Merus Selects Clinical Candidate for the Treatment of Acute Myeloid Leukemia (AML)

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MCLA-117 is a human, full-length IgG bispecific antibody, which activates the patient's own immune system by simultaneously binding to the CLEC12A molecule expressed by AML tumor cells and the CD3 molecule expressed by T cells. MCLA-117-mediated co-engagement of CLEC12A and CD3 results in the potent killing of cancerous AML cells and their malignant precursors. Merus intends to start phase I clinical trials with MCLA-117 in 2014.

The antibody is based on Merus' Biclonics™ ENGAGE platform. Human bispecific antibodies from this platform can be manufactured and administered like conventional, full-length IgG molecules, thereby providing for high yield, good stability and a long serum half life. In addition, bispecific antibodies from the Biclonics™ ENGAGE platform have a modified constant region to abrogate unwanted clinical cytokine release.

"We are excited about this clinical candidate because MCLA-117 selectively targets the burden of the leukemia load as well as the leukemia-initiating stem cells. It is designed to provide a therapy that more efficiently eradicates the cancer cells and prevents relapse," said Setareh van Driel Shamsili, Chief Medical Officer of Merus. "AML is a disease with limited treatment options, so there is a significant need for targeted therapies with potent mechanisms of action that attack the tumor at its roots."

Prof. Gert Ossenkoppele from the department of hematology at the Free University Medical Centre in Amsterdam, The Netherlands, added: "CLEC12A has been identified by my lab as a leukemic stem cell-specific antigen. In vitro data with MCLA-117 have confirmed killing of leukemic cells by targeting this molecule. Therefore, the clinical development of a T cell redirecting treatment by a bispecific antibody against the CLEC12A target could offer great opportunities and be of extreme importance to potentially cure this disease."

Prof. Ossenkoppele will be the lead investigator of the first MCLA-117 Phase I study.