Product Information

Anti-γ-Adaptin Antibody, Mouse Monoclonal

Clone 100/3, Purified from Hybridoma Cell Culture

SAB4200858

Product Description

Monoclonal Anti-γ-Adaptin antibody (mouse IgG2b isotype) is derived from the 100/3 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from immunized BALB/c mice, AP-1 adaptor complex from bovine brain was used as the immunogen.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-γ-Adaptin antibody specifically recognizes 104 kDa polypeptide[1] of the Golgi adaptor complex AP-1 from human, bovine, and monkey[6]. The antibody reacts with polypeptides of approximately 100 kDa in bovine liver, human heart fibroblasts, and Madin-Darby bovine kidney cultured cells (MDBK).[1] The antibody does not recognize the γ-subunit in rodents.[1] The staining of the antibody appears to be largely confined to the trans-Golgi network.[1,6] The antibody may be used in various immunochemical techniques including immunoblot[1-6] (~ 104 kDa), immunofluorescence[1,6], immunoprecipitation,[3] electron microscopy[7] and immunoaffinity purification of the Golgi adaptor complex AP-1[5].

Clathrin-mediated endocytosis is a key process in vesicular trafficking that transports various cargo molecules from the plasma membrane of eukaryotic cells into the cytoplasm. These cargoes are involved in various physiological processes, such as cell signaling and developmental regulation.[8] Besides clathrin, coated vesicle populations contain the adaptor complexes: Assemble Protein 1 (AP1) and Assemble Protein 2 (AP-2), also known as HA-I (HA1) adaptor and HA-II (HA2) adaptor, respectively.[9] These adaptor proteins mediate the recruitment of clathrin to the membranes and thus considered as major initiators and regulators of clathrin-coated vesicle trafficking.[8,10]

AP2 is responsible for Clathrin-mediated trafficking from the plasma membrane to the endosomes, while AP1 mediates trafficking from the Golgi to endosomes and from the endosomal system to other cellular locations.[10] Biochemical analysis of APs purified from bovine brains determined that it is composed of two ~ 100 kDa large adaptin subunits (β1 and γ for AP1, β2 and α for AP2), one ~ 50 kDa medium subunit (μ1 for AP1 and μ2 for AP2) which has two folded domains connected by a linker and one ~ 18 kDa small subunit (σ1 for AP1 and σ2 for AP2).[10]

Malfunction of clathrin-dependent trafficking pathways have been associated with a variety of human diseases, such as, Alzheimer's disease, schizophrenia, leukemias and X-linked mental retardation. Additionally, various pathogens take advantage of clathrin-mediated endocytosis to enter cells and use clathrin machinery to promote other infection enhancing aspects.[11]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 0.5 mg/mL

Precautions and Disclaimer

For research use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing 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

Immunoblotting

A working concentration of 0.25-0.5 µg/mL is recommended using HeLa cells.

Immunofluorescence

A working concentration of 1-2 µg/mL is recommended using human HeLa cells.

Note: In order to obtain best results in different techniques and preparations it is recommended to determine optimal working concentration by titration test.

References

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