SANTA CRUZ BIOTECHNOLOGY, INC.

XPG (8H7): sc-13563

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: ERCC5 (human) mapping to 13q33.1.

SOURCE

XPG (8H7) is a mouse monoclonal antibody raised against recombinant xeroderma pigmentosum group G of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

XPG (8H7) is available conjugated to agarose (sc-13563 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13563 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13563 PE), fluorescein (sc-13563 FITC), Alexa Fluor® 488 (sc-13563 AF488), Alexa Fluor® 546 (sc-13563 AF546), Alexa Fluor® 594 (sc-13563 AF594) or Alexa Fluor® 647 (sc-13563 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13563 AF680) or Alexa Fluor® 790 (sc-13563 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

XPG (8H7) is recommended for detection of XPG of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for XPG siRNA (h): sc-36857, XPG shRNA Plasmid (h): sc-36857-SH 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.

Positive Controls: Jurkat nuclear extract: sc-2132, K-562 nuclear extract: sc-2130 or Jurkat + PMA nuclear extract: sc-2133.

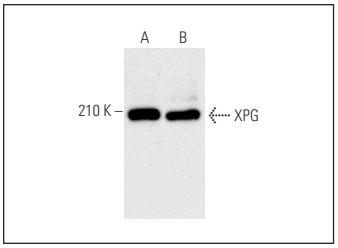
STORAGE

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

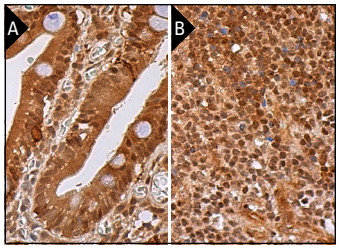
RESEARCH USE

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

DATA



XPG (8H7): sc-13563. Western blot analysis of XPG expression in Jurkat (**A**) and K-562 (**B**) nuclear extracts.



XPG (8H7): sc-13563. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear and cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear and cytoplasmic staining of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Bomgarden, R.D., et al. 2006. Opposing effects of the UV lesion repair protein XPA and UV bypass polymerase η on ATR checkpoint signaling. EMBO J. 25: 2605-2614.
2. Limsirichaikul, S., et al. 2009. A rapid non-radioactive technique for measurement of repair synthesis in primary human fibroblasts by incorporation of ethynyl deoxyuridine (EdU). Nucleic Acids Res. 37: e31.
3. Schwerdtle, T., et al. 2010. Genotoxicity of soluble and particulate cadmium compounds: impact on oxidative DNA damage and nucleotide excision repair. Chem. Res. Toxicol. 23: 432-442.
4. Tomicic, M.T., et al. 2011. Delayed c-Fos activation in human cells triggers XPF induction and an adaptive response to UVC-induced DNA damage and cytotoxicity. Cell. Mol. Life Sci. 68: 1785-1798.
5. Meise, R., et al. 2012. The chloroethylating anticancer drug ACNU induces FRA1 that is involved in drug resistance of glioma cells. Biochim. Biophys. Acta 1823: 1199-1207.
6. Hu, J., et al. 2013. Nucleotide excision repair in human ells: fate of the excised oligonucleotide carrying DNA damage *in vivo*. J. Biol. Chem. 288: 20918-20926.
7. Horibata, K., et al. 2015. Constructive rescue of TFIIH instability by an alternative isoform of XPD derived from a mutated XPD allele in mild but not severe XP-D/CS. J. Hum. Genet. 60: 259-265.
8. Dutto, I., et al. 2017. An improved method for the detection of nucleotide excision repair factors at local UV DNA damage sites. DNA Repair 51: 79-84.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.