Merus Presents Preclinical Data on its Novel Bispecific Antibody MCLA-117 at EHA 2013

June 17, 2013 2:19 PM ET

Posted on 17 June, 2013

The compound is being developed for the treatment of acute myeloid leukemia (AML), a disease with very poor long-term prognosis.

MCLA-117 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. CLEC12A is a myeloid differentiation antigen that is expressed on 90-95% of de novo and relapsed AML cases and is selectively expressed on leukemic stem cells.

Co-incubation of patients´ resting T cells and AML tumor cells via MCLA-117 resulted in efficient tumor cell lysis, i.e. the potent killing of cancerous AML cells. By introducing mutations in the heavy chain constant region CH2 domain, Merus was able to develop an antibody that in peripheral blood mononuclear cell (PBMC) assays prevented the release of non-specific, pro-inflammatory cytokines, while retaining its full capacity to induce T cell-mediated elimination of AML tumor cells.

The MCLA-117 antibody is based on Merus' proprietary 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.

"The data we have generated with MCLA-117 so far clearly show that the compound can efficiently eradicate AML tumor cells. Most importantly, the compound can also destroy tumor-inducing cancer stem cells which are the main cause for relapse," said Lex Bakker, Chief Development Officer of Merus. "In addition, we have designed MCLA-117 to prevent undesired side-effects triggered by cytokine release, which makes it a safe candidate for potent, targeted cancer therapy."

"Based on the favorable research and preclinical data, we are looking forward to moving MCLA-117 into clinical development next year," added Ton Logtenberg, Chief Executive Officer of Merus. "As MCLA-117 was selected from large panels of common light chain human monoclonal antibodies that were screened for both functional and developmental characteristics, we are convinced that we have identified the best clinical candidate for AML."