

tPA (D-1): sc-515562

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 disassociate to produce cleaved species that fold into stable inactive conformations.

REFERENCES

- Riccio, A., et al. 1985. The human urokinase-plasminogen activator gene and its promoter. *Nucleic Acids Res.* 13: 2759-2771.
- Degen, S.J., et al. 1986. The human tissue plasminogen activator gene. *J. Biol. Chem.* 261: 6972-6985.
- Milligan, K.S. 1987. Tissue-type plasminogen activator: a new Fibrinolytic agent. *Heart Lung* 16: 69-74.
- Loscalzo, J., et al. 1988. Tissue plasminogen activator. *N. Engl. J. Med.* 319: 925-931.

CHROMOSOMAL LOCATION

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

SOURCE

tPA (D-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 486-509 near the C-terminus of tPA of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

tPA (D-1) is available conjugated to agarose (sc-515562 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515562 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515562 PE), fluorescein (sc-515562 FITC), Alexa Fluor® 488 (sc-515562 AF488), Alexa Fluor® 546 (sc-515562 AF546), Alexa Fluor® 594 (sc-515562 AF594) or Alexa Fluor® 647 (sc-515562 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515562 AF680) or Alexa Fluor® 790 (sc-515562 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515562 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

tPA (D-1) is recommended for detection of tPA of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

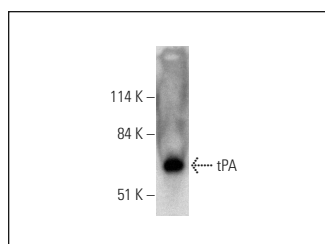
Molecular Weight of tPA: 67 kDa.

Positive Controls: human plasma extract: sc-364374.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



tPA (D-1): sc-515562. Western blot analysis of tPA expression in human plasma.

SELECT PRODUCT CITATIONS

- Morsy, M.D. 2018. Hemostatic effect of acylated ghrelin in control and sleeve gastrectomy-induced rats: mechanisms of action. *Arch. Physiol. Biochem.* 126: 31-40.
- Zheng, Y., et al. 2023. Anti-PAI-1 monoclonal antibody inhibits the metastasis and growth of esophageal squamous cell carcinoma. *J. Cancer* 14: 114-128.

STORAGE

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

RESEARCH USE

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

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