Small Molecule, Anti-Cancer Therapeutic and Companion Diagnostic (05056 / 11062)

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Technology description

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University of Louisville Investigators, Dr. Paula J. Bates, Dr. Gerald B. Hammond and Dr. Bo Xu, have discovered a novel fluorine-containing, small molecule compound that is easily synthesized and has potent antiproliferative activity against cancer cells in culture. The novel mechanism of inhibiting DNA methyltransferase I (DNMT1) activity of the lead compound rivals any other inhibitors reported to date. The compound was screened against the National Cancer Institute's 60-cell line panel, and it exhibited a highly selective cytotoxic activity against several cancer cell types. Potency levels have been observed in the nanogram range, and selectivity values are considered comparable to halomon, a naturally derived cancer therapeutic representing a high standard in anti-cancer therapeutics. In addition, statistically significant tumor reduction resulted following administration of the drug in lung and colon cancer xenograft models.

Markets Addressed

Standard chemotherapy agents result in significant side effects and are rarely curative in cases of advanced disease. Therefore, there is a pressing need for new anticancer agents that are easy to manufacture and produce fewer side effects in patients. The University of Louisville is seeking a business partner interested in commercializing a novel new chemotherapeutic compound that demonstrates anti-cancer activity against specific cancer cells. This compound has significant potential as a cancer therapeutic, possibly able to be administered in combination with other therapeutic agents for treatment of cancer. Additionally this compound has potential for treating a pathological condition or cancer in animals. Furthermore, a companion biomarker has been identified for diagnostic and drug monitoring.

Application area

All commercial fields.

Advantages

These novel chemotherapeutic compounds demonstrate strong anti-cancer activity against selective cancer cells.
Inhibitory effect of the lead compound on DNMT1 activity rivals any other inhibitors reported to date.
Compounds have potent antiproliferative activity, especially in colon cancer cell lines.
This Technology is available for licensing, further development, or industrial partnering

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