NKT Therapeutics’ Identifies Novel anti-iNKT Antibodies for Depleting or Activating iNKT Cells

- Preclinical Research with Novel, Highly Specific Mouse anti-iNKT Antibodies Presented at American Society of Hematology Meeting
- Anti-iNKT Antibodies May Offer Novel Approach to Modulating Inflammatory Cascade for Treatment of inflammatory Diseases, Cancer and Other Conditions

WALTHAM, MA (December 9, 2013): NKT Therapeutics (NKTT) today presented research results with NKT14 and NKT14m, monoclonal antibodies designed to deplete (NKT14) or activate (NKT14m) murine iNKT cells. The results from these studies demonstrate that NKT14 can produce a complete and long lasting depletion of both peripheral blood and tissue iNKT cells in multiple mouse strains while NKT14m can produce iNKT cell activation in peripheral and tissue iNKT cells. The research results were presented today in a poster session at the 55th American Society of Hematology (ASH) meeting, held in New Orleans, LA.

Numerous publications have reported that iNKT cells generate an inflammatory cascade that, if down modulated, can have therapeutic benefit in a variety of inflammatory diseases such as sickle cell disease or asthma. This same cascade, if activated, can have benefit in treating cancer, infectious disease and some autoimmune diseases.

“Until now, researchers have studied the role of iNKT cells in immune regulation using iNKT cell-deficient inbred mouse strains or with the iNKT cell-activating agent alpha-Galactosyl-Ceramide,” said Felix Scheuplein, Ph.D., Senior Laboratory Head Preclinical Research at NKT Therapeutics. “These tools have weaknesses and limitations, including the lack of cell specificity in the cell-deficient mouse models and the poor pharmacologic profile of activating glycolipids.”

The NKTT scientists showed that they have generated an effective depleting antibody with NKT4 (an IgG2a) as well as a non-depleting version (NKT14m). They accomplished this by manipulating each antibody’s FC-function through mutations. Both of the generated antibodies are highly specific for mouse iNKT cells and recognize all alpha Galactosyl-Ceramide loaded CD1d tetramer binding cells in multiple inbred mouse strains tested (C57Bl/6, BALB/c, NOD, DBA, C3H, NZW, NZW/NZB F1, AKR, SJL and A/J). NKT14 rapidly and very specifically depletes iNKT cells in vivo. NKT14m can activate iNKT cells in vivo and induce the release of interferon gamma.
“These novel mouse invariant TCR-specific monoclonal antibodies will allow us to better understand the role of iNKT cells in health and disease, in order to inform clinical trials focused on iNKT cell manipulation for the treatment of disease,” said Robert Schaub, Ph.D., Senior Vice President and Chief Scientific Officer of NKT Therapeutics. “We are looking forward to expanding our pre-clinical pharmacology studies in the coming year.”

About NKT Therapeutics

NKT Therapeutics, Inc. is a privately held biotechnology company focused on developing therapeutics based on unique immune cells called natural killer T (NKT) cells. The company’s mission is to use its expertise to develop a pipeline of first-in-class NKT-based therapeutics to treat sickle cell disease, autoimmune and inflammatory diseases, and cancer. For more information on the company, please visit http://www.nktrx.com.

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