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# SMG1 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP54915

## Product Information

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| **Application** | IHC-P, IHC-F, IF, ICC, E |
| **Primary Accession** | Q96Q15 |
| **Reactivity** | Dog, Bovine |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 410501 |
| **Physical State** | Liquid |
| **Immunogen** | KLH conjugated synthetic peptide derived from human SMG1 |
| **Epitope Specificity** | 3551-3661/3661 |
| **Isotype** | IgG |
| **Purity** | affinity purified by Protein A |
| **Buffer** | 0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. |
| **SUBCELLULAR LOCATION** | Nuclear. Cytoplasm. |
| **SIMILARITY** | Belongs to the PI3/PI4-kinase family. Contains 1 FAT domain. Contains 1 FATC domain. Contains 1 HEAT repeat. Contains 1 PI3K/PI4K domain. |
| **SUBUNIT** | Component of the SMG1C complex composed of SMG1, SMG8 and SMG9; the recruitment of SMG8 to SMG1 N-terminus induces a large conformational change in the SMG1 C-terminal head domain containing the catalytic domain. Component of the transient SURF (SMG1-UPF1-eRF1-eRF3) complex. Interacts with PRKCI. Interacts with TELO2 and TTI1. Interacts with RUVBL1 and RUVBL2. Interacts with UPF2. |
| **Post-translational modifications** | utophosphorylated. |
| **Important Note** | This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications. |
| **Background Descriptions** | This gene encodes a protein involved in nonsense-mediated mRNA decay (NMD) as part of the mRNA surveillance complex. The protein has kinase activity and is thought to function in NMD by phosphorylating the regulator of nonsense transcripts 1 protein. Alternatively spliced transcript variants have been described, but their full-length nature has yet to be determined. [provided by RefSeq, Mar 2013] |

## Additional Information

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| **Gene ID** | 23049 |
| **Other Names** | Serine/threonine-protein kinase SMG1, SMG-1, hSMG-1, 2.7.11.1, 61E3.4, Lambda/iota protein kinase C-interacting protein, Lambda-interacting protein, SMG1, ATX, KIAA0421, LIP |
| **Target/Specificity** | Widely expressed, with highest level in heart and skeletal muscle. Expressed |

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| | in placenta, brain, lung and spleen, but not in liver. |
| **Dilution** | IHC-P=1:100-500,IHC-F=1:100-500,ICC=1:100-500,IF=1:100-500,ELISA=1:5000-10000 |
| **Format** | 0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce |
| **Storage** | Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C. |

## Protein Information

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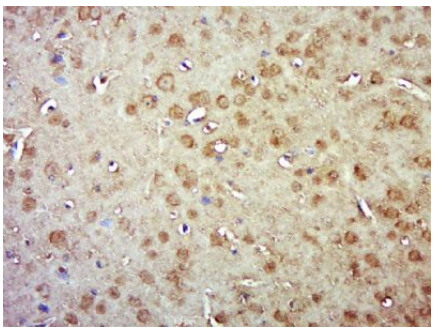
| **Name** | SMG1 ( HGNC:30045) |
| **Function** | Serine/threonine protein kinase involved in both mRNA surveillance and genotoxic stress response pathways. Recognizes the substrate consensus sequence [ST]-Q. Plays a central role in nonsense- mediated decay (NMD) of mRNAs containing premature stop codons by phosphorylating UPF1/RENT1. Recruited by release factors to stalled ribosomes together with SMG8 and SMG9 (forming the SMG1C protein kinase complex), and UPF1 to form the transient SURF (SMG1-UPF1-eRF1-eRF3) complex. In EJC-dependent NMD, the SURF complex associates with the exon junction complex (EJC) through UPF2 and allows the formation of an UPF1-UPF2-UPF3 surveillance complex which is believed to activate NMD. Also acts as a genotoxic stress-activated protein kinase that displays some functional overlap with ATM. Can phosphorylate p53/TP53 and is required for optimal p53/TP53 activation after cellular exposure to genotoxic stress. Its depletion leads to spontaneous DNA damage and increased sensitivity to ionizing radiation (IR). May activate PRKCI but not PRKCZ. |
| **Cellular Location** | Nucleus. Cytoplasm. Note=Present in the chromatoid body {ECO:0000250\|UniProtKB:Q8BKX6} |
| **Tissue Location** | Widely expressed, with highest level in heart and skeletal muscle. Expressed in placenta, brain, lung and spleen, but not in liver. |

## Images



Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (SMG1) Polyclonal Antibody, Unconjugated (AP54915) at 1:500 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.