Novel Transglutaminase Improves Wound Healing

INVENTORS • Daniel Aeschlimann, Deane Mosher

WARF: P96266US
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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a novel transglutaminase.

OVERVIEW

Transglutaminases, a family of cross-linking protein enzymes that serve as "biological glues," are used to add texture to processed foods like meat and cheese, and also to repair surgical wounds, fractures and cartilage lesions.

THE INVENTION

UW-Madison researchers have identified a novel transglutaminase, known as transglutaminase 5 (TG5). Because TG5 is expressed in epidermal cells, this transglutaminase could be used in wound dressings to speed healing. TG5 can also act as a G protein and may play a role in cell signaling, making it a potential target for anti-cancer or anti-inflammatory therapeutics.

The inventors identified TG5 using a set of oligonucleotide primers they developed to amplify the conserved active site region of all transglutaminases. Because each amplified region contains unique restriction endonuclease cleavage sites, the primers provide a simple and rapid means of distinguishing among different types of transglutaminases and identifying new transglutaminases. They may be particularly useful in diagnosing celiac disease, which is associated with antibodies to a specific transglutaminase isoform.

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.
APPLICATIONS

• Wound healing
• Cartilage repair
• Drug target for cancer or inflammation
• Production of recombinant transglutaminases
• Identifying which transglutaminase is expressed in a given cell to determine which transglutaminases are involved in particular biological events and disease states
• May lead to improved diagnosis and treatment of genetic disorders associated with transglutaminase genes, such as celiac disease

KEY BENEFITS

• Provides a novel transglutaminase
• Capable of detecting the expression of novel transglutaminase genes
• Diagnostic methods are based on genetic differences, rather than on less reliable antibody-based immunological methods.

ADDITIONAL INFORMATION

Tech Fields
Pharmaceuticals & Vitamin D - Skin & connective tissue
Diagnostic Assays - Other assays

CONTACT INFORMATION

For current licensing status, please contact Mark Staudt at mstaudt@warf.org or (608) 265-3084.