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大肠杆菌FC40系统静止期突变中的F因子转移 The Occurrence of Actual F Factor Transfer during the Stationary-phase Mutation in Escherichia coli FC40

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摘要　本研究采用大肠杆菌GM133 rifr细胞和营养收集细胞HB214 strr进行适应性突变实验。在混合30min和2d后添加链霉素杀死GM133基因型细胞，继续培养5d后，在选择平板上出现了一定数量的lac+strr基因型回复突变菌落。根据这些突变菌落的数量，估计在lac+突变产生之前，GM133和HB214细胞之间的接合频率分别为0.07%和7.47%。在培养了7d的选择平板上添加含链霉素的M9选择培养基，2d 后也观察到大量发生lac+突变但没有形成肉眼可见菌落的营养收集细胞。此外，在lac+突变发生后，也有F因子从GM133细胞转移进入HB214细胞。这些事实表明，在FC40系统的适应性突变实验中发生了真正的F因子转移。

Abstract:The experiment of adaptive mutation was performed by using Escherichia coli GM133 rifr as test cells and HB214 strr as scavenger cells.Transfer frequency between GM133 and HB214 was estimated, based on the number of revertants appeared on the selective plates when GM133 were killed by addition of M9 selective medium containing 100μg/mL of streptomycin at different time.After 30 minutes the cells of GM133 and HB214 were mixed, the estimated transfer frequency was about 0.07%, and two days, 7.47%.After selection of 7 days, some HB214 cells with F` factor from GM133 cells and lac+ mutation were observed, but these cells failed to form the colonies which can be seen by the naked-eye.It was demonstrated that actual F` factor transfer events from test cells GM133 to scavenger cells HB214 occurred during the selection.

关键词　大肠杆菌FC40系统　适应性突变　F因子转移 Key words　Escherichia coli FC40　adaptive mutation　F factor transfer

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Abstract

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