SANTA CRUZ BIOTECHNOLOGY, INC.

APOBEC3G (Q-17): sc-27521

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

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

REFERENCES

1. Mangeat, B., et al. 2003. Broad antiretroviral defence by human APOBEC3G through lethal editing of nascent reverse transcripts. Nature. 424: 99-103.
2. Shindo, K., et al. 2003. The enzymatic activity of CEM15/Apobec-3G is essential for the regulation of the infectivity of HIV-1 virion but not a sole determinant of its antiviral activity. J. Biol. Chem. 278: 44412-44416.
3. Harris, R.S., et al. 2003. DNA deamination mediates innate immunity to retroviral infection. Cell. 113: 803-809.
4. 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.
5. Mariani, R., et al. 2003. Species-specific exclusion of APOBEC3G from HIV-1 virions by Vif. Cell. 114: 21-31.

SOURCE

APOBEC3G (Q-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of APOBEC3G of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-27521 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

APOBEC3G (Q-17) is recommended for detection of APOBEC3G of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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