Novel Transglutaminase Improves Wound Healing

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Technology description

Summary

Transglutaminases, a family of cross-linking protein enzymes that serve as â€œbiological glues,â€ 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.

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