

Product datasheet for **RC403042**

BRCA1 (NM_007294) Human Mutant ORF Clone

Product data:

Product Type:	Mutant ORF Clones
Product Name:	BRCA1 (NM_007294) Human Mutant ORF Clone
Mutation Description:	N1236K
Affected Codon#:	1236
Affected NT#:	3708
Nucleotide Mutation:	BRCA1 Mutant (N1236K), Myc-DDK-tagged ORF clone of Homo sapiens breast Cancer, early onset (BRCA1), transcript variant 1 as transfection-ready DNA
Effect:	Breast and/or ovarian cancer
Symbol:	BRCA1
Synonyms:	BRCAI; BRCC1; BROVCA1; FANCS; IRIS; PNCA4; PPP1R53; PSCP; RNF53
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_007294
ORF Size:	5589 bp
Restriction Sites:	Sgfl-Mlul
ORF Nucleotide Sequence:	>RC403042 representing NM_007294 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGATTATCTGCTCTTCGCGTTGAAGAAGTACAAAATGTCATTAATGCTATGCAGAAAATCTTAGAGT
GTCCCATCTGTCTGGAGTTGATCAAGGAACCTGTCTCCACAAAGTGTGACCACATATTTTGCAAATTTTG
CATGCTGAAACTTCTCAACCAGAAGAAAGGCCCTTACAGTGTCTTTATGTAAGAATGATATAACCAA
AGGAGCCTACAAGAAAGTACGAGATTTAGTCAACTTGTGAAGAGCTATTGAAAATCATTGTGCTTTTC
AGCTTGACACAGGTTTGGAGTATGCAACAGCTATAATTTTGCAAAAAGGAAAATAACTCTCCTGAACA
TCTAAAAGATGAAGTTTCTATCATCAAAGTATGGGCTACAGAAACCGTCCAAAAGACTTCTACAGAGT
GAACCCGAAAATCCTTCTTGCAGGAAACAGTCTCAGTGTCCAACCTCTAACCTTGGAACTGTGAGAA



[View online »](#)

