

Product datasheet for **RC403046**

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:	S1241C
Affected Codon#:	1241
Affected NT#:	3722
Nucleotide Mutation:	BRCA1 Mutant (S1241C), Myc-DDK-tagged ORF clone of Homo sapiens breast Cancer, early onset (BRCA1), transcript variant 1 as transfection-ready DNA
Effect:	Breast 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:	SgfI-MluI
ORF Nucleotide Sequence:	>RC403046 representing NM_007294 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGATTATCTGCTCTTCGCGTTGAAGAAGTACAAAATGTCATTAATGCTATGCAGAAAATCTTAGAGT
GTCCCATCTGTCTGGAGTTGATCAAGGAACCTGTCTCCACAAAGTGTGACCACATATTTTGCAAATTTTG
CATGCTGAAACTTCTCAACCAGAAGAAAGGCCCTTACAGTGTCTTTATGTAAGAATGATATAACCAA
AGGAGCCTACAAGAAAGTACGAGATTTAGTCAACTTGTGAAGAGCTATTGAAAATCATTGTGCTTTTC
AGCTTGACACAGGTTTGGAGTATGCAACAGCTATAATTTTGCAAAAAGGAAAATAACTCTCCTGAACA
TCTAAAAGATGAAGTTTCTATCATCAAAGTATGGGCTACAGAAACCGTCCAAAAGACTTCTACAGAGT
GAACCCGAAAATCCTTCTTGCAGGAAACAGTCTCAGTGTCCAACCTCTAACCTTGGAACTGTGAGAA



[View online »](#)

