SANTA CRUZ BIOTECHNOLOGY, INC.

Glycophorin A (YTH89.1): sc-59182

BACKGROUND

Glycophorins A, B and C are sialoglycoproteins of the human erythrocyte membrane, which bear the antigenic determinants for the MN, Ss and Gerbich blood groups, respectively. Glycophorins span the membrane once and present their amino-terminal end to the extracellular surface of the human erythrocyte. The genetic array of expressed Glycophorin surface antigens on erythrocytes defines the blood group phenotype of the individual. The human Glycophorin A gene maps to chromosome 4q31.21, contains seven exons which are 97% homologous to Glycophorin B, and encodes a 150 amino acid protein. The human Glycophorin B gene maps to chromosome 4q31.21 and encodes a 91 amino acid protein. The human Glycophorin C gene maps to chromosome 2q14.3 and contains four exons. Glycophorin C transcript can generate two protein isoforms. Isoform 1 includes all four exons and encodes the full length 128 amino acid protein. Isoform 2 is missing exon two and encodes a 109 amino acid protein, which specifies the Yus subtype of the Gerbich phenotype.

REFERENCES

1. Andersson, L.C., et al. 1979. Glycophorin A as a cell surface marker of early erythroid differentiation in acute leukemia. Int. J. Cancer 23: 717-720.
2. Liszka, K., et al. 1983. Glycophorin A expression in malignant hematopoiesis. Am. J. Hematol. 15: 219-226.
3. Nakahata, T., et al. 1994. Cell surface antigen expression in human erythroid progenitors: erythroid and megakaryocytic markers. Leuk. Lymphoma 13: 401-409.
4. Sadahira, Y., et al. 1999. Immunohistochemical identification of erythroid precursors in paraffin embedded bone marrow sections: spectrin is a superior marker to Glycophorin. J. Clin. Pathol. 52: 919-921.
5. Gerber, D., et. al. 2001. *In vivo* detection of hetero-association of Glycophorin A and its mutants within the membrane. J. Biol. Chem. 276: 31229-31232.
6. Young, M.T., et. al. 2003. Distinct regions of human Glycophorin A enhance human red cell anion exchanger (band 3; AE1) transport function and surface trafficking. J. Biol. Chem. 278: 32954-32961.

CHROMOSOMAL LOCATION

Genetic locus: GYPA (human) mapping to 4q31.21; Gypa (mouse) mapping to 8 C2.

SOURCE

Glycophorin A (YTH89.1) is a rat monoclonal antibody raised against red blood cells of human origin followed by purified Glycophorin A.

PRODUCT

Each vial contains 200 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glycophorin A (YTH89.1) is available conjugated to phycoerythrin (sc-59182 PE), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

Glycophorin A (YTH89.1) is recommended for detection of Glycophorin A 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)], immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

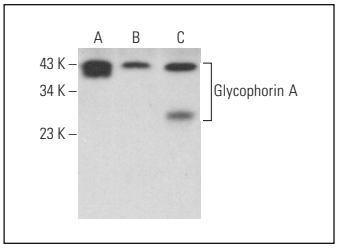
Suitable for use as control antibody for Glycophorin A siRNA (h): sc-42882, Glycophorin A siRNA (m): sc-44730, Glycophorin A shRNA Plasmid (h): sc-42882-SH, Glycophorin A shRNA Plasmid (m): sc-44730-SH, Glycophorin A shRNA (h) Lentiviral Particles: sc-42882-V and Glycophorin A shRNA (m) Lentiviral Particles: sc-44730-V.

Molecular Weight of Glycophorin A head-head dimer: 16 kDa.

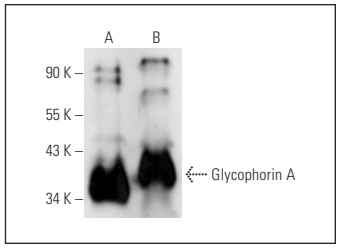
Molecular Weight of Glycophorin A head-tail dimer: 38 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, SK-N-SH cell lysate: sc-2410 or MEG-01 cell lysate: sc-2283.

DATA



Glycophorin A (YTH89.1): sc-59182. Western blot analysis of Glycophorin A expression in MEG-01 (**A**), SK-N-SH (**B**) and SP2/0 (**C**) whole cell lysates.



Glycophorin A (YTH89.1): sc-59182. Western blot analysis of Glycophorin A expression in human PBL (**A**) and K-562 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Naarmann, I.S., et al. 2008. mRNA silencing in human erythroid cell maturation: heterogeneous nuclear ribonucleoprotein K controls the expression of its regulator c-Src. J. Biol. Chem. 283: 18461-18472.
2. Marcoux, G., et al. 2016. Revealing the diversity of extracellular vesicles using high-dimensional flow cytometry analyses. Sci. Rep. 6: 35928.
3. Huang, N.J., et al. 2017. Genetically engineered red cells expressing single domain camelid antibodies confer long-term protection against botulinum neurotoxin. Nat. Commun. 8: 423.

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.