CTCTGAGGACAAAGCAGCGGATACAACCTCAAAAGACGTCTGTCTACATTGAATTGGGATCTGATTCTTC
 TGAAGATACCGTTAATAAGGCAACTTATTGCAGTGTGGGAGATCAAGAATTGTTACAAATCACCCCTCAA
 GGAACCAGGGATGAAATCAGTTTGGATTCTGCAAAAAGGCTGCTTGTGAATTTCTGAGACGGATGTAA
 CAAACTACTGAACATCATCAACCCAGTAATAATGATTTGAACACCACTGAGAAGCGTGCAGCTGAGAGGCA
 TCCAGAAAAGTATCAGGGTAGTTCTGTTCAAACCTGCATGTGGAGCCATGTGCCACAAATACTCATGCC
 AGCTCATTACAGCATGAGAACAGCAGTTTATTACTCACTAAAGACAGAATGAATGTAGAAAAGGCTGAAT
 TCTGTAATAAAAAGCAAACAGCCTGGCTTAGCAAGGAGCCAAACATAACAGATGGGCTGGAAGTAAGGAAAC
 ATGTAATGATAGGCGGACTCCCAGCACAGAAAAAAGGTAGATCTGAATGCTGATCCCCTGTGTGAGAGA
 AAAGAATGGAATAAGCAGAAACTGCCATGCTCAGAGAATCCTAGAGATACTGAAGATGTTCTTGGATAA
 CACTAAATAGCAGCATTAGAAAAGTAAATGAGTGGTTTTCCAGAAGTGAAGTGTAGGTTCTGATGA
 CTCACATGATGGGGAGTCTGAATCAAATGCCAAAGTAGCTGATGATTGGACGTTCTAAATGAGGTAGAT
 GAATATTCTGGTTCTTCCAGAAAAATAGACTTACTGGCCAGTGCCTCATGAGGCTTTAATATGAAAA
 GTGAAAGAGTTCACTCCAATCAGTAGAGATAATTTGAAGACAAAATTTGGGAAAACCTATCGGAA
 GAAGGCAAGCCTCCCAACTTAAGCCATGTAAGTAAAATCTAATTATAGGAGCATTGTTACTGAGCCA
 CAGATAATACAAGAGCGTCCCCTCACAATAAATTAAGCGTAAAAGGAGACCTACATCAGGCCCTTCATC
 CTGAGGATTTTATCAAGAAAGCAGATTTGGCAGTTCAAAAGACTCCTGAAATGATAAATCAGGGAACAA
 CCAAACGGAGCAGAATGGTCAAGTGAATATTACTAATAGTGGTCATGAGAATAAAACAAAAGGTGAT
 TCTATTAGAATGAGAAAAATCCTAACCAATAGAATCACTCGAAAAAGAATCTGCTTTCAAACGAAAG
 CTGAACCTATAAGCAGCAGTAAAGCAATATGGAAGTGAATTAATAATCCACAATTCAAAAGCAGCTAA
 AAAGAATAGGCTGAGGAGGAAGTCTTACCAGGCATATTCATGCGCTTGAAGTGTAGTGTAGTGTAGTAA
 CTAAGCCACCTAATTGTACTGAATTGCAAAATGATAGTTGTTCTAGCAGTGAAGAGATAAAGAAAAAA
 AGTACAACCAAATGCCAGTCAAGCAGCAGAAAACCTACAACCTCATGGAAGGTAAGAAAGTGAAGTGA
 AGCCAAGAGAGTAACAAGCCAAATGAACAGACAAGTAAAAGACATGACAGCGATACTTTCCCAAGCTG
 AAGTTAACAAATGCACCTGGTTCTTTTACTAAGTGTTCAAATACCAAGTGAAGTAAAGAATTTGTCAATC
 CTAGCCTTCCAAGAGAAGAAAAAGAGAAAAGTAAAGTGTCTAATAATGCTGAAGACCC
 CAAAGATCTCATGTTAAGTGGAGAAAGGTTTTGCAAAGTGAAGATCTGTAGAGAGTAGCAGTATTTC
