

# Technical Data Sheet

## BV510 Rat Anti-Mouse CD100 (Sema4D)

### Product Information

Material Number:	745011
Size:	50 µg
Clone:	BMA-12
Alternative Name:	Semaphorin-4D; SEM4D; Semaphorin-C-like 2; Semacl2; Semaj; M-Sema G; coll-4
Reactivity:	Mouse (Tested in Development)
Isotype:	Rat IgG2a, λ
Immunogen:	Mouse CD100 Recombinant Protein
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Entrez Gene ID:	20354
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

### Description

The BMA-12 monoclonal antibody specifically binds to CD100 which is also known as, Semaphorin-4D (Sema4D), or Collapsin-4 (Coll-4). CD100 is a ~150 kDa type I transmembrane glycoprotein that belongs to the class IV Semaphorin subfamily within the Ig gene superfamily. CD100 is expressed by cells from a broad range of tissues including the nervous system, where it serves in axon guidance and synapse formation, and the kidney. It is expressed by most hematopoietic cells including T cells which express CD100 more abundantly than B cells and dendritic cell subsets. Its expression is significantly upregulated upon activation of these cell types. CD100 can costimulate T cell responses. For B cells and dendritic cells, CD100 interaction with its ligands, CD72 or Plexin B1, induces cellular activation and promotes survival, respectively. CD100 is also known to interact with Plexin B2 on skin gamma delta T cells and contribute to the repair of tissue damage caused by inflammation. A biologically-active, soluble form of CD100 is generated by proteolytic cleavage of the cell surface form.

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.

### Preparation and Storage Section

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 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
554657	Stain Buffer (BSA) RUO	500 mL	
563794	Brilliant Stain Buffer RUO	100 Tests	
554656	Stain Buffer (FBS) RUO	500 mL	
555899	Lysing Buffer RUO	100 mL	
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™) 2.4G2 RUO	0.1 mg	
562952	BV510 Rat IgG2a, κ Isotype Control RUO	50 µg	

## 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 [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
7. Please refer to [www.bdbiosciences.com/us/s/resources](http://www.bdbiosciences.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 510 is covered by one or more of the following US patents: 8,575,303; 8,354,239.

## References

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Kumanogoh A, Watanabe C, Lee I, et al. Identification of CD72 as a lymphocyte receptor for the class IV semaphorin CD100: a novel mechanism for regulating B cell signaling. *Immunity*. 2000; 13(5):621-631.

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Wang X, Kumanogoh A, Watanabe C, Shi W, Yoshida K, Kikutani H. Functional soluble CD100/Sema4D released from activated lymphocytes: possible role in normal and pathologic immune responses. *Blood*. 2001; 97(11):3498-3504.

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