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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
- ▶ In-situ Production of Anti-inflammatory Lipids for Treating Inflammation
- ▶ 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

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