

Chimeric and Humanized Anti-CD45 Antibody for Therapeutic Applications

Business Opportunity

Exclusive license
Non-exclusive license
Sponsored research

Technology Type

Radioimmunotherapy
Monoclonal Antibody

State of Development

Preclinical in vivo

Patent Information

PCT application filed

Investigator

Brenda Sandmaier, MD
Clinical Research Division
Roland Walter, MD, PhD, MS
Jose Carreras/E. Donnall
Thomas Endowed Chair
for Cancer Research

Tech ID

22-168

Contact

partnering@fredhutch.org

Brief Description

Humanized antibody offers reduced toxicity and anti-mouse antibody immunization

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 transplants

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.