BRCA1 cDNA Clone – Breast Cancer 1, Early Onset (Human)

PRODUCT OVERVIEW

Product Name	BRCA1, cDNA Clone
Full Product Name	BRCA1 cDNA Clone
Product Gene Name	BRCA1 cdna clone
Sequence	atggatttat ctgctcttcg cgttgaagaa gtacaaaatg tcattaatgc tatgcagaaa atcttagagt gtcccatctg tctggagttg atcaaggaac ctgtctccac aaagtgtgac cacatatttt gcaaattttg catgctgaaa cttctcaacc agaagaaagg gccttcacag tgtcctttat gtaagaatga tataaccaaa aggagcctac aagaaagtac gagatttagt caacttgttg aagagctatt gaaaatcatt tgtgcttttc agcttgacac aggtttggag tatgcaaaca gctataattt tgcaaaaaag gaaaataact ctcctgaaca tctaaaagat gaagtttcta tcatccaaag tatgggctac agaaaccgtg ccaaaagact tctacagagt gaacccgaaa atccttcctt gcaggaaacc agtctcagtg tccaactctc taaccttgga actgtgagaa ctctgaggac aaagcagcgg atacaacctc aaaagacgtc tgtctacatt gaattgggat ctgattcttc tgaagatacc gttaataagg caacttattg cagtgtggga gatcaagaat tgttacaaat cacccctcaa ggaaccaggg atgaaatcag tttggattct gcaaaaaagg ctgcttgtga attttctgag acggatgtaa caaatactga acatcatcaa cccagtaata atgatttgaa caccactgag aagcgtgcag ctgagaggca tccagaaaag tatcagggtg aagcagcatc tgggtgtgag agtgaaacaa gcgtctctga agactgctca gggctatcct ctcagagtga cattttaacc actcagcaga gggataccat gcaacataac ctgataaagc tccagcagga aatggctgaa ctagaagctg tgttagaaca gcatgggagc cagccttcta acagctaccc ttccatcata agtgactctt ctgcccttga ggacctgcga aatccagaac aaagcacatc agaaaaagta ttaacttcac agaaaagtag tgaataccct ataagccaga atccagaagg cctttctgct gacaagtttg aggtgtctgc agatagttct accagtaaaa ataaagaacc aggagtggaa aggtcatccc cttctaaatg cccatcatta gatgataggt ggtacatgca cagttgctct gggagtcttc agaatagaaa ctacccatct caagaggagc tcattaaggt tgttgatgtg gaggagcaac agctggaaga gtctgggcca cacgatttga cggaaacatc ttacttgcca aggcaagatc tagagggaac cccttacctg gaatctggaa tcagcctctt ctctgatgac cctgaatctg atccttctga agacagagcc ccagagtcag ctcgtgttgg caacatacca tcttcaacct ctgcattgaa agttccccaa ttgaaagttg cagaatctgc ccagagtcca gctgctgctc atactactga tactgctggg tataatgcaa tggaagaaag tgtgagcagg gagaagccag aattgacagc ttcaacagaa agggtcaaca aaagaatgtc catggtggtg tctggcctga ccccagaaga atttatgctc gtgtacaagt ttgccagaaa acaccacatc actttaacta atctaattac tgaagagact actcatgttg ttatgaaaac agatgctgag tttgtgtgtg aacggacact gaaatatttt ctaggaattg cgggaggaaa atgggtagtt agctatttct gggtgaccca gtctattaaa gaaagaaaaa tgctgaatga gcatgatttt gaagtcagag gagatgtggt caatggaaga aaccaccaag gtccaaagcg agcaagagaa tcccaggaca gaaagatctt caggggggcta gaaatctgtt gctatgggcc cttcaccaac atgcccacag ggtgtccacc caattgtggt tgtgcagcca gatgcctgga cagaggacaa tggcttccat gcaattgggc agatgtgtga
Molecular Weight	202,342 Da
OMIM	113705
Vector	pENTR223.1 or pUC
Clone Sequence Report	Provided with product shipment
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for BRCA1 cdna clone	MBS1269020 is a cDNA clone targeting BRCA1.
Other Notes	Small volumes of BRCA1 cdna clone vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for BRCA1. It may not necessarily be applicable to this product.

NCBI GI #	47939869
NCBI GeneID	672
NCBI Accession #	BC072418
UniProt Secondary Accession #	O15129; Q1RMC1; Q3LRJ0; Q3LRJ6; Q6IN79; Q7KYU9; E9PFZ0

UniProt Related Accession #	P38398
NCBI Official Full Name	Homo sapiens breast cancer 1, early onset, mRNA
NCBI Official Synonym Full Names	BRCA1, DNA repair associated
NCBI Official Symbol	BRCA1
NCBI Official Synonym Symbols	IRIS; PSCP; BRCAI; BRCC1; FANCS; PNCA4; RNF53; BROVCA1; PPP1R53
UniProt Protein Name	Breast cancer type 1 susceptibility protein
UniProt Synonym Protein Names	RING finger protein 53
Protein Family	Breast cancer type 1 susceptibility protein
UniProt Gene Name	BRCA1
UniProt Synonym Gene Names	RNF53
UniProt Entry Name	BRCA1_HUMAN
NCBI Protein Information	breast cancer type 1 susceptibility protein
NCBI Summary for BRCA1	This gene encodes a nuclear phosphoprotein that plays a role in maintaining genomic stability, and it also acts as a tumor suppressor. 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 2009]

