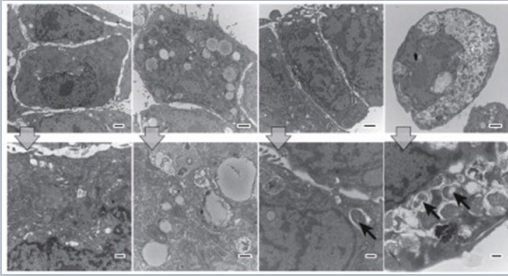


Media Control Ceramide Liposomes Vinblastine Combination



TEM images of cancer cells showing C6-ceramide and vinblastine combination treatment results in a significant increase in autophagic vacuoles (black arrows) over treatments alone or control.

Synergistic Combination Agent for Cancer Therapy

Inventor

Stephan Stern, Ph.D., DABT

Senior Principal Scientist, NCL, FNLCR

STATE OF DEVELOPMENT

- Evaluated in human hepatocarcinoma, human colon cancer models
- Conducted dose range-finding toxicology study in rodents
- Additional in vivo studies with other cancer types and early stage preclinical toxicology planned

APPLICATIONS

Treatment for cancers such as breast, testicular, head and neck, Hodgkin's lymphoma, and non-small cell lung

INTELLECTUAL PROPERTY

U.S. Patent Filed: 61/451,925

Foreign: PCT/US2012/028567

DESIRED PARTNERSHIP

Licensing,
Further Development

LICENSING CONTACT

John D. Hewes, PhD
John.Hewes@nih.gov
(240) 276-5515

Problem

In using cancer therapeutics to decrease cancer cell growth, toxicity increases proportionally to the treatment given.

Solution

This is a novel combination chemotherapy that is shown to have synergistic effects on cytotoxicity to cancer cells in vitro, and to cause a substantial decrease in tumor growth in preclinical tumor models in vivo. The combination therapy using these agents may enhance the response rate of different cancers to these drugs and may significantly reduce side effects by allowing a lower therapeutic dose to be administered.

Advantages

- Combination of ceramide and vinca alkaloids decreases cancer cell growth without increasing the toxicity profile compared to the individual drugs.
- The vinca alkaloid-ceramide combination can be administered at lower doses than vinca alkaloids alone with comparable efficacy and may allow for more frequent dosing (metronomic dosing).
- The novel mechanism of action of this combination appears to be selective to cancer cells.