

Joint Event

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&

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### Targeted vaccination and intrinsic adjuvant function: Next generation checkpoint control of tumor specific B and T cells

OncoQR develops therapeutic cancer vaccines based on the S-TIR™ technology platform. Vaccines from this platform are (non-)human specific and able to induce strong polyclonal B cell and T cell immune responses against tumour associated (auto-)antigens. Two prototype vaccines, TYG100 and OQR200 resp., have reached *in vivo* proof of concept in non-human primates (NHP). S-TIR™ vaccines consist of 2 modules, the disease specific module, “immunogen” and the generic module, “warhead”, which directs the vaccines to CD32 on antigen presenting cells, especially pDCs and B cells and optimally activates these cells<sup>1</sup>. The immunogen of TYG100 is G17, a growth factor for pancreatic cancer cells<sup>2</sup> The immunogen of OQR200 targets and contains HER2/neu, overexpressed in ~20% of all breast cancer patients. TYG100 was tested as monotherapy and in combination with gemcitabine. OQR200 were tested as monotherapy and in combination with TYG100 in a cross over study. Four immunizations were given 2-3 weeks apart antibody titres were measured on a weekly basis. Under normal conditions no clinically relevant immune responses can be induced against autoantigens. However, in combination with the warhead, thanks to intrinsic check point control, all treated NHP (n=44) generated very strong and rapid dose dependent auto-antigen specific antibody (IgG and IgA) and T cell responses. Two weeks after the 2nd immunization all animals were seroconverted. Despite very high antibody titres no side effects were observed. Animals, sequentially treated with OQR200, TYG100 and OQR200 showed that the induced responses were 100% vaccine specific, resulting in animals with very high antibody titres against 2 different autoantigens at the same time. All responses are reversible and can be boosted. S-TIR™ vaccines do not induce autoimmune disease and are tumour specific while optimally mobilizing both arms of the immune system. The immune response can be fine-tuned on a patient to patient basis.

### Biography

Geert C Mudde received a PhD in Immunology from the University of Utrecht in 1985 and started his international professional career at the Swiss Institute for Asthma and Allergy Research in Davos in 1989. In 1992, he joined the Pharmaceutical/Biotech Industry, where he held several Senior Management positions at the Novartis Research Institute in Vienna, Austria, the Parke Davis Research Institute in Fresnes, France, Ingenium Pharmaceuticals, Martinsried, Germany, and at Igeneon AG, Vienna, Austria. Finally, in 2006, while joining Baxter BioScience in Vienna as Interim Manager, he co-founded the biotech company F-star Biotechnology. In 2009, together with Christof Langer, he started to develop the S-TIR™ technology platform for human specific therapeutic vaccines which led to the foundation of S-TARget therapeutics GmbH in 2010, and the spin-off companies OncoQR ML GmbH (2013) and TYG oncology Ltd. (2013). He serves as CSO and Managing Director for OncoQR ML.

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