

XRCC4 (G-10): sc-365118

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-PK_{CS}, 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: XRCC4 (human) mapping to 5q14.2; Xrcc4 (mouse) mapping to 13 C3.

SOURCE

XRCC4 (G-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 307-337 at the C-terminus of XRCC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

XRCC4 (G-10) is available conjugated to agarose (sc-365118 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365118 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365118 PE), fluorescein (sc-365118 FITC), Alexa Fluor[®] 488 (sc-365118 AF488), Alexa Fluor[®] 546 (sc-365118 AF546), Alexa Fluor[®] 594 (sc-365118 AF594) or Alexa Fluor[®] 647 (sc-365118 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365118 AF680) or Alexa Fluor[®] 790 (sc-365118 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365118 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

PROTOCOLS

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

APPLICATIONS

XRCC4 (G-10) is recommended for detection of XRCC4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for XRCC4 siRNA (h): sc-37405, XRCC4 siRNA (m): sc-37406, XRCC4 shRNA Plasmid (h): sc-37405-SH, XRCC4 shRNA Plasmid (m): sc-37406-SH, XRCC4 shRNA (h) Lentiviral Particles: sc-37405-V and XRCC4 shRNA (m) Lentiviral Particles: sc-37406-V.

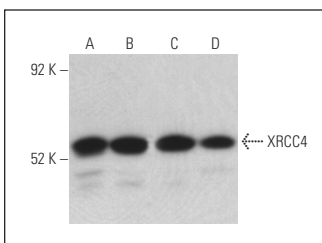
Molecular Weight of XRCC4: 55 kDa.

Positive Controls: MOLT-4 cell lysate: sc-22233, HCT-116 whole cell lysate: sc-364175 or HeLa whole cell lysate: sc-2200.

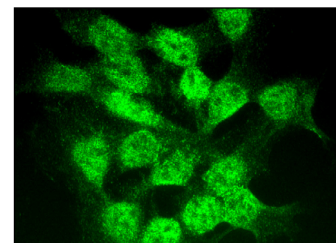
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG_κ BP-HRP: sc-516102 or m-IgG_κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG_κ BP-FITC: sc-516140 or m-IgG_κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



XRCC4 (G-10): sc-365118. Western blot analysis of XRCC4 expression in MOLT-4 (A), HCT-116 (B), K-562 (C) and HeLa (D) whole cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



XRCC4 (G-10): sc-365118. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Xu, H., et al. 2015. AMPK α 1 deficiency promotes cellular proliferation and DNA damage via p21 reduction in mouse embryonic fibroblasts. *Biochim. Biophys. Acta* 1853: 65-73.
- Lobbardi, R., et al. 2017. TOX regulates growth, DNA repair, and genomic instability in T-cell acute lymphoblastic leukemia. *Cancer Discov.* 7: 1336-1353.

RESEARCH USE

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