

Antisense Oligonucleotide Therapy for B Cell Mediated Cancers

Tech ID: 29215 / UC Case 2014-686-0

ABSTRACT

Researchers at the University of California, Davis have developed a targeted therapy using an antisense oligonucleotide (ASO) to treat precursor B cell (pre-B) acute lymphoblastic leukemia (ALL).

FULL DESCRIPTION

Antisense compounds have been used to modulate protein expression by binding to a target mRNA encoding the protein. Application of oligonucleotide-based technologies in cancer is promising but has had limited success *in vivo* due to the ineffective cell-targeting. Better targeting is needed to improve therapeutic efficacy of oligonucleotide-based cancer therapies *in vivo*.

Researchers at the University of California, Davis have developed a precursor B cell (pre-B) acute lymphoblastic leukemia (ALL) cell targeting compound by directly conjugating an antisense oligonucleotide with an anti-CD22 antibody. This method specifically targets a transcription factor identified to be involved in pre-B ALL cell survival. *In-vivo* therapeutic efficacy has been successfully tested in pre-B ALL xenograft mouse models and Reh cell line, as well as patient-derived leukemia cells. Utilizing this method also provides new opportunities to treat and target B cells associated with leukemia, lymphoma and autoimmune disorders.

APPLICATIONS

- Leukemia
- B cell mediated cancers, diseases and disorders

FEATURES/BENEFITS

- Targets leukemia cells
- Conjugated for antisense oligonucleotide
- Targets precursor B cells
- Monoclonal antibody

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,714,288	07/25/2017	2014-686

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OTHER INFORMATION

KEYWORDS

anti-CD22 monoclonal

antibody, antisense

oligonucleotide, targeted

therapy, precursor B cell

acute lymphoblastic

leukemia, protein

inhibition, pre-B ALL

CATEGORIZED AS

- **Medical**
 - Disease: Cancer
 - New Chemical Entities, Drug Leads
 - Other
 - Research Tools
 - Therapeutics
- **Research Tools**
 - Other

RELATED CASES

2014-686-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Bispecific and Trispecific T-cell Engager Antibodies
- Methods for Selecting and Identifying Cancer Stem Cells

- ▶ [Method for Efficient Loading of Bioactives into Lipid Membrane Microcapsules](#)
- ▶ [Fermented Wheat Germ Extract And Its Purified Low Molecular Weights Proteins For Treatment Of Lung Cancer](#)
- ▶ [Milk Fat Globules As A Universal Delivery System](#)
- ▶ [Non-Living Edible Surrogates For Process Validation Food Processing Plants](#)