SANTA CRUZ BIOTECHNOLOGY, INC.

p-PAM (Ser 949)-R: sc-22263-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Peptidylglycine α-amidating monooxygenase (PAM) catalyzes the two-step formation of bioactive α-amidated neural and endocrine peptides from their glycine-extended precursors. PAM is a bifunctional protein that contains a peptidyl-glycine α-hydroxylating monooxygenase and a peptidyl-α-hydroxyglycine α-amidating lyase catalytic domains. Tissue-specific alternative splicing and endoproteo-lysis generate both soluble and integral membrane mono- and bifunctional PAM proteins. PAM is highly expressed in ovary, testis, lung, heart septum, anterior pituitary and hypothalamus, and to a lesser extent in liver, ventricle, atrium and neuro-intermediate lobe. The 3'-untranslated region of PAM mRNA has a novel 20-nucleotide cis element, which is able to interact with cellular cytosolic protease-sensitive factor(s). The cytosolic domain of the PAM protein contains multiple signals determining its subcellular localization. PAM interacts with three related cytosolic proteins, designated P-CIPs (PAM cytosolic interactor proteins). P-CIP2 is a protein kinase that phosphorylates PAM at serine 949. Phosphorylation of PAM in the cytosolic domain of PAM plays a critical role in the trafficking of PAM. PAM in rat sciatic nerves is proteolytically processed during the axonal transport of secretion granules.

REFERENCES

1. Husten, E.J., et al. 1993. Use of endoproteases to identify catalytic domains, linker regions and functional interactions in soluble peptidylglycine α-amidating monooxygenase. J. Biol. Chem. 268: 9709-9717.
2. Yun, H.Y., et al. 1995. Phosphorylation of the cytosolic domain of peptidyl glycine α-amidating monooxygenase. J. Biol. Chem. 270: 30075-30083.
3. Takasugi, H., et al. 1996. Distribution and processing of peptidylglycine α-mediating monooxygenase activity in rat dorsal root ganglia and sciatic nerves. Neurochem. Int. 29: 397-403.
4. el Meskini, R., et al. 1997. Estrogen regulation of peptidylglycine α-amidating monooxygenase expression in anterior pituitary gland. Endocrinology 138: 379-388.
5. Fraboulet, S., et al. 1998. Identification of a novel CIS-element in the 3'-untranslated region of mammalian peptidylglycine α-amidating monooxygenase messenger ribonucleic acid. Endocrinology 139: 894-904.
6. Girard, B., et al. 1999. Characterization and regulation of peptidylglycine α-amidating monooxygenase (PAM) expression in H9c2 cardiac myoblasts. Cell Tissue Res. 298: 489-497.
7. Caldwell, B.D., et al. 1999. The novel kinase peptidylglycine α-amidating monooxygenase cytosolic interactor protein 2 interacts with the cytosolic routing determinants of the peptide processing enzyme peptidyl glycine alpha-amidating monooxygenase. J. Biol. Chem. 274: 34646-34656.

CHROMOSOMAL LOCATION

Genetic locus: PAM (human) mapping to 5q21.1; Pam (mouse) mapping to 14 E2.3.

STORAGE

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

SOURCE

p-PAM (Ser 949)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 949 phosphorylated PAM of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22263 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-PAM (Ser 949)-R is recommended for detection of PAM 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-PAM (Ser 949)-R is also recommended for detection of correspondingly phosphorylated PAM in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PAM siRNA (h): sc-106802, PAM siRNA (m): sc-155926, PAM shRNA Plasmid (h): sc-106802-SH, PAM shRNA Plasmid (m): sc-155926-SH, PAM shRNA (h) Lentiviral Particles: sc-106802-V and PAM shRNA (m) Lentiviral Particles: sc-155926-V.

Molecular Weight of PAM: 120/94/84/45 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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