Synstatin \( \text{SSTN}_{\text{EGFR}} \) Fights Cancer

INVENTORS • Alan Rapraeger

WARF: P120300US03
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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a peptide that can inhibit and kill tumors by blocking a key receptor interaction.

OVERVIEW

EGFR (epidermal growth factor receptor) exists on the cell surface and is a member of a family of closely related receptor tyrosine kinases. Overexpression of EGFR can result in cancer. In particular, EGFR plays a major role in lung cancer, triple negative breast cancer and head and neck carcinoma.

It is known that EGFR couples with another type of receptor, \( \alpha 6\beta 4 \) integrin, found on cell surfaces. The two receptors form a signaling complex that drives tumor growth, invasion and survival. How they interact and start this process has remained mysterious until now. The answer may lead to groundbreaking new cancer treatments.

THE INVENTION

A UW–Madison researcher has discovered that the EGFR/\( \alpha 6\beta 4 \) assembly is mediated by the syndecan family of matrix receptors. Specifically, syndecan-4 (Sdc4) links the two receptors together and helps tumor cells grow and survive.

To obstruct this process, the researcher has created a recombinant peptide that competes with Sdc4 for binding partners. The new peptide is derived from Sdc4 but is harmless. It is called \( \text{SSTN}_{\text{EGFR}} \). It can be administered as a drug and combined with cancer patients’ other therapies.

APPLICATIONS

- Treating carcinoma, myeloma, melanoma, schwannoma, malignant endothelial cells or glioma
- May help scarring and other pathological wound healing

WARF: A Leader in Technology Transfer Since 1925
Since its founding as a private, nonprofit affiliate of the University of Wisconsin–Madison, WARF has provided patent and licensing services to UW–Madison and worked with commercial partners to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.

The University of Wisconsin and WARF – A Single Location to Accelerate Translational Development of New Drugs
UW–Madison has the integrative capabilities to complete many key components of the drug development cycle, from discovery through clinical trials. As one of the top research universities in the world, and one of the two best-funded universities for research in the country, UW–Madison offers state-of-the-art facilities unmatched by most public universities.

These include the Small Molecule Screening Facility at the UW Comprehensive Cancer Center; the Zeeh Pharmaceutical Experiment Station, which provides consulting and laboratory services for developing formulations and studying solubility, stability and more; the Waisman Clinical Biomanufacturing Facility; the Wisconsin Institute for Medical Research, which provides UW–Madison with a complete translational research facility; and the innovative, interdisciplinary Wisconsin Institutes for Discovery, home to the private, nonprofit Morgridge Institute for Research and its public twin, WID, part of the university's graduate school. The highly qualified experts at these facilities are ready to work with you to create a library of candidates for drug development.
KEY BENEFITS

• Targets growth, survival and invasion of tumor cells
• May target tumor angiogenesis
• Does not hurt normal cells

ADDITIONAL INFORMATION

Related Technologies
WARF reference number P120259US03 describes another cancer-fighting synstatin, SSTN\textsubscript{HER2}, that blocks a related syndecan-mediated signaling complex.

Publications


Tech Fields
Pharmaceuticals & Vitamin D - Oncology & hematology

CONTACT INFORMATION

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857.