

Product Information

Heparin sodium salt from porcine intestinal mucosa Grade I-A, ≥180 USP units/mg

Catalog Number **H3393**
Store at Room Temperature

CAS RN 9041-08-1

Product Description

Heparin is a polymer classified as a mucopolysaccharide or a glycosaminoglycan. It is biosynthesized and stored in mast cells of various mammalian tissues, particularly liver, lung, and mucosa. Commercial heparin is chiefly isolated from beef lung or pork intestinal mucosa.¹

Heparin has been traditionally used as an anticoagulant. It binds to antithrombin III, a naturally occurring plasma protease inhibitor, accelerating significantly the rate at which antithrombin III (AT-III) inhibits coagulation proteases (Factor X_a and thrombin).²⁻⁴

In addition, heparin has been shown to stabilize tryptase as an enzymatically active tetramer.⁵

It is unlikely that heparin is cell membrane permeable, including that of the brain.⁶ Heparin crosses cell membranes poorly, because of its polarity and large molecular size. It is not absorbed from the gastrointestinal and sublingual sites. Passage along the placenta and into the maternal milk is also hindered.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This product is soluble in water (50 mg/ml).

Storage/Stability

Store the powdered product at room temperature.

Heparin is a polysaccharide, which remains active in aqueous solution for up to 2 years at 2–8 °C, provided the solutions have been filtered through a 0.2 μm membrane. Alternatively, 0.06–1% benzyl alcohol may be added to solutions to prevent bacterial growth. Any trace of contaminating organisms in the solution will break down the heparin in order to use its sugars for nutrients, resulting in degradation of non-sterile solutions.

Heparin solutions should not be autoclaved, because additional crosslinking of the sugars may occur at high temperatures. There is no need to freeze solutions of heparin; in fact, solutions of any polysaccharide of high molecular mass should not be frozen.

References

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3. Prevention of venous thromboembolism in surgical patients by low-dose heparin: prepared by the Council on Thrombosis of the American Heart Association. *Circulation*, **55**, 423-426A (1977).
4. Jordan, R. et al., Fractionation of low molecular weight heparin species and their interaction with antithrombin. *J. Biol. Chem.*, **254**, 2902-2913 (1979).
5. Schwartz, L.B., and Bradford, T.R., Regulation of tryptase from human lung mast cells by heparin. Stabilization of the active tetramer. *J. Biol. Chem.*, **261**, 7372-7379 (1986).
6. The Pharmacological Basis of Therapeutics, 7th Ed., Gilman, A. G. et al., Eds., Macmillan (New York, NY: 1985), p. 1341.

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