



Novel Anticancer Pro-drugs Activated by Hydrogen Peroxide

OTT1277

Applications

Anticancer drugs.

Target Problems

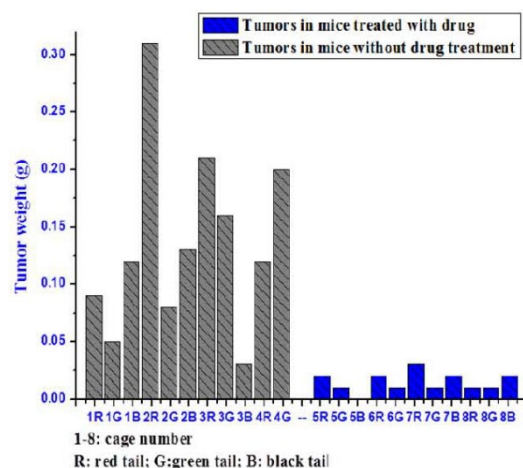
Many cancer treatments can damage healthy cells in addition to cancer cells, leading to unwanted toxicity and side effects. There is a need for therapies that are activated specifically within tumors and can selectively target cancer cells while improving drug performance.

Solution

This technology consists of pro-drug compounds that remain inactive until they encounter elevated levels of hydrogen peroxide within the tumor microenvironment. Once activated, the compounds release multiple cancer-fighting effectors, including agents designed to cause DNA damage and induce cancer cell death. The approach offers a targeted strategy for delivering anticancer activity while minimizing toxicity outside the tumor.

Key Benefits

- Designed to be toxic primarily to cancer cells.
- Activated specifically within the tumor microenvironment.
- Can be adapted to a wide variety of existing cancer drugs.
- Contains multiple effectors for combating cancer cells.
- May improve solubility, chemical stability, absorption, blood-brain barrier permeability, and resistance to pre-systemic metabolism.
- Demonstrated cancer cell growth inhibition in laboratory testing.
- Showed tumor size reduction in a breast cancer mouse xenograft study.



About this Technology

The technology uses pro-drug compounds containing chemical triggers that respond to elevated hydrogen peroxide levels found deep within tumors. These triggers activate the compounds only within the tumor microenvironment, releasing potent anticancer effectors. Some effectors are designed to damage DNA within cancer cells, resulting in growth inhibition and cell death.

Stage of Development

Several compounds have undergone initial testing and demonstrated potential for inhibiting the growth of or killing leukemia, non-small cell lung cancer, and breast cancer cells.

Partnering Opportunity

We are seeking partners with pharmaceutical companies, oncology drug developers, biotechnology companies, and organizations focused on anticancer therapeutics.

Intellectual Property (IP)

Issued U.S. Patent [8962670](#). Protected and managed by the UWM Research Foundation.

Lead Inventor

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