



## NIH AIDS Reagent Program

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### DATA SHEET

<b>Reagent:</b>	Anti-Human APOBEC3G Polyclonal (NT)
<b>Catalog Number:</b>	11231
<b>Lot Number:</b>	070995
<b>Provided:</b>	100 µg per vial. APOBEC3G antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide.
<b>Description:</b>	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 (1). Similar to TRIM5alpha which targets incoming retroviral capsids, APOBEC3 plays a major role in cellular defense against retroviral infection (2,3) 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 (4,5). 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 (6).
<b>Special Characteristics:</b>	APOBEC3G antibody can be used for detection of APOBEC3G by Western blot at 5 µg/mL (Optimal dilution should be determined by user). Caco-2 cell lysate can be used as a positive control. APOBEC3G antibody will also detect the APOBEC3F isoform.
<b>Recommended Storage:</b>	Keep at 4°C for short term storage and -80°C for long term storage. Avoid freeze-thaw cycles as reagent degradation may result.
<b>Contributor:</b>	ProSci, Incorporated
<b>References:</b>	Jarmuz A, Chester A, Bayliss J, et al. An anthropoid-specific locus of Orphan C to U RNA-editing enzymes on chromosome 22. <i>Genomics</i> 2002; <b>79</b> :285-96.  Stremlau M, Owens CM, Perron MJ, et al. The cytoplasmic body component TRIM5a restricts HIV-1 infection in Old World monkeys. <i>Nature</i> 2004; <b>427</b> :848-53.  Bieniasz PD. Intrinsic immunity: a front-line defense against viral attack. <i>Nat Immunol.</i> 2004; <b>5</b> :1109-15.  Sheehy AM, Gaddis NC, Choi JD, et al. Isolation of a human gene that inhibits HIV-1

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ALL RECIPIENTS OF THIS MATERIAL MUST COMPLY WITH ALL APPLICABLE BIOLOGICAL, CHEMICAL, AND/OR RADIOCHEMICAL SAFETY STANDARDS INCLUDING SPECIAL PRACTICES, EQUIPMENT, FACILITIES, AND REGULATIONS. NOT FOR USE IN HUMANS.

infection and is suppressed by the viral vif protein. *Nature* 2002; **418**:646-50.

Zheng Y-H, Irwin D, Kurosu T, et al. Human APOBEC3F is another host factor that blocks human immunodeficiency virus type 1 replication. *J. Vir.* 2004; **78**:6073-6.

Xu H, Svarovskaia ES, Barr R, et al. A single amino acid substitution in human APOBEC3G antiviral enzyme confers resistance to HIV-1 virion infectivity factor-induced depletion. *Proc. Natl. Acad. Sci. USA* 2004; **101**:5652-7.

**NOTE:**

Acknowledgment for publications should read "The following reagent was obtained through the NIH AIDS Reagent Program, Division of AIDS from ProSci Inc.: Anti-Human APOBEC3G Polyclonal (NT)." Also include the references cited above in any publications.

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