

Aminopeptidase P1 (D-7): sc-398955

BACKGROUND

Aminopeptidases comprise a family of enzymatic proteins that are widely distributed in both eukaryotes and prokaryotes and function to catalyze the removal of amino acids from the N-termini of proteins. Aminopeptidase P1 is proline-specific; it cleaves the N-terminal amino acid where the second residue is proline. It is a mammalian bradykinin-degrading, metal-dependant enzyme that exists in two forms: a membrane-bound form and a cytosolic form. Aminopeptidase P1 is GPI-linked and the membrane-bound form is expressed in all tissues with highest expression in pancreas. Aminopeptidase P1 has been shown to be a receptor for the breast-homing peptide and may therefore be a potential therapeutic target for the treatment and prevention of breast cancer.

REFERENCES

1. Wilk, S., et al. 1998. Purification, characterization and cloning of a cytosolic aspartyl aminopeptidase. *J. Biol. Chem.* 273: 15961-15970.
2. Cottrell, G.S., et al. 2000. Cloning, expression and characterization of human cytosolic Aminopeptidase P: a single manganese(II)-dependent enzyme. *Biochemistry* 39: 15121-15128.
3. Essler, M., et al. 2002. Molecular specialization of breast vasculature: a breast-homing phage-displayed peptide binds to Aminopeptidase P in breast vasculature. *Proc. Natl. Acad. Sci. USA* 99: 2252-2257.
4. Graham, S.C., et al. 2006. Kinetic and crystallographic analysis of mutant *Escherichia coli* Aminopeptidase P: insights into substrate recognition and the mechanism of catalysis. *Biochemistry* 45: 964-975.
5. Jao, S.C., et al. 2006. Tyrosine 387 and Arginine 404 are critical in the hydrolytic mechanism of *Escherichia coli* Aminopeptidase P. *Biochemistry* 45: 1547-1553.
6. Kiraly, O., et al. 2006. Expression of human cationic trypsinogen with an authentic N-terminus using intein-mediated splicing in Aminopeptidase P deficient *Escherichia coli*. *Protein Expr. Purif.* 48: 104-111.
7. Molinaro, G., et al. 2006. Kinin-dependent hypersensitivity reactions in hemodialysis: metabolic and genetic factors. *Kidney Int.* 70: 1823-1831.
8. Oh, P., et al. 2007. Live dynamic imaging of caveolae pumping targeted antibody rapidly and specifically across endothelium in the lung. *Nat. Biotechnol.* 25: 327-337.

CHROMOSOMAL LOCATION

Genetic locus: XPNPEP1 (human) mapping to 10q25.1; Xpnpep1 (mouse) mapping to 19 D2.

SOURCE

Aminopeptidase P1 (D-7) is a mouse monoclonal antibody raised against amino acids 103-246 mapping within an internal region of Aminopeptidase P of human origin.

PRODUCT

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

APPLICATIONS

Aminopeptidase P1 (D-7) is recommended for detection of Aminopeptidase P1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Aminopeptidase P1 siRNA (h): sc-90608, Aminopeptidase P1 siRNA (m): sc-141046, Aminopeptidase P1 shRNA Plasmid (h): sc-90608-SH, Aminopeptidase P1 shRNA Plasmid (m): sc-141046-SH, Aminopeptidase P1 shRNA (h) Lentiviral Particles: sc-90608-V and Aminopeptidase P1 shRNA (m) Lentiviral Particles: sc-141046-V.

Molecular Weight of Aminopeptidase P1: 70/67 kDa.

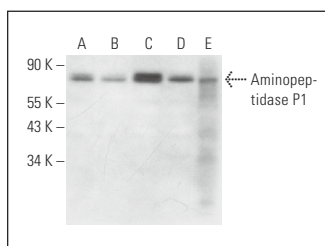
Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Jurkat whole cell lysate: sc-2204 or MCF7 whole cell lysate: sc-2206.

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.

DATA



Aminopeptidase P1 (D-7): sc-398955. Western blot analysis of Aminopeptidase P1 expression in MIA PaCa-2 (A), HeLa (B), Jurkat (C) and MCF7 (D) whole cell lysates and human pancreas tissue extract (E).

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.