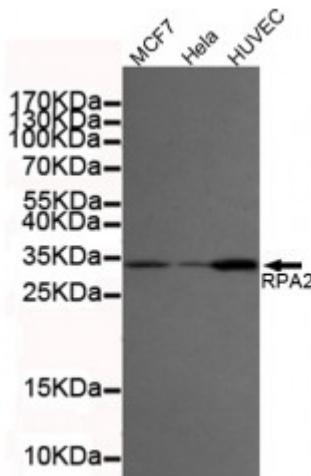




Anti-RPA32/RPA2 antibody



Description	Mouse monoclonal to RPA32/RPA2.
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Model	STJ99210
Host	Mouse
Reactivity	Human
Applications	ELISA, WB
Immunogen	Purified recombinant human RPA32/RPA2 protein fragments expressed in E.coli.
Gene ID	6118
Gene Symbol	RPA2
Dilution range	WB 1:500-2000 ELISA 1:10000-20000
Specificity	This antibody detects endogenous levels of RPA32/RPA2 and does not cross-react with related proteins.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Clone ID	3E7-B5-F2
Note	For Research Use Only (RUO).
Protein Name	Replication protein A 32 kDa subunit RP-A p32 Replication factor A protein 2 RF-A protein 2 Replication protein A 34 kDa subunit RP-A p34
Molecular Weight	32kDa
Clonality	Monoclonal

Conjugation	Unconjugated
Isotype	IgG2b
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:10290 OMIM:179836
Alternative Names	Replication protein A 32 kDa subunit RP-A p32 Replication factor A protein 2 RF-A protein 2 Replication protein A 34 kDa subunit RP-A p34
Function	<p>As part of the heterotrimeric replication protein A complex (RPA/RP-A), binds and stabilizes single-stranded DNA intermediates, that form during DNA replication or upon DNA stress. It prevents their reannealing and in parallel, recruits and activates different proteins and complexes involved in DNA metabolism. Thereby, it plays an essential role both in DNA replication and the cellular response to DNA damage. In the cellular response to DNA damage, the RPA complex controls DNA repair and DNA damage checkpoint activation. Through recruitment of ATRIP activates the ATR kinase a master regulator of the DNA damage response. It is required for the recruitment of the DNA double-strand break repair factors RAD51 and RAD52 to chromatin in response to DNA damage. Also recruits to sites of DNA damage proteins like XPA and XPG that are involved in nucleotide excision repair and is required for this mechanism of DNA repair. Plays also a role in base excision repair (BER) probably through interaction with UNG. Through RFWD3 may activate CHEK1 and play a role in replication checkpoint control. Also recruits SMARCAL1/HARP, which is involved in replication fork restart, to sites of DNA damage. May also play a role in telomere maintenance.</p>
Cellular Localization	Nucleus Nucleus, PML body. Redistributions to discrete nuclear foci upon DNA damage in an ATR-dependent manner.
Post-translational Modifications	<p>Differentially phosphorylated throughout the cell cycle, becoming phosphorylated at the G1-S transition and dephosphorylated in late mitosis. Mainly phosphorylated at Ser-23 and Ser-29, by cyclin A-CDK2 and cyclin B-CDK1, respectively during DNA replication and mitosis. Dephosphorylation may require the serine/threonine-protein phosphatase 4. Phosphorylation at Ser-23 and Ser-29 is a prerequisite for further phosphorylation. Becomes hyperphosphorylated on additional residues including Ser-4, Ser-8, Thr-21 and Ser-33 in response to DNA damage. Hyperphosphorylation is mediated by ATM, ATR and PRKDC. Primarily recruited to DNA repair nuclear foci as a hypophosphorylated form it undergoes subsequent hyperphosphorylation, catalyzed by ATR. Hyperphosphorylation is required for RAD51 recruitment to chromatin and efficient DNA repair. Phosphorylation at Thr-21 depends upon RFWD3 presence. DNA damage-induced 'Lys-63'-linked polyubiquitination by PRPF19 mediates ATRIP recruitment to the RPA complex at sites of DNA damage and activation of ATR.</p>