

Antithrombin Mechanism

The Fritsma Factor
YOUR INTERACTIVE HEMOSTASIS RESOURCE

UFH: Crude Extract of Porcine Mucosal Mast Cell Secretion

Unbranched highly sulfated mucopolysaccharide glycosaminoglycan

Pentose sequence in heparin chains

Active pentasaccharide

Heparin from porcine digestive mucosa

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The Fritsma Factor
YOUR INTERACTIVE HEMOSTASIS RESOURCE

The Heparin Pentose Activates Antithrombin

Extrinsic

Intrinsic

Common

Active pentasaccharides

PTT reagent, phospholipid with negatively charged particles, prolonged by heparin, LAC, procoagulant inhibitors, and XII, XI, IX, X, V, II, fibrinogen deficiencies

Figure courtesy of Margaret G. Fritsma

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The Fritsma Factor
YOUR INTERACTIVE HEMOSTASIS RESOURCE

UFH Downregulates Thrombin

UFH binds antithrombin [AT] and thrombin [IIa], neutralizes IIa by allosterically and co-localization

$IIa:Xa = 4:1$

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The Fritsma Factor
YOUR INTERACTIVE HEMOSTASIS RESOURCE

UFH Downregulates Xa

UFH binds antithrombin [AT] and Xa, neutralizes Xa by allosterically but not co-localization

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