SANTA CRUZ BIOTECHNOLOGY, INC.

Rad23A (K-16): sc-47349

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., Song, X.Q., Chen, M., Hopkins, K.M., Lieberman, H.B. and Zhao, Y. 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., Vermeulen, W., van der Horst, G.T., Bergink, S., Sugasawa, K., Vrieling, H. and Hoeijmakers, J.H. 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., Goh, A.M., Howley, P.M. and Walters, K.J. 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: RAD23A (human) mapping to 19p13.2; Rad23a (mouse) mapping to 8 C3.

STORAGE

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

SOURCE

Rad23A (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rad23A 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-47349 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rad23A (K-16) is recommended for detection of Rad23A of mouse, rat and 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); may cross-react with Rad23B.

Rad23A (K-16) is also recommended for detection of Rad23A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rad23A siRNA (h): sc-61435, Rad23A siRNA (m): sc-61436, Rad23A shRNA Plasmid (h): sc-61435-SH, Rad23A shRNA Plasmid (m): sc-61436-SH, Rad23A shRNA (h) Lentiviral Particles: sc-61435-V and Rad23A shRNA (m) Lentiviral Particles: sc-61436-V.

Molecular Weight of Rad23A: 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.

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.