

Biochemistry II CHEM 4420

Writing



The Science of Scientific Writing

1. Long distance relationships are difficult: don't make your subject pine for its verb.



1. If it is important. put it at the end.



Circle the verbs, and put boxes around the subjects

Hagfish slime consists of mucins and protein threads that are released from slime glands and mix with seawater to produce an ephemeral material with intriguing physical properties. We recently characterized the mechanics of the slime's fibrous component, and here we report the first mechanical properties of the mucin component and the slime as a whole. Our results suggest that hagfishes can produce remarkable quantities of the slime because it is almost three orders of magnitude more dilute than typical mucus secretions. Mechanical experiments using whole slime produced *in vitro* demonstrate that the slime threads dominate the slime's material properties and impart elasticity. Mucins impart viscosity at the strain rates tested and are important for rapid deployment of the slime. We also found that slime threads are tapered at both ends, which suggested to us that hagfish slime might best be modeled as a discontinuous fibre-reinforced composite. Our measurements demonstrate that the mucins are not capable of providing shear linkage between threads, but this is not necessary because the threads are long enough to span an entire slime mass. Our findings suggest that hagfish slime consists mainly of bulk seawater entrained between mucin-coated threads, and in this way functions more like a fine sieve than coherent mucus. These results are consistent with the hypothesis that the slime has evolved as a defense against gill-breathing predators.

Excerpted from: Douglas S. Fudge, Nimrod Levy, Scott Chiu, John M. Gosline. Composition, morphology and mechanics of hagfish slime. *Journal of Experimental Biology* 2005 208: 4613-4625;
doi: 10.1242/jeb.01963

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gerund

nominalization

Stress Position

Readers naturally put the greatest emphasis on the material at the end of what they are reading.

- We want to be rewarded for all of our hard work.
- Give us the goodies at the end of our reading.
- This applies to individual sentences, paragraphs and whole papers.
- Start a meal with soup
(warm and comforting)
- End with dessert
(lipids and chocolate!)
- **DESSERTS** is **STRESSED**
spelled backwards.



Grading Form: Topic Paper

- There are specific details about the biochemistry involved. (What reactions, what molecules?)
- There is no paraphrasing, copied text or quotations and no patching.
- The sentences are in well organized paragraphs.
- The paper has an introduction, body and summary.
- The paper has no spelling, grammar or punctuation errors.
- There is a least one current (2010-2018) literature paper fully listed in the references and cited in the text.