SANTA CRUZ BIOTECHNOLOGY, INC.

Nup214 (N-15): sc-26055

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The nuclear pore complex (NPC) mediates bidirectional macromolecular traffic between the nucleus and cytoplasm in eukaryotic cells and comprises more than 100 different subunits. Many of the subunits belong to a family called nucleoporins (Nups), which are characterized by the presence of O-linkedN-acetylglucosamine moieties and a distinctive pentapeptide repeat (XFXFG). The short filaments extending from the cytoplasmic face of nuclear pore complexes contain docking sites for nuclear import substrates. One component of these filaments, the large O-linked glycoprotein CAN/Nup214, participates in myeloid leukemia in humans. The oncogenic nucleoporin CAN/NUP214 is critical to cell cycle progression and required for both nuclear protein import and mRNA export. The depletion of CAN/Nup214 results in defective nuclear protein import, inhibition of messenger RNA export, and cell cycle arrest. CAN/Nup214 localizes to the cytoplasmic face of the NPC.

REFERENCES

1. McMorrow, I., et al. 1994. Sequence analysis of a cDNA encoding a human nuclear pore complex protein, hnup153. Biochim. Biophys. Acta 1217: 219-223.
2. van Deursen, J., et al. 1996. G_2 arrest and impaired nucleocytoplasmic transport in mouse embryos lacking the proto-oncogene CAN/Nup214. EMBO J. 15: 5574-5583.
3. Fornerod, M., et al. 1997. The human homologue of yeast CRM1 is in a dynamic subcomplex with CAN/Nup214 and a novel nuclear pore component Nup88. EMBO J. 16: 807-816.
4. Boer, J.M., et al. 1997. The nucleoporin CAN/Nup214 binds to both the cytoplasmic and the nucleoplasmic sides of the nuclear pore complex in overexpressing cells. Exp. Cell Res. 232: 182-185.
5. Bastos, R., et al. 1997. Nup84, a novel nucleoporin that is associated with CAN/Nup214 on the cytoplasmic face of the nuclear pore complex. J. Cell Biol. 137: 989-1000.
6. Gould, V.E., et al. 2002. Nup88 (karyoporin) in human malignant neoplasms and dysplasias: correlations of immunostaining of tissue sections, cytologic smears, and immunoblot analysis. Hum. Pathol. 33: 536-544.
7. Walther, T.C., et al. 2002. The cytoplasmic filaments of the nuclear pore complex are dispensable for selective nuclear protein import. J. Cell Biol. 158: 63-77.

CHROMOSOMAL LOCATION

Genetic locus: NUP214 (human) mapping to 9q34.13.

SOURCE

Nup214 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Nucleoporin 214 of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26055 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nup214 (N-15) is recommended for detection of nucleoporin 214 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Nup214 (N-15) is also recommended for detection of nucleoporin 214 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Nup214 siRNA (h): sc-106320, Nup214 shRNA Plasmid (h): sc-106320-SH and Nup214 shRNA (h) Lentiviral Particles: sc-106320-V.

Molecular Weight of Nup214: 214 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Crampton, N., et al. 2009. Oxidative stress inhibits nuclear protein export by multiple mechanisms that target FG nucleoporins and Crm1. Mol. Biol. Cell 20: 5106-5116.
2. Asally, M., et al. 2011. Nup358, a nucleoporin, functions as a key determinant of the nuclear pore complex structure remodeling during skeletal myogenesis. FEBS J. 278: 610-621.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.