

Ku-70 Polyclonal Antibody

Catalog # AP70682

Product Information

Application	WB, IHC-P
Primary Accession	P12956
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	69843

Additional Information

Gene ID	2547
Other Names	XRCC6; G22P1; X-ray repair cross-complementing protein 6; 5'-deoxyribose-5-phosphate lyase Ku70; 5'-dRP lyase Ku70; 70 kDa subunit of Ku antigen; ATP-dependent DNA helicase 2 subunit 1; ATP-dependent DNA helicase II 70 kDa subunit; CTC box-
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

Protein Information

Name	XRCC6
Synonyms	G22P1
Function	<p>Single-stranded DNA-dependent ATP-dependent helicase that plays a key role in DNA non-homologous end joining (NHEJ) by recruiting DNA-PK to DNA (PubMed:11493912, PubMed:12145306, PubMed:20493174, PubMed:2466842, PubMed:7957065, PubMed:8621488, PubMed:9742108). Required for double-strand break repair and V(D)J recombination (PubMed:11493912, PubMed:12145306, PubMed:20493174, PubMed:2466842, PubMed:7957065, PubMed:8621488, PubMed:9742108). Also has a role in chromosome translocation (PubMed:11493912, PubMed:12145306, PubMed:20493174, PubMed:2466842, PubMed:7957065, PubMed:8621488, PubMed:9742108). Has a role in chromosome translocation (PubMed:11493912, PubMed:12145306, PubMed:20493174, PubMed:2466842, PubMed:7957065, PubMed:8621488, PubMed:9742108). The DNA helicase II complex binds preferentially to fork-like ends of</p>

double-stranded DNA in a cell cycle-dependent manner (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). It works in the 3'-5' direction (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). During NHEJ, the XRCC5-XRCC6 dimer performs the recognition step: it recognizes and binds to the broken ends of the DNA and protects them from further resection (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). Binding to DNA may be mediated by XRCC6 (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). The XRCC5-XRCC6 dimer acts as a regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). The XRCC5-XRCC6 dimer is probably involved in stabilizing broken DNA ends and bringing them together (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step (PubMed:[11493912](#), PubMed:[12145306](#), PubMed:[20493174](#), PubMed:[2466842](#), PubMed:[7957065](#), PubMed:[8621488](#), PubMed:[9742108](#)). Probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose-5-phosphate at an abasic site near double-strand breaks (PubMed:[20383123](#)). 5'-dRP lyase activity allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined (PubMed:[20383123](#)). The XRCC5-XRCC6 dimer together with APEX1 acts as a negative regulator of transcription (PubMed:[8621488](#)). In association with NAA15, the XRCC5-XRCC6 dimer binds to the osteocalcin promoter and activates osteocalcin expression (PubMed:[12145306](#)). Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway (PubMed:[28712728](#)). Negatively regulates apoptosis by interacting with BAX and sequestering it from the mitochondria (PubMed:[15023334](#)). Might have deubiquitination activity, acting on BAX (PubMed:[18362350](#)).

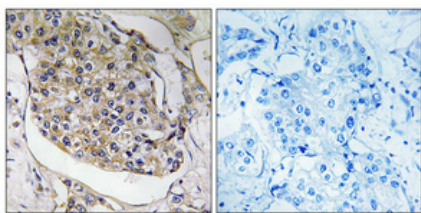
Cellular Location

Nucleus. Chromosome. Cytoplasm. Note=When trimethylated, localizes in the cytoplasm.

Background

Single-stranded DNA-dependent ATP-dependent helicase. Has a role in chromosome translocation. The DNA helicase II complex binds preferentially to fork-like ends of double-stranded DNA in a cell cycle-dependent manner. It works in the 3'-5' direction. Binding to DNA may be mediated by XRCC6. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The XRCC5/6 dimer acts as regulatory subunit of the DNA-dependent protein kinase complex DNA-PK by increasing the affinity of the catalytic subunit PRKDC to DNA by 100-fold. The XRCC5/6 dimer is probably involved in stabilizing broken DNA ends and bringing them together. The assembly of the DNA-PK complex to DNA ends is required for the NHEJ ligation step. Required for osteocalcin gene expression. Probably also acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), by catalyzing the beta-elimination of the 5' deoxyribose-5-phosphate at an abasic site near double-strand breaks. 5'-dRP lyase activity allows to 'clean' the termini of abasic sites, a class of nucleotide damage commonly associated with strand breaks, before such broken ends can be joined. The XRCC5/6 dimer together with APEX1 acts as a negative regulator of transcription. Plays a role in the regulation of DNA virus-mediated innate immune response by assembling into the HDP-RNP complex, a complex that serves as a platform for IRF3 phosphorylation and subsequent innate immune response activation through the cGAS-STING pathway.

Images



Immunohistochemical analysis of paraffin-embedded Human breast cancer. Antibody was diluted at 1:100(4°,overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negative contrl (right) obtaned from antibody was pre-absorbed by immunogen peptide.

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