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Product Information

Monoclonal Anti-NUP153, Clone R3G1
produced in rat, purified immunoglobulin

Catalog Number **N6663**

Product Description

Monoclonal Anti-NUP153 (rat IgG2a isotype) is derived from the rat hybridoma R3G1 produced by the fusion of mouse myeloma cells and splenocytes from rat immunized with a recombinant protein corresponding to amino acids 610-1191 of rat Nup153 (Gene ID: 25281).

Monoclonal Anti-NUP153 recognizes human, mouse, rat, and simian NUP153. The antibody may be used in various immunochemical techniques including immunohistochemistry, immunoblotting (predicted ~153 kDa; apparent ~160 kDa), and immunocytochemistry.

The nuclear envelope separates the nucleoplasm from the cytosol. In eukaryotic cells, nucleocytoplasmic transport is a critical function for maintaining basic processes such as cell cycle regulation and gene expression. Selective bi-directional traffic between the nucleus and the cytoplasm occurs through nuclear pore complexes (NPC).[1] These complexes are large macromolecular structures of ~125 MDa, that are embedded in the nuclear envelope. Each NPC is comprised of ~30 different proteins known as nucleoporins (Nups), that surround a central pore ~40 nm in diameter.[2] Nup153, a member of the nucleoporin family, has been localized to the distal ring of the basket structure in the nuclear side of the NPC.[3] The primary structure of Nup153 can be divided into three regions: a unique N-terminal region, a central domain consisting of four to five zinc fingers, and a C-terminal region containing ~30 irregularly spaced FXFG repeats. The N-terminal region of Nup153 is unique and contains both a pore targeting interface as well as a RNA binding domain. This discrete region is able to directly bind single strand RNA.[4] During the transition into mitosis, Nup153 directs proteins involved in membrane remodeling to the nuclear envelope. As cells exit mitosis, Nup153 is recruited to the chromosomal surface, where nuclear pores are formed. Moreover, it is targeted for protease cleavage during apoptosis and in response to certain viral infections, thus it is believed to be the molecular basis for alteration observed in NPC function.[5]

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

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, 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using HeLa total cell extract.

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

References

1. Adam, S. A., *Genome Biology*, **2**, reviews 0007.1-0007.6 (2001).
2. Suntharalingam, M., and Wente, S. R., *Dev. Cell,* **4,** 775-789 (2003).
3. Panté, N., et al., *J. Cell Biol.,* **126,** 603-617 (1994).
4. Ulamn, K. S., et al., *Mol. Biol. Cell,* **10**, 649-664 (1999).
5. Ball, J. R., and Ulman, K. S., *Chromosoma,* **114**, 319-330 (2005).

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