

**APOBEC3G Antibody**  
Catalog # ASC10229**Specification****APOBEC3G Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">O9HC16</a>
Other Accession	<a href="#">NP_068594</a> , <a href="#">13399304</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	<b>APOBEC3G antibody can be used for detection of APOBEC3G by Western blot at 5 µg/mL. Antibody can also be used for immunohistochemistry starting at 1 µg/mL.</b>

**APOBEC3G Antibody - Additional Information**Gene ID **60489****Other Names**

APOBEC3G Antibody: A3G, ARCD, ARP9, ARP-9, CEM15, CEM-15, MDS019, bK150C2.7, dj494G10.1APOBEC-related cytidine deaminase, APOBEC-related protein, apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3G

**Target/Specificity**

APOBEC3G; APOBEC3G antibody will also detect the APOBEC3F isoform.

**Reconstitution & Storage**

APOBEC3G antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

APOBEC3G Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**APOBEC3G Antibody - Protein Information****Name** APOBEC3G {ECO:0000303|PubMed:14557625, ECO:0000312|HGNC:HGNC:17357}**Function**

DNA deaminase (cytidine deaminase) which acts as an inhibitor of retrovirus replication and retrotransposon mobility via deaminase- dependent and -independent mechanisms (PubMed:&lt;a href="http://www.uniprot.org/citations/12808465" target="\_blank"&gt;12808465&lt;/a&gt;, PubMed:&lt;a href="http://www.uniprot.org/citations/16527742" target="\_blank"&gt;16527742&lt;/a&gt;, PubMed:&lt;a href="http://www.uniprot.org/citations/17121840" target="\_blank"&gt;17121840&lt;/a&gt;, PubMed:&lt;a href="http://www.uniprot.org/citations/17121840" target="\_blank"&gt;17121840&lt;/a&gt;)

href="http://www.uniprot.org/citations/18288108" target="\_blank">18288108</a>, PubMed:<a href="http://www.uniprot.org/citations/18849968" target="\_blank">18849968</a>, PubMed:<a href="http://www.uniprot.org/citations/19153609" target="\_blank">19153609</a>, PubMed:<a href="http://www.uniprot.org/citations/21123384" target="\_blank">21123384</a>, PubMed:<a href="http://www.uniprot.org/citations/22791714" target="\_blank">22791714</a>, PubMed:<a href="http://www.uniprot.org/citations/25542899" target="\_blank">25542899</a>). Exhibits potent antiviral activity against Vif-deficient HIV-1 (PubMed:<a href="http://www.uniprot.org/citations/12167863" target="\_blank">12167863</a>, PubMed:<a href="http://www.uniprot.org/citations/12859895" target="\_blank">12859895</a>, PubMed:<a href="http://www.uniprot.org/citations/14557625" target="\_blank">14557625</a>, PubMed:<a href="http://www.uniprot.org/citations/20219927" target="\_blank">20219927</a>, PubMed:<a href="http://www.uniprot.org/citations/21835787" target="\_blank">21835787</a>, PubMed:<a href="http://www.uniprot.org/citations/22807680" target="\_blank">22807680</a>, PubMed:<a href="http://www.uniprot.org/citations/22915799" target="\_blank">22915799</a>, PubMed:<a href="http://www.uniprot.org/citations/23097438" target="\_blank">23097438</a>, PubMed:<a href="http://www.uniprot.org/citations/23152537" target="\_blank">23152537</a>, PubMed:<a href="http://www.uniprot.org/citations/31397674" target="\_blank">31397674</a>). After the penetration of retroviral nucleocapsids into target cells of infection and the initiation of reverse transcription, it can induce the conversion of cytosine to uracil in the minus-sense single-strand viral DNA, leading to G-to-A hypermutations in the subsequent plus-strand viral DNA (PubMed:<a href="http://www.uniprot.org/citations/12808465" target="\_blank">12808465</a>, PubMed:<a href="http://www.uniprot.org/citations/12808466" target="\_blank">12808466</a>, PubMed:<a href="http://www.uniprot.org/citations/12809610" target="\_blank">12809610</a>, PubMed:<a href="http://www.uniprot.org/citations/12970355" target="\_blank">12970355</a>, PubMed:<a href="http://www.uniprot.org/citations/14528300" target="\_blank">14528300</a>, PubMed:<a href="http://www.uniprot.org/citations/22807680" target="\_blank">22807680</a>). The resultant detrimental levels of mutations in the proviral genome, along with a deamination-independent mechanism that works prior to the proviral integration, together exert efficient antiretroviral effects in infected target cells (PubMed:<a href="http://www.uniprot.org/citations/12808465" target="\_blank">12808465</a>, PubMed:<a href="http://www.uniprot.org/citations/12808466" target="\_blank">12808466</a>, PubMed:<a href="http://www.uniprot.org/citations/12809610" target="\_blank">12809610</a>, PubMed:<a href="http://www.uniprot.org/citations/12970355" target="\_blank">12970355</a>, PubMed:<a href="http://www.uniprot.org/citations/14528300" target="\_blank">14528300</a>). Selectively targets single-stranded DNA and does not deaminate double-stranded DNA or single- or double-stranded RNA (PubMed:<a href="http://www.uniprot.org/citations/12808465" target="\_blank">12808465</a>, PubMed:<a href="http://www.uniprot.org/citations/12809610" target="\_blank">12809610</a>, PubMed:<a href="http://www.uniprot.org/citations/12970355" target="\_blank">12970355</a>, PubMed:<a href="http://www.uniprot.org/citations/14528300" target="\_blank">14528300</a>). Exhibits antiviral activity also against simian immunodeficiency viruses (SIVs), hepatitis B virus (HBV), equine infectious anemia virus (EIAV), xenotropic MuLV-related virus (XMRV) and simian foamy virus (SFV) (PubMed:<a href="http://www.uniprot.org/citations/15031497" target="\_blank">15031497</a>, PubMed:<a href="http://www.uniprot.org/citations/16378963" target="\_blank">16378963</a>, PubMed:<a href="http://www.uniprot.org/citations/18448976" target="\_blank">18448976</a>, PubMed:<a href="http://www.uniprot.org/citations/19458006" target="\_blank">19458006</a>, PubMed:<a href="http://www.uniprot.org/citations/20335265" target="\_blank">20335265</a>). May inhibit the mobility of LTR and non-LTR retrotransposons (PubMed:<a href="http://www.uniprot.org/citations/16527742" target="\_blank">16527742</a>).

