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SERT Peptide

Catalog Number: PR-03
Quantity: 25 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), with BSA, no preservative.

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.

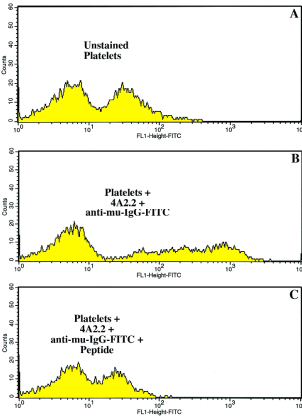
Specificity and Preparation:

This peptide corresponds to a sequence from the fourth extracellular domain of SERT as cloned by Blakely *et al.*¹ The peptide sequence is CEMRNEDVSEVAKDA. 25 micrograms of peptide is diluted into 125 micrograms of PBS containing 25 micrograms of BSA. This peptide sequence is identical in rat and mouse SERT.²

Usage and Storage:

Centrifuge material at low speed in microfuge to ensure all of solution is at bottom of tube. Vortex gently. The material should be stored at -20°C in undiluted aliquots. Material should be aliquoted to a convenient volume and quantity to avoid repeated freezing and thawing that can damage the protein content. Under these conditions, the material has a very stable shelf-life. Thawing should be done at room temperature or on ice. The thawed solution should remain on ice until use. The material can be handled safely using normal laboratory precautions.

SERT Peptide



COMPETITION OF ANTI-SERT BINDING WITH THE ANTIGENIC SERT PEPTIDE

Anti-SERT (4A2.2, Cat. #AB-N09) was incubated with human platelets in the presence of the SERT peptide (Cat. #PR-03, Lot #34-17). Anti-SERT alone produced a significant shift (B), but this shift was abolished in the presence of the SERT peptide used to produce the antibody (C). These data demonstrate the binding specificity of Anti-SERT to the SERT peptide. For the competition experiment Anti-SERT at a concentration of 1:50 was incubated with platelets in the presence of the SERT peptide at a concentration of 1 μ M. Data analyzed by CellQuest.

References:

1. Blakely RD, Berson HE, Freneau RT Jr, Caron MG, Peek MM, Prince HK, Bradley CC (1991) Cloning and expression of a functional serotonin transporter from rat brain. *Nature* 354(6348):66-70.
2. Chang AS, Chang SM, Starnes DM, Schroeter S, Bauman AL, Blakely RD (1996) Cloning and expression of the mouse serotonin transporter. *Brain Res Mol Brain Res* 43(1-2):185-192.