

Technical Data Sheet

BV711 Hamster Anti-Mouse FcεR1α

Product Information

Material Number:	751760
Size:	50 µg
Clone:	MAR-1 (also known as MAR1)
Alternative Name:	FcεR1 alpha; FcεR1α; FcεRIα; High affinity IgE Receptor; MAR1
Reactivity:	Mouse (Tested in Development)
Isotype:	Armenian Hamster IgG
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

Description

The MAR-1 monoclonal antibody specifically recognizes Fc-epsilon RI-alpha (FcεR1 alpha, also known as FcεR1α or FcER1α) which is likewise known as the IgE Fc receptor subunit alpha. FcεR1α is a type I transmembrane glycoprotein that is encoded by FcεR1α (Fc receptor, IgE, high affinity I, alpha polypeptide) which belongs to the Ig gene superfamily. As a single IgE-binding alpha subunit, FcεR1α complexes with signal transducing subunits including one beta subunit (FcεRIβ encoded by Ms4a2) and two disulfide-linked gamma subunits (FcεRIγ encoded by FcεR1g) to form the high-affinity receptor for IgE, Fc epsilon RI (FcεR1 or FcER1). FcεR1 is expressed on basophils and mast cells. Binding of cognate antigens (allergens) to FcεR1 with bound IgE antibodies leads to cellular activation and the release of mediators, including histamine and cytokines, that are responsible for allergic reactions. Tang et al. (2019) have reported that the MAR-1 antibody crossreacts with two other mouse Fc receptor chains, FcγRI (CD64) and FcαRIV (CD16-2), that are expressed by monocytes, macrophages, dendritic cells, or neutrophils. They suggested MAR-1 binding is specific for FcαRIα only on mast cells and basophils and that for other cell types reactive with the MAR-1 antibody, it may be appropriate to refer to these as MAR-1-positive (MAR-1+) cells.

The antibody was conjugated to BD Horizon™ BV711 which is part of the BD Horizon Brilliant™ Violet family of dyes. This dye is a tandem fluorochrome of BD Horizon BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 711-nm. BD Horizon BV711 can be excited by the violet laser and detected in a filter used to detect Cy™5.5 / Alexa Fluor® 700-like dyes (eg, 712/20-nm filter). Due to the excitation and emission characteristics of the acceptor dye, there may be moderate spillover into the Alexa Fluor® 700 and PerCP-Cy5.5 detectors. However, the spillover can be corrected through compensation as with any other dye combination.

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 to the dye under optimum conditions that minimize unconjugated dye and antibody.

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).

Suggested Companion Products

Catalog Number	Name	Size	Clone
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
554656	Stain Buffer (FBS)	500 mL	
554657	Stain Buffer (BSA)	500 mL	
563794	Brilliant Stain Buffer	100 Tests	
555899	Lysing Buffer	100 mL	
566349	Brilliant Stain Buffer	1000 Tests	
566385	Brilliant Stain Buffer Plus	1000 Tests	

Product Notices

1. 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.
2. Researchers should determine the optimal concentration of this reagent for their individual applications.
3. An isotype control should be used at the same concentration as the antibody of interest.
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. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. Please refer to www.bdbiosciences.com/us/s/resources for technical protocols.
7. 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.
8. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
9. Alexa Fluor® is a registered trademark of Life Technologies Corporation.
10. BD Horizon Brilliant Violet 711 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,455,613; 8,575,303; 8,354,239.
11. Cy is a trademark of GE Healthcare.
12. Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian hamster IgG monoclonal antibodies according to their reactivity with a panel of mouse anti-hamster IgG mAbs. A table of the hamster IgG groups, Reactivity of Mouse Anti-Hamster Ig mAbs, may be viewed at http://www.bdbiosciences.com/documents/hamster_chart_11x17.pdf.

References

- Obata K, Mukai K, Tsujimura Y, et al. Basophils are essential initiators of a novel type of chronic allergic inflammation.. *Blood*. 2007; 110(3):913-20. (Clone-specific: Flow cytometry).
- Ota T, Aoki-Ota M, Duong BH, Nemazee D. Suppression of IgE B cells and IgE binding to Fc(epsilon)RI by gene therapy with single-chain anti-IgE.. *J Immunol*. 2009; 182(12):8110-7. (Clone-specific: Flow cytometry).
- Pellefigues C, Mehta P, Prout MS, et al. The Basoph8 Mice Enable an Unbiased Detection and a Conditional Depletion of Basophils. *Front Immunol*. 2019; 10:2143. (Clone-specific: Flow cytometry).
- Perrigoue JG, Saenz SA, Siracusa MC, et al. MHC class II-dependent basophil-CD4+ T cell interactions promote T(H)2 cytokine-dependent immunity.. *Nat Immunol*. 2009; 10(7):697-705. (Clone-specific: Flow cytometry).
- Sokol CL1, Barton GM, Farr AG, Medzhitov R.. A mechanism for the initiation of allergen-induced T helper type 2 responses.. *Nat Immunol*. 2008; 9(3):310-318. (Clone-specific: Flow cytometry).
- Tang XZ, Jung JB, Allen CDC. A case of mistaken identity: The MAR-1 antibody to mouse FcεRIα cross-reacts with FcγRI and FcγRIV.. *J Allergy Clin Immunol*. 2019; 143(4):1643-1646.e6. (Clone-specific: Flow cytometry).

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