3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Importin 5 (N-terminal)
produced in rabbit, affinity isolated antibody

Product Number **SAB4200178**

Product Description

Anti-Importin 5 (N-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human Importin 5 (Gene ID: 3843) conjugated to KLH. The corresponding sequence differs by one amino acid in mouse and rat Importin 5. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Importin 5 (N-terminal) recognizes human Importin 5. The antibody may be used in several immunochemical techniques including immunoblotting (~123 kDa), immunoprecipitation, and immunofluorescence. Detection of the Importin 5 band by immunoblotting is specifically inhibited with the immunizing peptide.

Nucleocytoplasmic transport of proteins and RNAs occurs through nuclear pore complexes (NPCs) and is mediated by a soluble and conserved family known as importin β- type nuclear transport receptors, also named importins/exportins or karyopherins. As their names imply, importins or exportins mediate either the nuclear import or export (and sometimes even both) of a very diverse set of protein or RNA cargoes. In human cells there are more than 20 members of the family, and in yeast there are at least 14 members, all interacting directly with their cargoes, although some also use adapter proteins. The function of exportins and importins is regulated by the Ran G protein. Ran bound to GTP (RanGTP) enhances binding between exportin and its cargo, but stimulates the release of cargo from importins. RanGDP stimulates the release of exportin's cargo, but enhances the binding between an importin and its cargo.[1-3]

In addition to taking part in the nuclear import pathway, importins were implicated in anti-aggregation activity of highly basic cargo like histones and ribosomal proteins and in preventing their undesired interactions with other cellular components.[4]

Importin 5 (also known as IPO5, karyopherin β-3, importin subunit β-3, KPNB3, and RANBP5) has been identified as an importin for histones and ribosomal proteins L23a, S7, and L5, and also to the PB1 subunit of the influenza A virus RNA-dependent RNA polymerase.[5] It was also reported that abnormal expression and alternative splicing of the *IPO5* gene may be involved in the pathophysiology of schizophrenia.[6]

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: ~1.0 mg/mL

Precautions and Disclaimer

For R&D 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, or 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

Immunoblotting: a working antibody concentration of 2-4 μg/mL is recommended using whole extracts of human Jurkat cells.

Immunoprecipitation: a working amount of 5-10 μg is recommended using lysates of human HEK-293T cells.

Immunofluorescence: a working antibody concentration of 2.5-5.0 μg/mL is recommended using HEK-293T cells overexpressing human Importin 5.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Gorlich, D., and Kutay, U., *Annu. Rev. Cell Dev. Biol.*, **15**, 607-660 (1999).
2. Cook, A., et al., *Annu. Rev. Biochem.*, **76**, 647-671 (2007).
3. Weis, K., *Cell*, **112**, 441-451 (2003).
4. Jakel, S., et al., *EMBO J.*, **21**, 377- 386 (2002).
5. Deng, D., et al., *J. Virol.*, **80**, 11911-11919 (2006).
6. Wang, Z.Q., et al., *Psychiatry Res.*, In Press, Epub ahead of print doi:10.1016/j.psychres.2010.05.010 (2010).

VS,SG,RC,KAA,PHC,MAM 08/19-1