

STREPTOKINASE

Description:

Streptokinase (SK), a protein secreted by several species of streptococci, can bind and activate human plasminogen. SK is used as an effective clot-dissolving medication in some cases of myocardial infarction (heart attack) and pulmonary embolism. Streptokinase belongs to a group of medications known as fibrinolytics, and complexes of streptokinase with human plasminogen can hydrolytically activate other unbound plasminogen by activating through bond cleavage to produce plasmin. There are three domains to Streptokinase, denoted α (residues 1–150), β (residues 151–287), and γ (residues 288–414). Each domain binds plasminogen, although none can activate plasminogen independently.

Application:

Acute Evolving Transmural Myocardial Infarction: Streptokinase, is used in the management of acute myocardial infarction in adults, for the lysis of intracoronary thrombi, the improvement of ventricular function, and the reduction of mortality associated with AMI, when administered by either the intravenous or the intracoronary route, as well as for the reduction of infarct size and congestive heart failure associated with AMI when administered by the intravenous route. Earlier administration of Streptokinase is correlated with greater clinical benefit.

Pulmonary Embolism: Streptokinase, is used for the lysis of objectively diagnosed (angiography or lung scan) pulmonary emboli, involving obstruction of blood flow to a lobe or multiple segments, with or without unstable hemodynamics.

Deep Vein Thrombosis: Streptokinase, is indicated for the lysis of objectively diagnosed (preferably ascending venography), acute, extensive thrombi of the deep veins such as those involving the popliteal and more proximal vessels.

Arterial Thrombosis or Embolism: Streptokinase, is indicated for the lysis of acute arterial thrombi and emboli. Streptokinase is not indicated for arterial emboli originating from the left side of the heart due to the risk of new embolic phenomena such as cerebral embolism.

Occlusion of Arteriovenous Cannulae: Streptokinase, is indicated as an alternative to surgical revision for clearing totally or partially occluded arteriovenous cannulae when acceptable flow cannot be achieved.

MW: ~ 47,000 Daltons

Unit Definition:

One unit will liquefy a standard clot of fibrinogen, plasminogen and thrombin at pH 7.5 at 37° C in 10 minutes. The activities are normally measured against BP/IP reference standards for defining the number of units present.

Available form:

Lyophilized powder confirming to BP/IP specifications.

Solubility:

Freely soluble in water; soluble in aqueous glycerol and glycols. Insoluble in alcohol, acetone, ether.

Stability and storage:

Stable for 3 years at 2-8° C in sealed tamper proof containers.

Reference:

1. N. Engl. J. Med. 308, 1312, (1983).
2. Lancet, 2, 349 (1988).
3. Eur. Heart. J. 13, 1692 (1992).