Novel Regulators of Human Fibroblast Growth Factor 2 Transcription

INVENTION: Salk investigators have identified the gene named Regulator of Fibroblast Growth Factor 2 Transcription (RFT) that encodes transcription factors capable of bidirectionally regulating human fibroblast growth factor 2 (FGF-2) transcription. The RFT gene product RFT-A negatively regulates FGF-2 transcription, while the splice variants RFT-A’ and RFT-B act as positive regulators of FGF-2 transcription.

APPLICATIONS:
- Diagnosis and/or prognosis of cell proliferative diseases associated with FGF-2 dysregulation based on the relative expression levels of RFT gene products.
- Therapeutic potential for FGF-2 related tumor growth, neurological disease, wound healing, and angiogenesis through delivery of RFT gene products.

STAGE OF DEVELOPMENT: Discovery; in vitro studies.

BACKGROUND: FGF-2 is a potent mitogen, promoting cell division in neuroectoderm- and mesoderm-derived cells. In addition, FGF-2 has been found to act as an angiogenic factor in vivo. Investigations of FGF-2 function have implicated its involvement not only in tissue development, but also in tissue regeneration and repair, brain diseases such as Alzheimer’s disease and Huntington’s disease, and cell proliferative diseases like gliomas. Salk investigators have identified a gene, RFT, that encodes transcription factors that bidirectionally regulate FGF-2 transcription. The identification of RFT and its corresponding gene products provide new targets for manipulating FGF-2 expression.

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