

# Effect of Low Molecular Weight Heparin on Coagulation System and Thrombosis

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**Abstract** Low molecular weight haprin(LMWH) was obtained by controlled nitrous acid degradation of standard heparin(SH). It was demonstrated that 1)LMWH has less effect on coagulation system than SH; 2)The anti-thrombotic potency of LMWH was weaker, compared to that of SH, *in vitro*; 3)The effects of LMWH and Fragmin and SH on thrombosis *in vivo* were similar to one another. The  $ED_{50}$  of LMWH in models of the arterovenous shunt, carotid thrombosis(iv, sc) and vein thrombosis were 159, 185(iv), 193(sc) and  $91 \times 10^4$  IU/kg, respectively. It was found that LMWH injected in vein and subcutaneously had the same effect on carotid thrombosis model, but not to standard heparin. The findings suggest that LMWH remains the anti-thrombotic effect of SH, decreases the side effect of SH, and is a potential anti-thrombotic agent.

**Key words** Standard heparin; Low molecular weight heparin; Anti-thrombosis

## 应用酶工程技术生产 1,6-二磷酸果糖

由王旻副教授主持的国家“八五”攻关课题 1,6-二磷酸果糖(FDP),是利用现代酶工程技术,从蔗糖生产 FDP。已完成了小试和中试。用该工艺生产 FDP 具有工艺稳定,三废少,工业成本较低的特点,其固定化酶半衰期 $>20$  d,固定化酶表现活力(按湿细胞计算) $>550$  mg/d $\cdot$ g $^{-1}$ ,底物转化率达到 15%以上,产物提取重量总收率达 95%。

该项目于 1995 年 4 月取得国家二类新药证书和四类新药证书各一本。并于 1996 年 1 月通过中国科学院组织的专家验收。