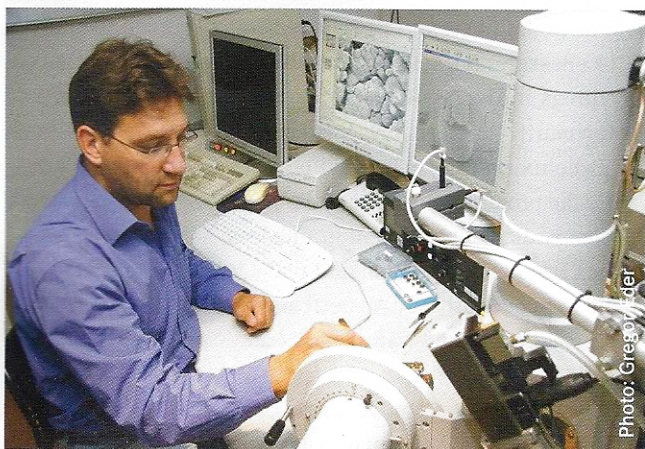


## Biomimetic adhesives for medicine

A research group led by Janek von Byern, a biologist at the University of Vienna, is currently analysing the skin secretions of salamanders. The aim is to produce so-called biomimetic adhesives for wound healing that have no harmful side-effects.



The biologist Janek von Byern and his team are currently analysing the skin secretions of salamanders in order to produce biomimetic adhesives for skin wound healing.

Most medical adhesives that are currently used for wound healing or for adhesively bonding medical or dental implants to the surrounding tissue are synthetic and consist mainly of harmful and non-biodegradable substances. However, because various forms of "adhesive" are widespread in nature, the young scientists are trying to learn from the biological structures and processes of these natural adhesives. The natural adhesive tricks used by plants and animals are being increasingly used as models for what are called biomimetic adhesives – adhesives that imitate nature.

Salamanders are well known for their wide variety of defence mechanisms. In addition to having conspicuous skin colourings, some species, such as the domestic fire salamander, form poisonous skin secretions. Other types of salamanders produce adhesives in skin glands, which they use to glue the mouth of a predator in order to prevent them from being eaten.

The Viennese research group, supported by the Anniversary Foundation for Higher Education of the City of Vienna, is examining the composition of these salamander adhesives and their protein components, in cooperation with the breeder Günter Schultschik and the biochemist Ingo Grunwald from the Centre for Adhesive Bonding Technology at the Fraunhofer Institute for Manufacturing Technology and Applied Materials Research (IFAM) in Bremen.

For further information, please contact: Dr. Janek von Byern, University of Vienna, Phone: +43-1-4277-544 28, Janek.von.Byern@univie.ac.at

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