SANTA CRUZ BIOTECHNOLOGY, INC.

uPA (H77A10): sc-59727

SANTA CRUZ BIOTECHNOLOGY

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 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

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.

CHROMOSOMAL LOCATION

Genetic locus: PLAU (human) mapping to 10q22.2; Plau (mouse) mapping to 14 A3.

SOURCE

uPA (H77A10) is a mouse monoclonal antibody raised against a recombinant protein corresponding to full-length wild-type (glycosylated) uPA of mouse origin.

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.

uPA (H77A10) is available conjugated to agarose (sc-59727 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-59727 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59727 PE), fluorescein (sc-59727 FITC), Alexa Fluor® 488 (sc-59727 AF488), Alexa Fluor® 546 (sc-59727 AF546), Alexa Fluor® 594 (sc-59727 AF594) or Alexa Fluor® 647 (sc-59727 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59727 AF680) or Alexa Fluor® 790 (sc-59727 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

uPA (H77A10) is recommended for detection of uPA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for uPA siRNA (h): sc-36779, uPA siRNA (m): sc-36780, uPA shRNA Plasmid (h): sc-36779-SH, uPA shRNA Plasmid (m): sc-36780-SH, uPA shRNA (h) Lentiviral Particles: sc-36779-V and uPA shRNA (m) Lentiviral Particles: sc-36780-V.

Molecular Weight of uPA precursor: 55 kDa.

Molecular Weight of uPA active enzyme: 33 kDa.

SELECT PRODUCT CITATIONS

1. Jing, Y., et al. 2012. Role of plasminogen activator inhibitor-1 in urokinase's paradoxical *in vivo* tumor suppressing or promoting effects. Mol. Cancer Res. 10: 1271-1281.
2. Zhang, W., et al. 2015. Additive effects of eukaryotic co-expression plasmid carrying GRIM-19 and LKB1 genes on breast cancer *in vitro* and *in vivo*. Mol. Med. Rep. 12: 7665-7672.
3. Tong, W., et al. 2016. Curcumin suppresses colon cancer cell invasion via AMPK-induced inhibition of NFκB, uPA activator and MMP9. Oncol. Lett. 12: 4139-4146.
4. Yang, H.L., et al. 2017. Lucidone promotes the cutaneous wound healing process via activation of the PI_3K/Akt, Wnt/β-catenin and NFκB signaling pathways. Biochim. Biophys. Acta 1864: 151-168.
5. Liu, Q., et al. 2018. High expression of uPA related to p38MAPK in esophageal cancer indicates poor prognosis. Onco Targets Ther. 11: 8427-8434.
6. Li, Q., et al. 2019. Chemically modified liposomes carrying TRAIL target activated hepatic stellate cells and ameliorate hepatic fibrosis *in vitro* and *in vivo*. J. Cell. Mol. Med. 23: 1951-1962.
7. Slamova, I., et al. 2021. Plasmin activity promotes amyloid deposition in a transgenic model of human transthyretin amyloidosis. Nat. Commun. 12: 7112.
8. Zheng, X., et al. 2022. Interventional microbubble enhanced sonothrombolysis on left ventricular assist devices. Adv. Sci. 9: e2201291.
9. Zhu, R., et al. 2022. Exogenous urokinase inhibits proteasomal degradation of its cognate urokinase plasminogen activator receptor. Front. Pharmacol. 13: 754271.

STORAGE

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