



○ Innovative Science

○ Breakthrough Therapies

○ Clinical Advances

Tetrafluorinated thalidomide analogs with potent anti-angiogenic and anti-cancer properties



TEDCO/NIH/NCI Technology Showcase

William D. Figg

September 25, 2007



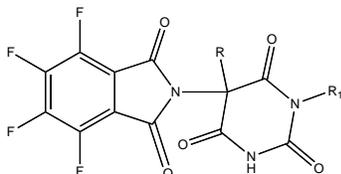
Technology



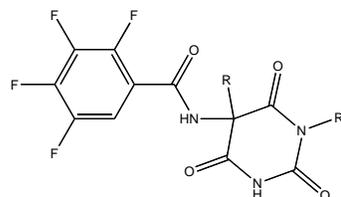
- Thalidomide (N-alpha-phthalimidoglutarimide), a glutamic acid derivative, is being increasingly used in the clinical management of a wide spectrum of immunologically mediated and infectious diseases, and multiple types of cancers
- Thalidomide has anti-cancer activity via a wide range of mechanisms:
 - **Immunomodulatory and anti-inflammatory pathways**
 - **Angiogenesis inhibition**
- This promising activity has led to the synthesis of many structural analogs in an effort to identify compounds with improved efficacy and decreased toxicity

Technology

- Two new classes of compounds have been synthesized and tested:



Tetrafluorinated thalidomide analogs
 9 compounds



Tetrafluorobenzamides
 9 compounds

Technology Applications

Initial testing of these compounds has shown:

- excellent inhibition of angiogenesis in an *ex vivo* model
- *in vivo* anticancer activity against prostate cancer cell lines
- activity is superior to first generation tetrafluorinated analogs

Planned research includes:

- identification of lead compounds
- preliminary toxicity testing in mice to establish the MTD
- mouse xenograft studies of multiple tumor types for efficacy

Commercial Applications

- **Cancer Therapy**
 - Administered as a single agent in:
 - Solid tumors
 - Hematological malignancies
 - Administered in combination with other anticancer agents

Collaboration Opportunities

- **Collaboration is sought to aid in preclinical development working towards a Phase I clinical trial in solid tumors**
 - Extensive toxicity testing
 - Additional in vivo testing for efficacy
 - Preclinical pharmacokinetics in mice and a non-rodent species, including drug formulation

Contact Information

For further information contact:

William D. Figg, Pharm.D.
Center for Cancer Research
National Cancer Institute
9000 Rockville Pike, 10/5A01
Bethesda, MD 20892
Tel: (301) 402-3623
wdfigg@helix.nih.gov