

RNF8 Protein, Human

Cat. No.:	HY-P701564
Synonyms:	RNF8; E3 ubiquitin-protein ligase RNF8; hRNF8; RING finger protein 8; RING-type E3 ubiquitin transferase RNF8
Species:	Human
Source:	E. coli
Accession:	O76064 (G2-F485)
Gene ID:	9025
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

RNF8 Protein, an E3 ubiquitin-protein ligase, assumes a pivotal role in DNA damage signaling through two distinct mechanisms: firstly, by catalyzing 'Lys-63'-linked ubiquitination of histones H2A and H2AX to facilitate the recruitment of DNA repair proteins at double-strand break (DSB) sites, and secondly, by promoting 'Lys-48'-linked ubiquitination to remove target proteins from DNA damage sites. In response to DSBs, RNF8 is recruited by ATM-phosphorylated MDC1, leading to the 'Lys-63'-linked ubiquitination of histones and the subsequent formation of TP53BP1 and BRCA1 ionizing radiation-induced foci (IRIF). It also plays a role in non-homologous end joining (NHEJ) by facilitating the 'Lys-48'-linked ubiquitination and degradation of KU80/XRCC5. Additionally, RNF8 modulates chromatin structure, promoting extensive chromatin decondensation and activating ATM by inducing histone H2B ubiquitination, indirectly triggering histone H4 'Lys-16' acetylation. In the testis, RNF8 contributes to histone replacement during spermatogenesis, and at uncapped telomeres, it induces H2A ubiquitination and TP53BP1 recruitment, potentially exacerbating telomere-induced genome instability. Moreover, RNF8 is implicated in RAD51 assembly at DSBs, class switch recombination in the immune system, proper exit from mitosis, cytokinesis regulation, and may play a role in the regulation of RXRA-mediated transcriptional activity. This extensive functionality underscores the multifaceted contributions of RNF8 in orchestrating DNA damage responses and maintaining genomic integrity.

Caution: Product has not been fully validated for medical applications. For research use only.

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