

tissue Plasminogen Activator (tPA)

Whole IgG from antiserum

10 mg

Product #: SATPA-IG

Lot #: XXXX

Expiry date: XXXX

Store at -10 to -20°C

For Research Use Only.

Not for use in diagnostic procedures.

Description of

tissue Plasminogen Activator (tPA)

Tissue-type plasminogen activator (tPA) is one of two major physiologic activators of plasminogen in plasma. It is a serine protease of 68 kDa produced primarily in endothelial cells but is also present in monocytes and megakaryocytes. Normal plasma tPA antigen concentrations have been reported from 20 ng/ml to 5 µg/ml, depending on the assay used, but typically most of the tPA (> 90%) is in complex with its primary inhibitor, plasminogen activator inhibitor-1 (PAI-1). Structurally, tPA is a single-chain enzyme that consists of a catalytic domain followed by two kringle structures, an EGF domain and a finger domain. The activation of plasminogen by tPA is dependent on the presence of a fibrin cofactor. The binding of both tPA and plasminogen to fibrin is mediated in part through lysine binding sites within the kringle structures of both enzyme and substrate, but also through the finger domain of tPA. Activation of plasminogen by tPA occurs by cleavage after residue Arg⁵⁶⁰ to produce the two-chain active serine protease plasmin. The activity of tPA is regulated in part by a very short half life in circulation ($t_{1/2}$ of ~4 minutes) and by circulating protease inhibitors PAI-1 and to a lesser extent α_2 macroglobulin¹⁻³.

REFERENCES and REVIEWS

1. Bachmann F; The Plasminogen-Plasmin Enzyme System; in Hemostasis and Thrombosis, 3rd Edition, eds. RW Colman, J Hirsh, VJ Marder and EW Salzman, pp. 1592-1622, J.B. Lippincott Co., Philadelphia PA, USA, 1994.
2. Holvoet P, Cleemput H, Collen D; Assay of Human Tissue-Type Plasminogen Activator (t-PA) with an Enzyme-Linked Immunosorbent Assay (ELISA) Based on Three Murine Monoclonal Antibodies to t-PA. Thrombosis and Haemostasis 54, pp. 684-687, 1985.
3. Giles AR, Nesheim, *et al*; The fibrinolytic Potential of the Normal Primate following the Generation of Thrombin *In Vivo*; Thrombosis and Haemostasis 63, pp. 476-481, 1990.

Product Specifications

Description:

Vial containing XXXX ml of whole IgG representing approximately 1 ml of antiserum. Total protein is 10 mg.

Format:

Whole IgG, clear liquid.

Host Animal:

Sheep

Immunogen:

Human tissue-type plasminogen activator prepared from melanoma cell line.

Concentration:

IgG concentration is XXXX mg/ml, determined by absorbance using an extinction coefficient ($E_{1\%}^{1\text{cm}}$) of 13.4.

Buffer:

10 mM HEPES, pH 7.4, 150 mM NaCl, 50% (v/v) glycerol.

Storage:

Store between -10 and -20°C. Product will become viscous but will not freeze. Avoid storage in frost-free freezers.

Keep vial tightly capped. Allow product to warm to room temperature and gently mix before use.

Specificity:

This antibody is specific for tPA as demonstrated by immunoelectrophoresis and ELISA.

Applications:

Suitable as a source of antibodies to human tPA.

Neutralizing activity:

Not determined.

Species Cross Reactivity:

Not determined.