CTCTGAGGACAAAGCAGCGGATACAACCTCAAAAGACGTCTGTCTACATTGAATTGGGATCTGATTCTTC
 TGAAGATACCGTTAATAAGGCAACTTATTGCAGTGTGGGAGATCAAGAATTGTTACAAATCACCCCTCAA
 GGAACCAGGGATGAAATCAGTTTGGATTCTGCAAAAAGGCTGCTTGTGAATTTCTGAGACGGATGTAA
 CAAACTACTGAACATCATCAACCCAGTAATAATGATTTGAACACCACTGAGAAGCGTGCAGCTGAGAGGCA
 TCCAGAAAAGTATCAGGGTAGTTCTGTTCAAACCTGCATGTGGAGCCATGTGCCACAAATACTCATGCC
 AGCTCATTACAGCATGAGAACAGCAGTTTATTACTCACTAAAGACAGAATGAATGTAGAAAAGGCTGAAT
 TCTGTAATAAAAAGCAAACAGCCTGGCTTAGCAAGGAGCCAAACATAACAGATGGGCTGGAAGTAAGGAAAC
 ATGTAATGATAGGCGGACTCCCAGCACAGAAAAAAGGTAGATCTGAATGCTGATCCCCTGTGTGAGAGA
 AAAGAATGGAATAAGCAGAACTGCCATGCTCAGAGAATCCTAGAGATACTGAAGATGTTCTTGGATAA
 CACTAAATAGCAGCATTAGAAAAGTAAATGAGTGGTTTTCCAGAAGTGAAGTGTAGGTTCTGATGA
 CTCACATGATGGGGAGTCTGAATCAAATGCCAAAGTAGCTGATGATTGGACGTTCTAAATGAGGTAGAT
 GAATATTCTGGTTCTTCCAGAAAAATAGACTTACTGGCCAGTGCCTCATGAGGCTTTAATATGAAAA
 GTGAAAGAGTTCACTCCAATCAGTAGAGATAATATTGAAGACAAAATTTGGGAAAACCTATCGGAA
 GAAGGCAAGCCTCCCAACTTAAGCCATGTAAGTAAAATCTAATTATAGGAGCATTGTTACTGAGCCA
 CAGATAATACAAGAGCGTCCCCTCACAATAAATTAAGCGTAAAAGGAGACCTACATCAGGCCCTTCATC
 CTGAGGATTTTATCAAGAAAGCAGATTTGGCAGTTCAAAAGACTCCTGAAATGATAAATCAGGGAACAA
 CCAAACGGAGCAGAATGGTCAAGTGAATATTACTAATAGTGGTCATGAGAATAAAACAAAAGGTGAT
 TCTATTAGAATGAGAAAAATCCTAACCAATAGAATCACTCGAAAAAGAATCTGCTTTCAAACGAAAG
 CTGAACCTATAAGCAGCAGTAAAGCAATATGGAAGTGAATTAATAATCCACAATTCAAAAGCCTAA
 AAAGAATAGGCTGAGGAGGAAGTCTTACCAGGCATATTCATGCGCTTGAAGTGTAGTGTAGTGTAGTAA
 CTAAGCCACCTAATTGTACTGAATTGCAAATGATAGTTGTTCTAGCAGTGAAGAGATAAAGAAAAAA
 AGTACAACCAAATGCCAGTCAAGCAGCAGAAAACCTACAACCTATGGAAGGTAAGAAAGTGAAGTGA
 AGCCAAAGAGTAACAAGCCAAATGAACAGACAAGTAAAAGACATGACAGCGATACTTTCCCAAGCTG
 AAGTTAACAAATGCACCTGGTTCTTTTACTAAGTGTTCAAATACCAGTGAAGTAAAGAATTTGTCAATC
 CTAGCCTTCCAAGAGAAGAAAAAGAGAAAACACTAGAAAACAGTTAAAGTGTCTAATAATGCTGAAGACC
 CAAAGATCTCATGTTAAGTGGAGAAAGGTTTTGCAAAGTGAAGATCTGTAGAGAGTAGCAGTATTTCA
 TTGGTACTGTTACTGATTATGGCACTCAGGAAAGTATCTCGTTACTGGAAGTTAGCACTCTAGGGAAGG
 CAAAAACAGAACCAAATAAATGTGTGAGTCAAGTGTGCAGCATTGAAAACCCCAAGGGACTAATTCATGG
 TTGTTCCAAAGATAATAGAAATGACACAGAAGGCTTTAAGTATCCATTGGGACATGAAGTAAACCACAGT
 CGGAAACAAGCATAGAAATGGAAGAAAGTGAAGTGTGCTCAGTATTTGCAGAATACATTCAAGGTTT
 CAAAGCGCCAGTCAATTTGCTCCGTTTTCAAATCCAGGAAATGCAGAAGAGGAATGTGCAACATTCTCTGC
 CCACTCTGGGTCTTAAAGAAACAAAGTCCAAAAGTCACTTTTGAATGTGAACAAAAGGAAGAAAATCAA
 GGAAAGAATGAGTCTAATATCAAGCCTGTACAGACAGTTAATATCACTGCAGGCTTTCTGTGGTTGGTC
 AGAAAGATAAGCCAGTTGATAATGCCAAATGTAGTATCAAAGGAGGCTCTAGGTTTTGTCTATCATCTCA
 GTTCAGAGGCAACGAACTGGACTCATTACTCCAAATAAACATGGACTTTTACAAAACCCATATCGTATA
 CCACCCTTTTCCCATCAAGTCATTTGTTAAACTAAATGTAAGAAAAATCTGCTAGAGGAAAACCTTGG
 AGGAACATTCAATGTACCTGAAAGAGAAATGGGAAATGAGAACATTCAGTACAGTGAACACAATTAG
 CCGTAATAACATTAGAGAAAATGTTTTAAAGAAGCCAGCTCAAGCAATATTAATGAAGTAGGTTCCAGT
 ACTAATGAAGTGGCTCCAGTATTAATGAAATAGGTTCCAGTGTGAAAACATTCAAGCAGAAGTGAAGTA
 GAAACAGAGGGCCAAAATGAAATGCTATGCTTAGATTAGGGTTTTGCAACCTGAGGCTATAAAACAAAG
 TCTTCTGGAAGTAATTGTAAGCATCCTGAAATAAAAAAGCAAGAATATGAAGAAGTAGTTCAGACTGTT
 AATACAGATTTCTCTCCATATCTGATTTAGATAAATAGAACAGCCTATGGGAAGTAGTCATGCATCTC
 AGGTTTGTCTGAGACACCTGATGACCTGTTAGATGATGGTGAATAAAGGAAGATACTAGTTTTGCTGA
 AAATGACATTAAGGAAAGTTCTGCTGTTTTAGCAAAGCGTCCAGAAAGGAGAGCTTAGCAGGAGTCTC
 AGCCCTTTCACCCATACACATTTGGCTCAGGGTACCAGAGGGGGCCAAAGAAATAGAGTCTCAGAAG
 AGAACTTACTAGTGAGGATGAAGAGCTCCCTGCTTCCAACACTTGTTATTTGGTAAAGTAAACAATAT
 ACCTTCTCAGTGTACTAGGCATAGCACCGTTGCTACCGAGTGTCTGTCTAAGAACACAGAGGAGAATTTA
 TTATCATTGAAGAATAGCTTAAATGACTGCAGTAACCAGGTAATATTGGCAAAGGCATCTCAGGAACATC
 ACCTTAGTGAGGAAACAAAATGTTCTGCTAGCTTGTCTTCTCACAGTGCAGTGAATTGGAAGACTTGAC
 TGCAAATACAAACACCCAGGATCCTTTCTGATTGGTTCTTCAAACAAATGAGGCATCAGTCTGAAAGC
 CAGGGAGTTGGTCTGAGTGACAAGGAATGGTTTCAGATGATGAAGAAAGAGGAACGGGCTTGAAGAAA
 ATAATCAAGAAGGCAAGCATGGATTCAAACCTTAGGTGAAGCAGCATCTGGGTGTGAGAGTGAACAAG

