

# XPG (E-18): sc-12558

## BACKGROUND

Seven complementation groups (A-G) of xeroderma pigmentosum have been described. The xeroderma pigmentosum group A protein, XPA, is a zinc metalloprotein which preferentially binds to DNA damaged by ultraviolet (UV) radiation and chemical carcinogens. XPA is a DNA repair enzyme that has been shown to be required for the incision step of nucleotide excision repair. XPG (also designated ERCC5) is an endonuclease that makes the 3' incision in DNA nucleotide excision repair. Mammalian XPG is similar in sequence to yeast RAD2. Conserved residues in the catalytic center of XPG are important for nuclease activity and function in nucleotide excision repair.

## REFERENCES

1. Tateishi, S., et al. 1995. Separation of protein factors that correct the defects in the seven complementation groups of xeroderma pigmentosum cells. *J. Biochem.* 118: 819-824.
2. Nakane, H., et al. 1995. High incidence of ultraviolet-B-or chemical-carcinogen-induced skin tumours in mice lacking the xeroderma pigmentosum group A gene. *Nature* 377: 165-168.
3. Li, L., et al. 1995. Mutations in XPA that prevent association with ERCC1 are defective in nucleotide excision repair. *Mol. Cell. Biol.* 15: 1993-1998.

## CHROMOSOMAL LOCATION

Genetic locus: ERCC5 (human) mapping to 13q33.1; Ercc5 (mouse) mapping to 1 C1.1.

## SOURCE

XPG (E-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of XPG of mouse 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-12558 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

XPG (E-18) is recommended for detection of XPG of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, 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 XPG siRNA (m): sc-36858, XPG siRNA (h): sc-36857, XPG shRNA Plasmid (m): sc-36858-SH, XPG shRNA Plasmid (h): sc-36857-SH, XPG shRNA (m) Lentiviral Particles: sc-36858-V and XPG shRNA (h) Lentiviral Particles: sc-36857-V.

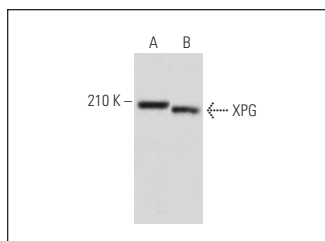
Molecular Weight (predicted) of XPG isoforms: 133/47 kDa.

Molecular Weight (observed) of XPG isoforms: 200/90 kDa.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



XPG (E-18): sc-12558. Western blot analysis of XPG expression in Jurkat (A) and K-562 (B) nuclear extracts.

## SELECT PRODUCT CITATIONS

1. Christmann, M., et al. 2006. c-Fos is required for excision repair of UV-light induced DNA lesions by triggering the re-synthesis of XPF. *Nucleic Acids Res.* 34: 6530-6539.
2. Pu, Y.S., et al. 2007. 8-Oxoguanine DNA glycosylase and MutY homolog are involved in the incision of arsenite-induced DNA adducts. *Toxicol. Sci.* 95: 376-382.

## STORAGE

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

## 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.



Try **XPG (8H7): sc-13563** or **XPG (G-4): sc-393004**, our highly recommended monoclonal alternatives to XPG (E-18). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **XPG (8H7): sc-13563**.