SANTA CRUZ BIOTECHNOLOGY, INC.

XRCC1 (C-15): sc-5903

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Rad5. 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.

CHROMOSOMAL LOCATION

Genetic locus: XRCC1 (human) mapping to 19q13.31; Xrcc1 (mouse) mapping to 7 A3.

SOURCE

XRCC1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of XRCC1 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-5903 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

XRCC1 (C-15) is recommended for detection of XRCC1 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

XRCC1 (C-15) is also recommended for detection of XRCC1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for XRCC1 siRNA (h): sc-36859, XRCC1 siRNA (m): sc-36860, XRCC1 shRNA Plasmid (h): sc-36859-SH, XRCC1 shRNA Plasmid (m): sc-36860-SH, XRCC1 shRNA (h) Lentiviral Particles: sc-36859-V and XRCC1 shRNA (m) Lentiviral Particles: sc-36860-V.

Molecular Weight (predicted) of XRCC1: 69 kDa.

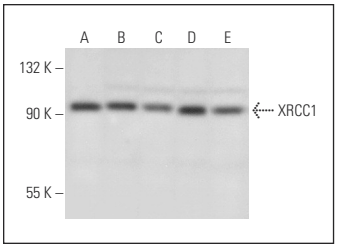
Molecular Weight (observed) of XRCC1: 71-92 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

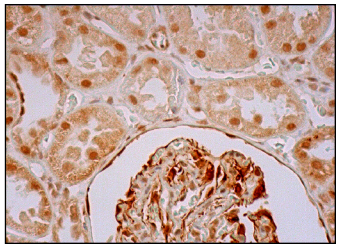
RECOMMENDED SECONDARY REAGENTS

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



XRCC1 (C-15): sc-5903. Western blot analysis of XRCC1 expression in MOLT-4 (**A**), K-562 (**B**), Daudi (**C**), Daoy (**D**) and Raji (**E**) whole cell lysates.



XRCC1 (C-15): sc-5903. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear and cytoplasmic staining of cells in glomeruli and cells in tubules.

SELECT PRODUCT CITATIONS

1. Date, H., et al. 2004. The FHA domain of Aprataxin interacts with the C-terminal region of XRCC1. Biochem. Biophys. Res. Commun. 325: 1279-1285.
2. Sano, Y., et al. 2004. Aprataxin, the causative protein for EAOH is a nuclear protein with a potential role as a DNA repair protein. Ann. Neurol. 55: 241-249.

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.