# PLK1 Antibody – Rabbit Polyclonal

## PRODUCT OVERVIEW

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| **Product Name** | PLK1, Polyclonal Antibody |
| **Full Product Name** | PLK1 (Phospho-Ser137) Polyclonal Conjugated Antibody |
| **Product Gene Name** | anti-PLK1 antibody |
| **Product Synonym Names** | PLK1 (Phospho-Ser137) Conjugated Antibody; Polo-like kinase 1; PLK-1; Serine/threonine-protein kinase 13; STPK13 |
| **Clonality** | Polyclonal |
| **Host** | Rabbit |
| **Species Reactivity** | Human, Mouse, Rat |
| **Form/Format** | 0.01M Sodium Phosphate, 0.25M NaCl, pH 7.6, 5mg/ml Bovine Serum Albumin, 0.02% Sodium Azide |
| **Specificity** | The antibody detects endogenous levels of PLK1 only when phosphorylated at serine 137. |
| **Preparation and Storage** | Store at 4 degree C for 6 months. |
| **Molecular Weight** | 68,255 Da |
| **Chromosome Location** | Chromosome: 16; NC_000016.9 (23690201..23701688). Location: 16p12.2 |
| **OMIM** | 602098 |
| **3D Structure** | ModBase 3D Structure for P53350 |
| **Immunogen** | Peptide sequence around phosphorylation site of serine 137 (R-R-S (p)-L-L) derived from Human PLK1. |
| **Conjugation** | Biotin AF350 AF405 AF488 AF555 AF594 AF647 AF680 AF750 |
| **Excitation Emission** | AF350: 346nm/442nm |
| **Applications Tested/Suitable for anti-PLK1 antibody** | Most Applications |
| **Application Notes for anti-PLK1 antibody** | Suggested Dilution:<br>AF350 conjugated: most applications: 1:50-1:250<br>AF405 conjugated: most applications: 1:50-1:250<br>AF488 conjugated: most applications: 1:50-1:250<br>AF555 conjugated: most applications: 1:50-1:250<br>AF594 conjugated: most applications: 1:50-1:250<br>AF647 conjugated: most applications: 1:50-1:250<br>AF680 conjugated: most applications: 1:50-1:250<br>AF750 conjugated: most applications: 1:50-1:250<br>Biotin conjugated: working with enzyme-conjugated streptavidin, most applications: 1:50-1:1000 |
| **Related Product Information for anti-PLK1 antibody** | Serine/threonine-protein kinase that performs several important functions throughout M phase of the cell cycle, including the regulation of centrosome maturation and spindle assembly, the removal of cohesins from chromosome arms, the inactivation of anaphase-promoting complex/cyclosome (APC/C) inhibitors, and the regulation of mitotic exit and cytokinesis. Polo-like kinase proteins acts by binding and phosphorylating proteins are that already phosphorylated on a specific motif recognized by the POLO box domains. Phosphorylates BORA, BUB1B/BUBR1, CCNB1, CDC25C, CEP55, ECT2, ERCC6L, FBXO5/EMI1, FOXM1, KIF20A/MKLP2, CENPU, NEDD1, NINL, NPM1, NUDC, PKMYT1/MYT1, KIZ, PPP1R12A/MYPT1, PRC1, RACGAP1/CYK4, SGOL1, STAG2/SA2, TEX14, TOPORS, p73/TP73, TPT1 and WEE1. Plays a key role in centrosome functions and the assembly of bipolar spindles by phosphorylating KIZ, NEDD1 and NINL. |

