



# BETH ISRAEL DEACONESS MEDICAL CENTER

## Technology Ventures Office



### BIDMC 402: Thrombospondin Peptides for Cancer Therapy

#### **Background:**

Thrombospondin 1 (TSP-1) is a potent inhibitor of angiogenesis found in blood which is secreted by platelets and endothelial cells. Thus, TSP-1 is a logical candidate as a cancer therapeutic not only because it modulates endothelial cell growth, cell attachment, migration and proliferation but also for its potential ease of delivery intravenously.

This technology describes the use of a recombinant version of the second type 1 repeat of TSP-1 to inhibit tumor growth. This recombinant construct has been designed to include all of the sequences of TSP-1 that have anti-tumor activity.

#### **Stage of Development:**

This protein has been shown to be a potent inhibitor of experimental tumor growth in mice.

#### **Patent / Licensing Status:**

Issued U.S. Patent #7,223,731 B2  
Flexible licensing options available

#### **Related Publication:**

Yee et al. (2004) *Am J Pathol*. Expression of the type-1 repeats of thrombospondin-1 inhibits tumor growth through activation of transforming growth factor-beta.

Zhang and Lawler (2007) *Microvasc. Res*. Thrombospondin-based Antiangiogenic Therapy

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#### **Market / Commercialization:**

- ✓ *The TSP repeat molecules are drug candidates for treatment of cancer, psoriasis, diabetic retinopathy, arthritis & any disease state where angiogenesis plays a role.*
- ✓ *Good candidates for combination therapies or to prevent rebound from withdrawal of VEGF inhibitors.*

#### **Competitive Advantages:**

- The engineered, recombinant peptides
  - *have only the anti-tumor activities of native thrombospondin*
  - *are stable in circulation*
  - *do not require any therapeutic agent to enter tumor cells or cross the blood brain barrier*
  - *are effective in treating multiple different types of tumors*
- Anti-angiogenic therapy has little toxicity.

*Since these peptides are derived from naturally occurring proteins, they are less likely to display side effects.*