 TTGGTACTGTTACTGATTATGGCACTCAGGAAAGTATCTCGTTACTGGAAGTGTAGCAGTCTAGGGAAG
 CAAAAACAGAACCAAATAAATGTGTGAGTCAAGTGTGCAGCATTGAAAACCCCAAGGACTAATTCATGG
 TTGTTCCAAAGATAATAGAAATGACACAGAAGGCTTTAAGTATCCATTGGGACATGAAGTAAACCACAGT
 CGGAAACAAGCATAGAAATGGAAGAAAGTGAAGTGTGCTCAGTATTTGCAGAATACATTCAAGGTTT
 CAAAGCGCCAGTCAATTTGCTCCGTTTTCAAATCCAGGAAATGCAGAAGAGGAATGTGCAACATTCTCTGC
 CCACTCTGGGTCTTAAAGAAACAAAGTCCAAAAGTCACTTTTGAATGTGAACAAAAGGAAGAAAATCAA
 GGAAAGAATGAGTCTAATATCAAGCCTGTACAGACAGTAAATCACTGCAGGCTTTCTGTGGTTGGTC
 AGAAAGATAAGCCAGTTGATAATGCCAAATGTAGTATCAAAGGAGGCTCTAGGTTTTGTCTATCATCTCA
 GTTCAGAGGCAACGAACTGGACTCATTACTCCAAATAAACATGGACTTTTACAAAACCCATATCGTATA
 CCACCCTTTTCCCATCAAGTCATTTGTTAAACTAAATGTAAGAAAAATCTGCTAGAGGAAAACCTTGG
 AGGAACATTCAATGTACCTGAAAGAGAAATGGGAAATGAGAACATTCAGTACAGTGAACACAATTAG
 CCGTAATAACATTAGAGAAAAATGTTTTAAAGAAGCCAGCTCAAGCAATTAATGAAGTAGGTTCCAGT
 ACTAATGAAGTGGCTCCAGTATTAATGAAATAGGTTCCAGTGTGAAAACATTCAAGCAGAAGTGAAGTA
 GAAACAGAGGGCCAAAATGAAATGCTATGCTTAGATTAGGGTTTTGCAACCTGAGGCTATAAAACAAAG
 TCTTCTGGAAGTAATTGTAAGCATCCTGAAATAAAAAAGCAAGAATATGAAGAAGTGTTCAGACTGTT
 AATACAGATTTCTCTCCATATCTGATTTAGATAAATAGAACAGCCTATGGGAAGTGTGATGATCTC
 AGGTTTGTCTGAGACACCTGATGACCTGTTAGATGATGGTGAATAAAGGAAGATACTAGTTTTGCTGA
 AAATGACATTAAGGAAAGTTCTGCTGTTTTAGCAAAAGCGTCCAGAAAGGAGAGCTTAGCAGGAGTCT
 AGCCCTTTCACCCATACACATTTGGCTCAGGGTACCAGAGGGGCAAGAAATAGAGTCTCAGAAG
 AGAACTTACTAGTGAAGTGAAGAGCTCCCTGCTTCCAACACTTGTATTTGGTAAAGTAAACAAGAT
 ACCTTCTCAGTCTACTAGGCATAGCACCCTGCTACCGAGTGTCTGTCTAAGAACACAGAGGAGAATTTA
 TTATCATTGAAGAATAGCTTAAATGACTGCAGTAACCAGGTAATATTGGCAAAGGCATCTCAGGAACATC
 ACCTTAGTGAGGAAACAAAATGTTCTGCTAGCTTGTCTTCTCACAGTGCAGTGAATTGGAAGACTTGAC
 TGCAAATACAAACACCCAGGATCCTTTCTGATTGGTTCTTCCAAAACAAATGAGGCATCAGTCTGAAAGC
 CAGGGAGTTGGTCTGAGTGAAGAAATGGTTTCAGATGATGAAGAAAGAGGAACGGGCTTGAAGAAA
 ATAATCAAGAAGGCAAGCATGGATTCAAACCTTAGGTGAAGCAGCATCTGGGTGTGAGAGTGAACAAG

