

## tPA (N-14): sc-5241



The Power to Question

## BACKGROUND

uPA (urokinase-type plasminogen activator) and tPA (tissue plasminogen activator) are serine proteases that are members of the trypsin family, and they are essential to the intrinsic coagulation system. tPA is primarily involved in fibrinolysis whereas uPA principally mediates cell migration and tissue remodeling processes. uPA and tPA are responsible for cleaving plasminogen, a large serum  $\beta$ -globulin that is deposited on the Fibrin strands within a thrombus. uPA and tPA preferentially target plasminogen at the Arg-Val bond to produce plasmin (also designated Fibrinolysin), which is a trypsin-like enzyme that acts on Arg-Lys bonds in Fibrin and Fibrinogen and contributes to the systematic activation of the coagulation cascade. uPA and tPA each consist of two chains that are designated A and B. The A chain of uPA can be cleaved, resulting in low and high molecular mass forms. uPA and tPA are regulated by the serpin family members, PAI-1 and PAI-2, which are serine proteinase inhibitors that complex with uPA, tPA and other targeted proteinases and then slowly disassociate to produce cleaved species that fold into stable inactive conformations.

## CHROMOSOMAL LOCATION

Genetic locus: PLAT (human) mapping to 8p11.21; Plat (mouse) mapping to 8 A2.

## SOURCE

tPA (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of tPA of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5241 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

tPA (N-14) is recommended for detection of tPA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

tPA (N-14) is also recommended for detection of tPA in additional species, including equine.

Suitable for use as control antibody for tPA siRNA (h): sc-36705, tPA siRNA (m): sc-36706, tPA siRNA (r): sc-45948, tPA shRNA Plasmid (h): sc-36705-SH, tPA shRNA Plasmid (m): sc-36706-SH, tPA shRNA Plasmid (r): sc-45948-SH, tPA shRNA (h) Lentiviral Particles: sc-36705-V, tPA shRNA (m) Lentiviral Particles: sc-36706-V and tPA shRNA (r) Lentiviral Particles: sc-45948-V.

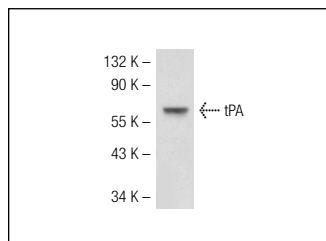
Molecular Weight of tPA: 67 kDa.

Positive Controls: mouse pancreas extract: sc-364244.

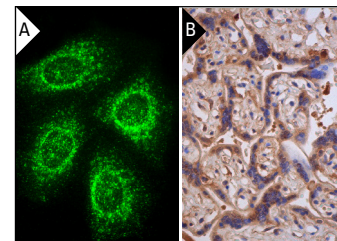
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



tPA (N-14): sc-5241. Western blot analysis of tPA expression in mouse pancreas tissue extract.



tPA (N-14): sc-5241. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic vesicles localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells (B).

## SELECT PRODUCT CITATIONS

- Siao, C.J. and Tsirka, S.E. 2002. Tissue plasminogen activator mediates microglial activation via its finger domain through annexin II. *J. Neurosci.* 22: 3352-3358.
- Ishidoya, S., et al. 2002. Plasminogen activator inhibitor-1 and tissue-type plasminogen activator are up-regulated during unilateral ureteral obstruction in adult rats. *J. Urol.* 167: 1503-1507.
- Emmetsberger, J., et al. 2010. Tissue plasminogen activator alters intracellular sequestration of zinc through interaction with the transporter ZIP4. *J. Neurosci.* 30: 6538-6547.
- Rahim, S., et al. 2011. YK-4-279 inhibits ERG and ETV1 mediated prostate cancer cell invasion. *PLoS ONE* 6: e19343.
- Barker, R., et al. 2011. Activators and inhibitors of the plasminogen system in Alzheimer's disease. *J. Cell. Mol. Med.* 16: 865-876.
- Soma, M., et al. 2012. Preferential emergence of cell types expressing markers for primitive endoderm lineages in mouse embryonic stem cells expressing exogenous EGAM1 homeoprotein. *J. Biosci. Bioeng.* 114: 342-346.
- Fudge, N.J. and Mearow, K.M. 2013. Extracellular matrix-associated gene expression in adult sensory neuron populations cultured on a laminin substrate. *BMC Neurosci.* 14: 15.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.



Try **tPA (D-1): sc-515562** or **tPA (UK98/6): sc-69740**, our highly recommended monoclonal alternatives to tPA (N-14).