10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

XPC Antibody(N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19709a

Product Information

Application	WB, E
Primary Accession	Q01831
Other Accession	NP_001139241.1, NP_004619.3
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB40964
Calculated MW	105953
Antigen Region	154-183

Additional Information

Gene ID	7508
Other Names	DNA repair protein complementing XP-C cells, Xeroderma pigmentosum group C-complementing protein, p125, XPC, XPCC
Target/Specificity	This XPC antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 154-183 amino acids from the N-terminal region of human XPC.
Dilution	WB~~1:2000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	XPC Antibody(N-term) 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)

Background

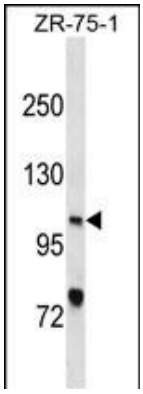
This gene encodes a component of the nucleotide excision repair (NER) pathway. There are multiple components involved in the NER pathway, including Xeroderma pigmentosum (XP) A-G and V, Cockayne syndrome (CS) A and B, and trichothiodystrophy (TTD) group A, etc. This component, XPC, plays an important role in the early steps of global genome NER, especially in damage recognition, open complex formation,

and repair protein complex formation. Mutations in this gene or some other NER components result in Xeroderma pigmentosum, a rare autosomal recessive disorder characterized by increased sensitivity to sunlight with the development of carcinomas at an early age. Alternatively spliced transcript variants have been found for this gene.

References

Gangwar, R., et al. J. Cancer Res. Clin. Oncol. (2009) In press :
Agalliu, I., et al. Cancer Causes Control (2009) In press :
Langie, S.A., et al. Br. J. Nutr., 1-12 (2009) In press :
Young, R.P., et al. Postgrad Med J 85(1008):515-524(2009)
Stern, M.C., et al. Cancer Res. 69(17):6857-6864(2009)

Images



XPC Antibody (N-term) (Cat. #AP19709a) western blot analysis in ZR-75-1 cell line lysates (35ug/lane).This demonstrates the XPC antibody detected the XPC protein (arrow).

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