages of autologous approaches** (Transgene does not modify the patient's cells but integrates the neoantigen panel into the virus);
- It is based on a **viral strain (MVA) whose safety, tolerability, immunogenicity and efficacy have already been demonstrated** in the clinic with TG4010 and TG4001;
- **The *myvac*™ viral vector (MVA)** has repeatedly shown that it **can induce a strong immune response from the patient against the tumor antigens incorporated in its viral genome** as well as an **enlargement of the antitumoral immune repertoire (epitope spreading)**;
- **An "all-in-one" formula**, requiring neither adjuvant nor association of different peptides.

Éric Quéméneur, PhD, Executive VP, Chief Scientific Officer of Transgene, said: *"With* myvac*™, Transgene is at the forefront of innovation in cancer immunotherapy. Based on our know-how in virotherapy, we have successfully integrated sequences coding for neoantigens to create an individualized immunotherapy. By combining sequencing and artificial intelligence with the design of the virus,* myvac*™ marks the entry of viral vector-based approaches in the era of digital transformation. Importantly we have also set up an organization able to design and manufacture* myvac*™ for each patient in a timely and cost-competitive manner. The* myvac*™ innovation is a logical evolution of our expertise and a new therapeutic option that promises a major improvement over existing therapies.* myvac*™ is also the result of our policy of open innovation which is based on working with partners developing technologies that are complementary to our expertise allowing us to benefit from a multidisciplinary approach. We look forward to demonstrating the transformative potential of* myvac*™ in the clinical trials we plan to start in 2019."*

myvac™, an ambitious project expected to enter the clinic in 2019

myvac™ will be administered to patients with solid tumors. Two clinical trials are being set up in Europe and in the United States, including HPV-negative head and neck cancers and ovarian cancer. These trials are expected to start in 2019.
The first preclinical and translational results will be presented soon at immuno-oncology conferences.

Our innovative network combines bioengineering and digital transformation

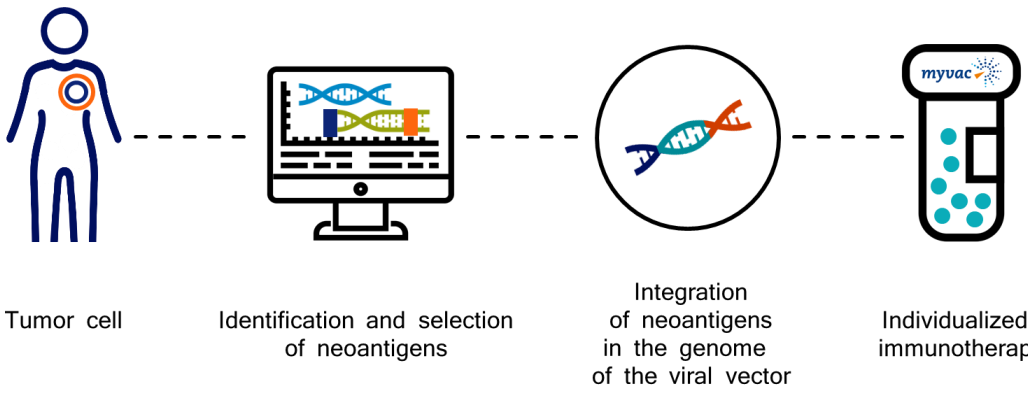
To design *myvac*™, Transgene and its collaborative network had to overcome many scientific and technical challenges. The network's expertise covers all the required know-how:

- **Institut Curie** (Cancer Immunotherapy Center, led by Professor Amigorena) is involved in the generation of translational data and the characterization of the mechanism of action;
- **HalioDx** studies biomarkers to maximize the effectiveness of the therapy;
- **Traaser** automates, secures and manages genomic data, including predictive algorithms provided by a recognized partner in artificial intelligence;
- **Transgene** has developed a unique manufacturing pilot unit in France to vectorize neoantigens and provide *myvac*™ within a timeframe compatible with clinical treatment schemes.

This innovative project has obtained the labeling of the Biovalley France and Eurobiomed French competitiveness clusters.

Transgene holds the intellectual property of the *myvac*™ viral vector platform and is actively working on the translational development of this innovative technology.

The different manufacturing steps of *myvac*™



Contacts

Transgene

Lucie Larguier
Director Corporate Communications & IR
+33 (0)3 88 27 91 04
investorrelations@transgene.fr

Media contacts:

Citigate Dewe Rogerson
David Dible/Marine Perrier
+44 (0)20 7638 9571
transgene@citigatedewerogerson.com

About Transgene

Transgene (Euronext: TNG), part of Institut Mérieux, 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 integrating neoantigens, completes this innovative research portfolio.

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

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Disclamer

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