# Cell Division Cycle Protein 42 (CDC42) ELISA Kit for Human

## PRODUCT OVERVIEW

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| **Product Name** | Cell Division Cycle Protein 42 (CDC42), ELISA Kit |
| **Full Product Name** | Human Cell Division Cycle Protein 42 ELISA Kit |
| **Product Gene Name** | CDC42 elisa kit |
| **Species Reactivity** | Human |
| **Assay Type** | Quantitative Sandwich |
| **Samples** | Canine Body Fluids, Tissue Homogenates, Secretions Or Feces Samples |
| **Detection Range** | 0.25ng/ml-8ng/ml |
| **Sensitivity** | 0.1ng/ml. |
| **Specificity** | No significant cross-reactivity or interference between this analyte and analogues is observed. |
| **Preparation and Storage** | Store all reagents at 2-8 degree C |
| **Inter-assay Precision** | Inter-assay CV (%) is less than 15%. [CV(%) = SD/mean ×100]. |
| **Intra-assay Precision** | Intra-assay CV (%) is less than 15% |
| **Molecular Weight** | 21,259 Da |
| **OMIM** | 116952 |
| **3D Structure** | ModBase 3D Structure for P60953 |
| **Related Product Information for CDC42 elisa kit** | Background/Introduction: This Quantitative Sandwich ELISA kit is only for in vitro research use only! This kit is intended to be used for determination the level of CDC42 (hereafter termed "analyte") in undiluted original Canine body fluids, tissue homogenates, secretions or feces samples. This kit is NOT suitable for assaying non-biological sources of substances. |
| **Other Notes** | Small volumes of CDC42 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. |
| **Searchable Terms for CDC42 purchase** | MBS082784 is a ready-to-use microwell, strip plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the Cell Division Cycle Protein 42 (CDC42) 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 CDC42. The ELISA analytical biochemical technique of the MBS082784 kit is based on CDC42 antibody-CDC42 antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect CDC42 antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, CDC42. 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(%). |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CDC42. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 4757952 |
| **NCBI GeneID** | 998 |
| **NCBI Accession #** | NP_001782.1 |
| **UniProt Primary Accession #** | P60953 |

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| **UniProt Secondary Accession #** | P21181; P25763; Q7L8R5; Q9UDI2 |
| **UniProt Related Accession #** | P60953 |
| **GenBank Nucleotide #** | NM_001791.3 |
| **NCBI Official Full Name** | cell division control protein 42 homolog isoform 1 |
| **NCBI Official Synonym Full Names** | cell division cycle 42 |
| **NCBI Official Symbol** | CDC42 |
| **NCBI Official Synonym Symbols** | G25K; CDC42Hs |
| **UniProt Protein Name** | Cell division control protein 42 homolog |
| **UniProt Synonym Protein Names** | G25K GTP-binding protein |
| **Protein Family** | Cdc42 |
| **UniProt Gene Name** | CDC42 |
| **UniProt Entry Name** | CDC42_HUMAN |
| **NCBI Protein Information** | cell division control protein 42 homolog; G25K GTP-binding protein; GTP-binding protein, 25kD; growth-regulating protein; GTP binding protein, 25kDa; small GTP binding protein CDC42; dJ224A6.1.1 (cell division cycle 42 (GTP-binding protein, 25kD)); dJ224A6.1.2 (cell division cycle 42 (GTP-binding protein, 25kD)) |
| **NCBI Summary for CDC42** | The protein encoded by this gene is a small GTPase of the Rho-subfamily, which regulates signaling pathways that control diverse cellular functions including cell morphology, migration, endocytosis and cell cycle progression. This protein is highly similar to Saccharomyces cerevisiae Cdc 42, and is able to complement the yeast cdc42-1 mutant. The product of oncogene Dbl was reported to specifically catalyze the dissociation of GDP from this protein. This protein could regulate actin polymerization through its direct binding to Neural Wiskott-Aldrich syndrome protein (N-WASP), which subsequently activates Arp2/3 complex. Alternative splicing of this gene results in multiple transcript variants. Pseudogenes of this gene have been identified on chromosomes 3, 4, 5, 7, 8 and 20. [provided by RefSeq, Apr 2013] |

