ADVANCED TARGETING SYSTEMS

10451 ROSELLE STREET, #300, SAN DIEGO, CA 92121
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Antibody to Serotonin Transporter (SERT)
MOUSE MONOCLONAL

Catalog Number:	AB-N09
Quantity:	100 micrograms
Format:	PBS (0.14 M Sodium Chloride; 0.003 M Potassium Chloride; 0.002 M Potassium Phosphate; 0.01 M Sodium Phosphate; pH 7.4), no preservative. Sterile-filtered.
Host:	Mouse
Isotype:	IgG
Clone:	4A2.2
Immunogen:	peptide from the fourth extracellular domain of the rat SERT

Background:
The serotonin (5HT) transporter (5HTT, SERT) is the major determinant of serotonin inactivation following release at synapses, is the site of action for many tricyclic antidepressants and the SSRIs (serotonin-selective reuptake inhibitor), and is also targeted by a number of psychostimulants including cocaine, methylphenidate, and MDMA 'ecstasy.' SERT is produced from a single gene and is expressed in both the CNS and GI system. The serotonergic system is known to modulate mood, emotion, sleep and appetite and thus is implicated in the control of numerous behavioral and physiological functions. Decreased serotonergic neurotransmission has been proposed to play a key role in the etiology of depression. Recent findings suggest that SERT might be linked to both neurotic and sexual behavior as well as to obsessive-compulsive disorder (OCD). The concentration of synaptic serotonin is controlled directly by its reuptake into the pre-synaptic terminal and, thus, drugs blocking serotonin transport have been successfully used for the treatment of depression. SERT first binds a sodium ion, followed by serotonin, and then a chloride ion. The transporter then flips inside the cell, releasing serotonin. A potassium ion binds, and the transporter flips back out, ready to receive another serotonin molecule.

Specificity and Preparation:
This antibody recognizes cells that express SERT in rat, human, and mouse. The immunogen is a peptide from the fourth extracellular domain of the rat SERT. This antibody was produced in tissue culture supernatants. The antibody is routinely tested by flow cytometry.

Usage and Storage:

Applications include flow cytometry (1:50),[4,5] immunohistochemistry (1:500[3], paraffin[4]), immunostaining (1:500),[4] immunocytochemistry.[1,2] Store the antibody at -20°C or -80°C. Avoid repeated freezing and thawing. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

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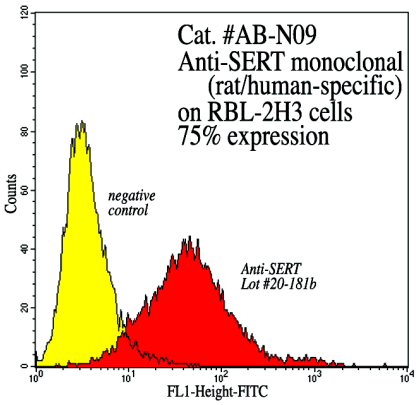

A clone of RBL-2H3 cells, rat basophilic leukemia cells, were used for a flow cytometry analysis with the serotonin re-uptake transporter (SERT) antibody that binds the rat and human SERT. Cells were treated with anti-SERT (Lot#20-181b) at 4 μg per one-million cells and subsequently with anti-murine IgG FITC. A 75% shift is seen as compared to the non-treated control.

References:

1. Muller HK, Wiborg O, Haase J (2006) Subcellular redistribution of the serotonin transporter by secretory carrier membrane protein 2. *J Biol Chem* 281(39):28901-28909.
2. O'Connell PJ, Wang X, Leon-Ponte M, Griffiths C, Pingle SC, Ahern GP (2006) A novel form of immune signaling revealed by transmission of the inflammatory mediator serotonin between dendritic cells and T cells. *Blood* 107(3):1010-1017.
3. Nattie EE, Li A, Richerson GB, Lappi DA (2004) Medullary serotonergic neurons and adjacent neurons that express neurokinin-1 receptors are both involved in chemoreception *in vivo*. *J Physiol* 556(1):235-253.
4. Lappi D, Kohls M, Majer K, Russell B, Blakely R, Richerson G (2002) Targeting serotonin re-uptake transporter (SERT) - expressing cells with a monoclonal antibody to an epitope from the extracellular domain of SERT: Results with a saporin conjugate. *4th Forum of European Neuroscience, Paris FRANCE*, Abstract #049.7.
5. Kohls MD, Majer KA, Russell BJ, Han Q, Blakely RD, Lappi DA (2001) A monoclonal antibody to an extracellular domain of the serotonin transporter: Characterization and targeting properties. *Soc Neurosci Mtg, San Diego CA*, Abstract #814.9.

Available Control(s):
SERT peptide

To view protocol(s) for this and other products please visit: www.ATSbio.com/protocols