

Substance P (E-15): sc-14104

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

- 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.
- 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.
- Sakuma, M., et al. 1991. Substance P-evoked release of GABA from isolated spinal cord of the newborn rat. *Neuroscience* 45: 323-330.
- Pascual, D.W., et al. 1992. The cytokine-like action of substance P upon B cell differentiation. *Reg. Immunol.* 4: 100-104.
- Kincy-Cain, T. and Bost, K.L. 1997. Substance P-induced IL-12 production by murine macrophages. *J. Immunol.* 158: 2334-2339.
- Saria, A. 1999. The tachykinin NK1 receptor in the brain: pharmacology and putative functions. *Eur. J. Pharmacol.* 375: 51-60.
- Zhang, G., et al. 2004. Substance P promotes sleep in the ventrolateral preoptic area of rats. *Brain Res.* 1028: 225-232.
- Kondo, I., et al. 2005. Inhibition by spinal μ - and δ -opioid agonists of afferent-evoked substance P release. *J. Neurosci.* 25: 3651-3660.

CHROMOSOMAL LOCATION

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

SOURCE

Substance P (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Protachykinin 1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-14104 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Substance P (E-15) is recommended for detection of mature Substance P and all isoforms of the Protachykinin 1 precursor 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).

Substance P (E-15) is also recommended for detection of mature Substance P and all isoforms of the Protachykinin 1 precursor in additional species, including equine, canine, bovine and porcine.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Arnold, J., et al. 2011. Imbalance between sympathetic and sensory innervation in peritoneal endometriosis. *Brain Behav. Immun.* 26: 132-141.
- Backman, L.J., et al. 2011. Endogenous substance P production in the Achilles tendon increases with loading in an *in vivo* model of tendinopathy-peptidergic elevation preceding tendinosis-like tissue changes. *J. Musculoskelet. Neuronal. Interact.* 11: 133-140.

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.


 MONOS
 Satisfaction
 Guaranteed

Try **Substance P (SP-DE4-21): sc-58591**, our highly recommended monoclonal alternative to Substance P (E-15).