SANTA CRUZ BIOTECHNOLOGY, INC.

# XPA (FL-273): sc-853

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## 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 proteins. Nucleotide excision repair (NER) is the normal cellular response to DNA damage induced by UV irradiation and is disrupted in patients with XP. Xeroderma pigmentosum group A (XPA) is an essential NER factor that coordinates the collection of a preincision complex during the processing of DNA damage. XPA may also have a role in the repair of oxidized DNA bases. XPA is sensitive not only to the structure of the DNA double helix, but also to bulky groups incorporated into DNA. XPA forms a homodimer in the absence of DNA, but binds to DNA in both monomeric and dimeric forms. The dimerically bound XPA is much more efficient, so cells probably regulate XPA activity in a concentration-dependent manner. XPA deficient organisms cannot repair UV-induced DNA damage and thus acquire skin cancers by UV irradiation very easily.

## CHROMOSOMAL LOCATION

Genetic locus: XPA (human) mapping to 9q22.33; Xpa (mouse) mapping to 4 B1.

## SOURCE

XPA (FL-273) is a rabbit polyclonal antibody raised against amino acids 1-273 representing full length XPA of human origin.

## PRODUCT

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

## APPLICATIONS

XPA (FL-273) is recommended for detection of XPA of mouse, rat and 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), 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).

XPA (FL-273) is also recommended for detection of XPA in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for XPA siRNA (h): sc-36853, XPA siRNA (m): sc-36854, XPA shRNA Plasmid (h): sc-36853-SH, XPA shRNA Plasmid (m): sc-36854-SH, XPA shRNA (h) Lentiviral Particles: sc-36853-V and XPA shRNA (m) Lentiviral Particles: sc-36854-V.

Molecular Weight of XPA: 40 kDa.

Positive Controls: BJAB nuclear extract: sc-2145, XPA (m): 293T Lysate: sc-126255 or MCF7 nuclear extract: sc-2149.

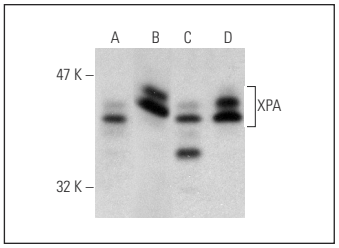
## STORAGE

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

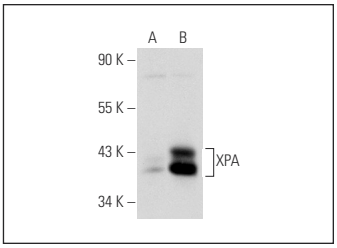
## RESEARCH USE

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

## DATA




XPA (FL-273): sc-853. Western blot analysis of XPA expression in GM637 whole cell lysate (**A**) and BJAB (**B**), MCF7 (**C**) and TF-1 (**D**) nuclear extracts.




XPA (FL-273): sc-853. Western blot analysis of XPA expression in non-transfected: sc-117752 (**A**) and mouse XPA transfected: sc-126255 (**B**) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Hasan, S., et al. 2001. Transcription coactivator p300 binds PCNA and may have a role in DNA repair synthesis. Nature 410: 387-391.
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3. Eppink, B., et al. 2011. The response of mammalian cells to UV-light reveals Rad54-dependent and independent pathways of homologous recombination. DNA Repair 10: 1095-1105.
4. Saijo, M., et al. 2011. Nucleotide excision repair by mutant xeroderma pigmentosum group A (XPA) proteins with deficiency in interaction with RPA. J. Biol. Chem. 286: 5476-5483.
5. Kang, H.J., et al. 2011. Detoxification: a novel function of BRCA1 in tumor suppression? Toxicol. Sci. 122: 26-37.
6. Liu, R.Y., et al. 2011. Role of eIF3α in regulating cisplatin sensitivity and in translational control of nucleotide excision repair of nasopharyngeal carcinoma. Oncogene 30: 4814-4823.
7. Li, Z., et al. 2011. XPA-mediated regulation of global nucleotide excision repair by ATR Is p53-dependent and occurs primarily in S-phase. PLoS ONE 6: e28326.
8. Guthrie, O.W. and Xu, H. 2012. Noise exposure potentiates the subcellular distribution of nucleotide excision repair proteins within spiral ganglion neurons. Hear. Res. 294: 21-30.