CGTCTCTGAAGACTGCTCAGGGCTATCCTCTCAGAGTGACATTTTAACCACTCAGCAGAGGGATACCATG
CAACATAACCTGATAAAGCTCCAGCAGGAAATGGCTGAACTAGAAGCTGTGTTAGAACAGCATGGGAGCC
AGCCTTCTAACAGCTACCCTTCCATCATAAGTGACTCTTCTGCCCTTGAGGACCTGCGAAATCCAGAACA
AAGCACATCAGAAAAAGCAGTATTAACCTCACAGAAAAGTAGTGAATACCCTATAAGCCAGAATCCAGAA
GGCCTTCTGCTGACAAGTTTGAGGTGTCTGCAGATAGTTCTACCAGTAAAAATAAAGAACCAGGAGTGG
AAAGGTCATCCCCTTCTAAATGCCCATCATTAGATGATAGGTGGTACATGCACAGTTGCTCTGGGAGTCT
TCAGAATAGAACTACCATCTCAAGAGGAGCTCATTAAAGTTGTTGATGTGGAGGAGCAACAGCTGGAA
GAGTCTGGGCCACAGATTTGACGGAAACATCTTACTTGCCAAGGCAAGATCTAGAGGGAACCCCTTACC
TGAATCTGGAATCAGCCTCTTCTCTGATGACCCTGAATCTGATCCTTCTGAAGACAGAGCCCCAGAGTC
AGCTCGTGTTGGCAACATACCATCTTCAACCTCTGCATTGAAAGTTCCCAATTGAAAGTTGCAGAATCT
GCCCAGAGTCCAGCTGCTGCTCATACTACTGATACTGCTGGGTATAATGCAATGGAAGAAAGTGTGAGCA
GGGAGAAGCCAGAATTGACAGCTTCAACAGAAAGGGTCAACAAAAGAATGTCCATGGTGGTGTCTGGCCT
GACCCAGAAGAATTTATGCTCGTGTACAAGTTTGCCAGAAAACACCACATCACTTTAACTAATCTAATT
ACTGAAGAGACTACTCATGTTGTTATGAAAACAGATGCTGAGTTTGTGTGTAACGGACACTGAAATATT
TTCTAGGAATTGCGGGAGGAAAATGGGTAGTTAGCTATTCTGGGTGACCCAGTCTATTAAGAAAGAAA
AATGCTGAATGAGCATGATTTTGAAGTCAGAGGAGATGTGGTCAATGGAAGAAACCACCAAGGTCCAAAG
CGAGCAAGAGAATCCCAGGACAGAAAGATCTTCAGGGGGCTAGAAATCTGTTGCTATGGGCCCTTACCA
ACATGCCACAGATCAACTGGAATGGATGGTACAGCTGTGTGGTGCTTCTGTGGTGAAGGAGCTTTCATC
ATTCACCCTTGGCACAGGTGTCCACCAATTGTGGTTGTGCAGCCAGATGCCTGGACAGAGGACAATGGC
TTCCATGCAATTGGGCAGATGTGTGAGGCACCTGTGGTGACCCGAGAGTGGGTGTTGGACAGTGTAGCAC
TCTACCAGTGCCAGGAGCTGGACACCTACCTGATACCCAGATCCCCACAGCCACTAC

AGCGGACCGACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence: >RC403042 representing NM_007294
 Red=Cloning site Green=Tags(s)

MDLSALRVEEVQNVINAMQKILECPICLELIEKPVSTKCDHIFCKFCMLKLLNQKKGPSQCPLCKNDITK
 RSLQESTRFSQLVEELLKIICAFQLDTGLEAYANSYNFAKKENNSPEHLKDEVSI IQSMGYRNRARLLQS
 EPENPSLQETSLSVQLSNLGTVRTLRKQRIQPQKTSVYIELGSDSSEDTVNKATYCSVGDQELLQITPQ
 GTRDEISLDSAKKAACEFSETDVTNTEHHQPSNNDLNTTEKRAAERHPEKYQGSSVSNLHVPCGTNTHA
 SSLQHENSLLLLTKDRMNVKEAEFCNKSKQPGLARSQHNRWAGSKETCNDRRTPSTEKKVDLNADPLCER
 KEWKNQKLPCCSENPRDTEVPWITLNSSIQKVNEWFSRSEDELLGSDSDHGESESNKAVADVLDVINEVD
 EYSGSSEKIDLLASDPHEALICKSERVHKSVE SNIEDKIFGKTYRKKASLPNLSHV TENLIIGAFVTEP
 QIIQERPLTNKLRKRRTSGLHPEDFIKKADLAVQKTPEMINQGTNQT EQNGQVMNITNSGHENKTKGD
 SIQNEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTRHIALELVSRN
 LSPNCTELQIDSCSSSEEEKKKYNQMPVRRSRNLQLEMGKEPATGAKKSNKPNEQTSKRHDSDTFPEL
 KLTNAPGSFTKCSNTSELKEFVNPSLPREEKEEKLETVKVSNN AEDPKDMLSGERVLQTERSVESSSIS
 LVPGTDYGTQESISLLEVSTLGAKTEPNKCVSQCAAFENPKGLIHGCSKDNRNDEGFKYPLGHEVNH
 RETSIEMEESELDAQYLQNTFKVSKRQSFAPFSNPGNAEEECATFSAHSGSLKKQSPKVTFECEQKEENQ
 GKNESNIKPVQTVNITAGFPVVGQKDKPVDNAKCSIKGGRFCLSSQFRGNETGLITPNKHGLLQNPYRI
 PPLFPKISFVKTKCKKNLLEENFEHSMSPEREMGNENIPSTVSTISRNNIRENVFKEASSSININEVGS
 TNEVGSSINEIGSSDENIQAELGRNRGPKLNAMLRLGVLQPEVYKQSLPGSNCKHPEIKKQEYEEVVQTV
 NTDFSPYLISDNLEQPMGSSHASQVCSETPDDLDDGEIKEDTSFAENDIKESSAVFSKSVQKGE LSRSP
 SPFTHHLAQGYRRGAKKLESSEENLSSEDEELPCFQHLLFGKVNKIPSQSTRHSTVATECLSKNTEENL
 LSLKNSLNDCSNQVILAKASQEHHLSEETKCSASLFSQCSLEEDLTANTNTQDPFLIGSSKQMRHQSES
 QGVGLSDKELVSDDEERGTGLEENQEEQSMDSNLGEAASGCESETSVSEDCSGLSSQSDILTQQQRDTM
 QHNLIKLQQEMAELEAVLEQHGSQPSNSYPSIISDSSALEDLRNPEQSTSEKAVLTSQKSSEYPI SQNPE
 GLSADKFEVSADSSTSKNKEPGVERSSPKCPSLDDRWMHSCSGSLQNRNYP SQEELIKVVDVEEQLE
 ESGPHDLTETSYLPRQDLEGTPYLESGISLFSDDPESDPSEDRAPE SARVGNIPSSTSALKVPQLKVAES
 AQSPAAAHTTDTAGYNAMEESVSREKPELTASTERVNRMSMVVSGLTPEEFMLVYKFKARKHITLNL I
 TEETTHVVMKTDAEFVCERTLKYFLGIAGGKVVSYFWVTQSIKERKMLNEHDFEVRGDVVGNRHHQGP
 RARESQRKIFRGLIICCYGPFNMPTDQLEWMVQLCGASVVKELSSFTLGTGVHPIVVVQPD AWTEDNG
 FHAIGQMCEAPVVTREWVLDSVALYQCQELDTYLIPQIPHSHY

SGPTRRRLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:

OTI Disclaimer:

Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in *E. coli* are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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).

RefSeq:

[NP_009225](#)

RefSeq Size:

5589 bp

RefSeq ORF:

5592 bp

Locus ID:

672

Cytogenetics:

17q21.31

Domains:

BRCT, RING

Protein Families:

Druggable Genome, Transcription Factors

Protein Pathways:

Ubiquitin mediated proteolysis

MW: 204.9 kDa

Gene Summary: This gene encodes a 190 kD nuclear phosphoprotein that plays a role in maintaining genomic stability, and it also acts as a tumor suppressor. The BRCA1 gene contains 22 exons spanning about 110 kb of DNA. The encoded protein combines with other tumor suppressors, DNA damage sensors, and signal transducers to form a large multi-subunit protein complex known as the BRCA1-associated genome surveillance complex (BASC). This gene product associates with RNA polymerase II, and through the C-terminal domain, also interacts with histone deacetylase complexes. This protein thus plays a role in transcription, DNA repair of double-stranded breaks, and recombination. Mutations in this gene are responsible for approximately 40% of inherited breast cancers and more than 80% of inherited breast and ovarian cancers. Alternative splicing plays a role in modulating the subcellular localization and physiological function of this gene. Many alternatively spliced transcript variants, some of which are disease-associated mutations, have been described for this gene, but the full-length natures of only some of these variants has been described. A related pseudogene, which is also located on chromosome 17, has been identified. [provided by RefSeq, May 2020]