

**RPA1 Antibody (C-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP14415b****Specification**

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**RPA1 Antibody (C-term) Blocking Peptide - Product Information**Primary Accession [P27694](#)**RPA1 Antibody (C-term) Blocking Peptide - 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

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**RPA1 Antibody (C-term) Blocking Peptide - 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: [27723720](http://www.uniprot.org/citations/27723720), PubMed: [27723717](http://www.uniprot.org/citations/27723717)). Thereby, it plays an essential role both in DNA replication and the cellular response to DNA damage (PubMed: [9430682](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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:<a href="http://www.uniprot.org/citations/7697716" target="\_blank">7697716</a>). Also plays a role in base excision repair (BER) probably through interaction with UNG (PubMed:<a href="http://www.uniprot.org/citations/9765279" target="\_blank">9765279</a>). Also recruits SMARCA1/HARP, which is involved in replication fork restart, to sites of DNA damage. Plays a role in telomere maintenance (PubMed:<a href="http://www.uniprot.org/citations/17959650" target="\_blank">17959650</a>, PubMed:<a href="http://www.uniprot.org/citations/34767620" target="\_blank">34767620</a>). 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:<a href="http://www.uniprot.org/citations/19996105" target="\_blank">19996105</a>).

#### **Cellular Location**

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

#### **RPA1 Antibody (C-term) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

#### **RPA1 Antibody (C-term) Blocking Peptide - Images**

#### **RPA1 Antibody (C-term) Blocking Peptide - Background**

RPA1 plays an essential role in several cellular processes in DNA metabolism including replication, recombination and DNA repair. Binds and subsequently stabilizes single-stranded DNA intermediates and thus prevents complementary DNA from reannealing. Functions as component of the alternative replication protein A complex (aRPA). aRPA binds single-stranded DNA and probably plays a role in DNA repair; it does not support chromosomal DNA replication and cell cycle progression through S-phase. In vitro, aRPA cannot promote efficient priming by DNA polymerase alpha but supports DNA polymerase delta synthesis in the presence of PCNA and replication factor C (RFC), the dual incision/excision reaction of nucleotide excision repair and RAD51-dependent strand exchange.

#### **RPA1 Antibody (C-term) Blocking Peptide - References**

Choi, J.H., et al. Proc. Natl. Acad. Sci. U.S.A. 107(31):13660-13665(2010)Locatelli, G.A., et al. Biochem. J. 429(3):573-582(2010)Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010)Guillem, V.M., et al. Am. J. Hematol. 85(7):482-486(2010)Oakley, G.G., et al. Front. Biosci. 15, 883-900 (2010) :