

## Anti-XPA antibody, monoclonal (5F12)

70-031 100 ug

XP (Xeroderma pigmentosum) is an autosomal recessive human disease characterized by hypersensitivity to sunlight and a high incidence of skin cancer on sun-exposed skin (1). Cells from XP patients are hypersensitive to killing by UV irradiation because of a defect in nucleotide excision repair (NER). XP is classified into seven complementation groups (A~G) and a variant form (1). XPA shows the most severe symptoms. Products encoded by the XP genes function in repairing UV-induced cyclobutane pyrimidine dimer and (6-4) photoproducts as well as chemically induced variety of DNA lesions (1).

XPA protein consists of 273 amino acids and forms a complex with many proteins such as RPA, ERCC1, TFIIH, XAB1, and XAB2, which plays a role in early step of NER. The hybridoma 5F12 was constructed by Prof. K. Tanaka's group who first cloned the XPA gene (2, 3).

### Applications

1. Western blotting (1/1,000~1/10,000)
2. Immunofluorescence staining (1/100~1/1,000)
3. ELISA
4. Inhibition of in vitro excision repair reaction
5. Inhibition of XPA interaction with ERCC1 and TFIIH

Other applications have not been tested.

**Antigen** : Recombinant full-length human XPA protein

**Cross reactivity**: human (expected to react also with mouse XPA from the sequence homology)

**Epitope**: Amino acids 30-47

**Clone**: Mouse monoclonal antibody, 5F12

**Subtype**: IgG2b

**Form**: Purified IgG, 1 mg/ml in PBS pH 7.2, 50% glycerol, filter-sterilized

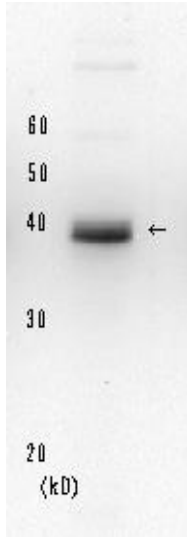
**Storage**: Shipped at 4°C or -20°C, and upon arrival, aliquot and store at -20°C

**Data Link** UniProtKB/Swiss-Prot [P23025](#) (XPA\_HUMAN)

**References**: **This antibody is described and used in Ref. 2**

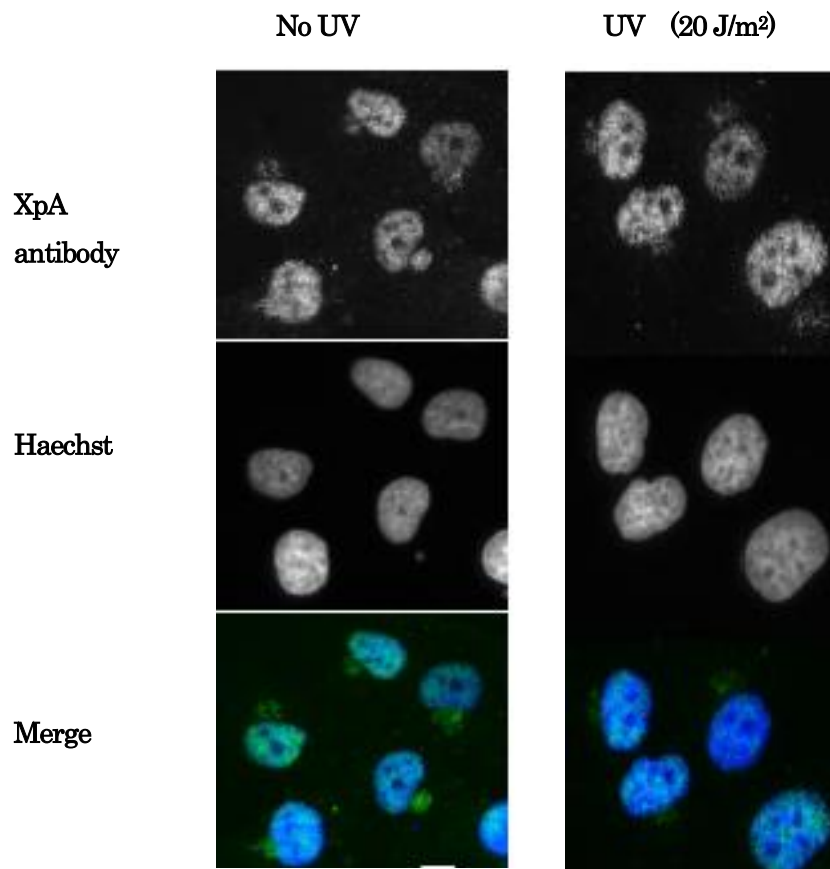
1. Friedberg EC *et al* *DNA Repair and Mutagenesis* 2<sup>nd</sup> ed., ASM Press (2006)
2. Saijo M *et al* "Inhibition of nucleotide excision repair by anti-XPA monoclonal antibodies which interfere with binding to RPA, ERCC1, and TFIIH" *Biochem Biophys Res Comm* **321**:815-822 (2004) PMID: [15358100](#)
3. Tanaka K *et al* "Analysis of a human DNA excision repair gene involved in group A xeroderma pigmentosum and containing a zinc-finger domain" *Nature* **348**:73-76 (1990)

PMID: [2234061](#)



**Fig.1** Detection of XPA protein in the crude extract of HeLa cells by Western blotting using this monoclonal antibody.

Antibody was used at 1/2,000 dilution



**Fig.2** Immunofluorescence staining of human fibroblast cells (GM0637) using anti-XpA antibody (5F12)

The cells were non-irradiated (left) or irradiated with UV at 20 J/m<sup>2</sup> and fixed after 30 min with paraform aldehyde. The antibody was used at 1/100 dilution and as the second antibody, Alexa 488 conjugated goat anti-mouse IgG was used at 1/5,000 dilution.