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Product Information

Monoclonal Anti-β-COP
Clone M3A5
produced in Mouse, ascites fluid

Catalog Number **G2279**

Product Description

Monoclonal Anti-β-COP (mouse IgG1 isotype) is derived from the M3A5 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Microtubule-associated protein preparation purified from goose brain was used as the immunogen.[1] The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

The Golgi apparatus is the central structure within the cell through which newly synthesized secretory vesicles and membrane proteins are passed, modified, and sorted en route to their final destination inside or outside of the cell.[1,3,18-22] It consists of an interconnected, branched network of membrane-bound stacks and tubules, and is divided into several structurally and functionally distinct regions.[6] At least two major classes of vesicles associated with Golgi transport are distinguished by unique sets of coat proteins.[10] The coat proteins of these vesicles consist of the heavy and light chains of clathrin, in addition to adaptor complexes comprised of the 100 kDa, α, β, and γ adaptins, and another class of nonclathrin coated vesicles. These vesicles, involved in transport within the Golgi complex and possibly between the rough ER and Golgi complex,[19,21] have a transiently attached coat containing adaptin-like, complex, coatomer proteins (COPs).[8] The coatomer (approx. 550 kDa)[2] consists of proteins designated α-, β-, γ-, and δ-COP, together with substoichiometric amounts of several other proteins.[20,22] Best characterized is the 110 kDa β-COP component which has homology in primary structure to the β–adaptin component of clathrin-coated vesicles.[2] Monoclonal antibody reacting specifically to β-COP protein, together with other antibodies to Golgi proteins (e.g., the Golgi 58K protein) may be used to study the role and relationships of this protein in the cell.

Reagent

Supplied as ascites fluid containing 15mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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, solution may be frozen in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

Product Profile

Monoclonal Anti-β-COP recognizes an epitope shared by the β-COP protein (110 kDa) found in most tissue culture cells, and a high MW doublet of brain microtubule-associated protein (MAP 2, 270-300 kDa).[1,2] The antibody stains a reticular structure in the perinuclear area of non-neuronal cells (the periphery of the Golgi complex and a population of vesicles scattered throughout the cytoplasm) in tissues from different species,[1-5] in cell processes and in cell bodies in chicken brain neuronal cells.[1] Optimal immunofluorescent staining with the antibody is obtained applying methanol/acetone, paraformaldehyde or ethylene glycol bis(succinimidylsuccinate) fixation, with a permeabilization step (0.1% Triton® X-100 and 0.05% SDS)[1] for the latter two methods.[1] The product may be used for studies on the effects of various agents influencing energy status, on disrupting the Golgi complex, or on altering the activity of G-proteins or small GTP-binding proteins on the cellular localization of β-COP.[2-12,15] The product cross reacts with a variety of species, including human,[1,3] monkey,[1,3,7,12,17] bovine,[1,5,9.14] dog,[1] rat,[1-4,8-11,15,16] rat kangaroo,[1,6] hamster,[1,9,13] chicken,[1] and goose.[1]

Monoclonal Anti-β-COP may be used for the localization of β-COP using immunoprecipitation,[1] immunocytochemistry,[1-4,6-12,15-17] immunoblotting[1,2,5,8,9,13,14] and for the immunoaffinity purification of the β-COP protein.[2]

Note: In order to obtain best results, it is recommended that each individual user determine their optimal working dilution be determined by titration assay.

References

1. Allan, V. J., and Kreis. T. E., *J. Cell Biol*., **103**, 2229 (1986).
2. Duden, R., et al., *Cell*, **64**, 649 (1991).
3. Donaldson, J. G., et al., *J. Cell Biol*., **111**, 2295 (1990).
4. Donaldson, J. G., et al., *Cell Biol*., **112**, 589 (1991).
5. Orci, L., et al., Nature, **362**, 648 (1993).
6. Ktistakis, N. T., et al., *J. Cell Biol*., **113**, 1009 (1991).
7. Sugai, M., et al., *Proc. Natl. Acad. Sci. USA*., **89**, 8903 (1992).
8. Donaldson, J. G., et al., *Science*, **254**, 1197 (1991).
9. Donaldson, J. G., et al., *Proc. Natl. Acad. Sci. USA*, **89**, 6408 (1992).
10. Narula, N., et al., *J. Cell Biol*., **117**, 27 (1992).
11. Lippincott-Schwartz, J., et al., *J. Cell Biol*., **112**, 567 (1991).
12. Robinson, M., et al., *Cell*, **69**, 129 (1992).
13. Harter, C., et al., *Proc. Natl. Acad. Sci. USA*, **93**, 1902 (1996).
14. Stamnes, M. A., et al., *Proc. Natl. Acad. Sci. USA*, **92**, 8011 (1995).
15. Cukierman, E., et al., *Science*, **270**, 1999 (1995).
16. DeMatteis, M. A., et al., *Nature*, **364**, 818 (1993).
17. Montmayeur, J. P., and Borelli, E., *Science*, **263**, 95 (1994).
18. Pepperkok, R., et al., *Cell*, **74**, 71 (1993).
19. Griffiths, G., et al., *J. Cell Sci*., **108**, 2839 (1995).
20. Kreis, T. E., et al., *Annu. Rev. Cell Dev. Biol*., **11**, 677 (1995).
21. Oprins, A., et al., *J. Cell Biol*., 121, 49 (1993).
22. Whitney, J. A., et al., *Cell*, 83, 703 (1995).

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