Technical Data Sheet

BV605 Mouse Anti-Human CD38

Product Information

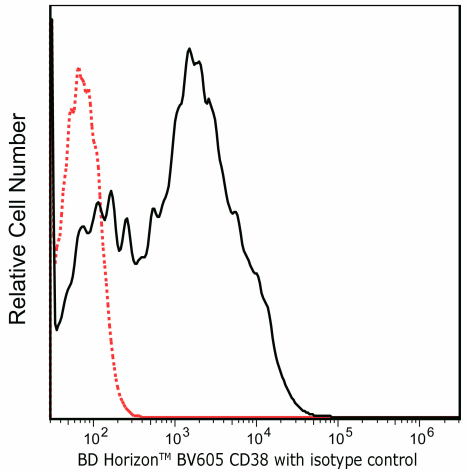
Material Number:	**562666**
Alternate Name:	T10; ADP-ribosyl cyclase 1; Cyclic ADP-ribose hydrolase 1; OKT10
Size:	25 Tests
Vol. per Test:	5 µl
Clone:	HB7
Immunogen:	Human BJAB B cell line
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human
Workshop:	III B918
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The HB7 monoclonal antibody specifically binds to human CD38. CD38 is a type II transmembrane glycoprotein of 45 kDa with a protein core of 35 kDa. The CD38 antigen is expressed on essentially all pre-B lymphocytes, plasma cells, and thymocytes. It is also present on activated T lymphocytes, natural killer (NK) lymphocytes, myeloblasts, and erythroblasts. The antigen is expressed during the early stages of T- and B-lymphocyte differentiation, is lost during the intermediate stages of maturation, and then reappears during the final stages of maturation. The CD38 antigen is expressed on 90% of CD34+ cells, and is not expressed on pluripotent stem cells. Coexpression of CD38 antigen on CD34+ cells indicates lineage commitment of those cells. CD38 is a counter-receptor of CD31. It is also expressed in T- and B-acute lymphoblastic leukemia (ALL), Burkitt's lymphoma, multiple myeloma, acute myeloid leukemia (AML), and chronic lymphocytic leukemia (CLL).

This antibody is conjugated to BD Horizon BV605 which is part of the BD Horizon Brilliant™ Violet family of dyes. With an Ex Max of 407-nm and Em Max of 602-nm, BD Horizon BV605 can be excited by a violet laser and detected with a standard 610/20-nm filter set. BD Horizon BV605 is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em max at 605-nm. Due to the excitation of the acceptor dye by the green (532 nm) and yellow-green (561 nm) lasers, there will be significant spillover into the PE and BD Horizon PE-CF594 detectors off the green or yellow-green lasers. BD Horizon BV605 conjugates are very bright, often exhibiting brightness equivalent to PE conjugates and can be used as a third color off of the violet laser.

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).



Flow cytometric analysis of CD38 expression on human peripheral blood lymphocytes. *Human whole blood was stained with the BD Horizon™ BV605 Mouse Anti-Human CD38 antibody (Cat. No. 562665/ 562666; solid line histogram) or with BD Horizon™ BV605 Mouse IgG1, Isotype Control (Cat. No. 562652; dashed line histogram). The erythrocytes were lysed with BD Pharm Lyse™ Lysing Buffer (Cat. No. 555899). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable lymphocytes. Flow cytometry was performed using a BD™ LSRII Flow Cytometer System.*

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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™ BV605 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV605 were removed.

Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
562652	BV605 Mouse IgG1, κ Isotype Control	50 µg	X40
554656	Stain Buffer (FBS)	500 mL	(none)
562665	BV605 Mouse Anti-Human CD38	100 Tests	HB7
555899	Lysing Buffer	100 mL	(none)
563794	Brilliant Stain Buffer	5 mL	(none)

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Although every effort is made to minimize the lot-to-lot variation in the efficiency of the fluorochrome energy transfer, differences in the residual emission from BD Horizon™ BV421 may be observed. Therefore, we recommend that individual compensation controls be performed for every BD Horizon™ BV605 conjugate.
4. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
5. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
6. 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.
7. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
8. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
9. CF™ is a trademark of Biotium, Inc.

