SANTA CRUZ BIOTECHNOLOGY, INC.

GATA-1 (N6): sc-265

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the GATA family share a conserved zinc finger DNA-binding domain and are capable of binding the WGATAR consensus sequence. GATA-1 is erythroid-specific and is responsible for the regulated transcription of erythroid genes. It is an essential component in the generation of the erythroid lineage. GATA-2 is expressed in embryonic brain and liver, HeLa and endothelial cells, as well as erythroid cells. Studies with a modified GATA consensus sequence, AGATCTTA, have shown that GATA-2 and GATA-3 recognize this mutated consensus while GATA-1 has poor recognition of this sequence. This indicates broader regulatory capabilities of GATA-2 and GATA-3 than GATA-1. GATA-3 is highly expressed in T lymphocytes. GATA-4, GATA-5 and GATA-6 comprise a subfamily of transcription factors. GATA-4 and GATA-6 are found in heart, pancreas and ovary; lung and liver tissues exhibit GATA-6, but not GATA-4, expression. GATA-5 expression has been observed in differentiated heart and gut tissues and is present throughout the course of development in the heart. Although expression patterns of the various GATA transcription factors may overlap, it is not yet apparent how the GATA factors are able to discriminate in binding their appropriate target sites.

REFERENCES

1. Ko, L.J., et al. 1991. Murine and human T-lymphocyte GATA-3 factors mediate transcription through a *cis*-regulatory element within the human T-cell receptor δ gene enhancer. Mol. Cell. Biol. 11: 2778-2784.
2. Dorfman, D.M., et al. 1992. Human transcription factor GATA-2. Evidence for regulation of preproendothelin-1 gene expression in endothelial cells. J. Biol. Chem. 267: 1279-1285.

CHROMOSOMAL LOCATION

Genetic locus: GATA1 (human) mapping to Xp11.23; Gata1 (mouse) mapping to X A1.1.

SOURCE

GATA-1 (N6) is a rat monoclonal antibody raised against recombinant GATA-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-265 X, 200 µg/0.1 ml.

GATA-1 (N6) is available conjugated to agarose (sc-265 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-265 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-265 PE), fluorescein (sc-265 FITC), Alexa Fluor® 488 (sc-265 AF488), Alexa Fluor® 546 (sc-265 AF546), Alexa Fluor® 594 (sc-265 AF594) or Alexa Fluor® 647 (sc-265 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-265 AF680) or Alexa Fluor® 790 (sc-265 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

GATA-1 (N6) is recommended for detection of GATA-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)], 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).

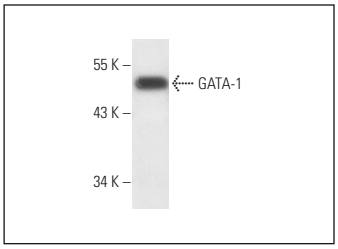
Suitable for use as control antibody for GATA-1 siRNA (h): sc-29330, GATA-1 siRNA (m): sc-35452, GATA-1 shRNA Plasmid (h): sc-29330-SH, GATA-1 shRNA Plasmid (m): sc-35452-SH, GATA-1 shRNA (h) Lentiviral Particles: sc-29330-V and GATA-1 shRNA (m) Lentiviral Particles: sc-35452-V.

GATA-1 (N6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

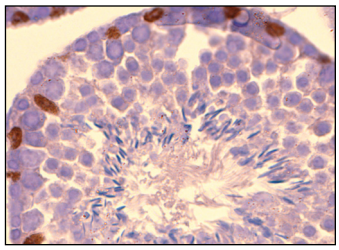
Molecular Weight of GATA-1: 47 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, K-562 nuclear extract: sc-2130 or HEL 92.1.7 cell lysate: sc-2270.

DATA



GATA-1 (N6): sc-265. Western blot analysis of GATA-1 expression in NIH/3T3 nuclear extract.



GATA-1 (N6): sc-265. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis tissue showing nuclear staining of Sertoli cells.

SELECT PRODUCT CITATIONS

1. Towatari, M., et al. 1995. Regulation of GATA-2 phosphorylation by mitogen-activated protein kinase and interleukin-3. J. Biol. Chem. 270: 4101-4107.
2. Park, S., et al. 2017. Defective erythropoiesis caused by mutations of the thyroid hormone receptor α gene. PLoS Genet. 13: e1006991.
3. Behera, V., et al. 2018. Exploiting genetic variation to uncover rules of transcription factor binding and chromatin accessibility. Nat. Commun. 9: 782.
4. Duan, Y., et al. 2019. Heat shock protein 60 regulates yolk sac erythropoiesis in mice. Cell Death Dis. 10: 766.
5. Yu, X., et al. 2020. The dynamic emergence of GATA-1 complexes identified in *in vitro* ES differentiation and *in vivo* mouse fetal liver. Haematologica 105: 1802-1812.

RESEARCH USE

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