

XRCC3 (N-19): sc-5904

BACKGROUND

The x-ray repair cross-complementing (XRCC) proteins are responsible for efficiently repairing and maintaining genetic stability following DNA base damage. These genes share sequence similarity with the yeast DNA repair protein Rad51. XRCC1 is a protein that facilitates the DNA base excision repair pathway by interacting with DNA ligase III and DNA polymerase to repair DNA single-strand breaks. XRCC2 and XRCC3 are both involved in maintaining chromosome stability during cell division. XRCC2 is required for efficient repair of DNA double-strand breaks by homologous recombination between sister chromatids, and XRCC3 interacts directly with Rad51 to cooperate with Rad51 during recombinational repair. XRCC4 is an accessory factor of DNA ligase IV that preferentially binds DNA with nicks or broken ends. XRCC4 binds to DNA ligase IV and enhances its joining activity, and it is also involved in V(D)J recombination. Any defect in one of the known components of the DNA repair/V(D)J recombination machinery (Ku-70, Ku-80, DNA-PKCS, XRCC4 and DNA ligase IV) leads to abortion of the V(D)J rearrangement process and early block in both T and B cell maturation.

REFERENCES

- Nash, R.A., et al. 1997. XRCC1 protein interacts with one of two distinct forms of DNA ligase III. *Biochemistry* 36: 5207-5211.
- Liu, N., et al. 1998. XRCC2 and XRCC3, new human Rad51-family members, promote chromosome stability and protect against DNA cross-links and other damages. *Mol. Cell* 1: 783-793.
- Thacker, J. 1999. The role of homologous recombination processes in the repair of severe forms of DNA damage in mammalian cells. *Biochimie* 81: 77-85.
- Thacker, J. 1999. A surfeit of Rad51-like genes? *Trends Genet.* 15: 166-168.
- Johnson, R.D., et al. 1999. Mammalian XRCC2 promotes the repair of DNA double-strand breaks by homologous recombination. *Nature* 401: 397-399.
- Pierce, A.J., et al. 1999. XRCC3 promotes homology-directed repair of DNA damage in mammalian cells. *Genes Dev.* 13: 2633-2638.

CHROMOSOMAL LOCATION

Genetic locus: XRCC3 (human) mapping to 14q32.33.

SOURCE

XRCC3 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of XRCC3 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-5904 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

XRCC3 (N-19) is recommended for detection of XRCC3 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).

Suitable for use as control antibody for XRCC3 siRNA (h): sc-37403, XRCC3 shRNA Plasmid (h): sc-37403-SH and XRCC3 shRNA (h) Lentiviral Particles: sc-37403-V.

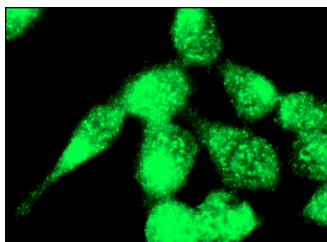
Molecular Weight of XRCC3: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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.

DATA



XRCC3 (N-19): sc-5904. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Rodriguez, R., et al. 2008. Apoptosis induced by replication inhibitors in Chk1-depleted cells is dependent upon the helicase cofactor Cdc45. *Cell Death Differ.* 15: 889-898.

STORAGE

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

MONOS
Satisfaction
Guaranteed

Try **XRCC3 (D-7): sc-271714** or **XRCC3 (10F1/6): sc-53471**, our highly recommended monoclonal alternatives to XRCC3 (N-19).