SANTA CRUZ BIOTECHNOLOGY, INC.

Blimp-1 (3H2E8): sc-66015

BACKGROUND

The development and differentiation of plasma cells, which are terminally differentiated B-cells, are induced by Blimp-1 (B lymphocyte-induced maturation protein, also designated PRDI-BF1). Blimp-1 is a transcriptional repressor that localizes to the nucleus and is considered a master regulator of terminal B-cell development. Alone, Blimp-1 is sufficient to trigger terminal B-cell differentiation. Blimp-1 upregulates the expression of Syndecan-1 and J chain, represses IFN-β gene transcription and associates with HDAC to recruit it to DNA, thereby repressing c-Myc. Blimp-1 is expressed during the late stages of B-cell differentiation in immunoglobulin-secreting plasma cells, as well as in long-lived, bone marrow plasma cells. The expression of Blimp-1 defines a checkpoint beyond which fully activated B cells proceed to the plasma cell stage, whereas immature and partially activated cells are eliminated.

CHROMOSOMAL LOCATION

Genetic locus: PRDM1 (human) mapping to 6q21; Prdm1 (mouse) mapping to 10 B2.

SOURCE

Blimp-1 (3H2E8) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 199-409 of Blimp-1 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.

Blimp-1 (3H2E8) is available conjugated to agarose (sc-66015 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-66015 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-66015 PE), fluorescein (sc-66015 FITC), Alexa Fluor® 488 (sc-66015 AF488), Alexa Fluor® 546 (sc-66015 AF546), Alexa Fluor® 594 (sc-66015 AF594) or Alexa Fluor® 647 (sc-66015 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-66015 AF680) or Alexa Fluor® 790 (sc-66015 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Blimp-1 (3H2E8) is recommended for detection of Blimp-1 of mouse, rat and human 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Blimp-1 siRNA (h): sc-37714, Blimp-1 siRNA (m): sc-37715, Blimp-1 shRNA Plasmid (h): sc-37714-SH, Blimp-1 shRNA Plasmid (m): sc-37715-SH, Blimp-1 shRNA (h) Lentiviral Particles: sc-37714-V and Blimp-1 shRNA (m) Lentiviral Particles: sc-37715-V.

Molecular Weight of Blimp-1: 90 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, Ramos nuclear extract: sc-2153 or Blimp-1 (h2): 293 Lysate: sc-176917.

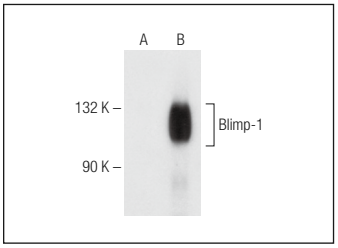
RESEARCH USE

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

STORAGE

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

DATA



Blimp-1 (3H2E8): sc-66015. Western blot analysis of Blimp-1 expression in non-transfected: sc-110760 (**A**) and human Blimp-1 transfected: sc-176917 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, J., et al. 2009. Patterns of microRNA expression characterize stages of human B-cell differentiation. Blood 113: 4586-4594.
2. Pérez-Galán, P., et al. 2011. Bortezomib resistance in mantle cell lymphoma is associated with plasmacytic differentiation. Blood 117: 542-552.
3. Levine, A.M., et al. 2013. Pegylated liposomal doxorubicin, rituximab, cyclophosphamide, vincristine, and prednisone in AIDS-related lymphoma: AIDS malignancy consortium study 047. J. Clin. Oncol. 31: 58-64.
4. Zhang, T., et al. 2014. Hypermethylation of the tumor suppressor gene PRDM1/Blimp-1 supports a pathogenetic role in EBV-positive Burkitt lymphoma. Blood Cancer J. 4: e261.
5. Wang, W.F., et al. 2017. HSP70-Hrd1 axis precludes the oncorepressor potential of N-terminal misfolded Blimp-1s in lymphoma cells. Nat. Commun. 8: 363.
6. Shin, H.M., et al. 2017. Transient expression of ZBTB32 in anti-viral $CD8^+$ T cells limits the magnitude of the effector response and the generation of memory. PLoS Pathog. 13: e1006544.
7. Wang, L., et al. 2019. Control of germinal center localization and lineage stability of follicular regulatory T cells by the Blimp-1 transcription factor. Cell Rep. 29: 1848-1861.e6.
8. Romero-García, R., et al. 2020. Differential epigenetic regulation between the alternative promoters, PRDM1α and PRDM1β, of the tumour suppressor gene PRDM1 in human multiple myeloma cells. Sci. Rep. 10: 15899.
9. Villanueva-Hernández, S., et al. 2022. Co-expression of the B-cell key transcription factors Blimp-1 and IRF4 identifies plasma cells in the pig. Front. Immunol. 13: 854257.

PROTOCOLS

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