

## CD15 (TG-1): sc-19595



The Power to Question

## BACKGROUND

Fucosyltransferases (FucTs) catalyze the covalent association of fucose to different positional linkages on sugar acceptor molecules. The carbohydrate moieties that are generated are covalently attached to cell surfaces and are necessary to ensure a surface contour that satisfies a variety of physiological roles. CD15, also known as Lewis X or Le<sup>x</sup>, is a carbohydrate antigen that is generated by FucT-IV ( $\alpha$  1,3-fucosyltransferase IV). Commonly found on the surface of leukocytes and some tumor cells, CD15 is a trisaccharide that is synthesized when FucT-IV transfers an  $\alpha$ -fucose residue onto the  $\beta$ -GlcNAc moiety of cellular N-acetylglucosamines. CD15 functions as an adhesion molecule capable of calcium-mediated homotypic binding. Cells with high surface expression of CD15, therefore, exhibit strong self-aggregation (based on CD15-CD15 interaction) in the presence of calcium. Additionally, CD15 is thought to be a ligand for Selectins (proteins involved in mediating leukocyte-specific cellular interactions), further supporting its role as a cell-adhesion protein.

## REFERENCES

1. Eggens, I., et al. 1989. Specific interaction between Le<sup>x</sup> and Le<sup>x</sup> determinants. A possible basis for cell recognition in preimplantation embryos and in embryonal carcinoma cells. *J. Biol. Chem.* 264: 9476-9484.
2. Hakomori, S. 1992. Le<sup>x</sup> and related structures as adhesion molecules. *Histochem. J.* 24: 771-776.
3. Warren, H.S., et al. 1996. A carbohydrate structure associated with CD15 (Lewis X) on myeloid cells is a novel ligand for human CD2. *J. Immunol.* 156: 2866-2873.
4. Nimgaonkar, M., et al. 1996. A combination of CD34 selection and complement-mediated immunopurging (anti-CD15 monoclonal antibody) eliminates tumor cells while sparing normal progenitor cells. *J. Hematother.* 5: 39-48.

## CHROMOSOMAL LOCATION

Genetic locus: FUT4 (human) mapping to 11q21.

## SOURCE

CD15 (TG-1) is a mouse monoclonal antibody raised against glycoprotein fraction of human lymphocytes.

## PRODUCT

Each vial contains 200  $\mu$ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD15 (TG-1) is available conjugated to either phycoerythrin (sc-19595 PE) or fluorescein (sc-19595 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## 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.

## APPLICATIONS

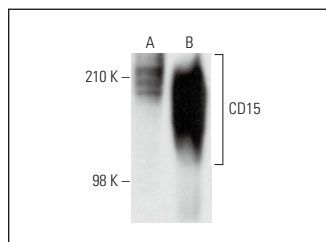
CD15 (TG-1) is recommended for detection of CD15 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

Positive Controls: THP-1 cell lysate: sc-2238 or human PBL whole cell lysate.

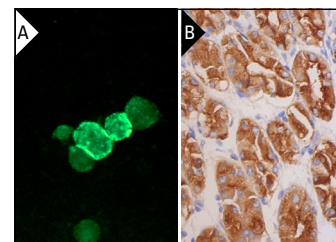
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CD15 (TG-1): sc-19595. Western blot analysis of CD15 expression in THP-1 (A) and human PBL (B) whole cell lysates.



CD15 (TG-1): sc-19595. Immunofluorescence staining of methanol-fixed U-937 cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Zandberg, W.F., et al. 2012. Metabolic inhibition of sialyl-Lewis X biosynthesis by 5-thiofucose remodels the cell surface and impairs selectin-mediated cell adhesion. *J. Biol. Chem.* 287: 40021-40030.
2. Chavali, P.L., et al. 2014. TLX activates MMP-2, promotes self-renewal of tumor spheres in neuroblastoma and correlates with poor patient survival. *Cell Death Dis.* 5: e1502.



See **CD15 (C3D-1): sc-19648** for CD15 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.