

# PorthoMCL: Parallel orthology prediction using MCL for the realm of massive genome availability

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## Abstract

**Background:** Finding orthologous genes among multiple sequenced genomes is a primary step in comparative genomics studies. With the number of sequenced genomes increasing exponentially, comparative genomics becomes more powerful than ever for genomic analysis. However, the very large number of genomes in need of analysis makes conventional orthology prediction methods incapable of this task. Thus, an ultrafast tool is urgently needed.

**Results:** Here, we present PorthoMCL, a fast tool for finding orthologous genes among a very large number of genomes. PorthoMCL can be run on a single machine or in parallel on computer clusters. We have demonstrated PorthoMCL's capability by identifying orthologs in 2,758 prokaryotic genomes. The results are available for download at: <http://ehsan.ncu.go/porthomcl/>.

**Conclusions:** PorthoMCL is a fast and easy to run tool for identifying orthology among any number of genomes with minimal requirements. PorthoMCL will facilitate comparative genomics analysis with increasing number of available genomes thanks to the rapidly evolving sequencing technologies.

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