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枯草杆菌的抗铬性

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摘要 所有测试过的*Bacillus subsilis*菌株都对37.5 pgCrO_3/ml敏感。以紫外线照射168 trPC2$^+$菌株，很容易从中分离到抗100----150pgCrO_3/n-il的突变体。多次企图通过转化或转导将此抗性转移到其他菌株，均未获成功。而以所有三种位点的半脸氨酸缺陷菌株为受体进行转化或转导，所得到的C ys$^+$转化体或转导体却都能抗50--75pgCrO_3/ ml。在肉汤琼脂培养基中外加半肤氨酸，可以诱导抗铬拟表型，但在合成培养基上诱导抗铬拟表型，除半眯氨酸之外，还要补加其他一、二种氨基酸。这些结果加上其他实验结果表明，半胧氨酸诱导抗铬拟表型，不是由于半肤氨酸使CrO，在细胞外脱毒之故。由于枯草杆菌很容易在合成培养基上生长，本实验结果说明枯草杆菌可以作为进一步研究抗铬机理的模型。

关键词

分类号

Chromium Resistance in Bacillus subtilis

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Abstract

Several tested strains of Bacillus subtilis were found to be sensitive to CrOa at 37.5ug/ml. Mutants resistant to 100-150 ugCrOa/ml can be readily generated by UV irradiation of strain 168trpC2⁺. Attempts to transfer chromium resistance to other strains by transformation or transduction have been unsuccessful. Cysteine prototrophs were obtained by transduction and transformation, using cysteina auxotrophic strains as recipients, and chromium resistant mutants or 168trpC2as donors, or by using CysA,CysB, or CysC as donors as well as recipients. It is surprising that all of the Cys⁺recombinants were resistant to 50 ugCrOa/ml.Chromium resistance phenocopy can be induced phenocopy was not imposed by L-cysteine alone in synthetic medium;L-asparticacid or L-threonine as required for strains containing cysB or cysC,and L-methionine in addition to L-aspartic acid orL-threonine was required for strains containing cysA.Our results indicate that the chromium resistance phenocopy is not the consequence of detoxification of hexavalent chromium by extracellular cysteine.

Key words

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