SANTA CRUZ BIOTECHNOLOGY, INC.

CEM15 (B-2): sc-390254

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

APOBEC3G 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 APOBEC3G 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 wild type 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. CEM15 is a 429 amino acid mouse protein that is thought to function as an ortholog of human APOBEC3G.

REFERENCES

1. Zhang, H., et al. 2003. The cytidine deaminase CEM15 induces hypermutation in newly synthesized HIV-1 DNA. Nature 424: 94-98.
2. Mangeat, B., et al. 2003. Broad antiretroviral defence by human APOBEC3G through lethal editing of nascent reverse transcripts. Nature 424: 99-103.
3. 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.
4. Harris, R.S., et al. 2003. DNA deamination mediates innate immunity to retroviral infection. Cell 113: 803-809.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

CEM15 (B-2) is a mouse monoclonal antibody raised against amino acids 241-310 mapping within an internal region of CEM15 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CEM15 (B-2) is available conjugated to agarose (sc-390254 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390254 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390254 PE), fluorescein (sc-390254 FITC), Alexa Fluor® 488 (sc-390254 AF488), Alexa Fluor® 546 (sc-390254 AF546), Alexa Fluor® 594 (sc-390254 AF594) or Alexa Fluor® 647 (sc-390254 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390254 AF680) or Alexa Fluor® 790 (sc-390254 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CEM15 (B-2) is recommended for detection of CEM15 of mouse and rat origin by Western Blotting (starting dilution 1:100, 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.

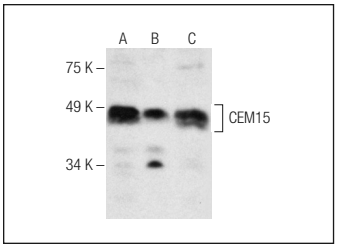
Molecular Weight of CEM15: 48 kDa.

Positive Controls: CEM15 (m): 293T Lysate: sc-119161, I-11.15 whole cell lysate: sc-364370 or AMJ2-C8 whole cell lysate: sc-364366.

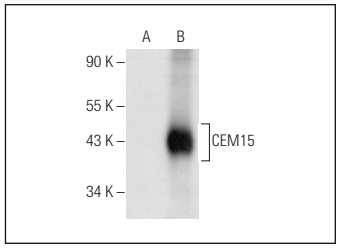
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CEM15 (B-2): sc-390254. Western blot analysis of CEM15 expression in AMJ2-C8 (**A**), SP2/0 (**B**) and I-11.15 (**C**) whole cell lysates.



CEM15 (B-2): sc-390254. 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.

RESEARCH USE

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

PROTOCOLS

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