SANTA CRUZ BIOTECHNOLOGY, INC.

PAM (F-4): sc-514110

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 peptidylglycine α-hydroxylating monooxygenase and a peptidyl-α-hydroxyglycine α-amidating lyase catalytic domains. Tissue-specific alternative splicing and endoproteolysis generate both soluble and integral membrane mono- and bifunctional PAM proteins. PAM is higly expressed in ovary, testis, lung, heart septum, anterior pituitary and hypothalamus, and to a lesser extent in liver, ventricle, atrium and neurointermediate 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. 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 peptidylglycine 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.

CHROMOSOMAL LOCATION

Genetic locus: PAM (human) mapping to 5q21.1.

SOURCE

PAM (F-4) is a mouse monoclonal antibody raised against amino acids 501-800 mapping near the C-terminus of PAM of human 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.

PAM (F-4) is available conjugated to agarose (sc-514110 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514110 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514110 PE), fluorescein (sc-514110 FITC), Alexa Fluor® 488 (sc-514110 AF488), Alexa Fluor® 546 (sc-514110 AF546), Alexa Fluor® 594 (sc-514110 AF594) or Alexa Fluor® 647 (sc-514110 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514110 AF680) or Alexa Fluor® 790 (sc-514110 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PAM (F-4) is recommended for detection of PAM of 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 PAM siRNA (h): sc-106802, PAM shRNA Plasmid (h): sc-106802-SH and PAM shRNA (h) Lentiviral Particles: sc-106802-V.

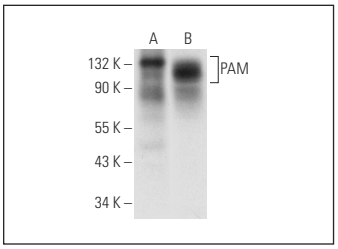
Molecular Weight of PAM: 120/94/84/45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or human heart extract: sc-363763.

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



PAM (F-4): sc-514110. Western blot analysis of PAM expression in human heart tissue extract (**A**) and HeLa whole cell lysate (**B**).

SELECT PRODUCT CITATIONS

1. Grotz, A.K., et al. 2019. A CRISPR/Cas9 genome editing pipeline in the EndoC-βH1 cell line to study genes implicated in β cell function. Wellcome Open Res. 4: 150.

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.