Technical Data Sheet

# BV510 Mouse Anti-Human CD27

## Product Information

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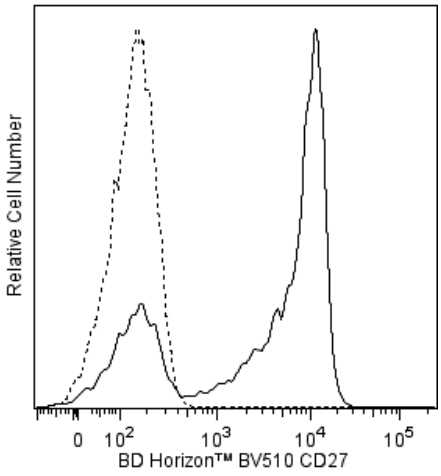
| **Material Number:** | **563090** |
| **Alternate Name:** | TNFRSF7; Tumor necrosis factor receptor superfamily, member 7; Tp55; S152 |
| **Size:** | 25 tests |
| **Vol. per Test:** | 5 µl |
| **Clone:** | L128 |
| **Immunogen:** | Human Activated Peripheral Blood Cells |
| **Isotype:** | Mouse (BALB/c) IgG1 |
| **Reactivity:** | QC Testing: Human |
| **Workshop:** | VI T6T037 |
| **Storage Buffer:** | Aqueous buffered solution containing BSA and ≤0.09% sodium azide. |

## Description

The L128 monoclonal antibody specifically binds to human CD27. CD27 is a 55-kDa disulfide-linked dimer that is a member of the nerve growth factor (NGF) super family. This family also includes CD40, rat OX40, tumor necrosis factor (TNF) receptors and CD95 (Fas). With its ligand CD70, CD27 acts in a co-stimulatory fashion on T lymphocytes. Present on most peripheral blood T lymphocytes and medullary thymocytes, the CD27 antigen is upregulated upon activation with the release of a soluble form, 28 to 32 kDa. It is also detected on a subpopulation of approximately 33% of circulating B lymphocytes. Following exposure to antigens, CD45RA+ T lymphocytes respond by upregulating the CD27 antigen. After maximal stimulation, the CD27 antigen cannot be re-expressed on long-term cultures or on CD45RA-CD27+ T lymphocytes. The CD4+CD27- population is contained within the memory CD45RO+ subset that proliferates after exposure to allergens. Two subpopulations of B lymphocytes bearing the CD27 antigen secrete IgM (δ+) and IgG (δ-).

The antibody was conjugated to BD Horizon™ BV510 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. With an Ex Max of 405-nm and Em Max at 510-nm, BD Horizon™ BV510 can be excited by the violet laser and detected in the BD Horizon™ V500 (525/50-nm) filter set. BD Horizon™ BV510 conjugates are useful for the detection of dim markers off the violet laser.




***Flow cytometric analysis of CD27 expression on human peripheral blood lymphocytes.*** *Human whole blood was stained with the BD Horizon™ BV510 Mouse Anti-Human CD27 antibody (Cat. No. 563090/563092; solid line histogram) or with BD Horizon™ BV510 Mouse IgG1, κ Isotype Control (Cat. No. 562946; 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™ LSR II Flow Cytometry 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™ BV510 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV510 were removed.

## Application Notes

**Application**

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| Flow cytometry | Routinely Tested |

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## Suggested Companion Products

| Catalog Number | Name | Size | Clone |
|---|---|---|---|
| 554656 | Stain Buffer (FBS) | 500 ml | (none) |
| 562946 | BV510 Mouse IgG1, k Isotype Control | 50 µg | X40 |
| 555899 | Lysing Buffer | 100 ml | (none) |
| 563092 | BV510 Mouse Anti-Human CD27 | 100 tests | L128 |

## 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. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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 www.bdbiosciences.com/colors.
7. Brilliant Violet™ 510 is a trademark of Sirigen.

## References


Baars PA, Maurice MM, Rep M, Hooibrink B, van Lier RA. Heterogeneity of the circulating human CD4+ T cell population. Further evidence that the CD4+CD45RA-CD27- T cell subset contains specialized primed T cells. *J Immunol.* 1995; 154(1):17-25. (Biology)

Bowman MR, Crimmins MA, Yetz-Aldape J, Kriz R, Kelleher K, Herrmann S. The cloning of CD70 and its identification as the ligand for CD27. *J Immunol.* 1994; 152(4):1756-1761. (Biology)

Camerini D, Walz G, Loenen WA, Borst J, Seed B. The T cell activation antigen CD27 is a member of the nerve growth factor/tumor necrosis factor receptor gene family. *J Immunol.* 1991; 147(9):3165-3169. (Biology)

De Jong R, Brouwer M, Hooibrink B, Van der Pouw-Kraan T, Miedema F, Van Lier RA. The CD27- subset of peripheral blood memory CD4+ lymphocytes contains functionally differentiated T lymphocytes that develop by persistent antigenic stimulation in vivo. *Eur J Immunol.* 1992; 22(4):993-999. (Biology)

Hintzen RQ, de Jong R, Hack CE, Chamuleau M, de Vries EF, ten Berge IJ, Borst J, van Lier RA. A soluble form of the human T cell differentiation antigen CD27 is released after triggering of the TCR/CD3 complex. *J Immunol.* 1991; 147(1):29-35. (Biology)

Hintzen RQ, de Jong R, Lens SM, Brouwer M, Baars P, van Lier RA. Regulation of CD27 expression on subsets of mature T-lymphocytes. *J Immunol.* 1993; 151(5):2426-2435. (Biology)

Hintzen RQ, Lens SM, Beckmann MP, Goodwin RG, Lynch D, van Lier RA. Characterization of the human CD27 ligand, a novel member of the TNF gene family. *J Immunol.* 1994; 152(4):1762-1773. (Biology)

Kobata T, Agematsu K, Kameoka J, Schlossman SF, Morimoto C. CD27 is a signal-transducing molecule involved in CD45RA+ naive T cell costimulation. *J Immunol.* 1994; 153(12):5422-5432. (Biology)

Kobata T, Morimoto C. CD27 Workshop Panel Report. In: Kishimoto T, Kikutani H, von dem Borne AEGK, ed. *Leucocyte Typing VI: White Cell Differentiation Antigens.* New York, NY: Garland Publishing, Inc.; 1997:67-69. (Clone-specific: Flow cytometry, Immunohistochemistry)

Maurer D, Fischer GF, Fae I, Majdic O, Stuhlmeier K, Von Jeney N, Holter W, Knapp W. IgM and IgG but not cytokine secretion is restricted to the CD27+ B lymphocyte subset. *J Immunol.* 1992; 148(12):3700-3705. (Biology)

Morimoto C. Cluster report: CD27. In: Schlossman SF, Boumsell L, Gilks W, et al, eds, ed. *Leucocyte Typing V: White Cell Differentiation Antigens.* New York, NY: Oxford University Press; 1995:356-357. (Biology)

Reiter C. T9. Cluster report: CD27. In: Knapp W, Dorken B, Rieber EP, et al, ed. *Leukocyte Typing IV: White Cell Differentiation Antigens.* New York: Oxford University Press; 1988:350. (Biology)



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