

Product datasheet for **RR210589**

Rnf168 (NM_001127597) Rat Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Rnf168 (NM_001127597) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Rnf168
Synonyms:	MGC188789
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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ORF Nucleotide Sequence:

>RR210589 representing NM_001127597
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGAAGATGGCTGCACCTAAAACTCCATCCCTTCTTAGCGGAATGTCAGTGGCGGATCTGCATGGAAA
 TCCTCGTAGAGCCTGTTACCCTACCTTGAACCCACACGCTCTGTAACCCATGCTTCCAATCGACTGTTGA
 AAAGGCCAATTTATGCTGTCCTTCTGTGCGCCGCCGGTCTCTTCGTGGACTCGGTACCATACCCGAAGA
 AATTCTCTGGTCAATACAGACCTGTGGGAGATTATCAAAGCACTATGCAAAGGAATGCAAGCTTAGAA
 TCTCTGGACAAGAATCAAAGGAAATCGTTGATGAGTACCAGCCAGTTCGTCTACTCAGTAAACCTGGGGA
 GTTGAGGCGAGAATGAAGAGGAGATAAGCAAGGTGGAGGCTGAGCGACAAGCCAGCAAGGAAGAGGAA
 AACAAAGCCAGTGAGGAGTACATACAGAGACTGCTGGCCGAGGAGGAGGAGGAGAAAAGGCGGACGG
 AGAGAAGCAAGTGAGATGGAGGAGCAGCTGAGGGGCGATGAGGAGCTGGCGAGGAGGCTGAGCACCAG
 CATCAACAGTAACTACGAGAGAAATATCTTGGCATCTCCTTTGAGTTCAGAAAAATCAGATCCCCTCACA
 AACAAAGTACAGAAGAAAAATACGAACAAACAAAAAACTTTGGAGATATTCAAAGATACTTGTCACCTA
 AGTCAAAGCCTGGGACAGCATGGGCATGTAAAAGTGGAGATGGAGAAGACATGTGCAAGTCTAAGGAAAC
 AGACAGTAGTGACACGAAGAGCCCTGTGTTGCAAGACACAGCAGTTGAAGAAAGCATGCCAACACATTCT
 CCTCAGACCTGCCAGAACTCAAGGGCAAGTCCGGAGCCTTTGACAGAGATGCCTGTGCCATGGCTAT
 GTGCAAGGAATGCTGAACAGTGCCTTGAGGGAAAAGCTGAAGCAGTGTCAACCAATCCTGATGATTCATG
 TATTGTAATGATGGTGGACCTAGAGCCATAGTTTCTAACTCTAAGGAAGCTGCAGTTAAGCCTCCTACC
 AAGATAGAAAACGAAGAGTATTCTGTGTCAGGTGACCCAGTTAACTGGGGCAACGGAGTTCCAACAG
 AGAGCAGAGTGTACGACTTACTAGTCGAAAAGAGATTTCCGAAAGAGAAAACCGAAGTCTGTGTTTGA
 AGAAGTCATGGATCCATGCTTTTCTGCAAAAAGAAAGAAAATATTCATCACATCCCTTAGATCAAGAA
 GAAACAGAAAGTGAATTTTACACAAAAGTATAGATTTGGAACATATGCTTTTTCGAGAGACATAAGCAAG
 AAGAACAGGACAGGTTGTTAGCATTACAACCTCAAAAAGAGGAGATAAGAAAAAATGGTGCCAAACCG
 GCAGAAAGGATCCCAGATCAGTACCAGCTGCGCACATCTTACCCCCAGACGGTTGCTGAATGGACAG
 AGGAAGAATGTCAAAGATAGGAACTCCCCAAAGCAAACTGCAGATCGTTCAAATCTCAGAGGAGCAGGA
 AAGGTGAATACTGGGAGACCTTCGAAAGCACTTGAAGGGTTAGTTAATGGAACGAAGTGCCAACTCC
 TAGGAAAGATAGTTGTAATGTATCTAAACGTGCCTGTCCCCTACAGCACAGAAGTGCACAGAAAAGCATT
 CTTCAAATGTTTCAGAGG

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RR210589 representing NM_001127597
 Red=Cloning site Green=Tags(s)

