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## Veterinarni Medicina

Immunohistological changes in skin wounds during the early periods of healing in a rat model

Sabol F, Dancakova L, Gal P, Vasilenko T, Novotny M, Smetana K, Lenhardt L:

Veterinarni Medicina, 57 (2012): 77-82

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The complexity of the wound healing process, which is still poorly understood, prompted us to perform an immunohistochemical investigation using rat skin as an *in vivo* model. Fifteen Sprague-Dawley rats were included in the experiment. Two round full thickness wounds, 4 mm in diameter, were made on the backs of all rats. Haematoxylin and eosin basic staining as well as antibodies against wide spectrum keratin, keratin 10, keratin 14,  $\alpha$ -smooth muscle actin, vimentin, fibronectin, collagens Type 1 and 3, and the transcription factor Sox-2 were applied to paraffin and frozen sections of skin wound specimens two,

six and fourteen days after surgery, respectively. New hair follicles with Sox-2-positive cells were present after fourteen days; keratin/vimentin positivity was restricted to specimens of day two. Collagen-3 expression prevailed over collagen-1 expression at all evaluated time intervals, except in the uninjured part of the dermis. In conclusion, rat skin wound healing is a dynamic process which can serve as a model for studying phenomena such as cell-cell interactions and transitions *in vivo*.

### **Keywords:**

tissue repair and regeneration; cell differentiation; transition; proliferation; wound healing

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