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ProductInformation

Anti-Synaptopodin (SE-19)
Developed in Rabbit
IgG Fraction of Antiserum

Product Number **S 9442**

Product Description

Anti-Synaptopodin (SE-19) is developed in rabbit using as immunogen a synthetic peptide corresponding to amino acids 184-202 of rat synaptopodin conjugated to KLH. This synaptopodin sequence has considerable homology (~70% identity) with human synaptopodin. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Synaptopodin (SE-19) recognizes synaptopodin (100 kDa) by immunoblotting. Staining of synaptopodin in immunoblotting is specifically inhibited with the synaptopodin immunizing peptide (rat, amino acids 184-202).

Synaptopodin is a proline-rich, actin-associated protein (100 kDa) localized to the actin cytoskeleton of the post-synaptic density (PSD) and dendritic spines and associated with differentiated podocytes foot processes within the renal glomerulus.[1, 2-4] Synaptopodin is thought to play an important role in neuronal plasticity by modulating actin-based motility of neuronal dendritic spines and during formation or elimination of synaptic contacts.[1, 5-7] The association of synaptopodin with the specialized actin system of renal podocyte foot processes suggests that it may play a role in actin cytoskeleton dynamics of these cellular extensions. Synaptopodin has been found to interact with α-actinin-4 and the tight junction protein MAGI-1 in MDCK cells.[8]

Synaptopodin contains a high amount of proline residues (~20%), which are evenly distributed along the protein sequence, thus virtually excluding the formation of globular domains. In particular, synaptopodin does not contain functional domains found in receptor clustering PSD proteins. Sequence comparison between human and mouse synaptopodin shows 84% identity. An additional member of the synaptopodin gene family is the synaptopodin homolog, myopodin.[9] The overall homology between synaptopodin and myopodin is ~48%.

In both brain and kidney, synaptopodin mRNA expression is differentiation dependent. During postnatal maturation of rat brain, it is first detected at day 15 and reaches maximal expression in the adult animal. The exclusive site of synaptopodin expression in the telencephalon is restricted to specific areas of high synaptic plasticity, i.e. in the perykaria of the olfactory bulb, striatum, and hippocampus.

Reagent

Anti-Synaptopodin (SE-19) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a minimum working antibody dilution of 1:3,000 is determined using a cytosolic S1 fraction of rat brain.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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