

## RNF8 Protein, Human (His)

<b>Cat. No.:</b>	HY-P701565
<b>Synonyms:</b>	RNF8; E3 ubiquitin-protein ligase RNF8; hRNF8; RING finger protein 8; RING-type E3 ubiquitin transferase RNF8
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	O76064 (G2-F485)
<b>Gene ID:</b>	9025
<b>Molecular Weight:</b>	

### PROPERTIES

<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	Please use rapid thawing with running water to thaw the protein.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	<p>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.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA