SANTA CRUZ BIOTECHNOLOGY, INC.

XPC (D-10): sc-74410

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.

CHROMOSOMAL LOCATION

Genetic locus: XPC (human) mapping to 3p25.1; Xpc (mouse) mapping to 6 D1.

SOURCE

XPC (D-10) 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_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

XPC (D-10) is available conjugated to agarose (sc-74410 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74410 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74410 PE), fluorescein (sc-74410 FITC), Alexa Fluor® 488 (sc-74410 AF488), Alexa Fluor® 546 (sc-74410 AF546), Alexa Fluor® 594 (sc-74410 AF594) or Alexa Fluor® 647 (sc-74410 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74410 AF680) or Alexa Fluor® 790 (sc-74410 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

XPC (D-10) is recommended for detection of XPC of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (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 siRNA (m): sc-37806, XPC shRNA Plasmid (h): sc-37805-SH, XPC shRNA Plasmid (m): sc-37806-SH, XPC shRNA (h) Lentiviral Particles: sc-37805-V and XPC shRNA (m) Lentiviral Particles: sc-37806-V.

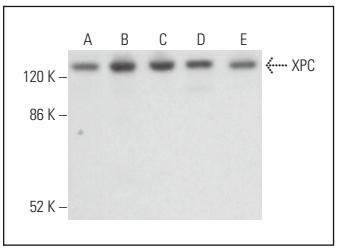
Molecular Weight of XPC: 125 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or Raji whole cell lysate: sc-364236.

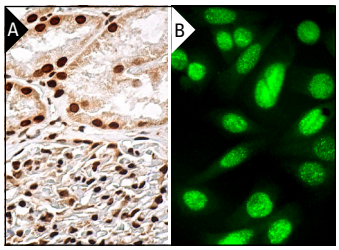
STORAGE

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

DATA



XPC (D-10): sc-74410. Western blot analysis of XPC expression in Raji (**A**), HeLa (**B**), MCF7 (**C**), Jurkat (**D**) and IMR-32 (**E**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



XPC (D-10): sc-74410. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and tubules (**A**). Immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Hardy, T.M., et al. 2010. RB stabilizes XPC and promotes cellular NER. Anticancer Res. 30: 2483-2488.
2. Hu, J., et al. 2013. Nucleotide excision repair in human cells: fate of the excised oligonucleotide carrying DNA damage *in vivo*. J. Biol. Chem. 288: 20918-20926.
3. Naipal, K.A., et al. 2015. Attenuated XPC expression is not associated with impaired DNA repair in bladder cancer. PLoS ONE 10: e0126029.
4. Mazouzi, A., et al. 2017. Repair of UV-induced DNA damage independent of nucleotide excision repair is masked by MUTYH. Mol. Cell 68: 797-807.
5. Galanos, P., et al. 2018. Mutational signatures reveal the role of Rad52 in p53-independent p21-driven genomic instability. Genome Biol. 19: 37.
6. Li, W., et al. 2019. Nucleotide excision repair capacity increases during differentiation of human embryonic carcinoma cells into neurons and muscle cells. J. Biol. Chem. 294: 5914-5922.
7. Nishimoto, K., et al. 2020. HDAC3 is required for XPC recruitment and nucleotide excision repair of DNA damage induced by UV irradiation. Mol. Cancer Res. 18: 1367-1378.
8. Kusakabe, M., et al. 2022. Histone deacetylation regulates nucleotide excision repair through an interaction with the XPC protein. iScience 25: 104040.
9. Lindsey-Boltz, L.A., et al. 2023. Nucleotide excision repair in human cell lines lacking both XPC and CSB proteins. Nucleic Acids Res. 51: 6238-6245.
10. Yang, Z., et al. 2024. The m^6A reader YTHDC2 regulates UVB-induced DNA damage repair and histone modification. Photochem. Photobiol. 100: 1031-1040.

RESEARCH USE

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