



## TECHNOLOGY

# Natural TFD-Containing Compound Prevents Tumorigenesis

## OVERVIEW

In 2011, prostate cancer was the second leading cause of cancer deaths in men and accounted for approximately a third of all new cases of cancer in the United States. Hormone therapy is the treatment of choice in cases where the primary tumor has metastasized or has advanced to a high-grade, high-risk disease. However, alternative strategies for prevention and treatment of prostate cancer are urgently needed as the majority, if not all patients, develop androgen-resistance and current therapies provide only moderate increase in survival. One alternative strategy may come from the disruption of the tumor-endothelial interaction that occurs when tumor cells metastasize to distant sites. UMB researchers have ascertained a compound, TFD100, from cod fish that possess the ability to inhibit tumor-endothelial interactions which effectively prevent tumor cell reattachment. In addition, TFD100 has shown anti-angiogenic properties to reduce blood vessel development and the ability to inhibit the destruction of lymphocytes caused by proteins secreted by certain tumors making TFD100 a possible therapeutic utility for the prevention of prostate cancer progression and metastasis.

## APPLICATIONS

The majority of cancers, if caught in the early stages of development, have a survival rate that is significantly higher (e.g. colon 85%, rectum 90%) than if discovered in the later stages of metastasis (e.g. colon 14%, rectum 24%). Early detection and the prevention of cancer metastasis is an ideal method to elevate survival rates for the majority of cancers. The 5 year survival rate for prostate cancer, if detected in the local or regional stages is 100% with relative survival rates at 10- and 15- years at 98% and 91% respectively. TFD100 not only reduces reattachment of circulating tumor cells but reduces the source of nutrients for tumors as well as buffering the body's natural ability to fight disease. Due to the multifunctional properties of TFD100, this compound is applicable to not only prevent metastasis but in the treatment of already existing tumors that have developed resistance to current chemotherapeutic treatments.

## ADVANTAGES

TFD100 is applicable to the majority of cancers to prevent metastasis to secondary sites. TFD100 is applicable for the treatment of tumors that have developed drug-resistance. Natural sources are available locally (or in local grocery stores) for the extraction of compound TFD100.

## STAGE OF DEVELOPMENT

In vitro studies have been conducted in prostate cancer cells and endothelial cells that demonstrate the ability of TFD100 to inhibit cancer-endothelial interactions, inhibit angiogenesis, and inhibit T-cell apoptosis. Moreover, in vivo studies demonstrate the efficacy of the TFD100 to inhibit prostate cancer metastasis in mice.

## R&D REQUIRED

Additional validation required.

## LICENSING POTENTIAL

UM seeks to develop and commercialize by an exclusive or non-exclusive license agreement and/or sponsored research with a company active in the area.

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, Baltimore

### PATENT STATUS

US Patent No. 9,180,175, issued Nov 10, 2015

### LICENSE STATUS

Available for non-exclusive license

### CATEGORIES

- Therapeutics

### INVESTIGATOR(S)

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### EXTERNAL RESOURCES

- [Evidence of heavy methylation in the galectin 3 promoter in early stages of prostate adenocarcinoma...](#)
- [A novel clinically relevant animal model for studying galectin-3 and its ligands during colon carcinogenesis.](#)
- [Galectin-3 regulates mitochondrial stability and antiapoptotic function in response to anticancer drug in prostate cancer.](#)
- [Intravascular origin of metastasis from the proliferation of endothelium-attached tumor cells: a new model for metastasis.](#)

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