

## Product datasheet for **RC402836**

### **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:	C47Y
Affected Codon#:	47
Affected NT#:	140
Nucleotide Mutation:	BRCA1 Mutant (C47Y), 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:	SgfI-MluI
ORF Nucleotide Sequence:	>RC402836 representing NM_007294 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**GCGATCGCC**

ATGGATTATCTGCTCTTCGCGTTGAAGAAGTACAAAATGTCATTAATGCTATGCAGAAAATCTTAGAGT  
GTCCCATCTGTCTGGAGTTGATCAAGGAACCTGTCTCCACAAAGTGTGACCACATATTTTGCAAATTTTA  
CATGCTGAAACTTCTCAACCAGAAGAAAGGGCCTTCACAGTGTCTTTATGTAAGAATGATATAACCAA  
AGGAGCCTACAAGAAAGTACGAGATTTAGTCAACTTGTGAAGAGCTATTGAAAATCATTGTGCTTTTC  
AGCTTGACACAGGTTTGGAGTATGCAACAGCTATAATTTTGCAAAAAGGAAAATAACTCTCCTGAACA  
TCTAAAAGATGAAGTTTCTATCATCAAAGTATGGGCTACAGAAACCGTCCAAAAGACTTCTACAGAGT  
GAACCCGAAAATCCTTCTTGCAGGAAACAGTCTCAGTGTCCAACCTCTAACCTTGGAACTGTGAGAA



[View online »](#)

