

## Product datasheet for **RC400540**

### BRCA2 (NM\_000059) Human Mutant ORF Clone

#### Product data:

Product Type:	Mutant ORF Clones
Product Name:	BRCA2 (NM_000059) Human Mutant ORF Clone
Mutation Description:	E475X
Affected Codon#:	475
Affected NT#:	1423
Nucleotide Mutation:	BRCA2 Mutant (E475X), Myc-DDK-tagged ORF clone of Homo sapiens breast Cancer, early onset (BRCA2) as transfection-ready DNA
Effect:	Breast cancer
Symbol:	BRCA2
Synonyms:	BRCC2; BROVCA2; FACD; FAD; FAD1; FANCD; FANCD1; GLM3; PNCA2; XRCC11
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_000059
ORF Size:	1422 bp
Restriction Sites:	Sgfl-RsrII



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**ORF Nucleotide Sequence:**

>RC400540 representing NM\_000059  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGCCTATTGGATCCAAAGAGAGGCCAACATTTTTTGAATTTTTAAGACACGCTGCAACAAAGCAGATT  
 TAGGACCAATAAGTCTTAATTGGTTTGAAGAACCTTCTCAGAAGCTCCACCCTATAATTCTGAACCTGC  
 AGAAGAATCTGAACATAAAAAACAATAATTCAAGACCAAACTATTTAAAACTCCACAAAGGAAACCATCT  
 TATAATCAGCTGGCTTCAACTCCAATAATTCAAAGAGCAAGGGCTGACTCTGCCGCTGTACCAATCTC  
 CTGTAAGAATTAGATAAATTCAAATAGACTTAGGAAGGAATGTTCCAATAGTAGACATAAAAGTCT  
 TCGCACAGTAAAACTAAATGGATCAAGCAGATGATGTTTCTGTCCACTTCTAAATCTTGTCTTAGT  
 GAAAGTCTGTTGTTCTACAATGTACACATGTAACACCACAAAGAGATAAGTCAGTGGTATGTGGGAGTT  
 TGTTTCATACACCAAAGTTGTGAAGGGTCGTGACACCAAAACATATTTCTGAAAGTCTAGGAGCTGA  
 GGTGGATCCTGATATGCTTGGTCAAGTCTTTAGCTACACCACCCACCTTAGTCTACTGTGCTCATA  
 GTCAGAAATGAAGAAGCATCTGAAACTGTATTTCTCATGATACTACTGTAATGTGAAAAGCTATTTTT  
 CCAATCATGATGAAAGTCTGAAGAAAAATGATAGATTTATCGCTTCTGTGACAGACAGTAAAAACACAAA  
 TCAAAGAGAAGCTGCAAGTCAATGGATTTGGAAAAACATCAGGGAATTCATTTAAAGTAAATAGCTGCAAA  
 GACCACATTGGAAAGTCAATGCCAAATGTCCTAGAAGATGAAGTATATGAAACAGTTGTAGATACCTCTG  
 AAGAAGATAGTTTTTCATTATGTTTTCTAAATGTAGAACAAAAATCTACAAAAAGTAAAGAACTAGCAA  
 GACTAGGAAAAAATTTCCATGAAGCAACCGTGTGATGATGTAATGTGAAAAATCTAAAAACCAAGTGAAGAA  
 AAATACTCATTGTATCTGAAGTGAACCAATGACTGATCCATTAGATTCAAATGTAGCAAAATCAGA  
 AGCCCTTTGAGAGTGGAAGTGACAAAATCTCCAAGGAAGTTGTACCGTCTTTGGCCTGTGAATGGTCTCA  
 ACTAACCTTTTCAAGTCTAAATGGAGCCAGATGGAGAAAAATACCCCTATTGCATATTTCTTCATGTGAC  
 CAAAATATTTGAAAAAGACCTATTAGACACAGAGAACAAAAAGAAAGAAAGATTTTCTTACTTCAGAGA  
 ATTCTTTGCCACGTATTTCTAGCCTACCAAAATCAGAGAAGCCATTAATGAGGAAACAGTGGTAAATAA  
 GAGAGATGAAGAGCAGCATCTT

