SANTA CRUZ BIOTECHNOLOGY, INC.

Substance P (SP-DE4-21): sc-58591

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Substance P (also designated NK-1) is an active peptide, known as a Tachykinin, that affects diverse functions, including blood pressure regulation, peristalsis of the gut, salivation and the modulation of cellular immunity. Fragments of Substance P have differential binding capacities for Substance P receptors and have varying biological activities. For example, two amino-terminal fragments of Substance P are able to evoke an increase in GABA release. NK-1 receptor (NK-1R), also designated Substance P receptor, binds to Tachykinin peptides, including Substance P, Substance K and Neuromedin K. In response to Substance P binding, NK-1R signals IL-12 production.

REFERENCES

1. Harmar, A.J., et al. 1986. cDNA sequence of human β-preprotachykinin, the common precursor to Substance P and Neurokinin A. FEBS Lett. 208: 67-72.
2. Chen, J., et al. 1991. The role of Substance P in regulation of blood pressure and hypertension. Ann. N.Y. Acad. Sci. 632: 413-414.
3. Sakuma, M., et al. 1991. Substance P-evoked release of GABA from isolated spinal cord of the newborn rat. Neuroscience 45: 323-330.
4. Pascual, D.W., et al. 1992. The cytokine-like action of Substance P upon B cell differentiation. Reg. Immunol. 4: 100-104.

CHROMOSOMAL LOCATION

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

SOURCE

Substance P (SP-DE4-21) is a mouse monoclonal antibody raised against amino acids 1-11 of Substance P of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 500 µl PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Substance P (SP-DE4-21) is recommended for detection of Substance P and protachykinin 1 precursor of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with related Tachykinins (human Neurokinin A, Neurokinin B, and Kassinin).

Substance P (SP-DE4-21) is also recommended for detection of Substance P and protachykinin 1 precursor in additional species, including equine and bovine.

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.

STORAGE

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

SELECT PRODUCT CITATIONS

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3. Lin, C.S., et al. 2015. H_2O_2 generated by NADPH oxidase 4 contributes to transient receptor potential vanilloid 1 channel-mediated mechanosensation in the rat kidney. Am. J. Physiol. Renal Physiol. 309: F369-F376.
4. Coyle, D., et al. 2016. Altered neurotransmitter expression profile in the ganglionic bowel in Hirschsprung's disease. J. Pediatr. Surg. 51: 762-769.
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6. Shanks, J., et al. 2018. Sympatho-excitatory response to pulmonary chemosensitive spinal afferent activation in anesthetized, vagotomized rats. Physiol. Rep. 6: e13742.
7. Donadio, V., et al. 2019. The autonomic innervation of hairy skin in humans: an *in vivo* confocal study. Sci. Rep. 9: 16982.
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12. Dalmolin, A.C., et al. 2022. Effect of bioactive glasses used as dentin desensitizers on the dentin-pulp complex in rats. Dent. Mater. J. 41: 874-881.
13. Song, X.X., et al. 2023. Estrogen receptor β/Substance P signaling in spinal cord mediates antinociceptive effect in a mouse model of discogenic low back pain. Front. Cell. Neurosci. 16: 1071012.

RESEARCH USE

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