References

Deaglio S, Morra M, Mallone R, et al. Human CD38 (ADP-ribosyl cyclase) is a counter-receptor of CD31, an Ig superfamily member. *J Immunol.* 1998; 160(1):395-402. (Biology)

Dörken B, Möller P, Pezzutto A, Schwartz-Albiez R, Moldenhauer G. B-cell antigens: CD38. In: Knapp W, Dörken B, Gilks WR, et al, ed. *Leucocyte Typing IV: White Cell Differentiation Antigens.* New York, NY: Oxford University Press; 1989:86. (Clone-specific)

Ghia P, Guida G, Stella S, Gottardi D, Geuna M, Strola G, Scielzo C, Caligaris-Cappio F. The pattern of CD38 expression defines a distinct subset of chronic lymphocytic leukemia (CLL) patients at risk of disease progression. *Blood.* 2003; 101(4):1262-1269. (Clone-specific: Flow cytometry)

Giorgi JV. Lymphocyte subset measurements: significance in clinical medicine. In: Rose NR, Friedman H, Fahey JL, ed. *Manual of Clinical Laboratory Immunology. 3rd ed..* Washington, DC: American Society for Microbiology; 1986:236-246. (Biology)

Landay A, Ohlsson-Wilhelm B, Giorgi JV. Application of flow cytometry to the study of HIV infection. *AIDS.* 1990; 4(6):479-497. (Biology)

Nicholson JKA, Jones BM. Immunophenotyping by flow cytometry: its use in HIV infection. *Labmedica.* 1989; 6:21-26. (Biology)

Pezzutto A, Behm F, Callard RE. Flow cytometry analysis of the B-cell blind panel: joint report. In: Knapp W, Dörken B, Gilks WR, et al, ed. *Leucocyte Typing IV: White Cell Differentiation Antigens.* New York, NY: Oxford University Press; 1989:165-174. (Biology)

Reinherz EL, Kung PC, Goldstein G, Levey RH, Schlossman SF. Discrete stages of human intrathymic differentiation: analysis of normal thymocytes and leukemic lymphoblasts of T-cell lineage. *Proc Natl Acad Sci U S A.* 1980; 77(3):1588-1592. (Biology)

Salazar-Gonzalez JF, Moody DJ, Giorgi JV, Martinez-Maza O, Mitsuyasu RT, Fahey JL. Reduced ecto-5'-nucleotidase activity and enhanced OKT10 and HLA-DR expression on CD8 (T suppressor/cytotoxic) lymphocytes in the acquired immune deficiency syndrome: evidence of CD8 cell immaturity. *J Immunol.* 1985; 135(3):1778-1785. (Biology)

Tedder TF, Clement LT, Cooper MD. Discontinuous expression of a membrane antigen (HB-7) during B lymphocyte differentiation. *Tissue Antigens.* 1984; 24(3):140-149. (Immunogen: Flow cytometry, Immunofluorescence, Immunoprecipitation)

Tedder TF, Crain MJ, Kubagawa H, Clement LT, Cooper MD. Evaluation of lymphocyte differentiation in primary and secondary immunodeficiency diseases. *J Immunol.* 1985; 135(3):1785-1791. (Clone-specific: Immunofluorescence)

Terstappen LW, Hollander Z, Meiners H, Loken MR. Quantitative comparison of myeloid antigens on five lineages of mature peripheral blood cells. *J Leukoc Biol.* 1990; 48(2):138-148. (Biology)

Terstappen LW, Huang S, Picker LJ. Flow cytometric assessment of human T-cell differentiation in thymus and bone marrow. *Blood.* 1992; 79(3):666-677. (Biology)

Terstappen LW, Huang S, Safford M, Lansdorp PM, Loken MR. Sequential generations of hematopoietic colonies derived from single nonlineage-committed CD34+CD38- progenitor cells. *Blood.* 1991; 77(6):1218-1227. (Biology)

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