SANTA CRUZ BIOTECHNOLOGY, INC.

tPA (UK98/6): sc-69740

BACKGROUND

uPA (urokinase-type plasminogen activator) and tPA (tissue plasminogen activator), which are serine proteases and members of the trypsin family, 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 β-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 dissociate to produce cleaved species that fold into stable inactive conformations.

REFERENCES

1. Riccio, A., et al. 1985. The human urokinase-plasminogen activator gene and its promoter. Nucleic Acids Res. 13: 2759-2771.
2. Degen, S.J., et al. 1986. The human tissue plasminogen activator gene. J. Biol. Chem. 261: 6972-6985.
3. Milligan, K.S. 1987. Tissue-type plasminogen activator: a new fibrinolytic agent. Heart Lung 16: 69-74.
4. Loscalzo, J., et al. 1988. Tissue plasminogen activator. N. Engl. J. Med. 319: 925-931.
5. Cheng, X.F., et al. 1992. Binding of tissue plasminogen activator to human endothelial cells. Importance of the B chain as a ligand. Biochem. J. 287: 407-413.
6. Prentice, C.R., et al. 1993. The fibrinolytic response to ancrod therapy: characterization of Fibrinogen and Fibrin degradation products. Br. J. Haematol. 83: 276-281.
7. Schaefer, B.M., et al. 1995. Differential expression of urokinase-type plasminogen activator (uPA), its receptor (uPA-R), and inhibitor type-2 (PAI-2) during differentiation of keratinocytes in an organotypic coculture system. Cell Res. 220: 415-423.

CHROMOSOMAL LOCATION

Genetic locus: PLAT (human) mapping to 8p11.21.

SOURCE

tPA (UK98/6) is a mouse monoclonal antibody raised against carcinoma cells of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

tPA (UK98/6) is available conjugated to either phycoerythrin (sc-69740 PE) or fluorescein (sc-69740 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

tPA (UK98/6) is recommended for detection of tPA of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

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

Molecular Weight of tPA: 67 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Makridakis, M., et al. 2010. Analysis of secreted proteins for the study of bladder cancer cell aggressiveness. J. Proteome Res. 9: 3243-3259.
2. Morretta, E., et al. 2022. Label-free quantitative proteomics to explore the action mechanism of the pharmaceutical-grade *Triticum vulgare* extract in speeding up keratinocyte healing. Molecules 27: 1108.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.