

# CEM15 (M-80): sc-48823

## BACKGROUND

The apolipoprotein B mRNA-editing enzyme, catalytic polypeptide-like 3G (APOBEC3G), also designated CEM15, is a member of a family of enzymes that have potent DNA mutator activity. APOBEC3G deaminates deoxycytosine to deoxyuracil in the minus strand of HIV-1 DNA, resulting in G to A hypermutation in the plus strand of DNA. Thus, APOBEC3G provides a mechanism for innate immunity to retroviruses and also likely contributes to sequence variation observed in many viruses. Viral infectivity factor (Vif) imparts APOBEC3G resistance to HIV through impaired translation of APOBEC3G mRNA and accelerated posttranslational degradation of CEM15 by the 26S Proteasome. Interestingly, HIV-1 Vif cannot form a complex with APOBEC3G of mouse origin as it does with the human protein, and thus mouse APOBEC3G functions as a potent inhibitor of wildtype HIV-1 replication, where human APOBEC3G is only able to inhibit Vif-deficient HIV-1 replication. This implies that induction of APOBEC3G activity or a method of blocking its interaction with Vif may provide a method for therapeutic intervention.

## REFERENCES

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- Harris, R.S., et al. 2003. DNA deamination mediates innate immunity to retroviral infection. *Cell* 113: 803-809.
- Mariani, R., et al. 2003. Species-specific exclusion of APOBEC3G from HIV-1 virions by Vif. *Cell* 114: 21-31.
- Stopak, K., et al. 2003. HIV-1 Vif blocks the antiviral activity of APOBEC3G by impairing both its translation and intracellular stability. *Mol. Cell* 12: 591-601.
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## CHROMOSOMAL LOCATION

Genetic locus: Apobec3 (mouse) mapping to 15 E1.

## SOURCE

CEM15 (M-80) is a rabbit polyclonal antibody raised against amino acids 241-310 mapping within an internal region of CEM15 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

CEM15 (M-80) is recommended for detection of CEM15 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

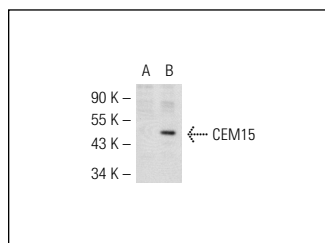
Suitable for use as control antibody for CEM15 siRNA (m): sc-60092, CEM15 shRNA Plasmid (m): sc-60092-SH and CEM15 shRNA (m) Lentiviral Particles: sc-60092-V.

Molecular Weight of CEM15: 48 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941

## DATA



CEM15 (M-80): sc-48823. Western blot analysis of CEM15 expression in non-transfected: sc-117752 (A) and mouse CEM15 transfected: sc-119161 (B) 293T whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.


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Try **CEM15 (B-2): sc-390254**, our highly recommended monoclonal alternative to CEM15 (M-80).