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| **UniProt Comments for CDC42** | Function: Plasma membrane-associated small GTPase which cycles between an active GTP-bound and an inactive GDP-bound state. In active state binds to a variety of effector proteins to regulate cellular responses. Involved in epithelial cell polarization processes. Regulates the bipolar attachment of spindle microtubules to kinetochores before chromosome congression in metaphase. Plays a role in the extension and maintenance of the formation of thin, actin-rich surface projections called filopodia. Mediates CDC42-dependent cell migration. Ref.21 Ref.22 Ref.23<br><br>Enzyme regulation: Regulated by guanine nucleotide exchange factors (GEFs) which promote the exchange of bound GDP for free GTP, GTPase activating proteins (GAPs) which increase the GTP hydrolysis activity, and GDP dissociation inhibitors which inhibit the dissociation of the nucleotide from the GTPase.<br><br>Subunit structure: The GTP-bound form interacts with CCPG1<br><br>By similarity. Interacts with CDC42EP1, CDC42EP2, CDC42EP3, CDC42EP4, CDC42EP5, CDC42SE1, CDC42SE2, PARD6A, PARD6B and PARD6G (in a GTP-dependent manner). Interacts with activated CSPG4 and with BAIAP2. Interacts with Zizimin1/DOCK9 and Zizimin2/DOCK11, which activate it by exchanging GDP for GTP. Interacts with NET1 and ARHGAP33/TCGAP. Part of a complex with PARD3, PARD6A or PARD6B and PRKCI or PRKCZ. Interacts with USP6. May interact with ARHGEF16; responsible for the activation of CDC42 by the viral protein HPV16 E6. Interacts with NEK6. Part of a collagen stimulated complex involved in cell migration composed of CDC42, CRK, TNK2 and BCAR1/p130cas. Interacts with ITGB1BP1. Interacts with ARHGDIA; this interaction inactivates and stabilizes CDC42. Ref.11 Ref.12 Ref.13 Ref.14 Ref.15 Ref.16 Ref.17 Ref.18 Ref.20 Ref.23 Ref.27 Ref.29 Ref.30<br><br>Subcellular location: Cell membrane; Lipid-anchor; Cytoplasmic side<br><br>Potential. Cytoplasm › cytoskeleton › microtubule organizing center › centrosome. Cytoplasm › cytoskeleton › spindle. Midbody. Note: Localizes to spindle during prometaphase cells. Moves to the central spindle as cells progressed through anaphase to telophase. Localizes at the end of cytokinesis in the intercellular bridge formed between two daughter cells. Its localization is regulated by the activities of guanine nucleotide exchange factor ECT2 and GTPase activating protein RACGAP1. Colocalizes with NEK6 in the centrosome. Ref.22 Ref.27<br><br>Post-translational modification: AMPylation at Tyr-32 and Thr-35 are mediated by bacterial enzymes in case of infection by H.somnus and V.parahaemolyticus, respectively. AMPylation occurs in the effector region and leads to inactivation of the GTPase activity by preventing the interaction with downstream effectors, thereby inhibiting actin assembly in infected cells. It is unclear whether some human enzyme mediates AMPylation; FICD has such ability in vitro but additional experiments remain to be done to confirm results in vivo.Phosphorylated by SRC in an EGF-dependent manner, this stimulates the binding of the Rho-GDP dissociation inhibitor RhoGDI. Ref.19<br><br>Sequence similarities: Belongs to the small GTPase superfamily. Rho family. CDC42 subfamily. |
| **Research Articles on CDC42** | **1.** These results indicate that Wnt5b is involved in the migration ability of OSCC cells through active Cdc42 and RhoA. |
| **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. |
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