### Cellular Location

Cytoplasm. Nucleus Cytoplasm, P-body. Note=Mainly cytoplasmic (PubMed:16527742, PubMed:16699599, PubMed:21835787). Small amount are found in the nucleus (PubMed:18667511). During HIV-1 infection, virion-encapsidated in absence of HIV-1 Vif (PubMed:12859895)

### Tissue Location

Expressed in spleen, testes, ovary and peripheral blood leukocytes and CD4+ lymphocytes. Also

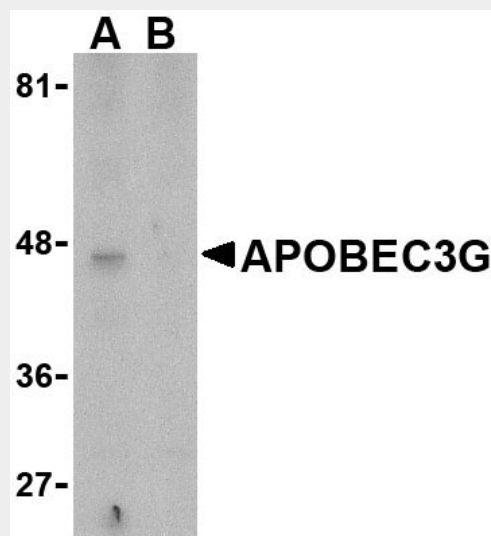
expressed in non-permissive peripheral blood mononuclear cells, and several tumor cell lines; no expression detected in permissive lymphoid and non-lymphoid cell lines Exists only in the LMM form in peripheral blood-derived resting CD4 T- cells and monocytes, both of which are refractory to HIV-1 infection LMM is converted to a HMM complex when resting CD4 T-cells are activated or when monocytes are induced to differentiate into macrophages. This change correlates with increased susceptibility of these cells to HIV-1 infection.

### APOBEC3G Antibody - Protocols

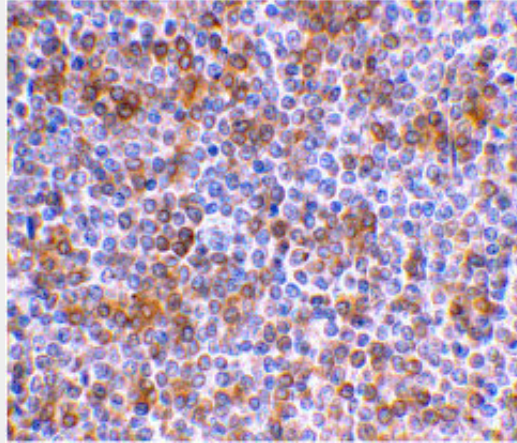
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### APOBEC3G Antibody - Images



Western blot analysis of APOBEC3G expression in Caco-2 cell lysate in the (A), absence and (B) presence of blocking peptide with APOBEC3G antibody at 5  $\mu$ g/mL.



Immunohistochemical staining of human spleen using APOBEC3G antibody at 1 µg/mL.

### **APOBEC3G Antibody - Background**

**APOBEC3G Antibody:** The Apolipoprotein B mRNA-editing, enzyme-catalytic, polypeptide-like (APOBEC) 3 is a multi-isoform member of the cytidine deaminase family of enzymes that act on monomeric nucleoside and nucleotide substrates. Similar to TRIM5 $\alpha$  which targets incoming retroviral capsids, APOBEC3 plays a major role in cellular defense against retroviral infection as at least two isoforms, APOBEC3G and to a lesser extent APOBEC3F, can be incorporated HIV-1 virions and induce hypermutation in the newly synthesized viral DNA and thus destabilize the viral genome. This innate mechanism of retroviral resistance is counteracted by the HIV-1 Vif protein by inducing the ubiquitization and degradation of APOBEC3G; a single amino acid substitution (D128K) blocks APOBEC3G depletion without affecting its inhibitory activity.

### **APOBEC3G Antibody - References**

Jarmuz A, Chester A, Bayliss J, et al. An anthropoid-specific locus of Orphan C to U RNA-editing enzymes on chromosome 22. *Genomics* 2002; 79:285-96.  
Stremlau M, Owens CM, Perron MJ, et al. The cytoplasmic body component TRIM5a restricts HIV-1 infection in Old World monkeys. *Nature* 2004; 427:848-53.  
Bieniasz PD. Intrinsic immunity: a front-line defense against viral attack. *Nat Immunol.* 2004; 5:1109-15.  
Sheehy AM, Gaddis NC, Choi JD, et al. Isolation of a human gene that inhibits HIV-1 infection and is suppressed by the viral Vif protein. *Nature* 2002; 418:646-50.