



SERT Peptide

Catalog Number: PR-03
Quantity: 25 micrograms
Format: DMSO

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 & 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 KDAGPSLLFITYAC. 25 micrograms of peptide is solubilized in 25 microliters of DMSO for a final concentration of 1 mg/ml. This peptide sequence is identical in rat and mouse SERT.²

Storage: Gently spin down material 5-10 seconds in a microfuge before use. 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.



Selected 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.

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