SANTA CRUZ BIOTECHNOLOGY, INC.

XPC (A-5): sc-74411

BACKGROUND

Xeroderma pigmentosum (XP) is an autosomal recessive disorder characterized by a genetic predisposition to sunlight-induced skin cancer due to deficiencies in the DNA repair enzymes. The most frequent mutations are found in the XP genes of group A through G and group V, which encode nucleotide excision repair (NER) proteins. NER provides versatile DNA repair mechanisms to ensure the proper functioning of all cells. The majority of patients with XP carry mutations in either the XPA or XPC genes, which encode proteins involved in the recognition of damaged DNA. The gene encoding human XPC maps to chromosome 3p25.1. XPC forms a complex with Cen2 and the human homolog of yeast Rad23B (HR23B), both of which stabilize XPC; it also excises thymine dimers from damaged DNA. Specifically, the carboxy-terminus of XPC is required for HR23B and DNA binding and, subsequently, mutations leading to carboxy-terminal truncations result in nonfunctional XPC proteins.

REFERENCES

1. Legerski, R.J., et al. 1994. Assignment of xeroderma pigmentosum group C (XPC) gene to chromosome 3p25. Genomics 21: 266-269.
2. 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.

CHROMOSOMAL LOCATION

Genetic locus: XPC (human) mapping to 3p25.1.

SOURCE

XPC (A-5) is a mouse monoclonal antibody raised against amino acids 641-940 mapping at the C-terminus of XPC of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

XPC (A-5) is recommended for detection of XPC of human origin by Western Blotting (starting dilution 1:100, 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 XPC siRNA (h): sc-37805, XPC shRNA Plasmid (h): sc-37805-SH and XPC shRNA (h) Lentiviral Particles: sc-37805-V.

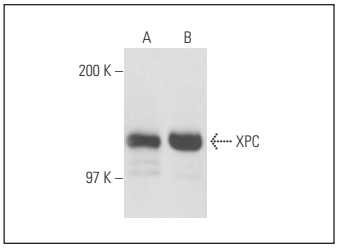
Molecular Weight of XPC: 125 kDa.

Positive Controls: Hs68 cell lysate: sc-2230, Raji whole cell lysate: sc-364236 or HeLa whole cell lysate: sc-2200.

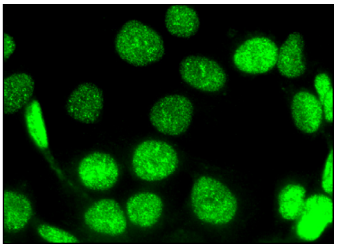
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



XPC (A-5): sc-74411. Western blot analysis of XPC expression in Hs68 (**A**) and Raji (**B**) whole cell lysates.



XPC (A-5): sc-74411. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Fei, J., et al. 2011. Regulation of nucleotide excision repair by UV-DDB: prioritization of damage recognition to internucleosomal DNA. PLoS Biol. 9: e1001183.
2. Muenyi, C.S., et al. 2012. Sodium arsenite ± hyperthermia sensitizes p53-expressing human ovarian cancer cells to cisplatin by modulating platinum-DNA damage responses. Toxicol. Sci. 127: 139-149.
3. Holcomb, N., et al. 2016. Exposure of human lung cells to tobacco smoke condensate inhibits the nucleotide excision repair pathway. PLoS ONE 11: e0158858.
4. Holcomb, N., et al. 2017. Inorganic arsenic inhibits the nucleotide excision repair pathway and reduces the expression of XPC. DNA Repair 52: 70-80.
5. Chen, J.C., et al. 2018. 17-(allylamino)-17-demethoxygeldanamycin enhances etoposide-induced cytotoxicity via the downregulation of xeroderma pigmentosum complementation group C expression in human lung squamous cell carcinoma cells. Pharmacology 102: 91-104.
6. Pajuelo-Lozano, N., et al. 2018. XPA, XPC, and XPD modulate sensitivity in gastric Cisplatin resistance cancer cells. Front. Pharmacol. 9: 1197.
7. Chen, J.C., et al. 2018. Astaxanthin enhances erlotinib-induced cytotoxicity by p38 MAPK mediated xeroderma pigmentosum complementation group C (XPC) down-regulation in human lung cancer cells. Toxicol. Res. 7: 1247-1256.

RESEARCH USE

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