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KD-Validated Anti-Ku70 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1493

Product Information

Application	WB, FC, ICC
Primary Accession	P12956
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB4855
Calculated MW	69843
Gene Name	XRCC6
Aliases	XRCC6; X-Ray Repair Cross Complementing 6; X-Ray Repair Complementing Defective Repair In Chinese Hamster Cells 6; G22P1; KU70; ML8; X-Ray Repair Cross-Complementing Protein 6; Thyroid Autoantigen 70kDa (Ku Antigen); ATP-Dependent DNA Helicase 2 Subunit 1; Thyroid Autoantigen 70kD (Ku Antigen); 5'-Deoxyribose-5-Phosphate Lyase Ku70; Lupus Ku Autoantigen Protein P70; 70 KDa Subunit Of Ku Antigen; DNA Repair Protein XRCC6; Ku Autoantigen, 70kDa; 5'-DRP Lyase Ku70; D22S731; D22S671; CTC75; CTCBF; TLAA; ATP-Dependent DNA Helicase II, 70 KDa Subunit; ATP-Dependent DNA Helicase II 70 KDa Subunit; CTC Box Binding Factor 75 KDa Subunit; CTC Box-Binding Factor 75 KDa Subunit; Thyroid-Lupus Autoantigen P70; Ku Autoantigen P70 Subunit; Thyroid-Lupus Autoantigen; EC 4.2.99.-; EC 3.6.4.-; Ku70
Immunogen	A synthesized peptide derived from human Ku70

Additional Information

Gene ID	2547
Other Names	X-ray repair cross-complementing protein 6, 3.6.4.-, 4.2.99.-, 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-binding factor 75 kDa subunit, CTC75, CTCBF, DNA repair protein XRCC6, Lupus Ku autoantigen protein p70, Ku70, Thyroid-lupus autoantigen, TLAA, X-ray repair complementing defective repair in Chinese hamster cells 6, XRCC6, G22P1

Protein Information

Name	XRCC6 (HGNC:4055)
Synonyms	G22P1
Function	DNA-binding protein critical for the DNA damage response, specifically in repairing double-strand breaks (DSBs) via the classical non-homologous end

joining (NHEJ) pathway. It forms a heterodimer with XRCC5 (Ku80), creating the Ku70:Ku80 heterodimer (Ku complex), which serves as a DNA end-binding complex. It primarily binds DSBs and recruits essential repair factors, assembling the core long-range NHEJ complex to facilitate the alignment and ligation of broken DNA ends (PubMed:11493912, PubMed:20493174, PubMed:33854234, PubMed:34352203, PubMed:9742108). This pathway ensures the rapid repair of cytotoxic and mutagenic DSBs and contributes to the generation of diversity in T-cell receptors and antibodies through mechanisms such as V(D)J recombination (PubMed:9742108). Likely acts as a 5'-deoxyribose-5-phosphate lyase (5'-dRP lyase), catalyzing the beta-elimination of the 5'-deoxyribose- 5-phosphate at abasic sites near DSBs. This activity cleans the termini of abasic sites, a common form of nucleotide damage, preparing broken ends for ligation (PubMed:20383123). It may also possess 3'-5' DNA helicase activity, although this has not been confirmed in vivo, and its physiological significance remains unclear (PubMed:7957065). Beyond DNA repair, the protein contributes to telomere maintenance (PubMed:29490055). It is also implicated in transcriptional regulation, acting as a cofactor for various transcription factors (PubMed:12145306, PubMed:8621488). It 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). Can also bind RNAs and recruits PRKDC to a wide range of cellular RNAs, including the U3 small nucleolar RNA, playing a role in the biogenesis of ribosomal RNAs (PubMed:32103174). Additionally, it negatively regulates apoptosis by interacting with BAX, sequestering it from the mitochondria, and may possess deubiquitination activity targeting BAX (PubMed:15023334, PubMed:18362350, PubMed:35545041).

Cellular Location

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

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