

A Novel Chemical Potency Study on Antibiotic LY-92

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Abstract A novel chemical analysis method for determination of Antibiotic LY-92 potency was investigated by colorimetric analysis. The assay is based on the complex formation of the antibiotic with sodium picrate, followed by extraction of the complexes in an organic solvent. The complex compound had maximum absorption length at 377 nm. This reaction had stability colour; high sensitivity; ($\epsilon_{377} = 1.75 \times 10^4 \text{ mol}^{-1} \cdot \text{cm}^{-1} \cdot \text{L}$); wide linearity range of 0~37.6 $\mu\text{g/ml}$ ($r = 0.9998$). A new colorimetric method was designed and the operating conditions of this analysis were established. The results obtained from further experiments showed that this method is also very easy and fast to be widely used for all kinds of samples.

Key words Antibiotic LY-92; Sodium picrate; Stability test; Potency; Ultraviolet spectrophotometry

应用酶工程技术生产 *L*-苯丙氨酸

由吴梧桐教授主持的国家科委“八五”攻关项目研究组应用基因工程技术构建高效表达芳香族氨基酸转氨酶的 CTB2 工程菌,再经固定化,用于从 *L*-苯丙酮酸转化生产 *L*-苯丙氨酸工程菌发酵收率 >2.5%,菌体酶活力 >2000 U/g · h⁻¹,底物转化率 90%,固定化细胞使用半衰期 >40 d,产品纯度 >98.5%,其他质量指标均符合药品标准,并已取得药品生产批准文号。本工艺技术水平与国际上报道的同类工艺研究水平相当,填补了我国应用固定化基因工程菌生产氨基酸的空白。

本研究还通过筛选获得 *L*-苯丙氨酸氨解酶的高产菌株 *R. rubra* CPU 9011,菌体发酵收率 >3.0%,菌体酶活力 1080 U/g · h⁻¹,固定化细胞酶活力 >580 U/g · h⁻¹,底物转化率 65.10%,固定化细胞使用半衰期 21 天,产品纯度 >98.5%,质量符合药品标准。

本项目于 1996 年 2 月通过国家医药管理局组织的科技成果鉴定。