OncoQR's Breast Cancer Vaccine Successfully Completes Pre-Clinical Proof-of-Concept Study | Print |

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Cancer Vaccine OQR200 Elicits Broad and Strong Immune Response to Her2/neu

Vienna, Austria, October 15, 2015 / B3C newswire / -- OncoQR ML, a company developing Adjustable Cancer Immunotherapies, today announced that its breast cancer vaccine candidate OQR200 has successfully completed a proof-of-concept study in non-human primates (NHPs). In the study, the vaccine elicited the expression of very high levels of polyclonal antibodies targeting multiple epitopes on Her2/neu. These epitopes include those two which are recognized by current blockbuster monoclonal antibodies Herceptin and Perjeta and which lead to ADCC (antibody dependent cytotoxicity). In addition, antibodies against Her2/neu epitopes so far not targeted by any licensed therapy were induced. These new epitopes allow tumor cell killing through complement activation (CDC), confirming the superior mode of action of polyclonal responses over current monoclonal treatments. Importantly, on top of the antibody response, OQR200 simultaneously induced polyclonal cellular immune responses to the breast cancer antigen, activating both helper T-cells and cytotoxic T-cells. Thus, OQR200 mobilizes and boosts the patient's complete immunological repertoire to combat the cancer cells. No adverse reactions were observed.

"We are very pleased that this study has proven that OQR200 induces both high levels of antibodies and T-cell responses to Her2/neu-cancer cells", commented Dr. Geert C. Mudde, CSO of OncoQR. "The results of this study show that compared to other drugs OQR200 is capable of mobilizing and boosting both arms of the immune system against cancer cells: cellular and humoral immunity. Such a two-pronged approach is considered critical to prevent 'tumor escape', a major limitation of current antibody treatments."

Dr. Mudde continued: "As an immunologist I am extremely excited that we could show that with our S-TIR™ technology underlying OQR200, an autologous antigen can overcome immune tolerance. This has been a longstanding challenge for active cancer immunotherapy. Equally important for the clinical potential of our technology is the fact that the strong and broad immune reaction OQR200 induces is reversible, as the body will return to its natural state of tolerance for the auto-antigen after the end of the vaccination schedule, when immunization pressure is released. In addition, this also means that the immune response can be fined-tuned on a patient-by-patient basis to reach the individually desired optimal levels by shortening or increasing the time period between immunizations of the patient."

"This study with OQR200 is the third indication in which our proprietary and highly versatile S-TIR™ technology has shown proof of concept again in the absence of side effects", commented Christof Langer, MBA, CEO of OncoQR. "We are delighted that we could move OQR200 from drawing-board to pre-clinical proof of concept in just eight months. Our next goal is to find adequate partners that will help bring this promising breast cancer vaccine to the clinic as fast as possible." Discussions with potential partners have already started, Langer added.

Over the next months, OncoQR plans to use the versatile S-TIR ™ technology underlying OQR200 to initiate the development of further Adjustable Cancer Immunotherapies against undisclosed clinically validated targets.

About OncoQR's Technology

OQR200, an anti-cancer immunotherapy vaccine, is based on a highly versatile, modular technology platform: S-TIR™ (specific T-cell immune remodeling). The vaccines based on this platform are comprised of two modules, a generic module (the "warhead") and a disease-specific module (the antigen, or "immunogen").

Module 1, the warhead, ensures that the immunogen is directed to the cells that initiate and execute the immune response to the immunogen (plasmacytoid dendritic cells (pDCs), and other antigen presenting cells as well as Module 2-specific B-cells). Module 1 primes pDCs to specifically break the tolerance against the tumor-associated antigen in Module 2, leading to activation of helper T-cells and cytotoxic T-cells which are specific for the immunogen in Module 2 and at the same time Module 1 breaks tolerances in

Module 2 specific B-cells. This tolerance generally keeps the immune system of an individual from turning against itself, including tumor cells. After end of treatment with S-TIR™ vaccines, the "natural" tolerant status of B- and T-cells in the body returns.

In addition, Module 1 strongly boosts the response of the immune system and acts as an intrinsic "adjuvant" for both pDCs and immunogen-specific B-cells.

Module 2, the immunogen, represents the disease- or cancer-specific antigen. In the case of OQR200, the immunogen is Her2/neu, a protein overexpressed on the surface of breast cancer cells.

Both modules are linked by high-affinity connectors.

OncoQR's modular technology is derived from the S-TIR™ technology platform, which was originally developed by S-TARget therapeutics for the treatment of severe allergic diseases. S-TARget's founders recognized the potential for its S-TIR™ technology in cancer immunotherapy and subsequently founded OncoQR ML GmbH.

Before showing proof of concept in triggering a reversible immune response against the breast cancer target Her2/neu in a in a pre-clinical trial, the technology has shown in vivo proof of concept in a severe form of house dust mite-induced allergic asthma as well as in pancreatic cancer. No side effects were observed in either study.

About OncoQR ML
OncoQR ML (OQR) is a biotech start-up that develops novel, adjustable cancer immunotherapies (ACIs) to treat oncologic diseases.

OncoQR's ACIs are based on the unique, proprietary human-specific S-TIR™ technology platform, which enables the patient's immune system to generate a powerful immune response against tumor-associated antigens.

OncoQR's lead candidate, OQR100, targets neutralization of G17 ("little gastrin", a peptide growth factor/hormone produced by gastro-intestinal cancer cells) for treatment of pancreatic and gastric cancers and is in co-development with TYG Oncology Ltd. under the name TYG100.

The Company's second most advanced program, OQR200, is a new candidate against Her2/neu to treat e.g. breast cancer.

In the next two years, several undisclosed new ACIs against clinically validated targets will be developed until at least in vivo proof of concept in Cynomolgus monkeys, after which the company will either seek for partners to bring these new ACIs into the clinic or to out-license the products.

OncoQR was founded by two experienced senior pharma professionals with top-level research & development as well as life-science management backgrounds: Christof Langer, MSc, MBA and Geert C. Mudde, PhD. The privately held company is based in Vienna, Austria.

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