SANTA CRUZ BIOTECHNOLOGY, INC.

GM-CSF (A-6): sc-377039

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Colony stimulating factors (CSFs) were initially characterized by their ability to stimulate *in vitro* colony formation by hematopoietic progenitor cells in semisolid media. Several of these CSFs have been assigned an interleukin number, while three (GM-CSF, G-CSF and M-CSF) have retained their CSF designations. The human granulocyte-macrophage colony stimulating factor (GM-CSF) is a pleiotropic cytokine with a 17 amino acid signal peptide that is cleaved to produce the mature form of 127 amino acids. The mature murine GM-CSF protein is 124 amino acids and shares 60% homology with the human GM-CSF protein. GM-CSF is a glycoprotein that can stimulate the proliferation of hematopoietic cells including granulocytes and macrophages. It has been shown to promote the phosphorylation of $cPLA_2$ in human neutrophils. The phosphorylation of $cPLA_2$ may be accompanied by an increase in enzyme activity.

REFERENCES

1. Suda, T., et al. 1990. Identification of a novel thymocyte growth-promoting factor derived from B cell lymphomas. Cell. Immunol. 129: 228-240.
2. Nozaki, S., et al. 1991. Augmentation of granulocyte/macrophage colony-stimulating factor expression by ultraviolet irradiation is mediated by interleukin 1 in Pam 212 keratinocytes. J. Invest. Dermatol. 97: 10-14.
3. Moore, M.A. 1991. The clinical use of colony stimulating factors. Annu. Rev. Immunol. 9: 159-191.
4. Abrams, J.S., et al. 1992. Strategies of anti-cytokine monoclonal antibody development: immunoassay of IL-10 and IL-5 in clinical samples. Immunol. Rev. 127: 5-24.
5. Freund, M. and Kleine, H.D. 1992. The role of GM-CSF in infection. Infection 20: S84-S92.
6. Costello, R.T. 1993. Therapeutic use of granulocyte-macrophage colony-stimulating factor (GM-CSF). A review of recent experience. Acta Oncol. 32: 403-408.
7. Sander, B., et al. 1993. Similar frequencies and blood and spleen. Cytokine detection by immunoassay and intracellular immunostaining. J. Immunol. Methods 166: 201-214.

CHROMOSOMAL LOCATION

Genetic locus: CSF2 (human) mapping to 5q31.1.

SOURCE

GM-CSF (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 115-144 at the C-terminus of GM-CSF of human 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.

Blocking peptide available for competition studies, sc-377039 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

GM-CSF (A-6) is recommended for detection of GM-CSF of human 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 GM-CSF siRNA (h): sc-39391, GM-CSF shRNA Plasmid (h): sc-39391-SH and GM-CSF shRNA (h) Lentiviral Particles: sc-39391-V.

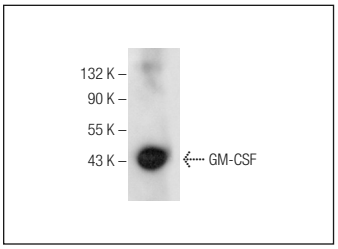
Molecular Weight of GM-CSF: 14 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

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



GM-CSF (A-6): sc-377039. Western blot analysis of human recombinant GM-CSF.

SELECT PRODUCT CITATIONS

1. Kumar, D., et al. 2014. Decidual GM-CSF is a critical common intermediate necessary for thrombin and TNF induced *in-vitro* fetal membrane weakening. Placenta 35: 1049-1056.
2. Reggiani, F., et al. 2017. Adipose progenitor cell secretion of GM-CSF and MMP9 promotes a stromal and immunological microenvironment that supports breast cancer progression. Cancer Res. 77: 5169-5182.

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.