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KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1488

Specification

KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	P27694
Reactivity	**Rat, Human**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 68 kDa, observed, 70 kDa KDa**
Gene Name	**RPA1**
Aliases	**RPA1; Replication Protein A1; REPA1; RPA70; HSSB; RF-A; RP-A; Replication Protein A 70 KDa DNA-Binding Subunit; Single-Stranded DNA-Binding Protein; Replication Factor A Protein 1; Replication Protein A1, 70kDa; RF-A Protein 1; RP-A P70; Replication Protein A1 (70kD); PFBMFT6; MSTP075; MST075**
Immunogen	**A synthesized peptide derived from human RPA 70**

KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody - Additional Information

Gene ID **6117**

Other Names
Replication protein A 70 kDa DNA-binding subunit, RP-A p70, Replication factor A protein 1, RF-A protein 1, Single-stranded DNA-binding protein, Replication protein A 70 kDa DNA-binding subunit, N-terminally processed, RPA1, REPA1, RPA70

KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody - Protein Information

Name RPA1

Synonyms REPA1, RPA70

Function
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 (PubMed:17596542, PubMed:27723717, PubMed:<a href="http://www.uniprot.org/citations/27723720"

target="_blank">27723720). Thereby, it plays an essential role both in DNA replication and the cellular response to DNA damage (PubMed:9430682). 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 (PubMed:24332808). It is required for the recruitment of the DNA double-strand break repair factors RAD51 and RAD52 to chromatin in response to DNA damage (PubMed:17765923). 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 (PubMed:7697716). Also plays a role in base excision repair (BER) probably through interaction with UNG (PubMed:9765279). Also recruits SMARCAL1/HARP, which is involved in replication fork restart, to sites of DNA damage. Plays a role in telomere maintenance (PubMed:17959650, PubMed:34767620). As part of the alternative replication protein A complex, aRPA, binds single-stranded DNA and probably plays a role in DNA repair. Compared to the RPA2-containing, canonical RPA complex, may not support chromosomal DNA replication and cell cycle progression through S-phase. The aRPA may not promote efficient priming by DNA polymerase alpha but could support DNA synthesis by polymerase delta in presence of PCNA and replication factor C (RFC), the dual incision/excision reaction of nucleotide excision repair and RAD51-dependent strand exchange (PubMed:19996105). RPA stimulates 5'-3' helicase activity of the BRIP1/FANCJ (PubMed:17596542).

Cellular Location
Nucleus. Nucleus, PML body. Note=Enriched in PML bodies in cells displaying alternative lengthening of their telomeres

KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-Replication protein A1 Rabbit Monoclonal Antibody - Images

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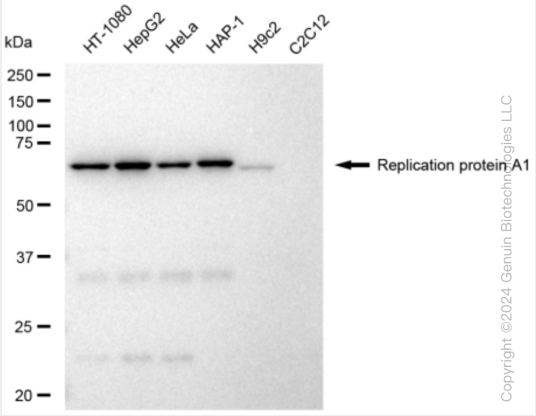
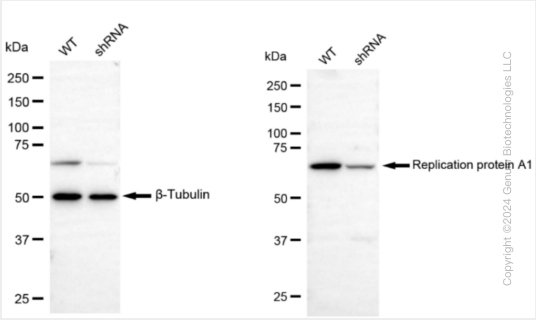
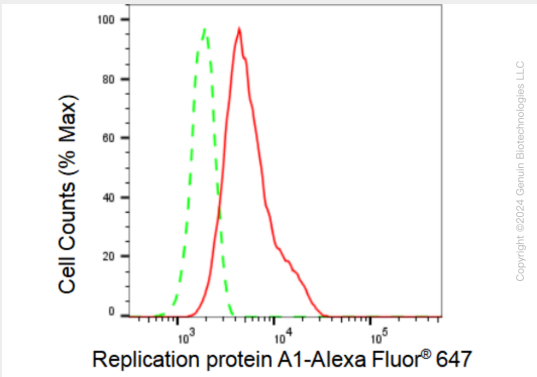


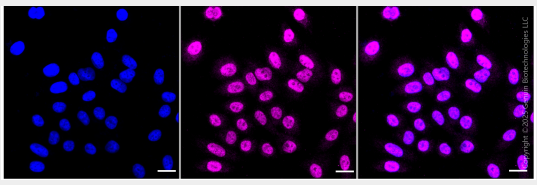
Western blotting analysis using anti-Replication protein A1 antibody (Cat#AGI1488). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Replication protein A1 antibody (Cat#AGI1488, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-Replication protein A1 antibody (Cat#AGI1488). Replication protein A1 expression in wild type (WT) and Replication protein A1 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-Replication protein A1 antibody (Cat#AGI1488, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of Replication protein A1 expression in HepG2 cells using Replication protein A1 antibody (Cat#AGI1488, 1:2,000). Green, isotype control; red, Replication protein A1.



Immunocytochemical staining of HepG2 cells with anti-Replication protein A1 antibody (Cat

#AGI1488, 1:1,000). Nuclei were stained blue with DAPI; Replication protein A1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 µm.