

## NOVEL ANALOGUES OF THE NATURAL PRODUCT SCHWEINFURTHIN WITH SPECIFICITY FOR TUMORS AND OTHER DISEASE MANIFESTATIONS ASSOCIATED WITH NEUROFIBROMATOSIS TYPE 1

### SUMMARY

The Genetic Modifiers of Tumorigenesis Section at the National Cancer Institute-Frederick is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize Schweinfurthins for the treatment of Neurofibromatosis type 1.

### REFERENCE NUMBER

E-183-2009

### PRODUCT TYPE

- Therapeutics

### KEYWORDS

- Cancer
- Schweinfurthin
- Natural Products
- Neurofibromatosis type 1 (NF1)

### COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

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### DESCRIPTION OF TECHNOLOGY

There remains a significant unmet need for therapies to treat neurofibromatosis type 1 and malignant tumors carrying NF1 mutations, including tumors of the central and peripheral nervous systems.

Researchers at the [National Cancer Institute \("NCI"\)-Frederick](#) investigating genetic influences on cancer susceptibility of the nervous system have synthesized novel analogues of Schweinfurthin, a natural compound first isolated from the tropical African plant *Macaranga schweinfurthii*, to which glioma and leukemia cell lines show significant sensitivity. The Schweinfurthin analogues also have inhibitory activity against mouse and human NF1 cancer cell lines. The analogues have a novel mode of

action that appears to involve regulation of cytoskeletal reorganization.

These inhibitors are likely to be accepted in the marketplace because their potent, selective activity and unique specificity in mode of action gives them a distinct advantage over the mechanisms of other existing therapies.

#### **POTENTIAL COMMERCIAL APPLICATIONS**

- Therapies for tumors associated with NF1 (including brain and peripheral nervous system tumors)
- Therapies for leukemia
- Therapies for NF1 and associated conditions

#### **COMPETITIVE ADVANTAGES**

- Utilizes proven small-molecule technology
- Specificity of mode of action may reduce potential side-effects
- Novel mode of action may limit market competition

#### **DEVELOPMENT STAGE**

- Discovery (Lead Identification)

#### **PATENT STATUS**

- **U.S. Issued:** US 8,686,016
- **Foreign Filed:** Canadian Patent Application No. 2,760,547, filed October 28, 2011

#### **THERAPEUTIC AREA**

- Cancer/Neoplasm
- Central Nervous System, Mental and Behavioral, Pain