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ProductInformation

Monoclonal Anti-Transportin 1
Clone D45
Purified Mouse Immunoglobulin

Product Number **T 0825**

Product Description

Monoclonal Anti-Transportin 1 (mouse IgG1 isotype) is derived from the hybridoma D45 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with recombinant human transportin 1.[1] The isotype is determined using Sigma ImmunoType™ Kit (Sigma ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti-Transportin1 recognizes human,[1] bovine, canine, rat, and mouse transportin 1 (approx. 90 kDa). The epitope recognized by the antibody resides in the second quarter of transportin 1.[1] The antibody can be used in various immunochemical techniques including immunoblotting,[1] immunoprecipitation,[1] and immunocytochemistry.[1]

Nucleocytoplasmic transport, which consists of entry and exit of molecules to and from the nucleus, is crucial for cell function. Both the entry and exit processes play an important role in the regulation of diverse cellular processes including growth factor-mediated signaling, stress responses, cell cycle control, and gene transcription and translation.[2] Eukaryotic cells are equipped with machinery charged with the responsibility of transporting a vast number of molecules in and out of the nucleus in a rapid, accurate, and often regulated manner. The cargoes for this machinery are diverse, comprising proteins as well as RNA-protein complexes (RNPs, ribonucloproteins). Proteins and RNAs are imported and exported through nuclear pore complexes (NPCs), which perforate the double bilayer of the nuclear envelope.[3] The nucleocytoplasmic transport is mediated by specific soluble receptors. The import receptors are called importins and the export receptors known as exportins. The family of import receptors consists of the importin β family that bind to the importin α adaptor protein. Transportin belongs to the importin β family of receptors and is responsible for importing hnRNP A1 back to the nucleus after it exports mRNA. Transportin recognizes a 38 amino acid motif called M9 domain that is enriched with aromatic residues and glycine. This motif is found in hnRNP A1, which is an abundant mRNA binding protein.[1, 5, 6]

Transportin 1 is localized in the cytoplasm, nucleoplasm, and nuclear rim, similar to the localization of importin β. This suggests that transportin 1 may interact with NPC during translocation. Monoclonal antibodies specific for Transportin 1 are an important tool for studying import and export of proteins to and from the nucleus.

Reagent

Monoclonal Anti-Transportin 1 is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide.

Antibody Concentration: Approx. 0.5 mg/ml.

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

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. Storage in frost-free freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 0.1-0.2 µg/ml is recommended using HeLa nuclear extract.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working concentration by titration.

References

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KAA/EK 0304