SANTA CRUZ BIOTECHNOLOGY, INC.

Rad23B (E-10): sc-377409

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mammalian cells express two Rad23 (genome repair protein) homologs: Rad23A (also designated HR23A) and Rad23B (also designated HR23B). In typical cells, mouse Rad23B is approximately ten times more abundant than mouse Rad23A. Endogenous XPC (xeroderma pigmentosum C protein) located in wildtype mouse embryonic fibroblasts is relatively stable; its steady-state level and stability appear to be significantly reduced by a targeted interruption of the mouse Rad23B gene, but not by that of mouse Rad23A. Loss of both mouse Rad23 genes causes a strong further reduction of the XPC protein level. The Rad23 genes (Rad23A and Rad23B), which encode the human Rad23 proteins, are crucial for excision-repair of UV-damaged DNA. RAD23 genes resemble the other DNA repair genes, RAD2, RAD6, RAD7, RAD18 and RAD54, all of which also exhibit increased transcription in response to DNA damage and during meiosis. Rad23 is a nuclear protein containing an ubiquitin-like domain required for biological functions. The protein, which is highly conserved, is involved in nucleotide excision repair (NER) that associates with the proteasome via its N-terminus. The C-terminal ubiquitin-associated domain of Rad23 is evolutionarily conserved from yeast to humans. Rad23 may also act as a regulator for the activity of the 26S Proteasome.

REFERENCES

1. Elder, R.T., et al. 2002. Involvement of rhp23, a *Schizosaccharomyces pombe* homolog of the human hHR23A and *Saccharomyces cerevisiae* Rad23 nucleotide excision repair genes, in cell cycle control and protein ubiquitination. Nucleic Acids Res. 30: 581-591.
2. Ng, J.M., et al. 2003. A novel regulation mechanism of DNA repair by damage-induced and Rad23-dependent stabilization of xeroderma pigmentosum group C protein. Genes Dev. 17: 1630-1645.
3. Wang, Q., et al. 2003. Ubiquitin recognition by the DNA repair protein hHR23A. Biochemistry 42: 13529-13535.
4. Kamionka, M. and Feigon, J. 2004. Structure of the XPC binding domain of hHR23A reveals hydrophobic patches for protein interaction. Protein Sci. 13: 2370-2377.
5. Okuda, Y., et al. 2004. Relative levels of the two mammalian Rad23 homologs determine composition and stability of the xeroderma pigmentosum group C protein complex. DNA Repair 3: 1285-1295.

CHROMOSOMAL LOCATION

Genetic locus: RAD23B (human) mapping to 9q31.2; Rad23b (mouse) mapping to 4 B3.

SOURCE

Rad23B (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 221-257 within an internal region of Rad23B 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 IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377409 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rad23B (E-10) is recommended for detection of Rad23B 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 Rad23B siRNA (h): sc-60812, Rad23B siRNA (m): sc-60813, Rad23B shRNA Plasmid (h): sc-60812-SH, Rad23B shRNA Plasmid (m): sc-60813-SH, Rad23B shRNA (h) Lentiviral Particles: sc-60812-V and Rad23B shRNA (m) Lentiviral Particles: sc-60813-V.

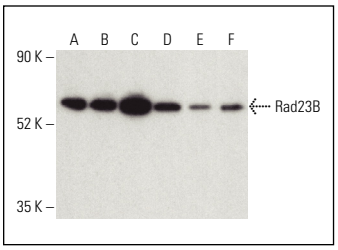
Molecular Weight of Rad23B: 55 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

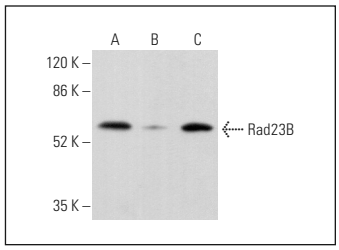
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



Rad23B (E-10): sc-377409. Western blot analysis of Rad23B expression in Caco-2 (**A**), K-562 (**B**), MCF7 (**C**), Hep G2 (**D**), A549 (**E**) and Jurkat (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Rad23B (E-10): sc-377409. Western blot analysis of Rad23B expression in A549 (**A**), Jurkat (**B**) and Hep G2 (**C**) whole cell lysates.

RESEARCH USE

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