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OHNOLOGS v2: a comprehensive resource for the genes retained from whole genome duplication in vertebrates.

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Ohnologs are genes in families generated by whole-genome duplications. They are named after Susumu Ohno who published his classic hypothesis of *Evolution by Gene Duplication* in 1970 {1}. Evolution of the vertebrates has been marked by two sequential whole-genome duplications (2R-WGD) at the invertebrate-to-vertebrate transition around 500 million years ago (Mya), followed by a teleost fish-specific 3R-WGD approximately 300 Mya, and a salmonid-specific WGD (4R) approximately 95 Mya. Interestingly, those ohnologs from the 2R, 3R and 4R that still survive in the genomes of modern-day vertebrates are highly enriched in components of signal transduction systems {2}.

OHNOLOGS v2 is a database of ohnologs that stem from the 2R-WGD, which was compiled by comparative analysis of the genomes of 27 vertebrate species. Four of the species selected for analysis are fish, which also enabled tracking of ohnologs generated by the teleost fish-specific 3R-WGD.

Thanks are due to the authors Param Priya Singh and Hervé Isambert for producing such a useful resource. OHNOLOGS v2 is easy to search, browse and download. No doubt it will be an invaluable tool for researching how vertebrate complexity and variety evolved across geologic time, and how cellular signal transduction networks operate in health and disease.

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