CTCTGAGGACAAAGCAGCGGATACAACCTCAAAAGACGTCTGTCTACATTGAATTGGGATCTGATTCTTC  
 TGAAGATACCGTTAATAAGGCAACTTATTGCAGTGTGGGAGATCAAGAATTGTTACAATCACCCCTCAA  
 GGAACCAGGGATGAAATCAGTTTGGATTCTGCAAAAAGGCTGCTTGTGAATTTCTGAGACGGATGTAA  
 CAAACTACTGAACATCATCAACCCAGTAATAATGATTTGAACACCACTGAGAAGCGTGCAGCTGAGAGGCA  
 TCCAGAAAAGTATCAGGGTAGTTCTGTTCAAACCTGCATGTGGAGCCATGTGCCACAAATACTCATGCC  
 AGCTCATTACAGCATGAGAACAGCAGTTTATTACTCACTAAAGACAGAATGAATGTAGAAAAGGCTGAAT  
 TCTGTAATAAAAAGCAAACAGCCTGGCTTAGCAAGGAGCCAACATAACAGATGGGCTGGAAGTAAGGAAAC  
 ATGTAATGATAGGCGGACTCCCAGCACAGAAAAAAGGTAGATCTGAATGCTGATCCCCTGTGTGAGAGA  
 AAAGAATGGAATAAGCAGAACTGCCATGCTCAGAGAATCCTAGAGATACTGAAGATGTTCTTGGATAA  
 CACTAAATAGCAGCATTAGAAAAGTAAATGAGTGGTTTTCCAGAAGTATGAACTGTTAGGTTCTGATGA  
 CTCACATGATGGGGAGTCTGAATCAAATGCCAAAGTAGCTGATGATTGGACGTTCTAAATGAGGTAGAT  
 GAATATTCTGGTTCTTCCAGAAAAATAGACTTACTGGCCAGTATCCTCATGAGGCTTTAATATGAAAA  
 GTGAAAGAGTTCACTCCAATCAGTAGAGATAATATTGAAGACAAAATATTTGGGAAAACCTATCGGAA  
 GAAGGCAAGCCTCCCAACTTAAGCCATGTAAGTAAAATCTAATTATAGGAGCATTGTTACTGAGCCA  
 CAGATAATACAAGAGCGTCCCCTCACAATAAATTAAGCGTAAAAGGAGACCTACATCAGGCCCTTCATC  
 CTGAGGATTTTATCAAGAAAGCAGATTTGGCAGTTCAAAAGACTCCTGAAATGATAAATCAGGGAACAA  
 CCAAACGGAGCAGAATGGTCAAGTATGAAATTAATAAGTGGTCAATGAGAATAAAACAAAAGGTGAT  
 TCTATTAGAATGAGAAAAATCCTAACCAATAGAATCACTCGAAAAAGAATCTGCTTTCAAACGAAAAG  
 CTGAACCTATAAGCAGCAGTAAAGCAATATGGAAGTGAATTAATAATCCACAATCAAAGACCTAA  
 AAAGAATAGGCTGAGGAGGAAGTCTTACCAGGCATATTCATGCGCTTGAAGTGTAGTGTAGTGTAGTAA  
 CTAAGCCACCTAATTGTACTGAATTGCAAATGATAGTTGTTCTAGCAGTGAAGAGATAAAGAAAAAA  
 AGTACAACCAAATGCCAGTCAAGCAGCAGAAAACCTACAACCTATGGAAGGTAAGAACCTGCAACTGG  
 AGCCAAGAGAGTAACAAGCCAAATGAACAGACAAGTAAAAGACATGACAGCGATACTTTCCCAAGCTG  
 AAGTTAACAATGCACCTGGTTCTTTTACTAAGTGTTCAAATACCAGTGAACCTAAAGAATTTGTCAATC  
 CTAGCCTTCCAAGAGAAGAAAAAGAGAAAACACTAGAAAACAGTTAAAGTGTCTAATAATGCTGAAGACC  
 CAAAGATCTCATGTTAAGTGGAGAAAGGTTTTGCAAAGTGAAGATCTGTAGAGAGTAGCAGTATTTCA  
 TTGGTACTGTTACTGATTATGGCACTCAGGAAAGTATCTCGTTACTGGAAGTTAGCACTCTAGGGAAGG  
 CAAAAACAGAACCAAATAAATGTGTGAGTCAAGTGTGCAGCATTGAAAACCCCAAGGGACTAATTCATGG  
 TTGTTCCAAGATAATAGAAATGACACAGAAGGCTTTAAGTATCCATTGGGACATGAAGTAAACCACAGT  
 CGGAAACAAGCATAGAAATGGAAGAAAGTGAACCTGATGCTCAGTATTTGCAGAATACATTCAAGGTTT  
 CAAAGCGCCAGTCAATTTGCTCCGTTTTCAAATCCAGGAAATGCAGAAGAGGAATGTGCAACATTCTCTGC  
 CCACTCTGGGTCTTAAAGAAACAAAGTCCAAAAGTCACTTTTGAATGTGAACAAAAGGAAGAAAATCAA  
 GGAAAGAATGAGTCTAATATCAAGCCTGTACAGACAGTAAATCACTGCAGGCTTTCTGTGGTTGGTC  
 AGAAAGATAAGCCAGTTGATAATGCCAAATGTAGTATCAAAGGAGGCTCTAGGTTTTGTCTATCATCTCA  
 GTTCAGAGGCAACGAACTGGACTCATTACTCCAAATAAATGGAAGTAAAGTAAAGTAAAGTAAAGTAAAG  
 CCACCCTTTTCCCATCAAGTCAATTTGTTAAACTAAATGTAAGAAAAATCTGCTAGAGGAAAACCTTTG  
 AGGAACATTCAATGTACCTGAAAGAGAAATGGGAAATGAGAACATCCAAGTACAGTGAACACAATTAG  
 CCGTAATAACATTAGAGAAAATGTTTTAAAGAAGCCAGCTCAAGCAATATTAATGAAGTAGGTTCCAGT  
 ACTAATGAAGTGGCTCCAGTATTAATGAAATAGGTTCCAGTGTGAAAACATTCAAGCAGAAGTAAAGTA  
 GAAACAGAGGGCCAAAATGAAATGCTATGCTTAGATTAGGGTTTTGCAACCTGAGGCTATAAAACAAAG  
 TCTTCTGGAAGTAATTGTAAGCATCCTGAAATAAAAAAGCAAGAATATGAAGAAGTGTTCAGACTGTT  
 AATACAGATTTCTCTCCATATCTGATTTAGATAAATAGAACAGCCTATGGGAAGTGTGATGATCTC  
 AGGTTTGTCTGAGACACCTGATGACCTGTTAGATGATGGTGAATAAAGGAAGATACTAGTTTTGCTGA  
 AAATGACATTAAGGAAAGTTCTGCTGTTTTAGCAAAAGCGTCCAGAAAGGAGAGCTTAGCAGGAGTCT  
 AGCCCTTTCACCCATACACATTTGGCTCAGGGTACCAGAGAGGGCCAAAGAAATAGAGTCTCAGAAG  
 AGAACTTACTAGTGAGGATGAAGAGCTCCCTGCTTCCAACACTTGTTATTTGGTAAAGTAAACAATAT  
 ACCTTCTCAGTCTACTAGGCATAGCACCCTGCTACCGAGTGTCTGTCTAAGAACACAGAGGAGAATTTA  
 TTATCATTGAAGAATAGCTTAAATGACTGCAGTAACCAGGTAATATTGGCAAAGGCATCTCAGGAACATC  
 ACCTTAGTGAGGAAACAAAATGTTCTGCTAGCTTGTTTTCTTCCAGTGCAGTGAATTGGAAGACTTGAC  
 TGCAAATACAAACACCCAGGATCCTTTCTGATTGGTTCTTCAAACAAATGAGGCATCAGTCTGAAAGC  
 CAGGGAGTTGGTCTGAGTGACAAGGAATGGTTTCAGATGATGAAGAAAGAGGAACGGGCTTGAAGAAA  
 ATAATCAAGAAGGCAAGCATGGATTCAAACCTTAGGTGAAGCAGCATCTGGGTGTGAGAGTGAACAAG

