# Breast Cancer Susceptibility Protein 1 (BRCA1) ELISA Kit for Horse

## PRODUCT OVERVIEW

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| **Product Name** | Breast Cancer Susceptibility Protein 1 (BRCA1), ELISA Kit |
| **Full Product Name** | Horse Breast Cancer Susceptibility Protein 1 ELISA Kit |
| **Product Gene Name** | BRCA1 elisa kit |
| **Species Reactivity** | Horse |
| **Assay Type** | Sandwich |
| **Preparation and Storage** | Store all reagents at 2-8 degree C |
| **Molecular Weight** | 207,721 Da |
| **Chromosome Location** | Chromosome: 17; NC_000017.10 (41196312..41277500, complement). Location: 17q21 |
| **OMIM** | 113705 |
| **3D Structure** | ModBase 3D Structure for P38398 |
| **Related Product Information for BRCA1 elisa kit** | MBS016626 is a ready-to-use microwell, strip plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the Breast Cancer Susceptibility Protein 1 (BRCA1) ELISA Kit target analytes in biological samples. The concentration gradients of the kit standards or positive controls render a theoretical kit detection range in biological research samples containing BRCA1. The ELISA analytical biochemical technique of the MBS016626 kit is based on BRCA1 antibody-BRCA1 antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect BRCA1 antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, BRCA1. Appropriate sample types may include undiluted body fluids and/or tissue homogenates, secretions. Quality control assays assessing reproducibility identified the intra-assay CV (%) and inter-assay CV(%). |
| **Other Notes** | Small volumes of BRCA1 elisa kit 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.

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| **NCBI GI #** | 1698399 |
| **NCBI GeneID** | 672 |
| **NCBI Accession #** | AAC37594.1 |
| **UniProt Primary Accession #** | P38398 |
| **UniProt Secondary Accession #** | O15129; Q3LRJ0; Q3LRJ6; Q6IN79; Q7KYU9 |
| **UniProt Related Accession #** | P38398 |
| **NCBI Official Full Name** | BRCA1 |
| **NCBI Official Synonym Full Names** | breast cancer 1, early onset |
| **NCBI Official Symbol** | BRCA1 |
| **NCBI Official Synonym Symbols** | IRIS; PSCP; BRCAI; BRCC1; PNCA4; RNF53; BROVCA1; PPP1R53 |
| **UniProt Protein Name** | Breast cancer type 1 susceptibility protein |
| **UniProt Synonym Protein Names** | RING finger protein 53 |

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| **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; RING finger protein 53; BRCA1/BRCA2-containing complex, subunit 1; protein phosphatase 1, regulatory subunit 53; breast and ovarian cancer susceptibility protein 1; breast and ovarian cancer sususceptibility protein 1 |
| **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] |

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| **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.<br><br>Protein type: EC 6.3.2.-; Ubiquitin conjugating system; Nuclear receptor co-regulator; Tumor suppressor; Ubiquitin ligase; Transcription, coactivator/corepressor<br><br>Chromosomal Location of Human Ortholog: 17q21<br><br>Cellular Component: nucleoplasm; gamma-tubulin ring complex; protein complex; condensed nuclear chromosome; cytoplasm; BRCA1-BARD1 complex; plasma membrane; chromosome; ribonucleoprotein complex; nucleus; ubiquitin ligase complex<br><br>Molecular Function: tubulin binding; protein binding; enzyme binding; androgen receptor binding; DNA binding; zinc ion binding; RNA binding; ubiquitin protein ligase binding; transcription coactivator activity; ubiquitin-protein ligase activity; damaged DNA binding; ligase activity<br><br>Biological Process: genetic imprinting; apoptosis; positive regulation of transcription, DNA-dependent; dosage compensation, by inactivation of X chromosome; centrosome cycle; protein ubiquitination; negative regulation of histone H3-K4 methylation; positive regulation of histone H3-K4 methylation; negative regulation of histone acetylation; chromosome segregation; regulation of apoptosis; DNA damage response, signal transduction by p53 class mediator resulting in transcription of p21 class mediator; double-strand break repair; DNA replication; fatty acid biosynthetic process; negative regulation of fatty acid biosynthetic process; positive regulation of histone H3-K9 methylation; negative regulation of histone H3-K9 methylation; protein autoubiquitination; chordate embryonic development; positive regulation of DNA repair; postreplication repair; DNA repair; negative regulation of centriole replication; double-strand break repair via homologous recombination; regulation of cell proliferation; regulation of transcription from RNA polymerase II promoter; positive regulation of angiogenesis; DNA damage response, signal transduction resulting in induction of apoptosis; positive regulation of protein ubiquitination; regulation of transcription from RNA polymerase III promoter; response to estrogen stimulus; androgen receptor signaling pathway; positive regulation of histone acetylation; positive regulation of transcription from RNA polymerase II promoter; response to ionizing radiation; G2/M transition DNA damage checkpoint; negative regulation of transcription, DNA-dependent; response to DNA damage stimulus<br><br>Disease: Breast-ovarian Cancer, Familial, Susceptibility To, 1; Pancreatic Cancer, Susceptibility To, 4; Breast Cancer |
| **Research Articles on BRCA1** | **1.** Impairment of BRCA1-related DNA double-strand break repair leads to ovarian aging in mice and humans. |
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