

化学

## 氯化锂-紫外-离子束复合诱变红霉素高产菌株研究

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**摘要** 以红霉素生产菌红色链霉菌为研究对象, 探讨了氯化锂、紫外、离子束3种不同诱变方式对红色链霉菌的影响, 根据后代的存活率和突变率选定合适的诱变条件: 氯化锂的最优诱变浓度1.2%, 紫外的最优诱变时间120 s, 离子束的最优诱变注量 $200 \times 10^{14} \text{ cm}^{-2}$ , 然后将3种方式结合起来进行复合诱变。经复合诱变后筛选获得高产突变株E03171726, 该菌株摇瓶效价达 $7.126 \mu\text{g/mL}$ , 较出发菌株E03提高了20.3%; 经多次传代分离实验表明, 该突变株遗传稳定性较好。

**关键词** [红霉素](#) [氯化锂](#) [紫外](#) [离子束](#) [复合诱变](#)

分类号

## Screening of Erythromycin High-Yielding Strain by Compound Mutation of LiCl, UV and Ion beam

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**Abstract** Taking erythromycin producing strain, *Streptomyces erythreus* as research object, the effects on *Streptomyces erythreus* caused by three different mutation ways of LiCl, UV and ion beam were explored. The mutated conditions were optimized by survival rate and mutation rate. The optimum mutation concentration of LiCl is 1.2%, the proper mutation time of UV is 120 s, and the optimal fluence of ion beam is  $200 \times 10^{14} \text{ cm}^{-2}$ . Then the three ways were combined to do compound mutation. One high yield mutant E03171726 by compound mutation was obtained. The titer of the strain is  $7.126 \mu\text{g/mL}$ , which is nearly 20.3% higher than that of original strain E03. Several passages and separation experiments show that the genetic stability of the mutants is good enough.

**Key words** [erythromycin](#) [LiCl](#) [UV](#) [ion beam](#) [compound mutation](#)

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