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

AGCGGACCGACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:** >RC402836 representing NM\_007294  
 Red=Cloning site Green=Tags(s)

MDLSALRVEEVQNVINAMQKILECPICLELIEKPVSTKCDHIFCKFYMLKLLNQKKGPSQCPLCKNDITK  
 RSLQESTRFSQLVEELLKIICAFQLDTGLEAYANSYNFAKKENNSPEHLKDEVSI IQSMGYRNRARLLQS  
 EPENPSLQETSLSVQLSNLGTVRTLRKQRIQPQKTSVYIELGSDSSEDTVNKATYCSVGDQELLQITPQ  
 GTRDEISLDSAKKAACEFSETDVTNTEHHQPSNNDLNTTEKRAAERHPEKYQGSSVSNLHVPCGTNTHA  
 SSLQHENSLLLLTKDRMNVKEAEFCNKSKQPGLARSQHNRWAGSKETCNDRRTPSTEKKVDLNADPLCER  
 KEWKNQKLPCCSENPRDTEVPWITLNSSIQKVNEWFSRSEDELLGSDSDHGESESNKAVADVLDVLENEVD  
 EYSGSSEKIDLLASDPHEALICKSERVHKSVESENIEDKIFGKTYRKKASLPNLSHVNTENLIIGAFVTEP  
 QIIQERPLTNKLRKRRTSGLHPEDFIKKADLAVQKTPEMINQGTNQTQEQNGQVMNITNSGHENKTKGD  
 SIQNEKNPNPIESLEKESAFKTKAEPISSSISNMELELNIHNSKAPKKNRLRRKSSTRHIALELVVSRN  
 LSPNCTELQIDSCSSSEEEKKKYQMPVRRSRNLQLEMGKEPATGAKKSNKPNEQTSKRHDSDTFPEL  
 KLTNAPGSFTKCSNTSELKEFVNPSLPREEKEEKLETVKVSNNAEADPKDMLSGERVLQTERSVESSSIS  
 LVPGTDTGTQESISLLEVSTLGAKTEPNKCVSQCAAFENPKGLIHGCSKDNRNDEGFKYPLGHEVNH  
 RETSIEMEESELDAQYLQNTFKVSKRQSFAPFSNPNAEEECATFSAHSGSLKKQSPKVTFECEQKEENQ  
 GKNESNIKPVQTVNITAGFPVVGQKDKPVDNAKCSIKGGRFCLSSQFRGNETGLITPNKHGLLQNPYRI  
 PPLFPKISFVKTKCKKNLLEENFEHSMSPEREMGNENIPSTVSTISRNNIRENVFKEASSNINEVGS  
 TNEVGSSINEIGSSDENIQAELGRNRGPKLNAMLRLGVLQPEVYKQSLPGSNCKHPEIKKQEYEEVVQTV  
 NTDFSPYLISDNLEQPMGSSHASQVCSETPDDLDDGEIKEDTSFAENDIKESSAVFSKSVQKGE  
 SRSPSPFTHHLAQGYRRGAKKLESSEENLSSEDEELPCFQHLLFGKVNNIPSQSTRHSTVATECLSKNTEENL  
 LSLKNSLNDCSNQVILAKASQEHHLSEETKCSASLFSQCSLEEDLTANTNTQDPFLIGSSKQMRHQSES  
 QGVGLSDKELVSDDEERGTGLEENQEEQSMDSNLGEAASGCESETSVSEDCSGLSSQSDILTTQQRDTM  
 QHNLIKLQQEMAELEAVLEQHGSQPSNSYPSIISDSSALEDLRNPEQSTSEKAVLTSQKSSEYPISQNP  
 EGLSADKFEVSADSSTSKNKEPGVERSSPKCPSLDDRWMHSCSGSLQNRNYPSEELIKVVDVEEQLE  
 ESGPHDLTETSYLPRQDLEGTPLYLESGISLFSDDPESDPSEDRAPE SARVGNIPSSSALKVPQLKVAES  
 AQSPAAAHTTDTAGYNAMEESVSREKPELTASTERVNRMSMVVSGLTPEEFMLVYKFKARKHITLNL  
 TEETTHVVMKTADEFVCERTLKYFLGIAGGKVVSYFWVTQSIKERKMLNEHDFEVRGDDVNGRHHQGP  
 RARESQRKIFRGLIICCYGPFNMPTDQLEWMVQLCGASVVKELSSFTLGTGVHPIVVVQPDWATEDNG  
 FHAIGQMCEAPVVTREWVLDSVALYQCQELDTYLIPQIPHSY

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](mailto: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]