

Simplest known animals engage in sex

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A Yale University study suggests even the most simple of animals engage in sex. Ana Signorovitch and colleagues have demonstrated placozoans, the simplest known free-living animals, undergo a sexual phase in their life cycle.

Placozoans possess the smallest genome of any known animal and are composed of only four different cell types. While asexual reproduction has been observed in placozoans, no evidence of sexual reproduction has been documented. The biology of the organisms remains largely unknown.

Signorovitch and colleagues utilized molecular genetics to investigate if placozoans reproduce sexually. Because asexual and sexual animals have distinct patterns of gene variation, the researchers studied the DNA sequences of several genes from a sample placozoan population of 10 individuals.

Genetic signatures consistent with a sexual mode of reproduction were observed. Within-individual and overall DNA diversity were found to be consistent with levels seen in sexually reproducing organisms. Also, genetic recombination and sharing of gene variants were observed, supporting the presence of a sexual phase in the placozoan life cycle.

Signorovitch said the findings indicate placozoans have or had the ability to reproduce sexually.

The research appears in the online early edition of the Proceedings of

the National Academy of Sciences.

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