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Collagenase role in skin ulcer therapy

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The use of therapeutic bacterial enzymes has gained prevalence in biomedical applications as they offer numerous advantages. These enzymes are non-toxic, easy to produce and reliable. Several enzymes are being used for a variety of diseases, such as leukaemia, skin problems, allergies, etc. Collagenase is one of the enzymes that is used widely in the treatment of skin ulcers. It is produced by Clostridium histolyticum. It is the enzyme that breaks the peptide bonds in collagen. Through studies, it has been witnessed that collagenases have several therapeutic properties in wound healing, burns, cellulite, lipoma, etc. Collagen degradation is necessary as sometimes it is generated more than the amount required or in non-desirable sites or might not degrade after a certain period. This deposition of collagen leads to several pathological conditions, such as hypertrophic scars and keloids. Hence, collagenases are required for their breakdown and degradation. Collagenase hydrolyses the peptide bonds of undenatured and denatured collagen and digests the collagen in necrotic tissue at physiological pH. This enzyme breaks down collagen in damaged tissues within the skin. The products released after cleavage of collagen help in controlling the migration and activity of important inflammatory cells and trigger the healing process. Also, it helps in the generation of new healthy tissues. These characteristics make collagen a perfect tool in the treatment of skin ulcers. Also, it helps in removing the dead skin tissues and aid in the healing of wounds. Collagenase can be used either in an injectable form or as an ointment. It is becoming a safe and valuable tool in the treatment of skin ulcers.

Keywords: Collagenase, Collagen, Collagen degradation, Hypertrophic scars, Keloids, Bacterial enzyme, Therapeutic properties, Wound healing

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