

## Technical Data Sheet

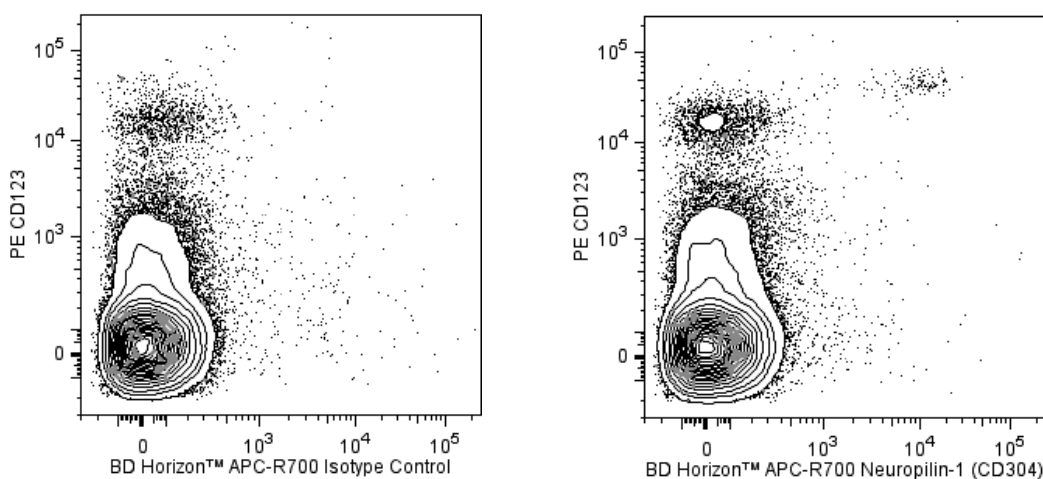
**APC-R700 Mouse Anti-Human Neuropilin-1 (CD304)****Product Information**

|                         |   |
|-------------------------|---|
| <b>Material Number:</b> | <b>566038</b>   |
| <b>Alternate Name:</b>  | Neuropilin; NRP; NP1; Blood dendritic cell antigen 4; BDCA-4; VEGF165R                          |
| <b>Size:</b>            | 100 Tests   |
| <b>Vol. per Test:</b>   | 5 µl  |
| <b>Clone:</b>           | U21-1283  |
| <b>Immunogen:</b>       | Recombinant Human Neuropilin-1  |
| <b>Isotype:</b>         | Mouse IgG2b, κ  |
| <b>Reactivity:</b>      | QC Testing: Human   |
| <b>Storage Buffer:</b>  | Aqueous buffered solution containing BSA, protein stabilizer, glycerol and ≤0.09% sodium azide. |

**Description**

The U21-1283 monoclonal antibody specifically recognizes Neuropilin-1 (NRP1) which is also known as CD304, Blood dendritic cell antigen 4 (BDCA4), or Vascular endothelial cell growth factor 165 receptor (VEGF165R). CD304 is a type I transmembrane glycoprotein that is involved in the development of the nervous and cardiovascular systems. It mediates the interaction, growth, survival, and migration of a variety of normal or tumor cells. CD304 is expressed on neurons, thymocytes, regulatory T cells, a subset of T follicular helper cells, dendritic cells, endothelial cells, and certain tumor cells. Neuropilin-1 has a very short cytoplasmic domain and interacts with various coreceptors to form ligand-binding, signal-transducing receptor complexes. CD304 complexes with Plexin-A family members to bind chemorepellent Class 3 Semaphorins and to guide neuronal axon growth. It also functions as a coreceptor with VEGFR2/CD309 to stimulate angiogenesis in response to VEGF165. CD304 serves to mediate the interactions between some T cells and dendritic cells.

This antibody was conjugated to BD Horizon APC-R700, which has been developed exclusively by BD Biosciences as a better alternative to Alexa Fluor® 700. APC-R700 excites and emits at similar wavelengths to Alexa Fluor® 700 yet exhibits significantly improved brightness. This dye can be excited by the red laser and detected with the same filter set as Alexa Fluor® (eg, 730/45-nm filter).



**Two-color flow cytometric analysis of Neuropilin-1 (CD304) expression on human peripheral blood lymphoid cells.** Human peripheral blood mononuclear cells were stained with PE Mouse Anti-Human CD123 antibody (Cat. No. 555644/561050) and either BD Horizon™ APC-R700 Mouse IgG2b, κ Isotype Control (Cat. No. 565138; Left Plot) or BD Horizon APC-R700 Mouse Anti-Human Neuropilin-1 (CD304) antibody (Cat. No. 566038/566039; Right Plot). Two-color flow cytometric contour plots showing the correlated expression of CD123 versus Neuropilin-1 (CD304) [for Ig Isotype control staining] were derived from gated events with the forward and side light-scatter characteristics of viable lymphoid cells. 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 APC-R700 under optimum conditions, and unconjugated antibody and free BD Horizon APC-R700 were removed.

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## Application Notes

### Application

Flow cytometry

Routinely Tested

### Suggested Companion Products

| Catalog Number | Name   | Size       | Clone    |
|----------------|--|------------|----------|
| 565138         | APC-R700 Mouse IgG2b, $\kappa$ Isotype Control | 0.1 mg     | 27-35    |
| 566039         | APC-R700 Mouse Anti-Human Neuropilin-1 (CD304) | 25 Tests   | U21-1283 |
| 555644         | PE Mouse Anti-Human CD123                      | 0.2 mg     | 9F5      |
| 561050         | PE Mouse Anti-Human CD123                      | 25 $\mu$ g | 9F5      |
| 554656         | Stain Buffer (FBS)                             | 500 mL     | (none)   |
| 554657         | Stain Buffer (BSA)                             | 500 mL     | (none)   |
| 555899         | Lysing Buffer                                  | 100 mL     | (none)   |
| 349202         | BD FACS™ Lysing Solution                       | 100 mL     | (none)   |

### Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use  $1 \times 10^6$  cells in a 100- $\mu$ l experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. 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.
5. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
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/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.

### References

Bruder D et al. Neuropilin-1: a surface marker of regulatory T cells. *Eur J Immunol.* 2004; 34(3):623-630. (Biology)  
Dzionek A et al. BDCA-2, BDCA-3, and BDCA-4: three markers for distinct subsets of dendritic cells in human peripheral blood. *J Immunol.* 2000; 165(11):6037-6046. (Biology)  
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Pan Q et al. Neuropilin-1 binds to VEGF121 and regulates endothelial cell migration and sprouting. *J Biol Chem.* 2007; 282(33):24049-24056. (Biology)  
Renand A, Milpied P, Rossignol J, et al. Neuropilin-1 expression characterizes T follicular helper (T<sub>fh</sub>) cells activated during B cell differentiation in human secondary lymphoid organs. *PLoS ONE.* 2013; 8(12):e85589. (Biology)  
Soker S, Takashima S, Miao HQ, Neufeld G, Klagsbrun M. Neuropilin-1 is expressed by endothelial and tumor cells as an isoform-specific receptor for vascular endothelial growth factor. *Cell.* 1998; 92(6):735-45. (Biology)

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