Technical Data Sheet

PE-CF594 Rat Anti-Mouse CD40

Product Information

Material Number: 562847
Alternate Name: Bp50; Tnfrsf5; TRAP; CD40L receptor; GP39; HIGM1; IMD3; T-BAM
Size: 0.1 mg
Concentration: 0.2 mg/ml
Clone: 3/23
Immunogen: Mouse CD40 Recombinant Protein
Isotype: Rat (LOU) IgG2a, κ
Reactivity: Mouse
Storage Buffer: Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 3/23 clone monoclonal antibody specifically binds to CD40, a 40-50 kDa glycoprotein expressed on B lymphocytes and other antigen-presenting cells. CD40 has been reported to be transiently expressed on activated CD4+ and CD8+ T cells and in some mouse strains, the 3/23 mAb has been reported to react with 5-10% of T lymphocytes in adult mouse, but not neonatal, spleen. CD40 plays a key role in B-cell growth and differentiation where interactions of CD40 with its ligand, CD154, are involved in the initiation, effector, and memory stages of cell-mediated immune responses. In addition, CD40 has been reported to be involved with the triggering of NK cells and NK-T cells. Ligation of CD40 with the 3/23 antibody has been reported to induce splenic B cells to express the costimulatory molecule CD86 (B7-2). In addition, although the 3/23 antibody by itself is a weak B-cell mitogen, it has been reported to synergize markedly with mitogenic anti-IgM, anti-IgD mAb or IL-4 to promote B-cell proliferation.

This antibody is conjugated to BD Horizon™ PE-CF594, which has been developed exclusively by BD Biosciences as a better alternative to PE-Texas Red®. PE-CF594 excites and emits at similar wavelengths to PE-Texas Red® yet exhibits improved brightness and spectral characteristics. Due to PE having maximal absorption peaks at 496 nm and 564 nm, PE-CF594 can be excited by the blue (488-nm), green (532-nm) and yellow-green (561-nm) lasers and can be detected with the same filter set as PE-Texas Red® (eg 610/20-nm filter).

Two-color flow cytometric analysis of CD40 expression on mouse splenocytes. Mouse splenic leucocytes were preincubated with Purified Rat Anti-Mouse CD16/CD32 antibody (Mouse BD Fc Block™) (Cat. No. 553141/553142). The cells were then stained with PE Hamster Anti-Mouse CD3e (Cat. No. 553064/553063/561824), and either BD Horizon™ PE-CF594 Rat IgG2a, κ Isotype Control (Cat. No. 562302; Left Panel) or BD Horizon™ PE-CF594 Rat Anti-Mouse CD40 antibody (Cat. No. 562847; Right Panel). Two-color flow cytometric dot plots show the correlated expression of CD40 (or Ig Isotype Control staining) versus CD3e for gated events with the forward and side light-scatter characteristics of viable splenic leucocytes. 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™ PE-CF594 under optimum conditions, and unconjugated antibody and free PE-CF594 were removed.

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References
Bourgeois C, Rocha B, Tanotch C. A role for CD40 expression on CD8+ T cells in the generation of CD8+ T cell memory. Science. 2002; 297(5589):2060-2063. (Biology)
Parry SL, Hasbold J, Holman M, Klaus GG. Hypercross-linking surface IgM or IgD receptors on mature B cells induces apoptosis that is reversed by costimulation with IL-4 and anti-CD40. J Immunol. 1994; 152(6):1835-1842. (Biology)