

Exo1 (N-18): sc-19941

BACKGROUND

Comparative evaluation of the expression patterns of the human and mouse genes, combined with previous biochemical and yeast genetic studies, indicate that the Exo1 (Exonuclease I) proteins are important contributors to chromosome processing during mammalian DNA repair and recombination. In mice, the mExo1 gene maps to distal chromosome 1, consistent with the recent mapping of the orthologous human HEX1/ hEXO1 gene to chromosome 1q42-q43. mExo1 is expressed prominently in testis, an area of active homologous recombination, and spleen, a prominent lymphoid tissue. In both mammalian and yeast systems, Exo1 is a 5'-3' double stranded DNA exonuclease that has previously been implicated in DNA mismatch repair (MMR). The mismatch repair (MMR) system ensures genome integrity by removing mispaired and unpaired bases that originate during replication. In humans, Exo1 interacts with MSH2 and MLH1 and has been proposed to be a redundant exonuclease in MM. In both mammalian and yeast systems, Exo1 plays a structural role in MMR and stabilizes multiprotein complexes containing a number of MMR proteins.

REFERENCES

1. Lee, B.I., Shannon, M., Stubbs, L. and Wilson, D.M. III 1999. Expression specificity of the mouse exonuclease 1 (mExo1) gene. *Nucleic Acids Res.* 27: 4114-4120.
2. Kirkpatrick, D.T., Ferguson, J.R., Petes, T.D. and Symington, L.S. 2000. Decreased meiotic intergenic recombination and increased meiosis I non-disjunction in *exo1* mutants of *Saccharomyces cerevisiae*. *Genetics* 156: 1549-1557.
3. Tran, P.T., Simon, J.A. and Liskay, R.M. 2001. Interactions of Exo1p with components of MutLalpha in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. USA* 98: 9760-9765.
4. Mansour, A.A., Tornier, C., Lehmann, E., Darmon, M. and Fleck, O. 2001. Control of GT repeat stability in *Schizosaccharomyces pombe* by mismatch repair factors. *Genetics* 158: 77-85.
5. Amin, N.S., Nguyen, M.N., Oh, S. and Kolodner, R.D. 2001. *exo1*-dependent mutator mutations: model system for studying functional interactions in mismatch repair. *Mol. Cell. Biol.* 21: 5142-5155.

CHROMOSOMAL LOCATION

Genetic locus: EXO1 (human) mapping to 1q43; Exo1 (mouse) mapping to 1 H4.

SOURCE

Exo1 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Exo1 of human origin.

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-19941 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Exo1 (N-18) is recommended for detection of Exo1a and Exo1b of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

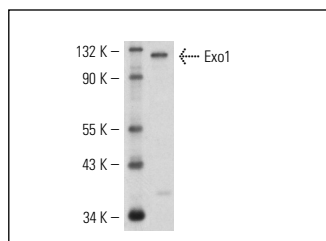
Exo1 (N-18) is also recommended for detection of Exo1a and Exo1b in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Exo1 siRNA (h): sc-44880, Exo1 siRNA (m): sc-44881, Exo1 shRNA Plasmid (h): sc-44880-SH, Exo1 shRNA Plasmid (m): sc-44881-SH, Exo1 shRNA (h) Lentiviral Particles: sc-44880-V and Exo1 shRNA (m) Lentiviral Particles: sc-44881-V.

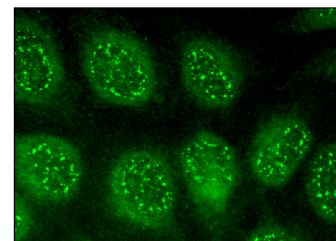
Molecular Weight of Exo1: 92 kDa.

Positive Controls: rat testis extract: sc-2400 or mouse testis extract: sc-2405.

DATA



Exo1 (N-18): sc-19941. Western blot analysis of Exo1 expression in rat testis tissue extract.



Exo1 (N-18): sc-19941. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Bolderson, E., et al. 2009. Involvement of Exo1b in DNA damage-induced apoptosis. *Nucleic Acids Res.* 37: 3452-3463.

STORAGE

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

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.



Try **Exo1 (SPM394): sc-56387**, our highly recommended monoclonal alternative to Exo1 (N-18).