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转座元件mariner Transposable Element Mariner

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摘要

自mariner转座元件在Drosophila mauritiana中首次发现至今已经在包括人类在内的多种生物体中证实了mariner及类mariner元件（MLEs）的存在。MLEs属于mariner/Tc1超家族-II型转座元件中分布最广、种类最多的超家族之一。MLEs的转座酶都具有“D,D(34)D”的结构，并能催化MLEs通过“剪切和粘贴”机制进行转座。它们的宿主广泛和多样，能够进行种系传递，这都表明MLEs的转座不需要宿主特异元件的参与。 MLEs对多种生物尤其对脊椎动物的成功转化更支持了它们的不依赖宿主的转座机制，而且让人们看到了它们作为转基因载体的巨大潜能。

Abstract: Mariner and mariner-like elements (MLEs) have been found in a wide range of organisms including human since its discovery in Drosophila mauritiana. MLEs belong to the mariner/Tc1 superfamily, one of the most diverse and widespread Class II transposable elements. MLEs have a conserved “D,D(34)D” motif in their transposases and they transpose by cut-and-paste mechanisms. Their extraordinarily wide host range and horizontal transmission in distantly related species indicate that they do not need additional host-specific factors for transposition. The evidence that MLEs could transform a wide variety of organisms especially the vertebrates supported the host-independent mechanism and suggested the availability as a kind of potential transforming vector.

关键词 mariner MLEs 转座元件 种系转化 转化载体 Key words mariner MLEs transposable element germline transformation transforming vector

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