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Anti-XPC Antibody

Rabbit Anti Human Polyclonal Antibody
Catalog # ALS17270

Product Information

Application	WB, IHC-P, E
Primary Accession	Q01831
Predicted	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	105953

Additional Information

Gene ID	7508
Alias Symbol	XPC
Other Names	XPC, RAD4, XPCC, p125, XP3
Target/Specificity	Human XPC
Reconstitution & Storage	PBS, pH 7.4, 0.03% Proclin 300, 50% glycerol. Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.
Precautions	Anti-XPC Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

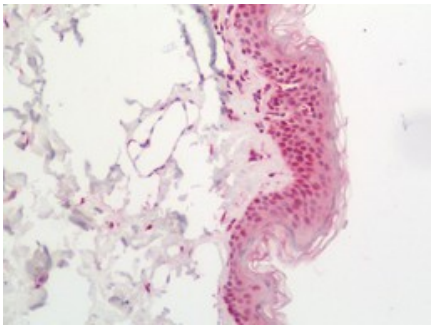
Name	XPC
Synonyms	XPCC
Function	Involved in global genome nucleotide excision repair (GG-NER) by acting as damage sensing and DNA-binding factor component of the XPC complex (PubMed:10734143, PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19609301, PubMed:19941824, PubMed:20028083, PubMed:20649465, PubMed:20798892, PubMed:9734359). Has only a low DNA repair activity by itself which is stimulated by RAD23B and RAD23A. Has a preference to bind DNA containing a short single-stranded segment but not to damaged oligonucleotides (PubMed:10734143, PubMed:19609301, PubMed:20649465). This feature is proposed to be related to a dynamic sensor function: XPC can rapidly screen duplex DNA for non-hydrogen- bonded bases by forming a transient nucleoprotein intermediate complex which matures into a stable recognition

complex through an intrinsic single-stranded DNA-binding activity (PubMed:10734143, PubMed:19609301, PubMed:20649465). The XPC complex is proposed to represent the first factor bound at the sites of DNA damage and together with other core recognition factors, XPA, RPA and the TFIIH complex, is part of the pre-incision (or initial recognition) complex (PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19941824, PubMed:20028083, PubMed:20798892, PubMed:9734359). The XPC complex recognizes a wide spectrum of damaged DNA characterized by distortions of the DNA helix such as single-stranded loops, mismatched bubbles or single-stranded overhangs (PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19941824, PubMed:20028083, PubMed:20798892, PubMed:9734359). The orientation of XPC complex binding appears to be crucial for inducing a productive NER (PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19941824, PubMed:20028083, PubMed:20798892, PubMed:9734359). XPC complex is proposed to recognize and to interact with unpaired bases on the undamaged DNA strand which is followed by recruitment of the TFIIH complex and subsequent scanning for lesions in the opposite strand in a 5'-to-3' direction by the NER machinery (PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19941824, PubMed:20028083, PubMed:20798892, PubMed:9734359). Cyclobutane pyrimidine dimers (CPDs) which are formed upon UV-induced DNA damage esacpe detection by the XPC complex due to a low degree of structural perurbation. Instead they are detected by the UV-DDB complex which in turn recruits and cooperates with the XPC complex in the respective DNA repair (PubMed:10873465, PubMed:12509299, PubMed:12547395, PubMed:19941824, PubMed:20028083, PubMed:20798892, PubMed:9734359). In vitro, the XPC:RAD23B dimer is sufficient to initiate NER; it preferentially binds to cisplatin and UV-damaged double-stranded DNA and also binds to a variety of chemically and structurally diverse DNA adducts (PubMed:20028083). XPC:RAD23B contacts DNA both 5' and 3' of a cisplatin lesion with a preference for the 5' side. XPC:RAD23B induces a bend in DNA upon binding. XPC:RAD23B stimulates the activity of DNA glycosylases TDG and SMUG1 (PubMed:20028083).

Cellular Location

Nucleus. Chromosome. Cytoplasm Note=Omnipresent in the nucleus and consistently associates with and dissociates from DNA in the absence of DNA damage (PubMed:18682493) Continuously shuttles between the cytoplasm and the nucleus, which is impeded by the presence of NER lesions (PubMed:18682493)

Images



Human Skin: Formalin-Fixed, Paraffin-Embedded (FFPE)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.