

Anti-Tumor and Anti-Angiogenic Growth Factor Binding Molecules

Researchers at the University of South Florida have synthesized a family of molecules capable of binding and inhibiting growth factors. These molecules can be used in the treatment of diseases associated with abnormal cellular proliferation such as tumor growth or restenosis.

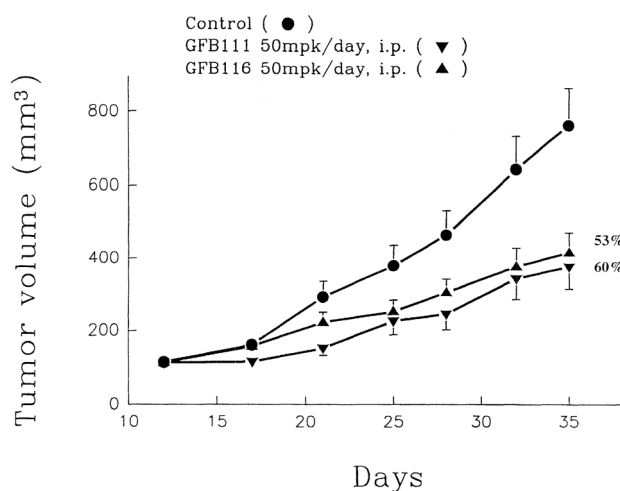
Growth factors are naturally-occurring signaling proteins that regulate many cellular processes. Several families of growth factors play a significant role in blood vessel formation, also known as angiogenesis. Furthermore, these growth factors are important modulators of cell proliferation and smooth muscle cell growth. However, abnormal cells utilize these growth factors improperly. This allows abnormal cells, such as tumor cells, to grow in and uncontrolled fashion. Inhibition of angiogenesis in tumor cells is a prominent treatment goal to halt the unwanted cell growth and eventually terminate the cells. Inhibition of angiogenesis in diseased smooth muscle cells is also crucial to stop the occurrence of restenosis.

USF researchers have synthesized molecules that bind growth factors through peptide loops attached to non-peptide organic scaffolds. These growth factor binding (GFB) molecules then disrupt protein-to-protein interactions over large surface areas. These molecules have been shown to effectively inhibit angiogenesis. The aforementioned novel compounds are applicable for the treatment of a variety of tumors and additional vascular diseases associated with increased cell proliferation such as restenosis.

ADVANTAGES:

- Effective inhibition of angiogenesis
- High stability
- Extended half-life
- Disruption of protein-protein interactions

A Novel Family of Molecules Capable of Binding and Inhibiting Growth Factors



Human Tumor Growth is Inhibited in Mice by GFB-116 and GFB-111

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US Patent #s: [8,361,970](#) / [7,632,805](#) / [7,157,419](#)