**Technical Data Sheet**

**BB515 Mouse Anti-Rat CD90/Mouse CD90.1**

**Product Information**

- **Material Number:** 564607
- **Alternate Name:** Rat Thy-1; Mouse Thy-1.1
- **Size:** 50 µg
- **Concentration:** 0.2 mg/ml
- **Clone:** OX-7 (also known as OX7)
- **Immunogen:** Rat Thymocyte Thy-1 Antigen
- **Isotype:** Mouse (BALB/c) IgG1, κ
- **Reactivity:**
  - QC Testing: Rat
  - Tested in Development: Mouse
  - Reported Reactivity: Rabbit, Guinea Pig

**Storage Buffer:**
Aqueous buffered solution containing ≤ 0.09% sodium azide.

**Description**

CD90 (Thy-1) is a GPI-anchored membrane glycoprotein of the Ig superfamily which is involved in signal transduction. The OX-7 monoclonal antibody specifically binds to rat CD90 reported to be expressed by hematopoietic stem cells, early myeloid and erythroid cells, immature B lymphocytes in the bone marrow and peripheral lymphoid organs, thymocytes, recent thymic emigrants (a subset of CD45RC-negative peripheral T lymphocytes), neurons, glomerular mesangial cells, endothelium at inflammatory sites, mast cells, and dendritic cells. Rat dendritic epidermal T cells (DEC) have been reported to be CD90 (Thy-1) negative, unlike those of the mouse.

The OX-7 clone has been reported to crossreact with the mouse CD90.1 (Thy-1.1) alloantigen of the AKR/J and PL strains, but not CD90.2 (Thy-1.2) found on many mouse strains. In the mouse, CD90 is found on thymocytes, most peripheral T lymphocytes, some intraepithelial T lymphocytes (IEL, DEC), hematopoietic stem cells, and neurons, but not B lymphocytes. In addition, there is evidence that CD90 mediates adhesion of mouse thymocytes to mouse thymic stroma. The OX-7 clone has also been reported to crossreact with rabbit and guinea pig thymus, brain, and intestine.

The antibody was conjugated to BD Horizon BB515 which is part of the BD Horizon Brilliant™ Blue family of dyes. With an Ex Max near 490 nm and an Em Max near 515 nm, BD Horizon BB515 can be excited by the blue laser (488 nm) laser and detected with a 530/30 nm filter. This dye has been exclusively developed by BD Biosciences and is up to seven times brighter than FITC with less spillover into the PE channel. Due to similar excitation and emission properties, BB515, FITC, and Alexa Fluor® 488 cannot be used simultaneously. It is not recommended to use BB515 in cocktails that include Streptavidin conjugates as it may cause high background.

**Two-color flow cytometric analysis of CD90 expression on rat splenocytes - Staining comparisons between BD Horizon™ BB515- and FITC-conjugated antibodies.** Lewis rat splenic leukocytes were preincubated with Purified Mouse Anti-Rat CD32 antibody (Rat BD Fc Block™) (Cat. No. 550270/550271). The cells were then stained with PE Rat Anti-Mouse CD3 antibody (Cat. No. 554833) and either BB515 Mouse IgG1, κ Isotype Control (Cat. No. 564416; Left Panel), BD Horizon BB515 Mouse Anti-Rat CD90/Mouse CD90.1 antibody (Cat. No. 564607; Middle Panel), or FITC Mouse Anti-Rat CD90/Mouse CD90.1 antibody (Cat. No. 554897/561973; Right Panel). Two-color flow cytometric contour plot showing the correlated expression of rat CD90 (or Ig Isotype control staining) versus CD3 were derived from gated events with the forward and side light-scatter characteristics of viable leukocytes. Flow cytometric analysis was performed using a BD LSRFortessa™ Cell Analyzer 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™ BB515 under optimum conditions and unconjugated antibody was removed.

Application Notes

Recommended Assay Procedure:
BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and CompBead to ensure that BD Comp beads are appropriate for your specific cellular application.

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. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

For optimal results, it is recommended to perform 2 washes after staining with antibodies. Cells may be prepared, stained with antibodies and washed twice with wash buffer per established protocols for immunofluorescence staining, prior to acquisition on a flow cytometer. Performing fewer than the recommended wash steps may lead to increased spread of the negative population.

Suggested Companion Products

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Product Notices
1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. 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.
4. Species testing during development may have been performed with a different format of the same clone. Selected applications have been tested for cross-reactivity.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. 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.
7. Please refer to www.regdocs.bd.com to access safety data sheets (SDS).

References


