SANTA CRUZ BIOTECHNOLOGY, INC.

plasminogen (10A1): sc-69793

BACKGROUND

Cleavage of the serine proteinase plasminogen to form plasmin is the central event in the dissolution of blood clots by the fibrinolytic system. Within the fibrinolytic cascade, the serine proteinases urokinase-type plasminogen activator (uPA) and tissue-type plasminogen activator (tPA) activate the pro-enzyme plasminogen by cleaving plasminogen to form the fibrinolytically active enzyme plasmin. The enzyme plasmin consists of a heavy chain of 561 amino acids, which originates from the N-terminus of plasminogen, and a light chain of 230 amino acid residues, which is derived from the C-terminus of plasminogen. Plasmin is a proangiogenic proteinase that is capable of degrading a variety of extracellular matrix proteins and that facilitates endothelial cell migration and angiogenesis. In the presence of free sulfhydryl donors (FSD), plasmin undergoes auto-proteolysis and is converted to the enzyme angiostatin, which blocks angiogenesis and neovascularization and can inhibit the growth of primary and metastatic tumors.

REFERENCES

1. Forsgren, M., et al. 1987. Molecular cloning and characterization of a full length cDNA clone for human plasminogen. FEBS Lett. 213: 254-260.
2. Petersen, T.E., et al. 1990. Char-acterization of the gene for human plasminogen, a key proenzyme in the fibrinolytic system. J. Biol. Chem. 265: 6104-6111.
3. Christensen, L., et al. 1996. Immunohistochemical localization of urokinase-type plasminogen activator, type-1 plasminogen-activator inhibitor, urokinase receptor and α_2-macroglobulin receptor in human breast carcinomas. Int. J. Cancer 66: 441-452.
4. Gately, S., et al. 1997. The mechanism of cancer-mediated conversion of plasminogen to the angiogenesis inhibitor angiostatin. Proc. Natl. Acad. Sci. USA 94: 10868-10872.
5. Falcone, D.J., et al. 1998. Macrophage formation of angiostatin during inflammation. A byproduct of the activation of plasminogen. J. Biol. Chem. 273: 31480-31485.
6. Morikawa, W., et al. 2000. Angiostatin generation by cathepsin D secreted by human prostate carcinoma cells. J. Biol. Chem. 275: 38912-38920.
7. Andreasen, P.A., et al. 2000. The plasminogen activation system in tumor growth, invasion, and metastasis. Cell. Mol. Life Sci. 57: 25-40.

CHROMOSOMAL LOCATION

Genetic locus: PLG (human) mapping to 6q26; Plg (mouse) mapping to 17 A1.

SOURCE

plasminogen (10A1) is a mouse monoclonal antibody raised against purified plasminogen of human origin.

PRODUCT

Each vial contains IgG_1 in 100 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

plasminogen (10A1) is recommended for detection of plasminogen of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Suitable for use as control antibody for plasminogen siRNA (h): sc-40857, plasminogen siRNA (m): sc-40858, plasminogen shRNA Plasmid (h): sc-40857-SH, plasminogen shRNA Plasmid (m): sc-40858-SH, plasminogen shRNA (h) Lentiviral Particles: sc-40857-V and plasminogen shRNA (m) Lentiviral Particles: sc-40858-V.

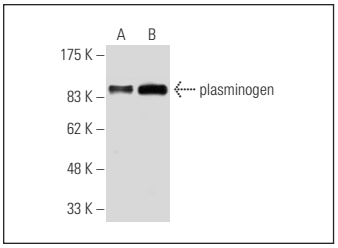
Molecular Weight of plasminogen: 90 kDa.

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-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).

DATA



plasminogen (10A1): sc-69793. Western blot analysis of plasminogen purified from human plasma (**A**) and in human plasma (**B**).

SELECT PRODUCT CITATIONS

1. Kinnaird, T., et al. 2004. Marrow-derived stromal cells express genes encoding a broad spectrum of arteriogenic cytokines and promote *in vitro* and *in vivo* arteriogenesis through paracrine mechanisms. Circ. Res. 94: 678-685.
2. Zamolodchikov, D. and Strickland, S. 2012. Aβ delays fibrin clot lysis by altering fibrin structure and attenuating plasminogen binding to fibrin. Blood 119: 3342-3351.

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.