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ProductInformation

MONOCLONAL ANTI-VASOACTIVE INTESTINAL PEPTIDE RECEPTOR 1 (VIPR 1, VPAC1)
Clone AS58
Purified Mouse Immunoglobulin

Product Number **V1631**

Product Description

Monoclonal Anti-Vasoactive Intestinal Peptide Receptor 1 (VIPR1) (mouse IgG2a isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a unique peptide corresponding to a portion of human Vasoactive Intestinal Peptide Receptor 1 (VIPR1). The antibody was purified from tissue culture supernatant using immobilized Protein G.

Monoclonal Anti-Vasoactive Intestinal Peptide Receptor 1 (VIPR1) recognizes VIPR1 protein from human and rat tissue by immunoblotting and by flow cytometric analysis of human cells using indirect immunofluorescence. The antibody does not recognize VIPR2 protein.

Vasoactive Intestinal Peptide (VIP) is a 28 amino acid neuropeptide with a broad range of biological activi ties. VIP is widely distributed throughout the central nervous system (CNS), peripheral nervous system and non-neuronal tissue such as mast cells and leukocytes.[1-6] In the CNS, VIP acts as a neurotransmitter or neuro-modulator.[1,2] It effects behavior, secretion, metabolism, electrophysiology, and secretion. It has trophic and mitogenic activity on neural tissue during embryogenesis, and inhibits tumors.[7,8] VIP also has important functions in the immune[9], cardiovascular[10], reproductive[11], pulmonary[12], and gastrointestinal systems. General effects include immunosuppresion, vasodilation, hormone secretion, bronchodilation, and increased gastric motility.

VIP binding sites in tissues can be divided into two types based on their sensitivity to GTP. Two GTP sensitive VIP receptors have been cloned and characterized, VIPR1 and VIPR2. These have been found to be G protein coupled receptors linked to adenylate cyclase. VIPR1 and VIPR2 are also referred to as VPAC1 and VPAC2 respectively since they respond similarly to VIP and pituitary adenylate cyclase activating polypeptide (PACAP) in stimulating cAMP production.[13]

Although structurally related, VIPR1 and VIPR2 exhibit differences in expression and function and VIP has a 3-10 fold preference for VIPR1 over VIPR2 receptors.

VIPR1 is expressed throughout the central nervous system (predominantly in the cerebral cortex and hippocampus), in peripheral tissues including liver, lung and intestine and in T lymphocytes.[14] VIPR1 mediates suppression of chemotaxis and matrix metalloprotein-ase expression elicited by some cytokines and chemo-kines, tumor cell migration induced by VIP, and vaso-dilation.

VIPR2 is expressed throughout the central nervous system, but to varying degrees. The highest expression levels are in the thalamus and suprachiasmatic nucleus, but VIPR2 is also present in the hippocampus, brainstem, spinal cord and dorsal root ganglia.[15] VIPR2 is also expressed in several peripheral tissues including pancreas, skeletal muscle, heart, kidney, adipose tissue, testis and stomach.[13]

Reagents

Monoclonal Anti-Vasoactive Intestinal Peptide Receptor 1 (VIPR1) is supplied as 100 µg of purified mouse immunoglobulin at 1.0 mg/ml in 0.2 µm sterile-filtered phosphate buffered saline with 0.08% 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 hazardous and safe handling

Storage/Stability

Store at –20°C. For extended storage, freeze in working aliquots. 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 concentration is 0.5-2 µg/ml for immunoblotting.[16] This antibody has been used at 0.25-1 µg/ml along with the appropriate secondary antibodies to stain human VIPR1 expressed on T-lymphocytes and human colonic adenocarcinoma cells fixed with paraformaldehyde followed by 0.1% Triton X-100.[16]

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

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