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

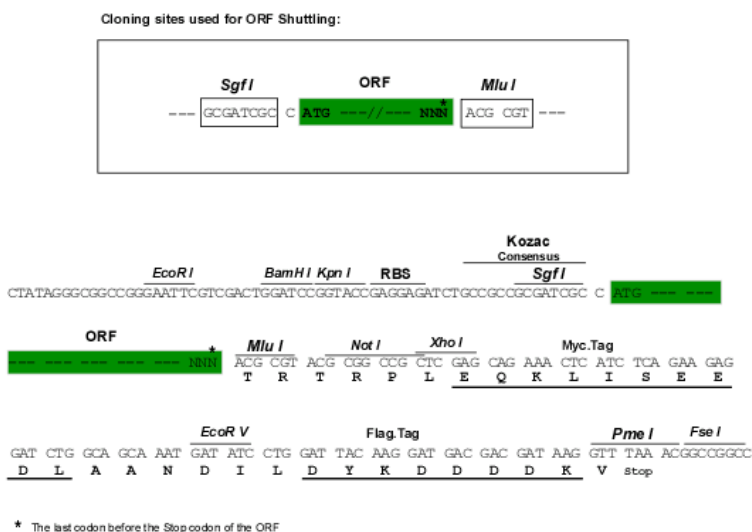
AGCGGACCGACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence: >RC403046 representing NM_007294
 Red=Cloning site Green=Tags(s)

MDLSALRVEEVQNVINAMQKILECPICLLELIKEPVSTKCDHIFCKFCMLKLLNQKKGPSQCPLCKNDITK
 RSLQESTRFSQLVEELLKIICAFQLDTGLEAYANSYNFAKKENNSPEHLKDEVSI IQSMGYRNRARLLQS
 EPENPSLQETSLSVQLSNLGTVRTLRKQRIQPQKTSVYIELGSDSSEDTVNKATYCSVGDQELLQITPQ
 GTRDEISLDSAKKAACEFSETDVTNTEHHQPSNNDLNTTEKRAAERHPEKYQGSSVSNLHVPCGTNTHA
 SSLQHENSLLLLTKDRMNVKEAEFCNKSKQPGLARSQHNRWAGSKETCNDRRTPSTEKKVDLNADPLCER
 KEWKNQKLPCCSENPRDTEVPWITLNSSIQKVNEWFSRSEDELLGSDSDHGESESNKAVADVLDVLENEVD
 EYSGSSEKIDLLASDPHEALICKSERVHKSVESENIEDKIFGKTYRKKASLPNLSHVNTENLIIGAFVTEP
 QIIQERPLTNKLRKRRTSGLHPEDFIKKADLAVQKTPEMINQGTNQTQNGQVMNITNSGHENKTKGD
 SIQNEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTRHIALELVVSRN
 LSPNCTELQIDSCSSSEEEKKKYNQMPVRRSRNLQLEMGKEPATGAKKSNKPNEQTSKRHDSDTFPEL
 KLTNAPGSFTKCSNTSELKEFVNPSLPREEKEEKLETVKVSNNAEADPKDMLSGERVLQTERSVESSSIS
 LVPGTDTGTQESISLLEVSTLGAKTEPNKCVSQCAAFENPKGLIHGCSKDNRNDEGFKYPLGHEVNH
 RETSIEMEESELDAQYLQNTFKVSKRQSFAPFSNPNAEEECATFSAHSGSLKKQSPKVTFECEQKEENQ
 GKNESNIKPVQTVNITAGFPVVGQKDKPVDNAKCSIKGGRFCLSSQFRGNETGLITPNKHGLLQNPYRI
 PPLFPKISFVKTKCKKNLLEENFEHSMSPEREMGNENIPSTVSTISRNNIRENVFKEASSNINEVGS
 TNEVGSSINEIGSSDENIQAELGRNRGPKLNAMLRLGVLQPEVYKQSLPGSNCKHPEIKKQEYEEVVQTV
 NTDFSPYLISDNLEQPMGSSHASQVCSETPDDLDDGEIKEDTSFAENDIKESSAVFSKSVQKGE
 SRSPSPFTHHLAQGYRRGAKKLESSEENLSSEDEELPCFQHLLFGKVNNIPSQCTRHSTVATECLSKNTEENL
 LSLKNSLNDCSNQVILAKASQEHHLSEETKCSASLFSQCSLEEDLTANTNTQDPFLIGSSKQMRHQSES
 QGVGLSDKELVSDDEERGTGLEENQEEQSMDSNLGEAASGCESETSVSEDCSGLSSQSDILTTQQRDTM
 QHNLIKLQQEMAELEAVLEQHGSQPSNSYPSIISDSSALEDLRNPEQSTSEKAVLTSQKSSEYPI
 SQNPEGLSADKFEVSADSSTSKNKEPGVERSSPKCPSLDDRWMHSCSGSLQNRNYPSEELIKVVDVEEQLE
 ESGPHDLTETSYLPRQDLEGTPYLESGISLFSDDPESDPSEDRAPE SARVGNIPSSSALKVPQLKVAES
 AQSPAAAHTTDTAGYNAMEESVSREKPELTASTERVNRMSMVVSGLTPEEFMLVYKFKARKHITLNL
 TEETTHVVMKTADEFVCERTLKYFLGIAGGKVVSYFWVTQSIKERKMLNEHDFEVRGDDVNGRHHQGP
 RARESQRKIFRGLIICCYGPFNMPTDQLEWMVQLCGASVVKELSSFTLGTGVHPIVVVQPD
 AWTEUNG FHAIGQMCEAPVVTREWVLDVALYQCQELDTYLIPQIPHSHY

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]