

**Technology**

Method of using NDF- β for neuroblastoma therapy

Inventor

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Key Features

- Biological factor that inhibits angiogenesis and promotes differentiation
- High therapeutic safety profile
- Could be used independently or in conjunction with other therapies

Stage of Development

Reduced to practice with successful demonstration *in vitro*

Keywords

- Therapeutic
- Neuroblastoma
 - angiogenesis inhibition
 - cancer therapy
 - neo differentiation factor-beta (NDF- β)
 - Schwann cell factor

Patent Status

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Neu Differentiation Factor-Beta, a Potent Inhibitor of Angiogenesis and a Schwann-Cell Derived Factor Capable of Inducing Differentiation in Human Neuroblastoma Tumor Cells

(VA Reference No. 00-033)

Novel method of using NDF- β for treatment of neuroblastoma

Technology

The Department of Veterans Affairs has developed a method of using beta isoform of neu differentiation factor (NDF- β) as a potential inhibitor of angiogenesis and an effective treatment for tumors or other angiogenic dependent diseases.

Description

Tumor growth and metastasis is dependent on angiogenesis. For neuroblastoma, a strong relationship exists between the degree of tumor vascularity and the level of aggressiveness and metastatic potential. While poorly vascularized tumors respond favorably to conventional therapies, a high vascular index in neuroblastoma correlates with a poor prognosis. Thus, anti-angiogenic therapies may prove efficacious in combating high-risk neuroblastoma.

The VA has discovered that NDF- β , which is a Schwann cell derived factor, can induce differentiation in neuroblastoma tumor cells. Consistent with this, Schwann stromal cells have been found capable of promoting neuroblast differentiation and inhibiting tumor angiogenesis. The developed method entails utilization of the Schwann cell-derived factor as an anti-cancer agent targeting neuroblastoma.

Competitive Advantage

Conventional therapies are generally ineffective against late-stage, high-risk neuroblastoma. Because these tumors are so highly vascularized, anti-angiogenic agents may prove efficacious.

This invention:

- Has the ability to concomitantly inhibit angiogenesis and promote differentiation providing a more efficacious treatment.
- Should result in minimal systemic toxicity because the biological factor is naturally occurring.
- Could be used independently or in conjunction with other treatment modalities.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).