SANTA CRUZ BIOTECHNOLOGY, INC.

XPA (E-14): sc-48713

BACKGROUND

Xeroderma pigmentosum (XP) is a genetic disorder in which the body is unable to repair DNA that has been mutated by ultraviolet (UV) light. 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.

REFERENCES

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3. Kuraoka, I., et al. 1996. Identification of a damaged-DNA binding domain of the XPA protein. Mut. Res. 362: 87-95.
4. Riou, L., et al. 1999. The relative expression of mutated XPB genes results in xeroderma pigmentosum/Cockayne's syndrome or trichothiodystrophy cellular phenotypes. Hum. Mol. Genet. 8: 1125-1133.
5. Horio, T., et al. 2001. Photobiologic and photoimmunologic characteristics of XPA gene-deficient mice. J. Investig. Dermatol. Symp. Proc. 6: 58-63.
6. Patrick, S.M., et al. 2002. Xeroderma pigmentosum complementation group A protein (XPA) modulates RPA-DNA interactions via enhanced complex stability and inhibition of strand separation activity. J. Biol. Chem. 277: 16096-16101.
7. Liu, Y., et al. 2005. Cooperative interaction of human XPA stabilizes and enhances specific binding of XPA to DNA damage. Biochemistry 44: 7361-7368.
8. 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.
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CHROMOSOMAL LOCATION

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

SOURCE

XPA (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of XPA of human 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-48713 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

XPA (E-14) 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), 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).

XPA (E-14) is also recommended for detection of XPA in additional species, including canine 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, MCF7 nuclear extract: sc-2149 or HeLa whole cell lysate: sc-2200.

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) 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.

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.