

Technical Data Sheet

BV711 Rat Anti-Mouse CD90.2

Product Information

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|--------------------|---|
| Material Number: | 740648 |
| Size: | 50 µg |
| Clone: | 30-H12 |
| Alternative Name: | Thy-1.2; T25; Thymus Cell Antigen 1; Theta |
| Reactivity: | Mouse (Tested in Development) |
| Isotype: | Rat LOU, also known as Louvain, LOU/C, LOU/M IgG2b, κ |
| Immunogen: | Mouse Thymus / Spleen |
| Application: | Flow cytometry (Qualified) |
| Concentration: | 0.2 mg/ml |
| Entrez Gene ID: | 21838 |
| Storage Buffer: | Aqueous buffered solution containing ≤0.09% sodium azide. |
| Regulatory Status: | RUO |

Description

The 30-H12 monoclonal antibody specifically binds to CD90.2 (Thy-1.2) alloantigen on thymocytes, most peripheral T lymphocytes, some intraepithelial T lymphocytes (IEL, DEC), epithelial cells, fibroblasts, neurons, hematopoietic stem cells, but not B lymphocytes, of most mouse strains. Thy-1.2 has also been initially reported to be detectable on thymic dendritic cells, but later revealed that the antigen was probably picked up from T-lineage cells. 30-H12 mAb has been reported not to cross-react with Thy-1.1 (e.g., AKR/J, PL), or with rat Thy-1. CD90 is a GPI-anchored membrane glycoprotein of the Ig superfamily which is involved in signal transduction. In addition, there is evidence that CD90 mediates adhesion of thymocytes to thymic stroma. It has been reported that crosslinked 30-H12 antibody induces Ca²⁺ influx into thymocytes and that co-crosslinking of 30-H12 mAb with antibody to the CD3/TCR complex intensifies thymocyte signal transduction, promotes apoptosis of thymocytes, and inhibits the CD3-mediated proliferative response of mature T lymphocytes.

The antibody was conjugated to BD Horizon™ BV711 which is part of the BD Horizon Brilliant™ Violet family of dyes. This dye is a tandem fluorochrome of BD Horizon BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 711-nm. BD Horizon BV711 can be excited by the violet laser and detected in a filter used to detect Cy™5.5 / Alexa Fluor® 700-like dyes (eg, 712/20-nm filter). Due to the excitation and emission characteristics of the acceptor dye, there may be moderate spillover into the Alexa Fluor® 700 and PerCP-Cy5.5 detectors. However, the spillover can be corrected through compensation as with any other dye combination.

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 BV711 under optimal conditions that minimize unconjugated dye and antibody.

Recommended Assay Procedure

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes (including BD OptiBuild Brilliant reagents) 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).

Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|----------------|------------------------------------|-----------|--------|
| 563045 | BV711 Rat IgG2b, κ Isotype Control | 50 µg | R35-38 |
| 554656 | Stain Buffer (FBS) | 500 mL | |
| 554657 | Stain Buffer (BSA) | 500 mL | |
| 563794 | Brilliant Stain Buffer | 100 Tests | |

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|--------|--|--------|-------|
| 555899 | Lysing Buffer | 100 mL | |
| 553141 | Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) | 0.1 mg | 2.4G2 |

Product Notices

1. This antibody was developed for use in flow cytometry.
2. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
3. Researchers should determine the optimal concentration of this reagent for their individual applications.
4. An isotype control should be used at the same concentration as the antibody of interest.
5. 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.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at wwwbdbiosciences.com/colors.
7. Please refer to wwwbdbiosciences.com/us/s/resources for technical protocols.
8. 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.
9. BD Horizon Brilliant Violet 711 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,455,613; 8,575,303; 8,354,239.
10. Cy is a trademark of Amersham Biosciences Limited.
11. Alexa Fluor® is a registered trademark of Life Technologies Corporation.

References

- Borrello MA, Phipps RP. Differential Thy-1 expression by splenic fibroblasts defines functionally distinct subsets. *Cell Immunol.* 1996; 173(2):198-206.
- Hathcock KS. T cell depletion by cytotoxic elimination. *Curr Protoc Immunol.* 1991; 1:3.4.1-3.4.3.
- He HT, Naquet P, Caillol D, Pierres M. Thy-1 supports adhesion of mouse thymocytes to thymic epithelial cells through a Ca2(+)-independent mechanism. *J Exp Med.* 1991; 173(2):515-518.
- Hueber AO, Raposo G, Pierres M, He HT. Thy-1 triggers mouse thymocyte apoptosis through a bcl-2-resistant mechanism. *J Exp Med.* 1994; 179(3):785-796.
- Ikuta K, Uchida N, Friedman J, Weissman IL. Lymphocyte development from stem cells. *Annu Rev Immunol.* 1992; 10:759-783.
- Kroczek RA, Gunter KC, Germain RN, Shevach EM. Thy-1 functions as a signal transduction molecule in T lymphocytes and transfected B lymphocytes. *Nature.* 1986; 322(6075):181-184.
- Kruisbeek AM. In vivo depletion of CD4- and CD8-specific T cells. *Curr Protoc Immunol.* 1991; :4.1.1-4.1.5.
- Ledbetter JA, Herzenberg LA. Xenogeneic monoclonal antibodies to mouse lymphoid differentiation antigens. *Immunol Rev.* 1979; 47:63-90.
- Ledbetter JA, Rouse RV, Micklem HS, Herzenberg LA. T cell subsets defined by expression of Lyt-1,2,3 and Thy-1 antigens. Two-parameter immunofluorescence and cytotoxicity analysis with monoclonal antibodies modifies current views. *J Exp Med.* 1980; 152(2):280-295.
- LeFrancois L. Extrathymic differentiation of intraepithelial lymphocytes: generation of a separate and unequal T-cell repertoire. *Immunol Today.* 1991; 12(12):436-438.
- Nakashima I, Pu M-Y, Hamaguchi M, et al. Pathway of signal delivery to murine thymocytes triggered by co-crosslinking CD3 and Thy-1 for cellular DNA fragmentation and growth inhibition. *J Immunol.* 1993; 151(7):3511-3520.
- Nakashima I, Zhang YH, Rahman SM, et al. Evidence of synergy between Thy-1 and CD3/TCR complex in signal delivery to murine thymocytes for cell death. *J Immunol.* 1991; 147(4):1153-1162.
- Radrizzani M, Carminatti H, Pivetta OH, Idoyaga Vargas VP. Developmental regulation of Thy 1.2 rate of synthesis in the mouse cerebellum. *J Neurosci Res.* 1995; 42(2):220-227.
- Tigelaar RE, Lewis JM, Bergstresser PR. TCR gamma/delta+ dendritic epidermal T cells as constituents of skin-associated lymphoid tissue. *J Invest Dermatol.* 1990; 94(6):585-635.
- Williams AF, Gagnon J. Neuronal cell Thy-1 glycoprotein: homology with immunoglobulin. *Science.* 1982; 216(4547):696-703.
- Wu L, Vremec D, Ardavin C, et al. Mouse thymus dendritic cells: kinetics of development and changes in surface markers during maturation. *Eur J Immunol.* 1995; 25(2):418-425.
- Zheng B, Han S, Kelsoe G. T helper cells in murine germinal centers are antigen-specific emigrants that downregulate Thy-1. *J Exp Med.* 1996; 184(3):1083-1091.
- Zhong RK, Donnenberg AD, Edison L, Harrison DE. The appearance of Thy-1- donor T cells in the peripheral circulation 3-6 weeks after bone marrow transplantation suggests an extrathymic origin. *Int Immunol.* 1996; 8(2):171-176.

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