SANTA CRUZ BIOTECHNOLOGY, INC.

Rad23B (2857D7a): sc-130641

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.
6. Hsieh, H.C., et al. 2005. hHR23A, a human homolog of *Saccharomyces cerevisiae* Rad23, regulates xeroderma pigmentosum C protein and is required for nucleotide excision repair. Biochem. Biophys. Res. Commun. 335: 181-187.
7. Kim, B., et al. 2005. Solution structure and backbone dynamics of the XPC-binding domain of the human DNA repair protein hHR23B. FEBS J. 272: 2467-2476.

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 or our catalog for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: RAD23B (human) mapping to 9q31.2.

SOURCE

Rad23B (2857D7a) is a mouse monoclonal antibody raised against a recombinant protein corresponding an internal region of Rad23B of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Rad23B (2857D7a) is recommended for detection of Rad23B of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Rad23B siRNA (h): sc-60812, Rad23B shRNA Plasmid (h): sc-60812-SH and Rad23B shRNA (h) Lentiviral Particles: sc-60812-V.

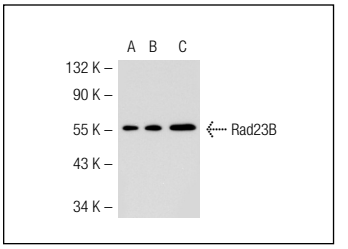
Molecular Weight of Rad23B: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Rad23B (h2): 293 Lysate: sc-111366 or A-431 whole cell lysate: sc-2201.

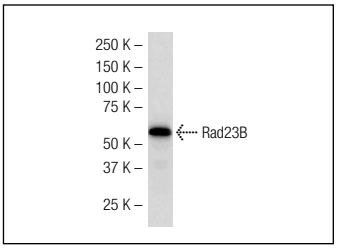
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Rad23B (2857D7a): sc-130641. Western blot analysis of Rad23B expression in non-transfected 293T: sc-117752 (**A**), human Rad23B transfected 293T: sc-111366 (**B**) and HeLa (**C**) whole cell lysates.



Rad23B (2857D7a): sc-130641. Western blot analysis of Rad23B expression in HeLa whole cell lysate.

RESEARCH USE

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