

## Comparative Anesthetic Effects of Lidocaine and Carbonated Lidocaine

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**Abstract** The anesthetic effects of lidocaine hydrochloride and carbonated lidocaine hydrochloride were compared. The results of the study showed that the anesthesia of carbonated lidocaine was more potent than that of lidocaine. The topical anesthetic effect of carbonated lidocaine appeared to be four times more potent than that of lidocaine. The infiltration and spinal anesthetic effects and conduction blockade of carbonated lidocaine were two times and six times more powerful than those of lidocaine respectively. In addition, carbonated lidocaine had shorter onset time and longer duration of action, compared with lidocaine hydrochloride.

**Key words** Lidocaine; Anesthetics; Carbonated lidocaine

## 应用酶工程技术生产 *L*-丙氨酸

由吴梧桐教授主持的本研究项目,应用固定化细胞技术从富马酸生产 *L*-丙氨酸,填补了我国双酶固定化应用的技术空白。通过小试、中试研究,筛选获得了 *L*-天冬氨酸β-脱羧酶的高产菌株 *Pseudomonas dacunhal* CPU 9001,菌体酶活力为 4000~6000 U/g·h<sup>-1</sup>,固定化细胞酶表现活力>6000 U/g·h<sup>-1</sup>,底物转化率>95%,产品总收率>85%,成品纯度>98.5%,产品质量符合美国药典 22 版标准,固定化细胞使用半衰期>90 d。通过半年多试生产,工艺稳定,三废少,工业成本较低,并已获得药品生产批文。

该项目于 1995 年 10 月通过了江苏省科委和国家医药管理局组织的科技成果鉴定。