SANTA CRUZ BIOTECHNOLOGY, INC.

XPA (K-15): sc-48714

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Horio, T., et al. 2001. Photobiologic and photoimmunologic characteristics of XPA gene-deficient mice. J. Investig. Dermatol. Symp. Proc. 6: 58-63.
2. Patrick, S.M. and Turchi, J.J. 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.
3. Liu, Y., et al. 2005. Cooperative interaction of human XPA stabilizes and enhances specific binding of XPA to DNA damage. Biochemistry 44: 7361-7368.
4. Bomgarden, R.D., et al. 2006. Opposing effects of the UV lesion repair protein XPA and UV bypass polymerase eta on ATR checkpoint signaling. EMBO J. 25: 2605-2614.
5. Dusinská, M., et al. 2006. Possible involvement of XPA in repair of oxidative DNA damage deduced from analysis of damage, repair and genotype in a human population study. Mutagenesis 21: 205-211.

CHROMOSOMAL LOCATION

Genetic locus: Xpa (mouse) mapping to 4 B1.

SOURCE

XPA (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of XPA of mouse 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-48714 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

XPA (K-15) is recommended for detection of XPA of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

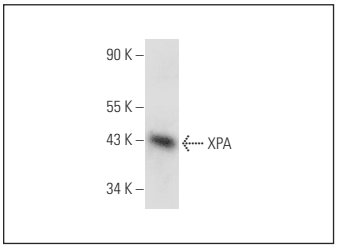
Molecular Weight of XPA: 40 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



XPA (K-15): sc-48714. Western blot analysis of XPA expression in NIH/3T3 whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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