SANTA CRUZ BIOTECHNOLOGY, INC.

Glycophorin A/B (HIR2): sc-51603

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 also 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 Glycophorin C 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/GYPB mapping to 4q31.21.

SOURCE

Glycophorin A/B (HIR2) is a mouse monoclonal antibody raised against the N-terminus of Glycophorin A of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Glycophorin A/B (HIR2) is available conjugated phycoerythrin (sc-51603 PE, 100 tests in 2 ml) for IF, IHC(P) and FCM.

APPLICATIONS

Glycophorin A/B (HIR2) is recommended for detection of an N-terminal homologous portion of Glycophorin A and Glycophorin B 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 10^6 cells).

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

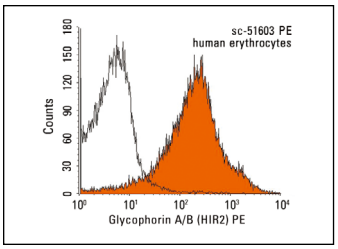
Molecular Weight of Glycophorin A head-tail dimer: 38 kDa.

Molecular Weight of Glycophorin B monomer: 25 kDa.

Molecular Weight of Glycophorin B dimer: 46 kDa.

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

DATA



Glycophorin A/B (HIR2): sc-51603. Indirect FCM analysis of human erythrocytes stained with Glycophorin A/B (HIR2), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_{2b}: sc-3879.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **Glycophorin A (R10): sc-53905** for Glycophorin A antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.