AG**GCGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

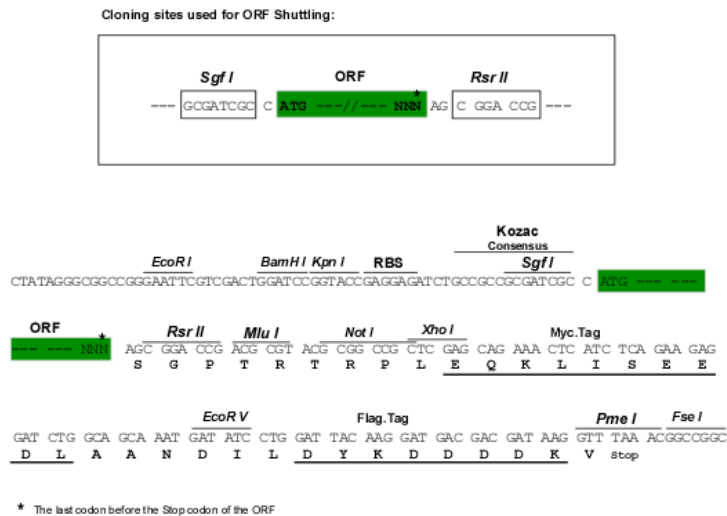
>RC400540 representing NM\_000059  
 Red=Cloning site Green=Tags(s)

MPIGSKERPTFFEIFKTRCNKADLGPISLWNFEELSSEAPPYNSPEAESEHKNNNYEPNLFKTPQRKPS  
 YNQLASTPIIFKEQGLTLPLYQSPVKELDKFKLDLGRNVPNSRHKSLRTVKTMDQADDVSCPLLNSCLS  
 ESPVVLQCTHVPQRDKSVVCGSLFHTPKFVKGRQTPKHISESLGAEVDPDMSWSSSLATPPTLSSTVLI  
 VRNEEASETVFPHDTTANVKS YFSNHDESLKKNDRF IASVTDSENTNQREAAASHGFGKTSGNSFKVNSCK  
 DHIGKSMPNVLEDEVYETVVDTSEEDSFLCF SKCRTKNLQKVRTSKTRKKIFHEANADECEKSKNQVKE  
 KYSFVSEVEPNDDPLDSNVANQKPFESGSDKISKEVVPSLACEWSQLTSLGLNGAQMEKIPLLHISSCD  
 QNISEKDLLDTENKRKKDFLTSNSLPRISSLPKSEKPLNEETVVNKRDEEQHL

SGP**TRRRLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-RsrII

**Cloning Scheme:**

**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).

**RefSeq:**

[NP\\_000050](#)

**RefSeq Size:**

1422 bp

**RefSeq ORF:**

10257 bp

**Locus ID:**

675

**Cytogenetics:**

13q13.1

**Protein Families:**

Druggable Genome

**Protein Pathways:**

Homologous recombination, Pancreatic cancer, Pathways in cancer

**MW:**

52.1 kDa

**Gene Summary:**

Inherited mutations in BRCA1 and this gene, BRCA2, confer increased lifetime risk of developing breast or ovarian cancer. Both BRCA1 and BRCA2 are involved in maintenance of genome stability, specifically the homologous recombination pathway for double-strand DNA repair. The largest exon in both genes is exon 11, which harbors the most important and frequent mutations in breast cancer patients. The BRCA2 gene was found on chromosome 13q12.3 in human. The BRCA2 protein contains several copies of a 70 aa motif called the BRC motif, and these motifs mediate binding to the RAD51 recombinase which functions in DNA repair. BRCA2 is considered a tumor suppressor gene, as tumors with BRCA2 mutations generally exhibit loss of heterozygosity (LOH) of the wild-type allele. [provided by RefSeq, May 2020]