



RADIOIMMUNOTHERAPY

Pretargeted Radioimmunotherapy for the Treatment of Multiple Myeloma & B Cell Malignancies

Brief Description of Technology

Anti-CD38 and anti-BCMA bispecific antibodies deliver targeted radioimmunotherapy and avoid systemic toxicity.

BUSINESS OPPORTUNITY

Exclusive license
Sponsored research

TECHNOLOGY TYPE

Therapeutic
Hybridoma/Antibody
Immuno-Oncology

STAGE OF DEVELOPMENT

Preclinical *in vivo*

PATENT INFORMATION

Patent pending

INVESTIGATOR

Damian Green, MD
Clinical Research Division

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Tech ID: 18-038
partnering@fredhutch.org
206-667-4304

Technology Overview

Pretargeted radioimmunotherapy (PRIT) differs from conventional RIT in that a nonradioactive bispecific targeting antibody is first administered allowing for localization in tumor sites. Then a low molecular weight radioactive moiety [such as Y^{90}] is added facilitating rapid tumor penetration, capture, and retention of Y^{90} by the pretargeted antibody. The rapid clearance of unbound radioactive molecules greatly decreases radiation absorption by healthy tissues. Multiple myeloma (MM) is an excellent candidate for PRIT due to the high degree of target expression [CD38 or BCMA] compared to normal myeloid and lymphoid cells. The Green Lab has constructed bispecific antibodies which target either CD38 or BCMA and have demonstrated their superiority over prior PRIT approaches. In preclinical studies, the CD38 PRIT clinical candidate cured >75% of mice vs. 5% cured in the control group and showed similarly promising results in non-Hodgkin lymphoma.

Applications

- Therapy for multiple myeloma, non-Hodgkin lymphoma, other B cell malignancies, and other cancers expressing CD38 or BCMA, such as NK/T-cell lymphoma

Advantages

- Targeted delivery of radiation to tumor, avoiding systemic radiation exposure
- Less toxic conditioning regimen as compared to autologous stem cell transplant
- Reduction of immunogenicity & elimination of endogenous biotin blocking
- High efficacy and potentially curative

Market Overview

In the US, there are more than 120,000 people are living with MM, with 30,000 new cases diagnosed each year. Globally, the market for MM therapy was \$7.5 billion in 2015 and is expected to increase to \$37.5 billion by 2024 due to an increased number of available therapies and an expected high adoption rate.