

Metabolism gives a boost to understanding plant and animal nutrient evolution

February 14 2014

For the ancient ancestors of plants and animals, a partnership with other microbes was once formed during an endosymbiotic event to give rise to eukaryotes. Plants and animals, over billions of years of trial and error, made efficient use of different energy sources in the environment, namely carbon dioxide and oxygen.

In the advanced online edition of *Molecular Biology and Evolution*, authors Maurino, et. al., explore the evolution of a family of enzymes, called 2-hydroxy acid oxidase, or 2-HAOX, that break down fats in both plant and animals. They wanted to test and see if they could trace the evolution of 2-HOAX back to a [common ancestor](#) that once gave rise to these enzymes. They built a database of all known 2-HAOX sequences in plants, animals and bacteria and reconstructed phylogenetic trees to test their hypothesis as wells as examining the functional differences through enzyme tests.

Their data supports the evolution of 2-HOAX from a common ancestral gene, with plants and animals evolving these enzymes independently, in ancient organisms responsible for the evolution of simpler animals and plants. This provides an example of how plants and [animals](#) have adapted differently to similar environmental conditions in order to meet their energy needs.

Provided by Oxford University Press

Citation: Metabolism gives a boost to understanding plant and animal nutrient evolution (2014, February 14) retrieved 26 April 2024 from <https://phys.org/news/2014-02-metabolism-boost-animal-nutrient-evolution.html>

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