

Runner-up Technology
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Tetrahalogenated Anti-genetic Inhibitors

A promising anti-angiogenic molecule is thalidomide. Thalidomide has been approved as an anti-cancer agent and for other use in Europe and Australia though its use as a drug has been limited by its effect as a teratogen, necessitating the development of new thalidomide analogs with improved efficacy and reduced toxicity.

This technology describes synthesis of several tetrahalogenated thalidomide derivatives such as tetrafluorobenzamides that are potentially more anti-angiogenic than thalidomide. More specifically, two series of analogs based on two major common pharmacophores have been synthesized. One preserves the thalidomide common structure and the other contains a different common structure (tetrafluorobenzamides). Several analogs from both series have shown significant anti-angiogenic properties in *in vitro* assays. This technology has therapeutic potential for a broad spectrum of cancer related diseases alone, or in combination with existing therapies.

Data from both experimental studies have demonstrated the effectiveness of the current technology.

Anti-angiogenic therapy shows promise of treating cancer without its cytotoxic side-effects that are associated with chemotherapy. This new approach will improve living conditions of millions suffering from cancer. Thalidomide is associated with severe side effects causing birth defects, and is only sold in United States for the treatment of Leprosy with tight FDA control on its marketing. The newly developed derivatives of thalidomide shows potential of reduced toxicity and improved efficacy.

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