

Scientists discover new way of testing reproductive compatibility

March 29 2016, by Jess Reid



Scientists from The University of Western Australia have discovered a new way of measuring the effectiveness of different sperm competing to fertilise eggs in blue mussels.

The discovery could help researchers understand [sperm-egg interactions](#) in humans and have important implications for [medical research](#) such as IVF technology.

Lead author of the study, PhD student from UWA Centre for Evolutionary Biology Rowan Lymbery said that sexual selection was a reproductive advantage that some individuals had over others, but success in fertility didn't end at just choosing a sexual partner.

"A person or animal may choose a sexual partner or 'out-compete' prospective rivals based on their physical attributes, or behaviour," Mr Lymbery said.

"Something not commonly known is that this also occurs in sperm and eggs, with sperm from rival males competing for fertilisations or eggs choosing the sperm from more compatible males.

"Success in fertilisation therefore doesn't just end at the selection of a [sexual partner](#) but depends on the interactions among sperm and eggs."

Mr Lymbery said that UWA researchers had developed the new system which uses fluorescent green dye to colour mitochondria sperm and allow it to compete with undyed sperm from rivals, to see which eggs the focal male fertilised.

"By enabling us to visualise these sorts of cell interactions in detail, the technique is not only an exciting advance for [sexual selection](#) research, but will also have implications for reproductive biology and medical research," he said.

Mr Lymbery said that in studying the reproductive interactions in broadcast spawning animals such as the blue mussel, it could offer insights into the reproduction of 'higher order' animals, such as humans.

"For example, similar [cell interactions](#) occur in humans and are crucial for the success of assisted reproduction technologies such as IVF.

"Determining why some sperm and eggs are more compatible than others could help us better understand infertility and associated genetic disorders, which brings exciting possibilities for improving this technology in the future."

The research was published in the Nature Journal *Scientific Reports*.

More information: Rowan A. Lymbery et al. Fluorescent sperm offer a method for tracking the real-time success of ejaculates when they compete to fertilise eggs, *Scientific Reports* (2016). [DOI: 10.1038/srep22689](https://doi.org/10.1038/srep22689)

Provided by University of Western Australia

Citation: Scientists discover new way of testing reproductive compatibility (2016, March 29) retrieved 5 May 2024 from <https://phys.org/news/2016-03-scientists-reproductive-compatibility.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.