

# CD137 (BBK-2): sc-58947

## BACKGROUND

CD137, also designated ILA and 4-1BB in mouse, belongs to the tumor necrosis factor receptor family and delivers a costimulatory signal to T lymphocytes. CD137 is expressed on activated T cells and binds an inducible ligand that is found on B cells, macrophages, and dendritic cells. Interactions between CD137 and its ligand are involved in antigen presentation and the generation of cytotoxic T cells. Crosslinking of the CD137 ligand induces apoptosis in resting lymphocytes. In contrast, CD137 regulates peripheral monocyte survival by inducing a cytokine release profile, and is mediated by M-CSF and to a lesser extent by granulocyte-macrophage colony-stimulating factor and IL-3. Soluble forms of CD137 are found in sera from patients with rheumatoid arthritis and may provide a negative control mechanism for immune responses.

## REFERENCES

1. Michel, J., et al. 1999. CD137-induced apoptosis is independent of CD95. *Immunology* 98: 42-46.
2. Langstein, J. and Schwarz, H. 1999. Identification of CD137 as a potent monocyte survival factor. *J. Leukoc. Biol.* 65: 829-833.
3. Langstein, J., et al. 2000. Comparative analysis of CD137 and LPS effects on monocyte activation, survival, and proliferation. *Biochem. Biophys. Res. Commun.* 24: 117-122.
4. Kienle, G. and von Kempis, J. 2000. CD137 (ILA/4-1BB), expressed by primary human monocytes, induces monocyte activation and apoptosis of B lymphocytes. *Int. Immunol.* 12: 73-82.
5. Michel, J. and Schwarz, H. 2000. Expression of soluble CD137 correlates with activation-induced cell death of lymphocytes. *Cytokine* 12: 742-746.
6. Dimberg, J., et al. 2006. Expression of CD137 and CD137 ligand in colorectal cancer patients. *Oncol. Rep.* 15: 1197-1200.

## CHROMOSOMAL LOCATION

Genetic locus: TNFRSF9 (human) mapping to 1p36.23.

## SOURCE

CD137 (BBK-2) is a mouse monoclonal antibody raised against recombinant CD137 ectodomain of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD137 (BBK-2) is available conjugated to agarose (sc-58947 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58947 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58947 PE), fluorescein (sc-58947 FITC), Alexa Fluor® 488 (sc-58947 AF488), Alexa Fluor® 546 (sc-58947 AF546), Alexa Fluor® 594 (sc-58947 AF594) or Alexa Fluor® 647 (sc-58947 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58947 AF680) or Alexa Fluor® 790 (sc-58947 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CD137 (BBK-2) is recommended for detection of CD137 of 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10<sup>6</sup> cells).

Suitable for use as control antibody for CD137 siRNA (h): sc-29961, CD137 shRNA Plasmid (h): sc-29961-SH and CD137 shRNA (h) Lentiviral Particles: sc-29961-V.

Molecular Weight of CD137 monomer: 32 kDa.

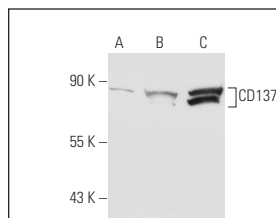
Molecular Weight of CD137 dimer: 85 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, MOLT-4 cell lysate: sc-2233 or CD137 (h2): 293T Lysate: sc-175476.

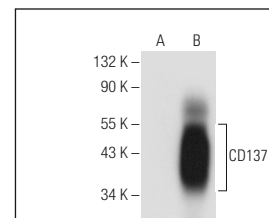
## RECOMMENDED SUPPORT REAGENTS

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



CD137 (BBK-2): sc-58947. Western blot analysis of CD137 expression in Daudi non-reducing buffer, not boiled (A), U-87 MG (B) and MOLT-4 (C) whole cell lysates.



CD137 (BBK-2): sc-58947. Western blot analysis of CD137 expression in non-transfected: sc-117752 (A) and human CD137 transfected: sc-175476 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Hammerl, D., et al. 2021. Spatial immunophenotypes predict response to anti-PD1 treatment and capture distinct paths of T cell evasion in triple negative breast cancer. *Nat. Commun.* 12: 5668.

## 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.