

Reagents Provided

Phycoerythrin (PE)-conjugated sheep polyclonal anti-mouse CD38:

Supplied as 25 µg of antibody in 1 mL saline containing up to 0.5% BSA and 0.1% sodium azide.

Isotype: sheep IgG

Reagents Not Provided

- Flow Cytometry Staining Buffer (Catalog # FC001) or other BSA-supplemented saline buffer.

Storage

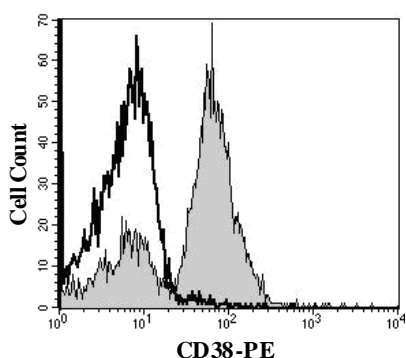
Reagents are stable for **twelve months** from the date of receipt when stored in the dark at 2° - 8° C.

Intended Use

Designed to quantitatively determine the percentage of cells bearing CD38 within a population and qualitatively determine the density of CD38 on cell surfaces by flow cytometry.

Product Description

Produced in sheep immunized with purified, NS0-derived, recombinant mouse CD38 extracellular domain (rmCD38; R&D Systems, Catalog # 4947-AC). Mouse CD38 specific IgG was purified by mouse CD38 affinity chromatography. The purified antibody was then conjugated to PE fluorochrome. Cell surface expression of CD38 is determined by flow cytometry using 488 nm wavelength excitation and monitoring emitted fluorescence with a detector optimized to collect peak emissions at 565 - 605 nm.



Mouse splenocytes were stained with PE-conjugated anti-mouse CD38 (Catalog # FAB4947P, filled histogram) or PE-conjugated sheep isotype control (Catalog # IC016P, open histogram).

Background Information

CD38, also known as ADP-ribosyl cyclase and cyclic ADP-ribose hydrolase, is a type II integral membrane protein. The enzyme is able to transform NAD(P)⁺ into three different products with calcium mobilizing ability: cyclic ADP-ribose, NAADP⁺, and ADP-ribose.¹ CD38 is expressed in B and T lymphocytes, osteoclasts, and in cardiac, pancreatic, liver and kidney cells.^{2,3} Through its production of cyclic ADP-ribose, CD38 modulates calcium-mediated signal transduction in many cell types, including neutrophils and pancreatic β cells.^{4,5} CD38 has been shown to regulate oxytocin secretion, and may be involved in the development of complex social behaviors in mammals.⁶

References

- Schuber, F. & Lund, F.E. (2004) *Curr. Mol. Med.* **4**:249.
- Jackson, D.G. & Bell, J.I. (1990) *J. Immunol.* **144**:2811.
- Sun, L. *et al.* (1999) *J. Cell Biol.* **146**:1161.
- Partida-Sanchez, S. *et al.* (2001) *Nature Med.* **7**:1209.
- Kato, I. *et al.* (1995) *J. Biol. Chem.* **270**:30045.
- Jin, D. *et al.* (2007) *Nature* **446**:41.

Flow Cytometry Validation

This antibody has been tested for flow cytometry using mouse splenocytes.

- Cells may be Fc-blocked with 1 µg of mouse IgG/10⁵ cells for 15 minutes at room temperature. Do not wash excess blocking IgG from this reaction.
- After blocking, 10 µL of conjugated antibody was added to up to 1 x 10⁶ cells and incubated for 30 minutes at room temperature.
- Unbound antibody was removed by washing the cells twice in Flow Cytometry Staining Buffer (Catalog # FC001). Note that whole blood requires a RBC lysis step at this point using Flow Cytometry Mouse Lyse Buffer (Catalog # FC003).
- The cells were resuspended in Flow Cytometry Staining Buffer for final flow cytometric analysis. As a control for this analysis, cells in a separate tube should be treated with PE-labeled sheep IgG antibody. This procedure may need to be modified, depending upon the cell type and final utilization. Individual users may need to titrate to determine the optimal reagent amount for their specific use.

Warning: Contains sodium azide as a preservative - sodium azide may react with lead and copper plumbing to form explosive metal azides. Flush with large volumes of water during disposal.