



# Rad3 (yC-15): sc-11963

## BACKGROUND

Nucleotide excision repair (NER) is a DNA repair mechanism that exists in both eukaryotes and prokaryotes and is crucial for the prevention of unwanted DNA mutations that may arise from chemical or UV damage. In *Saccharomyces cerevisiae*, Rad3 is an essential helicase protein which exists as a component of the TFIIH complex, a multi-subunit structure (comprised of Rad3, Rad25, TFB1, SSL1, p55 and p38) that is responsible for transcription initiation and DNA repair in yeast. In conjunction with other subunits of the TFIIH complex, Rad3 plays an indispensable role in DNA transcription and UV damage repair and is, thus, crucial for proper cell growth and viability.

## REFERENCES

1. Guzder, S.N., Qiu, H., Sommers, C.H., Sung, P., Prakash, L. and Prakash, S. 1994. DNA repair gene Rad3 of *S. cerevisiae* is essential for transcription by RNA polymerase II. *Nature* 367: 91-94.
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3. Bardwell, L., Bardwell, A.J., Feaver, W.J., Svejstrup, J.Q., Kornberg, R.D. and Friedberg, E.C. 1994. Yeast Rad3 protein binds directly to both SSL2 and SSL1 proteins: implications for the structure and function of transcription/repair factor  $\beta$ . *Proc. Natl. Acad. Sci. USA* 91: 3926-3930.
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5. Sung, P., Guzder, S.N., Prakash, L. and Prakash, S. 1996. Reconstitution of TFIIH and requirement of its DNA helicase subunits, Rad3 and Rad25, in the incision step of nucleotide excision repair. *J. Biol. Chem.* 271: 10821-10826.
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7. Lee, B.S., Bi, L., Garfinkel, D.J. and Bailis, A.M. 2000. Nucleotide excision repair/TFIIH helicases Rad3 and SSL2 inhibit short-sequence recombination and Ty1 retrotransposition by similar mechanisms. *Mol. Cell. Biol.* 20: 2436-2445.
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9. Kou, H., Zhou, Y., Gorospe, R.M. and Wang, Z. 2008. Mms19 protein functions in nucleotide excision repair by sustaining an adequate cellular concentration of the TFIIH component Rad3. *Proc. Natl. Acad. Sci. USA* 105: 15714-15719.

## STORAGE

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

## SOURCE

Rad3 (yC-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Rad3 of *Saccharomyces cerevisiae* origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11963 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Rad3 (yC-15) is recommended for detection of Rad3 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

## 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.

## SELECT PRODUCT CITATIONS

1. Kanin, E.I., Kipp, R.T., Kung, C., Slattery, M., Viale, A., Hahn, S., Shokat, K.M. and Ansari, A.Z. 2007. Chemical inhibition of the TFIIH-associated kinase Cdk7/Kin28 does not impair global mRNA synthesis. *Proc. Natl. Acad. Sci. USA* 104: 5812-5817.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.