abcam

Product datasheet

Recombinant Human XPC protein (His tag) ab236173

3 Images

Description

Product name	Recombinant Human XPC protein (His tag)
Purity	> 90 % SDS-PAGE.
Expression system	Escherichia coli
Accession	Q01831
Protein length	Protein fragment
Animal free	No
Nature	Recombinant
Species	Human
Sequence	SLPAASSSSSSSKRGKKMCSDGEKAEKRSIAGIDQWLEV FCEQEEKWVCV DCVHGVVGQPLTCYKYATKPMTYVVGIDSDGWVRDVTQR YDPVWMTVTRK CRVDAEWWAETLRPYQSPFMDREKKEDLEFQAKHMDQ PLPTAIGLYKNHP LYALKRHLLKYEAIYPETAAILGYCRGEAVYSRDCVHTLHSR DTWLKKAR VVRLGEVPYKMVKGFSNRARKARLAEPQLREENDLGLFG
Predicted molecular weight	32 kDa including tags
Amino acids	496 to 734
Tags	His tag N-Terminus

Specifications

Our **Abpromise guarantee** covers the use of **ab236173** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Mass Spectrometry SDS-PAGE
Mass spectrometry	LC-MS/MS
Form	Liquid

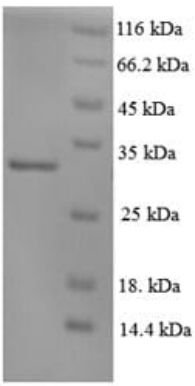
Preparation and Storage

Stability and Storage	Shipped at 4°C. Store at -20°C or -80°C. Avoid freeze / thaw cycle. pH: 7.2 Constituents: Tris buffer, 50% Glycerol (glycerin, glycerine)

General Info

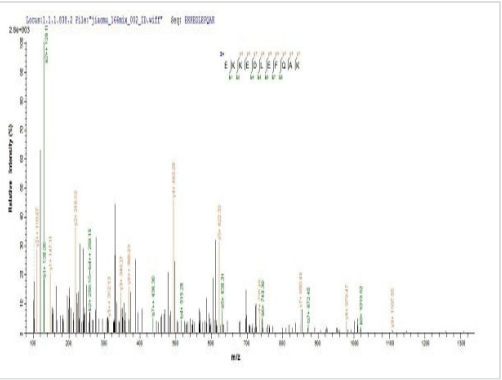
Function	Involved in global genome nucleotide excision repair (GG-NER) by acting as damage sensing and DNA-binding factor component of the XPC complex. Has only a low DNA repair activity by itself which is stimulated by RAD23B and RAD23A. Has a preference to bind DNA containing a short single-stranded segment but not to damaged oligonucleotides. 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. 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. 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. The orientation of XPC complex binding appears to be crucial for inducing a productive NER. 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. 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. 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. 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.
Involvement in disease	Defects in XPC are a cause of xeroderma pigmentosum complementation group C (XP-C) [MIM:278720]; also known as xeroderma pigmentosum III (XP3). XP-C is a rare human autosomal recessive disease characterized by solar sensitivity, high predisposition for developing cancers on areas exposed to sunlight and, in some cases, neurological abnormalities.
Sequence similarities	Belongs to the XPC family.
Post-translational modifications	Phosphorylated upon DNA damage, probably by ATM or ATR. Ubiquitinated upon UV irradiation; the ubiquitination requires the UV-DDB complex, appears to be reversible and does not serve as a signal for degradation.
Cellular localization	Nucleus. Cytoplasm. Omnipresent in the nucleus and consistently associates with and dissociates from DNA in the absence of DNA damage. Continuously shuttles between the cytoplasm and the nucleus, which is impeded by the presence of NER lesions.

Images



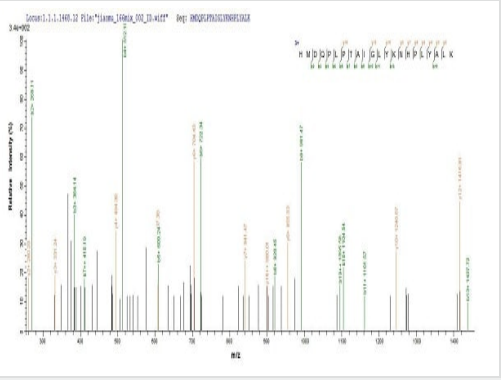
SDS-PAGE - Recombinant Human XPC protein (His tag) (ab236173)

(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) analysis with 5% enrichment gel and 15% separation gel of ab236173.



Mass Spectrometry - Recombinant Human XPC protein (His tag) (ab236173)

Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of ab236173 could indicate that this peptide derived from E.coli-expressed Homo sapiens (Human) XPC.



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