Technical Data Sheet

BUV737 Mouse Anti-Human CD93

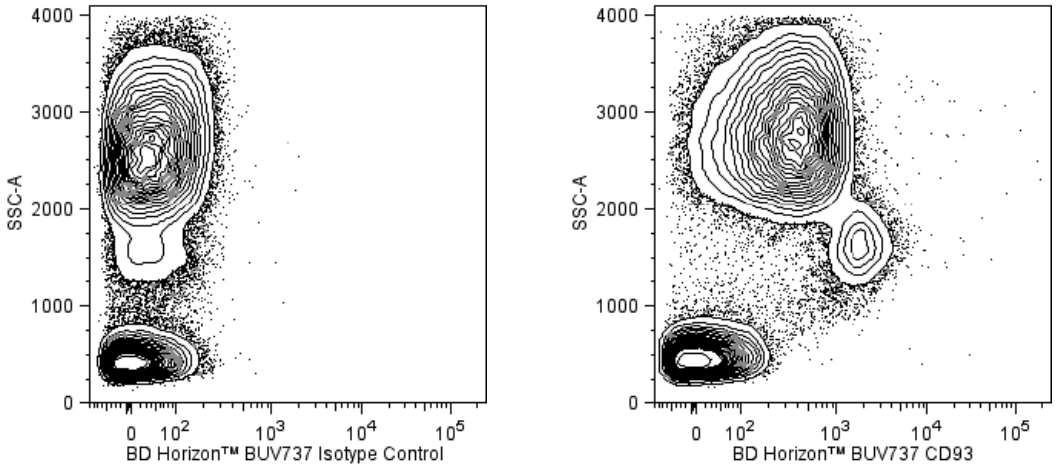
Product Information

Material Number:	**564934**
Alternate Name:	C1QR1; C1qRP; C1qR(P); C1q/MBL/SPA Receptor; MXRA4; GR11; Dj737e23.1
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	R139
Immunogen:	Clq-CLF-binding proteins
Isotype:	Mouse (BALB/c) IgG2b, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The R139 monoclonal antibody specifically binds to CD93 which is also known as Complement component C1q receptor (C1qR), C1q receptor 1 (C1qR1), or Matrix-remodeling-associated protein 4 (MXRA4). The immunogen used to generate the R139 hybridoma was a preparation of CD93 protein. Human CD93 is a transmembrane glycoprotein that is highly expressed on monocytes, macrophages, granulocytes, and endothelial cells but not on T and B lymphocytes. CD93 is also known as the C1q/MBL/SPA Receptor as it binds C1q, the recognition subunit of the first component (C1) of the complement pathway, as well as MBL (Mannose-binding-lectin) and SPA (Pulmonary Surfactant Protein A). Human C1qRp is involved in the C1q-mediated enhancement of phagocytosis. R139 is suitable to detect CD93 expression on cells of myeloid lineage by flow cytometry, and CD93 in cellular lysates by Western blotting or immunoprecipitation. In addition, R139 reportedly neutralizes C1q-mediated enhancement of phagocytosis. CD93 has also been reported to define a human stem cell population with hematopoietic and hepatic potential.

The antibody was conjugated to BD Horizon BUV737 which is part of the BD Horizon Brilliant™ Ultraviolet family of dyes. This dye is a tandem fluorochrome with an Ex Max near 350 nm and an Em Max near 737 nm. BD Horizon Brilliant BUV737 can be excited by the ultraviolet laser (355 nm) and detected with a 740/35 nm filter. Due to the excitation of the acceptor dye by the red laser line, there may be significant spillover into red laser detectors with filters in the 700-720 nm range.



Two-parameter flow cytometric analysis of CD93 expression on human peripheral blood leucocytes. *Human whole blood was stained with either BD Horizon™ BUV737 Mouse IgG2b, κ Isotype Control (Cat. No. 564429; Left Panel) or BD Horizon BUV737 Mouse Anti-Human CD93 antibody (Cat. No. 564934; Right Panel). Erythrocytes were lysed with BD FACS Lysing Solution (Cat. No. 349202). Two-parameter flow cytometric contour plots showing the correlated expression of CD93 (or Ig Isotype control staining) versus side light-scatter signals (SSC-A) were derived from gated events with the forward and side light-scatter characteristics of intact leucocyte populations. Flow cytometric analysis was performed using a BD™ LSR II Flow Cytometer System.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with BD Horizon BUV737 under optimum conditions, and unconjugated antibody and free BD Horizon BUV737 were removed.

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Application Notes

Application

Flow cytometry	Routinely Tested

Recommended Assay Procedure:

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to BD CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and BD CompBead to ensure that BD CompBeads are appropriate for your specific cellular application.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

Note: When using high concentrations of antibody, background binding of this dye to erythroid cell subsets (mature erythrocytes and precursors) has been observed. For researchers studying these cell populations, or in cases where light scatter gating does not adequately exclude these cells from the analysis, this background may be an important factor to consider when selecting reagents for panel(s).

Suggested Companion Products

Catalog Number	Name	Size	Clone
564429	BUV737 Mouse IgG2b, κ Isotype Control	50 µg	27-35
349202	BD FACS™ Lysing Solution	100 mL	(none)
555899	Lysing Buffer	100 mL	(none)
554656	Stain Buffer (FBS)	500 mL	(none)
554657	Stain Buffer (BSA)	500 mL	(none)
563794	Brilliant Stain Buffer	100 Tests	(none)
566349	Brilliant Stain Buffer	1000 Tests	(none)
566385	Brilliant Stain Buffer Plus	1000 Tests	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. BD Horizon Brilliant Ultraviolet 737 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,575,303; 8,354,239.
6. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
7. Please refer to http://regdocs.bd.com to access safety data sheets (SDS).
8. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Danet GH, Luongo JL, Butler G, et al. C1qRp defines a new human stem cell population with hematopoietic and hepatic potential. *Proc Natl Acad Sci USA.* 2002; 99(16):10441-5. (Biology)

Guan E, Robinson SL, Goodman EB, Tenner AJ. Cell-surface protein identified on phagocytic cells modulates the C1q-mediated enhancement of phagocytosis. *J Immunol.* 1994; 152(8):4005-4016. (Immunogen: Bioassay, ELISA, Flow cytometry, Immunoprecipitation, Inhibition, Neutralization, Western blot)

Guan EN, Burgess WH, Robinson SL, Goodman EB, McTigue KJ, Tenner AJ. Phagocytic cell molecules that bind the collagen-like region of C1q. Involvement in the C1q-mediated enhancement of phagocytosis. *J Biol Chem.* 1991; 266(30):20345-20355. (Biology)

Nepomuceno RR, Henschen-Edman AH, Burgess WH, Tenner AJ. cDNA cloning and primary structure analysis of C1qR(P), the human C1q/MBL/SPA receptor that mediates enhanced phagocytosis in vitro. *Immunity.* 1997; 6(2):119-129. (Biology)

Nepomuceno RR, Ruiz S, Park M, Tenner AJ. C1qRP is a heavily O-glycosylated cell surface protein involved in the regulation of phagocytic activity. *J Immunol.* 1999; 162(6):3583-3589. (Biology)

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Tenner AJ. C1q receptors: regulating specific functions of phagocytic cells. *Immunobiology.* 1998; 199(2):250-264. (Biology)