

Aphrodisiac for fish and frogs discovered

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Tree frog. Credit: Julia Platter

A supplement simply added to water has been shown to boost reproduction in nematodes (roundworms), molluscs, fish and frogs – and researchers believe it could work for humans too.

Increased reproductivity

Dr Keith Davies, senior lecturer at the University of Hertfordshire and his colleague Dr John Hart, CEO of Endocrine Pharmaceuticals Ltd, observed guppy fish (*Poecilia reticulata*) at London Zoo. The fish were given a peptide (short protein) in their tank water and they had produced four times as many offspring after six months than unexposed fish. Meanwhile, similar tests carried out at Paignton Zoo led to brown

mantella frogs (*Mantella ebenaui*) - an endangered amphibian from Madagascar - breeding for the first time in a zoo anywhere in the world. The protein was simply dissolved in water and misted on to the frogs in their rainforest vivaria (naturalistic enclosure), to achieve absorption through the skin.

Dr Davies, lead author of the research and an expert on nematodes (small roundworms which are good models for human beings) said: "The supplement brought reproductive activity forward and increased the number of offspring by about 80% in the famous soil nematode, *Caenorhabditis elegans*. What is suggested by our work is a biochemical mechanism of action that is conserved across the animal kingdom."

Lifting the natural brake

Dr Hart, who co-ordinated the various laboratories involved in the project, said: "What we have developed is an aphrodisiac which acts by lifting a natural brake on reproduction. This brake operates in the species we've tested, ranging from tiger stingrays to freshwater snails, so it should be present in mammals too, including humans. We are looking for a commercial partner to make a product available for animal breeders and also for clinicians treating infertile couples."

Reproduction in humans is controlled by a region at the base of the brain called the hypothalamus. Scientists believe that the reproductive brake is probably present there as well. It is first lifted at puberty which triggers sexual maturity. Nematode worms and [guppy fish](#) exposed to the supplement bred 'earlier and more'. The researchers speculate that sometimes in humans the brake does not come off properly or it goes on again in the event of impaired or delayed reproduction.

The report

Dr Hart adds: "As we say in the paper, the supplement caused [reproduction](#) to increase in freshwater angelfish when males and females were exposed together, but not when either sex was exposed alone. With this in mind we have invented a special formulation for human use first thing in the morning as a 'his & hers' drink."

More information: "Reproduction potentiated in nematodes (*Caenorhabditis elegans*) and guppy fish (*Poecilia reticulata*) by adding a synthetic peptide to their aqueous environment." *J Exp Biol.* 2015 Mar;218(Pt 5):778-85. [DOI: 10.1242/jeb.113837](https://doi.org/10.1242/jeb.113837). Epub 2015 Jan 23.

Provided by University of Hertfordshire

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