

柯叶艳, 齐文同. 前寒武纪生物起源时间的化石和分子钟研究[J]. 地质论评, 2002, 48(5): 457-462

前寒武纪生物起源时间的化石和分子钟研究 [点此下载全文](#)

[柯叶艳](#) [齐文同](#)

北京大学地质学系 100871 (柯叶艳)  
，北京大学地质学系 100871(齐文同)

基金项目：国家自然科学基金项目(编号 49572085)

DOI:

摘要:

时间尺度的确定，对于估计生物有机体的分子和形态改变的速率，以及建立大进化和生物古地理学模式都有非常必要的，传统的化石记录和新兴的分子钟研究，是可以提供生物谱系起源和分支时间的两种手段，占整个地球生命历史七分之二的前寒武纪，是地球及地球上生命演化的重要时期，对前寒武纪相当繁荣的微生物的起源时间和后生动物各门类的分支演化时间的研究，一直存在着很大的争议，本文在总结化石记录和分子钟研究结果时发现，由分子钟研究得出的早期微生物的起源时间明显晚于化石记录，而在后生动物分支演化时间的估算上却早于化石资料。本文试图从两种方法自身的特点来探讨这种分支演化时间的重大差别。

关键词：[生物起源时间](#) [前寒武纪](#) [化石](#) [分子钟](#) [有机体](#) [形态](#) [生物古地理学模式](#)

Fossil Records and Molecular Clock Study of the Time of Origin of the Precambrian Biologic Lineages [Download Fulltext](#)

KE Yeyan, QI Wentong Department of Geology, Peking University, Beijing, 100871

Fund Project:

Abstract:

The determination of a timescale is necessary for estimating the rates of molecular and morphological changes in organisms and for interpreting the patterns of macroevolution and biogeography. The traditional fossils records and the new-emerging molecular clock study are two methods by which the time of origin of biologic lineages and divergence in the Precambrian can be estimated. The Precambrian, spanning the six sevenths of the Earth's life, is a period of special importance for the evolution of the Earth and the life on it. There have long been disputes about the time of origin of microbes that were quite prosperous in the Precambrian and the divergence time of metazoans. In summing up the fossil records and data of the molecular clock study, the authors find that the time of origin of early-stage microbes obtained by the molecular clock study is notably later than that recorded by fossils, while the estimated divergence time of the metazoans is earlier than that indicated by the fossil data. In the paper an attempt is made to interpret these major discrepancies by analysing the characteristics of the two methods.

Keywords: [Precambrian](#) [fossil record](#) [molecular clock](#) [divergence](#)

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第693255位访问者 版权所有《地质论评》

地址：北京阜成门外百万庄路26号 邮编：100037 电话：010-68999804 传真：010-68995305

本系统由北京勤云科技发展有限公司设计