SANTA CRUZ BIOTECHNOLOGY, INC.

ST (24A5): sc-33724

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The members of the G protein-coupled receptor family are distinguished by their slow transmitting response to ligand binding. These seven transmembrane proteins include the adrenergic, serotonin and dopamine receptors. The effect of the signaling molecule can be excitatory or inhibitory depending on the type of receptor to which it binds. Members of the β-Arrestin family regulate receptor binding to G proteins. β-Arrestins have been found to be located at postsynaptic sites, where they are thought to act in concert with βARK (βARK1, also designated GRK 2, or βARK2, also designated GRK 3) to regulate G protein-coupled neurotransmitter receptors. Expression of β-Arrestin-1 and β-Arrestin-2 is seen predominantly in spleen and neuronal tissues. It has been shown that β-Arrestin-1 expression is modulated by intracellular cAMP, which may be a novel mechanism for the regulation of receptor-mediated responses. The Na/Cl dependent ST (SLC6A4) functions to clear serotonin from the synaptic cleft. Many tricyclic antidepressants and serotonin selective reuptake inhibitors appear to act on this transporter. SSRIs function by increasing the amount of time serotonin remains in the synaptic cleft. The presence of active ST is vital for proper emotional development within the brain.

REFERENCES

1. Cotecchia, S., et al. 1990. Multiple second messenger pathways of α-adrenergic receptor subtypes expressed in eukaryotic cells. J. Biol. Chem. 265: 63-69.
2. Levy, F.O., et al. 1992. Molecular cloning of a human gene (S31) encoding a novel serotonin receptor mediating inhibition of adenylyl cyclase. FEBS Lett. 296: 201-206.
3. Ramamoorthy, S., et al. 1993. Antidepressant- and cocaine-sensitive human serotonin transporter: molecular cloning, expression, and chromosomal localization. Proc. Natl. Acad. Sci. USA 90: 2542-2546.
4. Hediger, M.A., et al. 1995. Mammalian ion-coupled solute transporters. J. Physiol. 482: 7S-17S.
5. Barak, L.S., et al. 1995. The conserved seven-transmembrane sequence NP(X)2,3Y of the G protein-coupled receptor superfamily regulates multiple properties of the β_2-adrenergic receptor. Biochemistry 34: 15407-15414.
6. Pandey, S.C., et al. 1995. Phosphoinositide system-linked serotonin receptor subtypes and their pharmacological properties and clinical correlates. J. Psychiatry Neurosci. 20: 215-225.

CHROMOSOMAL LOCATION

Genetic locus: SLC6A4 (human) mapping to 17q11.2.

SOURCE

ST (24A5) is a mouse monoclonal antibody raised against the C-terminus of rat serotonin transporter.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ST (24A5) is recommended for detection of serotonin transporter of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ST siRNA (h): sc-36565, ST shRNA Plasmid (h): sc-36565-SH and ST shRNA (h) Lentiviral Particles: sc-36565-V.

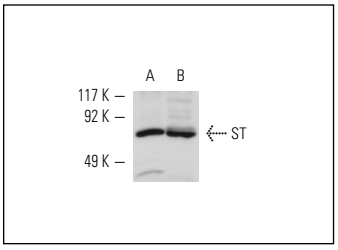
Molecular Weight of ST: 70 kDa.

Positive Controls: rat brain extract: sc-2392 or human brain tissue extract.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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).

DATA



ST (24A5): sc-33724. Western blot analysis of serotonin transporter expression in human (**A**) and rat (**B**) brain tissue extracts.

SELECT PRODUCT CITATIONS

1. Zhao, H., et al. 2011. Postnatal development of the serotonin signaling system in the mucosa of the guinea pig ileum. Neurogastroenterol. Motil. 23: 161-168.
2. Zhang, J., et al. 2012. Chronic social defeat up-regulates expression of the serotonin transporter in rat dorsal raphe nucleus and projection regions in a glucocorticoid-dependent manner. J. Neurochem. 123: 1054-1068.
3. Huff, C., et al. 2013. Effect of repeated exposure to MDMA on the function of the 5-HT transporter as assessed by synaptosomal 5-HT uptake. Brain Res. Bull. 91: 52-57.

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.