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RECOMBINANT HUMAN PROTEIN THAT PROMOTES NEURITE GROWTH IN VITRO

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BRIEF DESCRIPTON

UCSF researchers have produced a recombinant chimeric human protein that promotes neurite growth in vitro and that can be used as an alternative to the widely used cell adhesion molecule laminin, for cell attachment, neurite outgrowth studies, as well as other cell biology and immunology applications.

FULL DESCRIPTON

UCSF researchers have produced a recombinant chimeric human protein that promotes neurite growth in vitro and that can be used as an alternative to the widely used cell adhesion molecule laminin, for cell attachment, neurite outgrowth studies, as well as other cell biology and immunology applications. The technology involves the recombinant form of a cell adhesion molecule that plays a critical role in the formation of neuronal connectivity during in vivo development. This molecule is known to regulate the formation of axon fascicles and to promote axon growth through interactions with a number of defined binding partners. Genetically engineered mice deficient in the function of this adhesion molecule exhibit axonal pathway defects in the central nervous system. This molecule is also expressed in glial cells, cells of the immune system, and on regenerating axons. The axons of retinal ganglion cells have been used extensively as a model system for investigations of growth cone guidance, axon regeneration, and formation of neuronal connectivity in the nervous system. UCSF researchers have used this model to prove that this chimeric recombinant protein can be successfully used as a coating reagent to promote robust neurite growth in vitro.

FEATURES/BENEFITS

This protein can be used as a coating reagent on culture plates for studies of axonal growth in vitro, with the following advantages:

- ▶ This protein can be used as a coating reagent on culture plates for studies of axonal growth in vitro, with the following advantages:
- ▶ Simple purification procedure of the cell adhesion molecule from transfected cells, compared to lengthy biochemical purification of the protein from brain tissue.

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OTHER INFORMATION

KEYWORDS

neurite, cell adhesion molecule, laminin

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- ▶ [Medical](#)
- ▶ [Disease: Central Nervous System](#)
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2002-079-0

► Protein in chimeric form that provides correct orientation on culture plates for effective molecular interactions.

APPLICATIONS

- Cell motility assays in cell biology.
- Immunological assays.
- Axonal outgrowth assays, with both adult and embryonic neurons.

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