Library of Glycosylated Chlorambucil Analogs for Cancer Treatment

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WARF: P110076US02

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a set of glycosylated chlorambucil molecules that are potentially useful as anti-tumor or anti-metastatic agents.

Overview

Many of the compounds used in drug discovery by pharmaceutical companies consist of a central core structure (aglycon) and various sugar (glycosyl) attachments. Because the sugar moieties of many of these compounds define their biological activities, altering the carbohydrate ligands can lead to valuable new pharmaceuticals. A UW–Madison researcher previously developed a glycorandomization method for rapidly generating a diverse library of novel glycosylated compounds for use in drug discovery (see WARF reference number P04020US).

Chlorambucil currently is used as a leukemia treatment. This compound, which was first synthesized more than 50 years ago, acts by prohibiting DNA replication and transcription, ultimately killing cells. However, it is not specific to tumor cells, resulting in adverse side effects such as decreasing bone marrow function.

The Invention

UW–Madison researchers have used glycorandomization to develop a set of 63 glycosylated chlorambucil molecules. Several of these novel compounds are efficacious against various types of cancer cells. They could be developed into cancer therapeutics.

Applications

- Cancer treatment

Key Benefits

- Provides novel compounds for use as cancer therapeutics
- Some of the analogs show greater anti-cancer activity than the parent chlorambucil molecule.

Additional Information

Related Technologies

- See WARF reference number P04020US for more information about glycorandomization.

Publications

- Goff R.D. and Thorson J.S. 2010. Assessment of Chemoselective Neoglycosylation Methods Using Chlorambucil as a Model. J. Med. Chem. 53, 8129-8139.

Tech Fields

- Drug Discovery & Development : Compound libraries
- Therapeutics & Vaccines : Oncology

For current licensing status, please contact Rafael Diaz at rdiaz@warf.org or 608-960-9847