UniProt Comments for BRCA1	BRCA1: the BRCA1-BARD1 heterodimer coordinates a diverse range of cellular pathways such as DNA damage repair, ubiquitination and transcriptional regulation to maintain genomic stability. Acts by mediating ubiquitin E3 ligase activity that is required for its tumor suppressor function. Plays a central role in DNA repair by facilitating cellular response to DNA repair. Required for appropriate cell cycle arrests after ionizing irradiation in both the S-phase and the G2 phase of the cell cycle. Involved in transcriptional regulation of P21 in response to DNA damage. Required for FANCD2 targeting to sites of DNA damage. May function as a transcriptional regulator. Inhibits lipid synthesis by binding to inactive phosphorylated ACC1 and preventing its dephosphorylation. Defects in BRCA1 are a cause of genetic susceptibility to breast cancer. Mutations in BRCA1 are thought to be responsible for more than 80% of inherited breast-ovarian cancer. Part of the BRCA1-associated genome surveillance complex (BASC), which contains BRCA1, MSH2, MSH6, MLH1, ATM, BLM, PMS2 and the RAD50-MRE11-NBN protein complex. This association may be a dynamic process changing throughout the cell cycle and within subnuclear domains. Interacts (via BRCT domains) with CTIP. Associates with RNA polymerase II holoenzyme. Interacts with SMC1 and COBRA1. Interacts (via BRCT domains) with BRIP1. Interacts with FANCD2 (ubiquitinated). Interacts with BAP1. Interacts with Artemis and claspin. Interacts with H2AFX (phosphorylated on S140). Interacts with CHK1. Interacts with BRCC3. Five human isoforms are produced by alternative splicing and alternative initiation. Isoform 1 and isoform 3 are widely expressed. Isoform 1 is largely nuclear, while isoforms 3 and 5 are cytoplasmic. Protein type: EC 6.3.2.-; Nuclear receptor co-regulator; Transcription, coactivator/corepressor; Tumor suppressor; Ubiquitin conjugating system; Ubiquitin ligase Chromosomal Location of Human Ortholog: 17q21 Cellular Component: BRCA1-BARD1 complex; chromosome; cytoplasm; lateral element; nucleoplasm; nucleus; plasma membrane; protein complex; ribonucleoprotein complex Molecular Function: DNA binding; enzyme binding; protein binding; RNA binding; ubiquitin protein ligase binding; ubiquitin-protein ligase activity Biological Process: apoptosis; chordate embryonic development; chromosome segregation; DNA damage response, signal transduction by p53 class mediator resulting in transcription of p21 class mediator; DNA damage response, signal transduction resulting in induction of apoptosis; DNA double-strand break processing; DNA replication; DNA synthesis during DNA repair; dosage compensation, by inactivation of X chromosome; double-strand break repair; double-strand break repair via homologous recombination; double-strand break repair via nonhomologous end joining; G2/M transition DNA damage checkpoint; negative regulation of estrogen receptor signaling pathway; negative regulation of fatty acid biosynthetic process; negative regulation of histone acetylation; negative regulation of histone H3-K9 methylation; negative regulation of transcription, DNA-dependent; positive regulation of angiogenesis; positive regulation of DNA repair; positive regulation of histone acetylation; positive regulation of histone H3-K4 methylation; positive regulation of protein ubiquitination; positive regulation of transcription from RNA polymerase II promoter; positive regulation of transcription, DNA-dependent; postreplication repair; protein autoubiquitination; protein sumoylation; protein ubiquitination; regulation of apoptosis; regulation of cell proliferation; regulation of transcription from RNA polymerase II promoter; regulation of transcription from RNA polymerase III promoter; response to DNA damage stimulus; response to estrogen stimulus; response to ionizing radiation; strand displacement Disease: Breast Cancer; Breast-ovarian Cancer, Familial, Susceptibility To, 1; Pancreatic Cancer, Susceptibility To, 4
Research Articles on BRCA1	**1.** A small subset of TNBC patients carried a BRCA1 deleterious somatic mutation; BRCA1 somatic mutation carriers are likely to respond to neoadjuvant chemotherapy
Precautions	All of MyBioSource's Products are for scientific laboratory research purposes and are not for diagnostic, therapeutics, prophylactic or in vivo use. Through your purchase, you expressly represent and warrant to MyBioSource that you will properly test and use any Products purchased from MyBioSource in accordance with industry standards. MyBioSource and its authorized distributors reserve the right to refuse to process any order where we reasonably believe that the intended use will fall outside of our acceptable guidelines.
Disclaimer	While every efforts were made to ensure the accuracy of the information provided in this datasheet, MyBioSource will not be liable for any omissions or errors contained herein. MyBioSource reserves the right to make changes to this datasheet at any time without prior notice. It is the responsibility of the customer to report product performance issues to MyBioSource within 30 days of receipt of the product. Please visit our Terms & Conditions page for more information.

Product Note	Select online data sheet information is drawn from bioinformatics databases, occasionally resulting in ambiguous or non-relevant product information. It is the responsibility of the customer to review, verify, and evaluate the information to make sure it matches their requirements before purchasing the kit. Our ELISA Kit assays are dynamic research tools and sometimes they may be updated and improved. If the format of this assay is important to you then please request the current manual or contact our technical support team with a presales inquiry before placing an order. We will confirm the current details of the assay. We cannot guarantee the sample manual posted online is the most current manual, it is intended to serve as an example only. Please refer to the instructions For Use provided with the assay kit for precise details.

For Research Use Only. Not for use in diagnostic or therapeutic procedures.

MyBioSource | Tel: +1.858.633.0165 | Fax: +1.858.633.0166 | mybiosource.com/contact-us
Online datasheet: https://www.mybiosource.com/cdna-clone/brca1/1269020