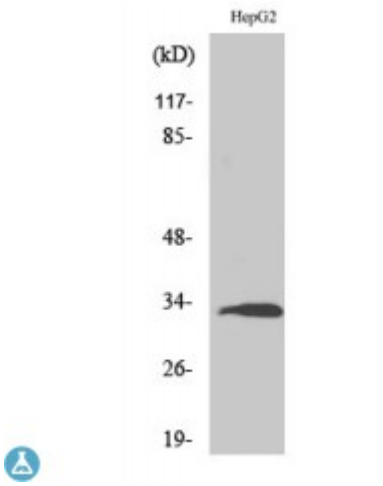
Anti-Ribosomal Protein S3 antibody



Description	Rabbit polyclonal to Ribosomal Protein S3.

Model	STJ95499
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human Ribosomal Protein S3
Immunogen Region	140-220 aa, C-terminal
Gene ID	6188
Gene Symbol	RPS3
Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:40000
Specificity	Ribosomal Protein S3 Polyclonal Antibody detects endogenous levels of Ribosomal Protein S3 protein.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	40S ribosomal protein S3 Small ribosomal subunit protein uS3
Molecular Weight	30 kDa
Clonality	Polyclonal
Conjugation	Unconjugated

Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:10420OMIM:600454
Alternative Names	40S ribosomal protein S3 Small ribosomal subunit protein uS3
Function	Involved in translation as a component of the 40S small ribosomal subunit . Has endonuclease activity and plays a role in repair of damaged DNA . Cleaves phosphodiester bonds of DNAs containing altered bases with broad specificity and cleaves supercoiled DNA more efficiently than relaxed DNA . Displays high binding affinity for 7,8-dihydro-8-oxoguanine (8-oxoG), a common DNA lesion caused by reactive oxygen species (ROS) . Has also been shown to bind with similar affinity to intact and damaged DNA . Stimulates the N-glycosylase activity of the base excision protein OGG1 . Enhances the uracil excision activity of UNG1 . Also stimulates the cleavage of the phosphodiester backbone by APEX1 . When located in the mitochondrion, reduces cellular ROS levels and mitochondrial DNA damage . Has also been shown to negatively regulate DNA repair in cells exposed to hydrogen peroxide . Plays a role in regulating transcription as part of the NF-kappa-B p65-p50 complex where it binds to the RELA/p65 subunit, enhances binding of the complex to DNA and promotes transcription of target genes . Represses its own translation by binding to its cognate mRNA . Binds to and protects TP53/p53 from MDM2-mediated ubiquitination . Involved in spindle formation and chromosome movement during mitosis by regulating microtubule polymerization . Involved in induction of apoptosis through its role in activation of CASP8 . Induces neuronal apoptosis by interacting with the E2F1 transcription factor and acting synergistically with it to up-regulate pro-apoptotic proteins BCL2L11/BIM and HRK/Dp5 . Interacts with TRADD following exposure to UV radiation and induces apoptosis by caspase-dependent JNK activation .
Cellular Localization	Cytoplasm Nucleus Nucleus, nucleolus Mitochondrion inner membrane Cytoplasm, cytoskeleton, spindle. In normal cells, located mainly in the cytoplasm with small amounts in the nucleus but translocates to the nucleus in cells undergoing apoptosis . Nuclear translocation is induced by DNA damaging agents such as hydrogen peroxide . Accumulates in the mitochondrion in response to increased ROS levels . Localizes to the spindle during mitosis . Localized in cytoplasmic mRNP granules containing untranslated mRNAs .
Post-translational Modifications	Methylation by PRMT1 is required for import into the nucleolus and for ribosome assembly. Sumoylation by SUMO1 enhances protein stability through increased resistance to proteolysis. Sumoylation occurs at one or more of the three consensus sites, Lys-18, Lys-214 and Lys-230. Phosphorylation at Thr-221 by CDK1 occurs mainly in G2/M phase . Phosphorylation by PRKCD occurs on a non-ribosomal-associated form which results in translocation of RPS3 to the nucleus and enhances its endonuclease activity . Phosphorylated on Ser-209 by IKKB in response to activation of the NF-kappa-B p65-p50 complex which enhances the association of RPS3 with importin-alpha and mediates the nuclear translocation of RPS3 .

Phosphorylation by MAPK is required for translocation to the nucleus following exposure of cells to DNA damaging agents such as hydrogen peroxide . Phosphorylation by PKB/AKT mediates RPS3 nuclear translocation, enhances RPS3 endonuclease activity and suppresses RPS3-induced neuronal apoptosis . Ubiquitinated . This is prevented by interaction with HSP90 which stabilizes the protein . Monoubiquitinated at Lys-214 by ZNF598 when a ribosome has stalled during translation of poly(A) sequences, leading to preclude synthesis of a long poly-lysine tail and initiate the ribosome quality control (RQC) pathway to degrade the potentially detrimental aberrant nascent polypeptide .