

Tachykinin (A-2): sc-55493

BACKGROUND

The Tachykinin family consists of amidated neuropeptides that share a carboxy-terminal sequence (Phe-X-Gly-Leu-Met-NH₂). Preprotachykinin I, also designated protachykinin 1 precursor (PPT), is a common precursor of Tachykinins. Preprotachykinin I alternately splices to form various isoforms. These isoforms include Substance P, Neurokinin A (NKA, Substance K, Neuromedin L), Neurokinin B, Neuropeptide K (NPK), Neuropeptide γ and C-terminal flanking peptide. Substance P is expressed primarily in the small diameter primary sensory fibers of the peripheral nervous system and in the superficial dorsal horn of the spinal cord, the substantia nigra and the medial amygdaloid nucleus of the central nervous system. Tachykinin peptides have many pleiotropic functions, including neurotransmission, immune/hematopoietic modulation, angiogenesis and mitogenesis. Preprotachykinin I has been implicated in breast cancer and bone marrow metastasis. Substance P plays a role in depression.

REFERENCES

1. McGregor, G.P. and Conlon, J.M. 1990. Characterization of the C-terminal flanking peptide of human β -preprotachykinin. *Peptides* 11: 907-910.
2. Kramer, M.S., et al. 1998. Distinct mechanism for antidepressant activity by blockade of central Substance P receptors. *Science* 281: 1640-1645.
3. Lai, J.P., et al. 1998. Identification of a δ isoform of preprotachykinin mRNA in human mononuclear phagocytes and lymphocytes. *J. Neuroimmunol.* 9: 121-128.
4. Page, N.M., et al. 2000. Excessive placental secretion of neurokinin B during the third trimester causes pre-eclampsia. *Nature* 405: 797-800.
5. Ribeiro-da-Silva, A. and Hokfelt, T. 2000. Neuroanatomical localization of Substance P in the CNS and sensory neurons. *Neuropeptides* 34: 256-271.
6. Singh, D., et al. 2000. Increased expression of preprotachykinin-I and neurokinin receptors in human breast cancer cells: implications for bone marrow metastasis. *Proc. Natl. Acad. Sci. USA* 97: 388-393.
7. Qian, J., et al. 2001. Cloning of human preprotachykinin-I oriniter and the role of cyclic adenosine 5'-monophosphate response elements in its expression by IL-1 and stem cell factor. *J. Immunol.* 166: 2553-2561.

CHROMOSOMAL LOCATION

Genetic locus: TAC1 (human) mapping to 7q21.3; Tac1 (mouse) mapping to 6 A1.

SOURCE

Tachykinin (A-2) is a mouse monoclonal antibody raised against amino acids 1-129 representing full length Tachykinin of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

Tachykinin (A-2) is recommended for detection of Tachykinin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

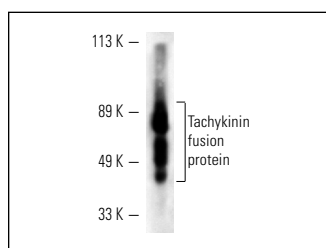
Suitable for use as control antibody for Preprotachykinin 1 siRNA (h): sc-42297, Preprotachykinin 1 siRNA (m): sc-42298, Preprotachykinin 1 shRNA Plasmid (h): sc-42297-SH, Preprotachykinin 1 shRNA Plasmid (m): sc-42298-SH, Preprotachykinin 1 shRNA (h) Lentiviral Particles: sc-42297-V and Preprotachykinin 1 shRNA (m) Lentiviral Particles: sc-42298-V.

Molecular Weight of Tachykinin: 16 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Tachykinin (A-2): sc-55493. Western blot analysis of human recombinant Tachykinin fusion protein.

STORAGE

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

PROTOCOLS

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



See **Tachykinin (H-2): sc-25266** for Tachykinin antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.