MKMAAPKNSIPSLAECQCGICMEILVEPVTLPCNHTLCNPFQSTVEKANLCCPFRRRVSSWTRYHTRR
 NSLVNTDLWEIIQKHAYAKEKLRISGQESKEIVDEYQPVRLLSKPGELRREYEEEEISKVEAERQASKEEE
 NKASEEYIQRLLAEEEEERRTERRRSEMEEQLRGDEELARRLSTINSNYERNILASPLSSRKSDPVT
 NKSQKNTNKQKNFGDIQRYLSPKSKPGTAWACKTEHGEMCKSKETDSSDTKSPVLQDQDVEESMPHVS
 PQTCPETQGGPEPLTEMPVPWLCARNAEQCLEGKAEAVSTNPDDSCIVNDGGPRAIVSNSKEAAVKPPT
 KIENEEYSVSGVTQLTGGNGVPTESRVYDLLVGKEISERENQESVFEEVMDPCFSAKRRKIFITSSLDQE
 ETEVNFQKQLIDLEHMLFERHKQEEQDRLLALQLQKEADKEKMPNRQKQSPDQYQLRTSSPPDGLLNGQ
 RKNVKNDRNSPKQTADRSKQSRKGEYWFESTWKGVSNGTKMPTPRKDCSNVSKRACPLQHRSAQKSI
 LQMFQR

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-Mlul

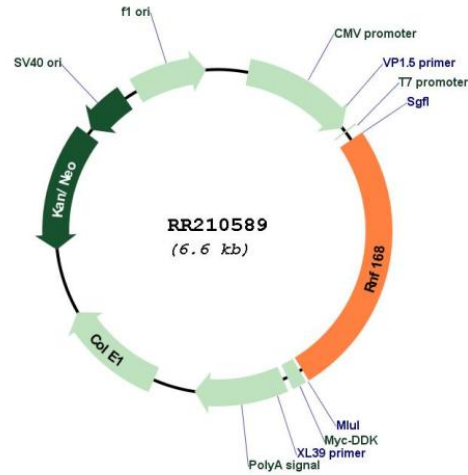
Cloning Scheme:

Cloning sites used for ORF Shutting:



* The last codon before the Stop codon of the ORF

Plasmid Map:



ACCN: NM_001127597
 ORF Size: 1698 bp

OTI Disclaimer:	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info
OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none"> 1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_001127597.2 , NP_001121069.2
RefSeq Size:	3311 bp
RefSeq ORF:	1701 bp
Locus ID:	690043
UniProt ID:	B2RYR0
Cytogenetics:	11q22
MW:	64.7 kDa

Gene Summary:

E3 ubiquitin-protein ligase required for accumulation of repair proteins to sites of DNA damage. Acts with UBE2N/UBC13 to amplify the RNF8-dependent histone ubiquitination. Recruited to sites of DNA damage at double-strand breaks (DSBs) by binding to ubiquitinated histone H2A and H2AX and amplifies the RNF8-dependent H2A ubiquitination, promoting the formation of 'Lys-63'-linked ubiquitin conjugates. This leads to concentrate ubiquitinated histones H2A and H2AX at DNA lesions to the threshold required for recruitment of TP53BP1 and BRCA1. Also recruited at DNA interstrand cross-links (ICLs) sites and promotes accumulation of 'Lys-63'-linked ubiquitination of histones H2A and H2AX, leading to recruitment of FAAP20 and Fanconi anemia (FA) complex, followed by interstrand cross-link repair. H2A ubiquitination also mediates the ATM-dependent transcriptional silencing at regions flanking DSBs in cis, a mechanism to avoid collision between transcription and repair intermediates. Also involved in class switch recombination in immune system, via its role in regulation of DSBs repair. Following DNA damage, promotes the ubiquitination and degradation of JMJD2A/KDM4A in collaboration with RNF8, leading to unmask H4K20me2 mark and promote the recruitment of TP53BP1 at DNA damage sites. Not able to initiate 'Lys-63'-linked ubiquitination in vitro; possibly due to partial occlusion of the UBE2N/UBC13-binding region. Catalyzes monoubiquitination of 'Lys-13' and 'Lys-15' of nucleosomal histone H2A (H2AK13Ub and H2AK15Ub, respectively).[UniProtKB/Swiss-Prot Function]