Product Information

Anti-Golgi FTCD antibody, clone 58k-9, Mouse monoclonal

Ascites fluid

G2404

Product Description

Monoclonal Anti-Golgi 58K Protein/ Formiminotransferase Cyclodeaminase (FTCD) (mouse IgG1 isotype) is derived from the 58K-9 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with FTCD/Golgi 58K protein purified from rat liver.[1] The isotype is determined using ImmunoType Kit (Cat. No. ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Cat. No. ISO-2).

Monoclonal Anti-Golgi 58K Protein/ Formiminotransferase Cyclodeaminase (FTCD) recognizes an epitope located on the peripheral Golgi membrane protein 58K, which was identified as the folate dependent bifunctional enzyme FTCD.[1-5] The antibody is reactive against the FTCD/Golgi 58K protein using a wide variety of mammalian cell lines and tissues by immunoblotting, immunofluorescent staining, and electron microscopy.[1] It is also useful for studies on the effect of microtubules-perturbing agents on the Golgi apparatus. Cross-reactivity with human and monkey 42 kDa ER chaperone protein RAP when using the antibody in immunoblotting and immunoprecipitation, but not by immunofluorescence has been reported.[6] The antibody cross-reacts with a variety of species, including human, monkey, bovine, pig, dog, rabbit, hamster, rat, kangaroo rat, and mouse.[1-7] Cross-reaction with lily and maize was also documented.[8, 9] The antibody may be used for the localization of Golgi 58K protein using immunoblotting, dot blot, electron microscopy, and immunocytochemistry. Immunohistochemical staining of formalin-fixed, paraffin-embedded sections has been described.[10]

The Golgi apparatus is a compound membranous cytoplasmic organelle of eukaryotic cells. It consists of an interconnected, branched network of membrane-bound stacks and tubules, and is divided into several structurally and functionally distinct regions, which proteins successively pass through: the cis-, medial-, and trans-Golgi cisternae and trans-Golgi network.[3] The Golgi apparatus appears in sections as a shallow semicircle so that its convex side (cis or entry face) abuts the endoplasmic reticulum, and from its concave side (trans or exit face) secretory vesicles emerge. In plants and lower animal cells, this organelle exists as several discrete stacks dispersed throughout the cytoplasm, while in most interphase mammalian cells the single Golgi apparatus is usually juxtanuclear or, in polar cells, adjacent to the apical surface. The main known functions of the Golgi complex include the sorting, packaging, post- translational modification, and transport of secretory proteins, membrane proteins and lipids. The Golgi apparatus is the central cellular structure through which newly synthesized secretory vesicles and membrane proteins are passed, are modified, and sorted en route to their destination inside or outside of the cell. Several cytoplasmically oriented proteins are associated with the Golgi apparatus. Golgi 58K Protein is a peripherally associated Golgi antigen that has been identified as a version of FTCD (Formiminotransferase Cyclodeaminase), a bifunctional metabolic enzyme (EC 2.1.2.5 and EC 4.3.1.4) involved in conversion of histidine to glutamic acid and serves to channel one-carbon units from formimino-glutamate to the folate pool.[2-5] This enzyme is a homo-octamer whose subunits are arranged in a planar ring. It is especially abundant in liver. Besides its association with the Golgi apparatus, it is detectable in the supernatant cytosolic fraction, and may also be localized to cytoplasmic vesicles.

FTCD does not seem to link Golgi membranes to the microtubules in vivo to the cytoskeleton, as originally proposed.1, 2 On the other hand, it was shown to interact in vitro and in vivo with vimentin subunits and with polymerized vimentin filaments regardless of its enzymatic activity.3, 5 Defects in FTCD cause the autosomal recessive disorder glutamate formiminotransferase deficiency.11 Autoantibodies to linear and conformational FTCD epitopes were described in patients with type 2 autoimmune hepatitis.

Understanding how the Golgi structure is determined and maintained and how its structure relates to Golgi function poses fundamental problems in cell biology. Monoclonal antibodies reacting specifically with the FTCD/58K protein of the Golgi apparatus used in conjunction with other antibodies to Golgi proteins (for example, the Golgi ß- COP protein) may be used for studies on the role and relationships of this protein in the cell. It is also useful for localization studies following subcellular fractionation procedures.

Reagent

Monoclonal Anti-Golgi 58K Protein/ Formiminotransferase Cyclodeaminase (FTCD) is provided as ascites fluid containing 15 mM sodium azide.

Precautions and Disclaimers

Due to the sodium azide content a safety data sheet (SDS) for this product has been sent to the attention of the safety officer of your institution. Consult the SDS 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

1. A minimum dilution of 1:50 was obtained by indirect immunofluorescent staining of cultured Chinese hamster ovary cells.
2. A minimum dilution of 1:5,000 was obtained by indirect immunoblot staining of whole rat liver extract blots.

To obtain the best results, it is recommended that each individual user determine their optimal working dilutions by titration assay.

References

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