Recombinant Human DNA repair protein complementing XP-C cells(XPC) ,partial

Catalog No: #AP70922

Package Size: #AP70922-1 20ug #AP70922-2 100ug #AP70922-3 1mg

Signalway Antibody
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Description

Product Name	Recombinant Human DNA repair protein complementing XP-C cells(XPC) ,partial
Host Species	E.coli
Purification	Greater than 90% as determined by SDS-PAGE.
Immunogen Description	Expression Region:496-734aaSequence Info:Partial
Other Names	Xeroderma pigmentosum group C-complementing proteinp125
Accession No.	Q01831
Calculated MW	31.5 kDa
Tag Info	N-terminal 6xHis-tagged
Target Sequence	SLPAASSSSSSSKRGKKMCSDGEKAEKRSIAGIDQWLEVFCEQEEKWVCVDCVHGVVGQPLTCYKYATKPM TYVVGIDSDGWVRDVTQRYDPVWMTVTRKCRVDAEWWAETLRPYQSPFMDREKKEDLEFQAKHMDQPLPT AIGLYKNHPLYALKRHLLKYEAIYPETAAILGYCRGEAVYSRDCVHTLHSRDTWLKKARVVRLGEVPYKMVKGF SNRARKARLAEPQLREENDLGLFG
Formulation	Tris-based buffer50% glycerol
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C,-80°C. The shelf life of lyophilized form is 12 months at -20°C,-80°C.Notes:Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Background

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 chically 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.

References

Protein interaction network of alternatively spliced isoforms from brain links genetic risk factors for autism.Corominas R., Yang X., Lin G.N., Kang S., Shen Y., Ghamsari L., Broly M., Rodriguez M., Tam S., Wanamaker S.A., Fan C., Yi S., Tasan M., Lemmens I., Kuang X., Zhao N., Malhotra D., Michaelson J.J. , Vacic V., Calderwood M.A., Roth F.P., Tavernier J., Horvath S., Salehi-Ashtiani K., Korkin D., Sebat J., Hill D.E., Hao T., Vidal M., Iakoucheva L.M.Nat. Commun. 5:3650-3650(2014)Research Topic:Epigenetics and Nuclear Signaling

Note: This product is for in vitro research use only and is not intended for use in humans or animals.