

Novel Transglutaminase Improves Wound Healing

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Technology description

Summary

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. This invention features 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.

Institution

[University of Wisconsin](#)

联系我们



叶先生

电话：021-65679356

手机：13414935137

邮箱：yeyingsheng@zf-ym.com