

Tumor-Suppressing Growth Factor Decoy

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ABSTRACT

Researchers at the University of California, Davis have developed dominant-negative FGF2 antagonists that suppress angiogenesis and tumor growth.

FULL DESCRIPTION

The Fibroblast growth factor-1 receptor (FGFR1) has been implicated in tumor angiogenesis and is an important target for antiangiogenic therapies. A dominant-negative FGF1 mutant (the R50E mutant) - a mutant of the FGF1 ligand that simulates the FGFR1 receptor - is currently used as an anti-cancer and anti-angiogenesis therapeutic agent. However, R50E is thermodynamically unstable - affecting its usefulness as a therapy. Therefore, there is a need for a FGF-targeting therapeutic that is just as effective as, but more stable than, R50E.

Researchers at the University of California, Davis have developed dominant-negative FGF2 mutants that are more stable than R50E. Both mutants (FGF2 decoys) have thermostability and strongly suppress angiogenesis and tumor growth. These dominant-negative FGF2 decoys bind FGFR1 and are both defective in signaling functions and to integrin binding. The decoys have been successfully tested in mouse embryonic fibroblast cells to suppress ERK1/2 activation and DNA synthesis, as well as to suppress angiogenesis in HUVEC cells (tube formation; endothelial cell migration) and sprouting in aorta ring assays.

APPLICATIONS

- ▶ Anti-angiogenic agents as tumor growth suppressor

FEATURES/BENEFITS

- ▶ Thermodynamically stable
- ▶ Long (7 hour) half-life in circulation
- ▶ Injectable Defective to integrin binding

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,229,681	01/25/2022	2017-547

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Suppression of sPLA2-Integrin Binding for Treating an Inflammatory Condition or Suppressing Cell Proliferation](#)
- ▶ [Novel Insight into Inhibiting IGF1 Signaling](#)
- ▶ [Novel Fibroblast Growth Factor 1-Derived Peptides for Therapy and Drug Discovery](#)
- ▶ [Modulating MD-2-Integrin Interaction for Sepsis Treatment](#)
- ▶ [Integrin Binding to P-Selectin as a Treatment for Cancer and Inflammation](#)
- ▶ [Novel IGF2 Signaling Inhibition](#)

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OTHER INFORMATION

KEYWORDS

suppress angiogenesis,
suppress tumor growth,
thermodynamically stable,
FGF2, FGF2 antagonist,
FGF2 decoy

CATEGORIZED AS

- ▶ [Biotechnology](#)
- ▶ [Health](#)

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