



THERAPEUTIC, TARGET

Chimeric and Humanized Anti-CD45 Antibody for Therapeutic Applications

Brief Technology Description

Humanized antibody offers reduced toxicity and anti-mouse antibody immunization

BUSINESS OPPORTUNITY

Exclusive licence
Non-exclusive license
Sponsored research

TECHNOLOGY TYPE

Therapeutic
Target
Immuno Oncology
Hybridoma/Antibody

STAGE OF DEVELOPMENT

Preclinical *in vivo*

INVESTIGATOR OVERVIEW

Brenda M. Sandmaier, MD
- Professor, Clinical Research Division

Roland B. Walter, MD, PhD, MS
- Professor, Clinical Research Division

PATENT INFORMATION

Provisional patent application

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Technology Overview

CD45 is a transmembrane cell surface glycoprotein expressed on almost all hematopoietic cells and absent on non-hematopoietic cells. CD45 is an abundantly expressed target in most hematologic malignancies, including 85-90% of cases of acute myeloid leukemia (AML) and acute lymphoblastic leukemia (ALL). Due to the stability of CD45 on the cell surface, it is an attractive candidate for antigen-specific immunotherapy and other targeted oncology approaches. This humanized anti-CD45 antibody has the potential to decrease infusion toxicities in some patients. Moreover, the humanized antibody limits anti-mouse antibody (HAMA) immunization leaving additional treatment options open for patients. Drs. Brenda Sandmaier and Roland Walter at Fred Hutch have developed chimeric and humanized forms of CD45 antibodies. Initial *in vivo* CD45+ cell targeting biodistribution studies show enrichment of radiolabeled antibody in immunodeficient mice xenotransplanted with human CD45+ leukemia cells.

Applications

- Hematologic malignancies, including AML and ALL
- Antibody can be used across modalities: antibody-drug conjugates, radioimmunotherapy, chimeric antigen receptors
- Conditioning regimens for hematopoietic stem cell transplant

Potential Advantages

- Toxicity and HAMA immunization seen in prior iteration murine antibody is reduced or eliminated
- Adaptable across modalities & available in multimerized forms
- CD45 is a clinically validated target

Market Overview: The global hematologic malignancies market size was valued at USD 35.6 billion in the year 2016 with a CAGR of 10.48%. Worldwide, more than 300,000 people are diagnosed with leukemia each year.