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| **Other Notes** | Small volumes of anti-PLK1 antibody 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 PLK1 purchase** | MBS9437553 is an antibody targeting PLK1. Also known as PLK1 (Phospho-Ser137) Polyclonal Conjugated Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit. |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PLK1. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 21359873 |
| **NCBI GeneID** | 5347 |
| **NCBI Accession #** | NP_005021.2 |
| **UniProt Primary Accession #** | P53350 |
| **UniProt Secondary Accession #** | Q15153; Q99746 |
| **UniProt Related Accession #** | P53350 |
| **GenBank Nucleotide #** | NM_005030.3 |
| **NCBI Official Full Name** | serine/threonine-protein kinase PLK1 |
| **NCBI Official Synonym Full Names** | polo-like kinase 1 |
| **NCBI Official Symbol** | PLK1 |
| **NCBI Official Synonym Symbols** | PLK; STPK13 |
| **UniProt Protein Name** | Serine/threonine-protein kinase PLK1 |
| **UniProt Synonym Protein Names** | Polo-like kinase 1; PLK-1; Serine/threonine-protein kinase 13 |
| **Protein Family** | Serine/threonine-protein kinase |
| **UniProt Gene Name** | PLK1 |
| **UniProt Synonym Gene Names** | PLK; PLK-1; STPK13 |
| **UniProt Entry Name** | PLK1_HUMAN |
| **NCBI Protein Information** | serine/threonine-protein kinase PLK1; PLK-1; polo like kinase; polo (Drosophia)-like kinase; serine/threonine-protein kinase 13; cell cycle regulated protein kinase |
| **NCBI Summary for PLK1** | The Ser/Thr protein kinase encoded by this gene belongs to the CDC5/Polo subfamily. It is highly expressed during mitosis and elevated levels are found in many different types of cancer. Depletion of this protein in cancer cells dramatically inhibited cell proliferation and induced apoptosis; hence, it is a target for cancer therapy. [provided by RefSeq, Sep 2015] |

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| **UniProt Comments for PLK1** | PLK1: a kinase of the PLK family. Contains a polo-box domain (PBD), a specific phosphoserine or phosphothreonine binding domain. Substrates include BRCA2, Myt1, NudC, Cdc25C, cyclin B1, Nlp and other mitotic proteins. Inhibited by ATR. Plays a role in regulation of cytokinesis and coordinating M-phase events.<br><br>Protein type: Protein kinase, Ser/Thr (non-receptor); EC 2.7.11.21; Protein kinase, Other; Kinase, protein; Other group; PLK family<br><br>Chromosomal Location of Human Ortholog: 16p12.2<br><br>Cellular Component: spindle pole; centrosome; cytosol; nucleoplasm; kinetochore; microtubule cytoskeleton; spindle microtubule; cytoplasm; nucleolus; spindle; midbody; spindle midzone; nucleus<br><br>Molecular Function: protein serine/threonine kinase activity; protein binding; microtubule binding; kinase activity; protein kinase binding; ATP binding; protein kinase activity<br><br>Biological Process: positive regulation of ubiquitin-protein ligase activity during mitotic cell cycle; regulation of cell cycle; positive regulation of proteolysis; regulation of mitotic cell cycle; mitotic nuclear envelope disassembly; cytokinesis; protein ubiquitination; anaphase-promoting complex activation during mitotic cell cycle; negative regulation of transcription from RNA polymerase II promoter; protein amino acid phosphorylation; response to antibiotic; establishment of protein localization; cytokinesis after mitosis; anaphase-promoting complex-dependent proteasomal ubiquitin-dependent protein catabolic process; centrosome organization and biogenesis; positive regulation of ubiquitin-protein ligase activity; mitotic cell cycle spindle assembly checkpoint; G2/M transition of mitotic cell cycle; mitosis; mitotic sister chromatid segregation; protein destabilization; organelle organization and biogenesis; regulation of mitotic metaphase/anaphase transition; negative regulation of cyclin-dependent protein kinase activity; cell proliferation; peptidyl-serine phosphorylation; regulation of ubiquitin-protein ligase activity during mitotic cell cycle; regulation of protein binding; positive regulation of proteasomal ubiquitin-dependent protein catabolic process; polar body extrusion after meiotic divisions; mitotic cell cycle; G2/M transition DNA damage checkpoint; microtubule bundle formation; mitotic metaphase/anaphase transition; negative regulation of apoptosis |
| **Research Articles on PLK1** | **1.** Plk1 phosphorylates MISP, thus stabilizing cortical and astral microtubule attachments required for proper mitotic spindle positioning. |
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