SANTA CRUZ BIOTECHNOLOGY, INC.

G-CSF (3D1): sc-53292

BACKGROUND

Granulocyte-colony stimulating factor, G-CSF, is a pleiotropic cytokine that influences differentiation, proliferation and activation of the neutrophilic granulocyte lineage. The murine G-CSF cDNA encodes a 208 amino acid precursor containing a 30 amino acid signal peptide that is proteolytically cleaved to form a 178 amino acid residue mature protein. Two G-CSF cDNAs, which are identical except for a three amino acid deletion in the amino terminus of one form of the protein, have been isolated from human cells. Murine and human G-CSF share 73% sequence identity at the amino acid level. G-CSF signals through the G-CSF receptor, G-CSFR, a heavily glycosylated 812 amino acid polypeptide with a single transmembrane domain. Stimulation of the G-CSFR results in the activation of the Ras/MAPK pathway and phosphorylation of the adaptor protein Shc. Studies indicate that the kinases Lyn and Syk and the the transcription factor Stat3 are activated in response to G-CSF stimulation.

CHROMOSOMAL LOCATION

Genetic locus: CSF3 (human) mapping to 17q21.1.

SOURCE

G-CSF (3D1) is a mouse monoclonal antibody raised against recombinant G-CSF of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for neutralizing, sc-53292 L, 200 µg/0.1 ml.

G-CSF (3D1) is available conjugated to agarose (sc-53292 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53292 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53292 PE), fluorescein (sc-53292 FITC), Alexa Fluor® 488 (sc-53292 AF488), Alexa Fluor® 546 (sc-53292 AF546), Alexa Fluor® 594 (sc-53292 AF594) or Alexa Fluor® 647 (sc-53292 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53292 AF680) or Alexa Fluor® 790 (sc-53292 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

G-CSF (3D1) is recommended for detection of G-CSF 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for G-CSF siRNA (h): sc-39389, G-CSF shRNA Plasmid (h): sc-39389-SH and G-CSF shRNA (h) Lentiviral Particles: sc-39389-V.

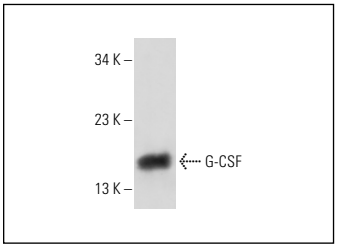
Molecular Weight of G-CSF: 19 kDa.

Positive Controls: U-698-M whole cell lysate: sc-364799.

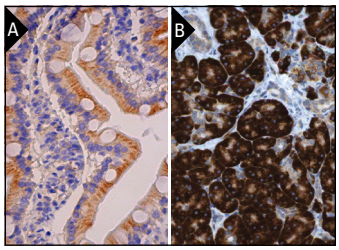
STORAGE

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

DATA



G-CSF (3D1): sc-53292. Western blot analysis of human recombinant G-CSF.



G-CSF (3D1): sc-53292. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and islet cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Song, J.A., et al. 2009. Human G-CSF synthesis using stress-responsive bacterial proteins. FEMS Microbiol. Lett. 296: 60-66.
2. Chang, I.W., et al. 2011. Anaplastic large cell lymphoma with paraneoplastic leukocytosis: a clinicopathological analysis of five cases. APMIS 119: 794-801.
3. Nakayama, K., et al. 2012. Uterine leiomyosarcoma producing granulocyte colony stimulating factor. Int. J. Gynecol. Pathol. 31: 172-177.
4. Lee, J.H., et al. 2014. A stress-responsive *Escherichia coli* protein, CysQ is a highly effective solubility enhancer for aggregation-prone heterologous proteins. Protein Expr. Purif. 101: 91-98.
5. Kang, Y.S., et al. 2015. *Escherichia coli* EDA is a novel fusion expression partner to improve solubility of aggregation-prone heterologous proteins. J. Biotechnol. 194: 39-47.
6. Aström, M., et al. 2018. Cytokine measurements for diagnosing and characterizing leukemoid reactions and immunohistochemical validation of a granulocyte colony-stimulating factor and CXCL8-producing renal cell carcinoma. Biomark. Insights 13: 1177271918792246.
7. Meyer, T., et al. 2020. Functional characterization of BRCC3 mutations in acute myeloid leukemia with t(8;21)(q22;q22.1). Leukemia 34: 404-415.
8. Cheng, Q., et al. 2022. A poly-ADP-ribose polymer-GCSF conjugate. Biomacromolecules 23: 5267-5272.
9. Okuno, Y., et al. 2023. Structural analysis of the colony-stimulating factor 3 gene of granulocyte colony-stimulating factor-producing urothelial cancer. Cureus 15: e43981.

RESEARCH USE

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