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ProductInformation

ANTI-INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR TYPE II
Developed in Rabbit, Affinity Isolated Antibody

Product Number **I 7654**

Product Description

Anti-Inositol 1,4,5-Trisphosphate Receptor Type II ($InsP_3R$-II, $InsP_3R2$) is developed in rabbit using as immunogen, a synthetic peptide corresponding to amino acid residues 317-334 from the amino terminal cytoplasmic domain of the rat $InsP_3R$-II protein. The antibody is affinity isolated on immobilized immunogen.

Anti-Inositol 1,4,5-Trisphosphate Receptor Type II specifically recognizes $InsP_3R$-II in rat cortex, hippocampus, corpus collosum and cerebellum by immunohistochemistry and immunoprecipitation. This antibody is not recommended for immunoblotting.

Two related families of calcium channels, inositol 1,4,5-trisphosphate ($InsP_3$, IP_3) and ryanodine receptors, are largely responsible for mediating calcium release from intracellular stores.[1] Because calcium diffuses slowly in the cytoplasm, the free calcium concentration near open calcium channels can far exceed that of the rest of the cytoplasm. Such spatially restricted increases in calcium concentration allow local communication between calcium channels and intracellular targets (mitochondria, for example). These “calcium synapses” increase enormously the versatility of calcium as an intracellular messenger.

The functional $InsP_3R$ is a homo- or heterotetramer of 313 kDa protein subunits in which six membrane-spanning helices, near the carboxy terminus of each subunit, form a calcium channel.[2] The enormous cytosolic domain of the receptor provides sites through which diverse intracellular signals modulate its behavior. Such signals include proteins that bind directly to the receptors (calmodulin, FKBP12), protein kinases that phosphorylate them, and many small second messengers. Perhaps the most important of the small messengers that regulate intracellular calcium channels is calcium itself, which regulates both families of receptors, and thereby allows each to mediate propagation of intracellular calcium signals by means of calcium-induced calcium release.

Mammalian $InsP_3R$ subunits are the product of three distinct genes that are widely expressed and differentially regulated. In fact, most cells express several isoforms.[3] $InsP_3R$-I has been detected in heart, liver, kidney, ovary and Purkinje neurons of the cerebellum. $InsP_3R$-II protein is found predominantly in the brain. $InsP_3R$-III expression has been shown to occur in pancreatic islets, kidney and intestinal tract.

Reagent

Anti-Inositol 1,4,5-Trisphosphate Receptor Type II is supplied as 100 µl of affinity isolated rabbit antibody in phosphate buffered saline containing 1 mg/ml bovine serum albumin and 0.05 % 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

Store the antibody at –20 °C. Repeated freezing and thawing is not recommended. Storage in “frost-free” freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:100 for immunohistochemistry.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

1. Berridge, M. J., et al., Nature Rev. Mol. Cell Biol., **1**, 11-21 (2000).
2. Patel, S., et al., Cell Calcium, **25**, 247-264 (1999).
3. Taylor, C.W., et al., Cell Calcium, **26**, 237-251 (1999).

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