## SANTA CRUZ BIOTECHNOLOGY, INC.

# PAM (F-4): sc-514110



### BACKGROUND

Peptidylglycine  $\alpha$ -amidating monooxygenase (PAM) catalyzes the two-step formation of bioactive  $\alpha$ -amidated neural and endocrine peptides from their glycine-extended precursors. PAM is a bifunctional protein that contains a peptidylglycine  $\alpha$ -hydroxylating monooxygenase and a peptidyl- $\alpha$ -hydroxyglycine  $\alpha$ -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**

- 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.
- 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  $\alpha$ -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  $\alpha$ -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  $\mu g$  IgG1 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-lgG $\kappa$  BP-HRP: sc-516102 or m-lgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-lgG $\kappa$  BP-FITC: sc-516140 or m-lgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> 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- $\beta$ H1 cell line to study genes implicated in  $\beta$  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.

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