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ALBUMIN-BASED NANOMEDICINES

BIOTECHNOLOGY

Albumin-based drug to induce apoptosis for treatment of blood malignancies, rheumatoid arthritis, and autoimmune diseases.

TECHNOLOGY TYPE

Proteomics

STAGE OF DEVELOPMENT

Ongoing *in vitro* and *in vivo* experiments to show efficacy compared to current polymers.

IP PROTECTION

Nationalized PCT Pending in the United States, Japan, and Europe

Compositions and Methods for Using Albumin-Based Nanomedicines
WO2017218813A1

LEARN MORE

Reference Number: U-6028

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TECHNOLOGY SUMMARY

Over 70,000 new cases of Non-Hodgkin's Lymphoma (NHL) were diagnosed in 2015, while nearly 20,000 people died from the disease. Most NHL cases derive from B cell lymphocytes and are treated with rituximab and chemotherapy. Almost 40 percent of patients, however, develop resistance to these therapies.

Research indicates the proposed albumin-based nanoconjugate can trigger direct and specific apoptosis of B-cell lymphomas without the help of effector cells. Hybridization of two complementary morpholino oligonucleotides or complementary coiled-coil forming peptides at B cell surface mediates crosslinking of receptors to initiate apoptosis. One oligonucleotide (MORF1) or coiled-coil forming peptide (CCE) is bound to an antibody fragment recognized by the CD20 receptor (nanoconjugate 1); the complementary oligonucleotide (MORF2) or oligonucleotide (CCK) is bound in multiple copies to human albumin.

FEATURES AND BENEFITS

- Increases intravascular half-life of the biocompatible nanoconjugate.
- Can be scalably synthesized in GMP environment.
- Alleviates the need for low molecular weight cytotoxic drugs.

RECENT PUBLICATIONS

Wu, K., Yang, J., Liu, J., & Kopecek, J. (2012). Coiled-coil based drug-free macromolecular therapeutics: In vivo efficacy. *Journal of Controlled Release*. 157:126-131. doi: 10.1016/j.jconrel.2011.08.002

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