

Versikine and ADAMTS-4,5 may be useful for differentiating between keloids and hypertrophic scars

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Keloid is characterized by abnormal collagen deposition that yields collagen bundles and the excessive deposition of other extracellular matrix (ECM) components. We have reported that keloids exhibit upregulated cleavage of the ECM component versican by the ADAMTS-4,5 versicanases (ADAMTS stands for a disintegrin-like and metalloprotease with thrombospondin type 1 motif). The resulting cleavage product, which is called versikine, is deposited at high levels in keloids. The aim of the present study was to investigate the difference between keloids and hypertrophic scars in terms of the expression of the versicanases and versikine. Thus, we investigated the mRNAs from five cases of keloid, three cases of hypertrophic scar tissue, and one normal skin tissue. RNAs were extracted from the tissues and converted to cDNA by the Reverse Transcription Polymerase Chain Reaction. Real-time quantitative PCR showed that ADAMTS-4,5 expression was upregulated in keloid tissue compared to normal skin. This upregulation was not observed in hypertrophic scars.

Immunohistochemical analyses showed that versikine was not detected in normal tissue but was highly expressed in keloids. By contrast, in the hypertrophic scar, there were only small amounts of versikine in the superficial dermis. These results suggest that ADAMTS-4,5 and versikine expression may be useful for differentiating between keloids and hypertrophic scars.