SANTA CRUZ BIOTECHNOLOGY, INC.

Substance P (NC1/34HL): sc-21715

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. Frag-ments 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.

CHROMOSOMAL LOCATION

Genetic locus: TAC1 (human) mapping to 7q21.3, TAC3 (human) mapping to 12q13.3; Tac1 (mouse) mapping to 6 A1, Tac2 (mouse) mapping to 10 D3.

SOURCE

Substance P (NC1/34HL) is a rat monoclonal antibody epitope mapping near the C-terminus of Substance P.

PRODUCT

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

Substance P (NC1/34HL) is available conjugated to agarose (sc-21715 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21715 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21715 PE), fluorescein (sc-21715 FITC), Alexa Fluor® 488 (sc-21715 AF488), Alexa Fluor® 546 (sc-21715 AF546), Alexa Fluor® 594 (sc-21715 AF594) or Alexa Fluor® 647 (sc-21715 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21715 AF680) or Alexa Fluor® 790 (sc-21715 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

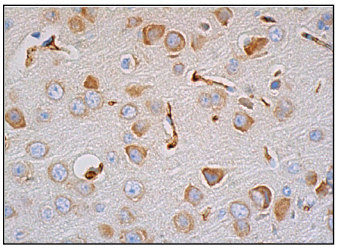
APPLICATIONS

Substance P (NC1/34HL) is recommended for detection of Substance P and Neurokinins A and B of multiple species origin by immunofluorescence (start-ing 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 [Leu] enkephalin, [Met] enkephalin, somatostatin, and β-endorphin.

STORAGE

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

DATA



Substance P (NC1/34HL): sc-21715. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells and endothelial cells.

SELECT PRODUCT CITATIONS

1. Sato, J., et al. 2007. Specific expression of Substance P in synovial tissues of patients with symptomatic, non-reducing internal derangement of the temporomandibular joint: comparison with clinical findings. Br. J. Oral Maxillofac. Surg. 45: 372-377.
2. Dall'Aglio, C., et al. 2008. Identification of orexin A- and orexin type 2 receptor-positive cells in the gastrointestinal tract of neonatal dogs. Eur. J. Histochem. 52: 229-235.
3. Li, X.B., et al. 2009. Role of *Helicobacter pylori* infection on neuronal expression in the stomach and spinal cord of a murine model. J. Dig. Dis. 10: 286-292.
4. Cipriani, G., et al. 2011. NK receptors, Substance P, Ano1 expression and ultrastructural features of the muscle coat in Cav-1$^{-/-}$ mouse ileum. J. Cell. Mol. Med. 15: 2411-2420.
5. Pradhan Nabzdyk, L., et al. 2013. Expression of neuropeptides and cytokines in a rabbit model of diabetic neuroischemic wound healing. J. Vasc. Surg. 58: 766-775.e12.
6. Dirks-Naylor, A.J., et al. 2014. Effects of acute doxorubicin treatment on hepatic proteome lysine acetylation status and the apoptotic environment. World J. Biol. Chem. 5: 377-386.
7. Ippolito, C., et al. 2015. An integrated assessment of histopathological changes of the enteric neuromuscular compartment in experimental colitis. J. Cell. Mol. Med. 19: 485-500.
8. Broms, J., et al. 2015. Conserved expression of the GPR151 receptor in habenular axonal projections of vertebrates. J. Comp. Neurol. 523: 359-380.
9. Pellegrini, C., et al. 2016. Alteration of colonic excitatory tachykininergic motility and enteric inflammation following dopaminergic nigrostriatal neurodegeneration. J. Neuroinflammation 13: 146.

RESEARCH USE

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