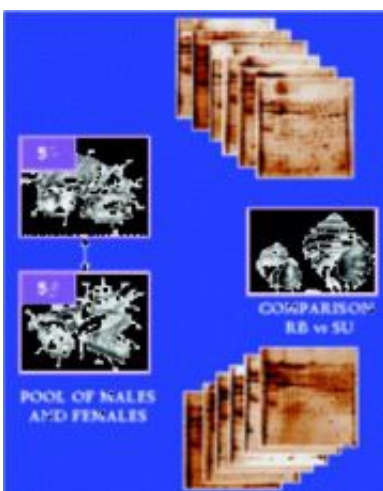


Tale of two snails reveals secrets about the biochemistry of evolution

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A study of two populations of marine snails provides new insights into how evolutionary changes works on the chemical level. Credit: American Chemical Society

Researchers in Spain are reporting deep new insights into how evolution changes the biochemistry of living things, helping them to adapt to new environments. Their study, based on an analysis of proteins produced by two populations of marine snails, reveals chemical differences that give one population a survival-of-the fittest edge for life in its cold, wave-exposed environment. Their report is scheduled for the November 7 issue of *ACS' Journal of Proteome Research*.

In the new study, Emilio Rolán-Alvarez and colleagues note that

scientists long have known that animals of the same species can have different physical characteristics enabling them to survive in different habitats.

One famous example is the different beak sizes and shapes that evolved in Darwin's finches, enabling the birds to live on different foods in different habitats on the Galapagos Islands. Until now, however, scientists knew little about the invisible biochemical changes behind such adaptations.

To help fill those gaps, the scientists studied two populations of marine snails that live only a few feet apart on the Spanish coast. One group lives on the lower shore, typically submerged in water and protected from large changes in temperature. The other group lives on the upper shore exposed to daily changes in temperature, humidity and other environmental conditions. Tests with mass spectrometry showed major differences in about 12 percent of the proteins in the snail, a subset of proteins that apparently enables the snails to survive in different environmental conditions. — MTS

Article: "Proteomic Comparison between Two Marine Snail Ecotypes Reveals Details about the Biochemistry of Adaptation"
[dx.doi.org/10.1021/pr700863e](https://doi.org/10.1021/pr700863e)

Source: ACS

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