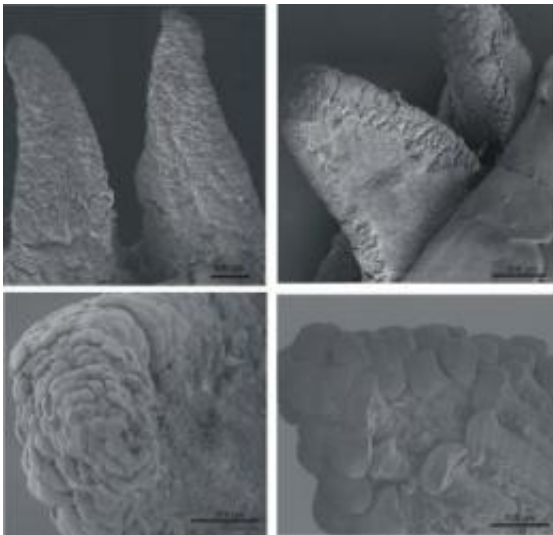


# Lizard tails detach at a biological 'dotted line'

December 19 2012

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Wedge-shaped extensions (cranial margins of individual tail muscles) projecting from the proximal end of the released tail stump demonstrate the presence of mushroom-shaped structures at the termini of the muscle fibers after autotomy. These structures are present on all sides of the extensions except on the outer part. Credit: Sanggaard KW, Danielsen CC, Wogensen L, Vinding MS, Rydtoft LM, et al. (2012) Unique Structural Features Facilitate Lizard Tail Autotomy. *PLoS ONE* 7(12): e51803. doi:10.1371/journal.pone.0051803

Like sheets of paper marked with perforated lines, gecko tails have unique structural marks that help them sever their tails to make a quick getaway. Though voluntarily shedding a body part in this manner is a well-known phenomenon, research published December 19 in the open

access journal *PLOS ONE* reveals aspects of the process that may have applications for structural engineers making similar, quickly detachable structures.

Jan Enghild and colleagues from Aarhus University, Denmark, used advanced bio-imaging techniques to discover that a Tokay gecko sheds its tail along pre-formed "score lines" in specific regions of the tail, which is held together by [adhesive forces](#) at these lines.

The process of separation is independent of protein-cleaving enzymes, and microstructures at the ends of [muscle fibers](#) are most likely involved in the release of the tail. Enghild adds, "Our work has been driven by a curiosity to understand how tail autotomy is facilitated among lizards.

In the present work we use a combination of advanced protein- and high-resolution imaging- techniques to address the mechanism involved in the process."

**More information:** Sanggaard KW, Danielsen CC, Wogensen L, Vinding MS, Rydtoft LM, et al. (2012) Unique Structural Features Facilitate Lizard Tail Autotomy. PLoS ONE 7(12): e51803.  
[doi:10.1371/journal.pone.0051803](https://doi.org/10.1371/journal.pone.0051803)

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