Technical Data Sheet

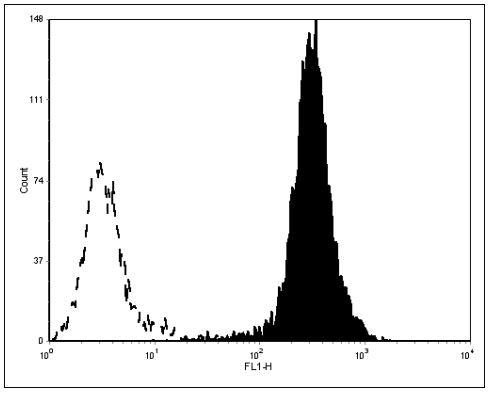
Purified Mouse Anti-Rat High Affinity IgE Receptor

Product Information

Material Number:	**551469**
Alternate Name:	FcεRI
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	BC4
Immunogen:	Rat basophilic leukemia cell line
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Rat
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The BC4 antibody reacts with the high-affinity IgE Fc receptor (FcεRI) expressed in rat mast cells, basophils, and non-B non-T cells. The rat FcεRI is expressed as a tetrameric molecule consisting of one α chain, one β chain, and two identical γ chains. The BC4 antibody has been reported to detect all three chains of the FcεRI by immunoprecipitation. In the rat model, the β chain (FcRβ) is required for cell-surface expression of the complete FcεRI. This differs from the human FcεRI, which can be expressed in trimer (αγ2) or tetramer forms (βγ2). Furthermore, the FcRβ has been characterized as a potent signaling molecule capable of substantially amplifying Fc-mediated cellular responses. The FcεRI functions to mediate cellular degranulation and the release of histamine, leukotrienes, and various cytokines and chemokines. The structure, expression, function, and signaling mechanisms of the FcεRI have been reviewed.



Expression of FcεRI on RBL cells. *RBL cells were incubated with either Purified Mouse IgG1, κ isotype control (Cat. no. 557273, open dash line overlay) or purified BC4 mAb (shaded histogram), followed by biotinylated F(ab')2 rat anti-mouse IgG and finally Streptavidin-FITC (Cat. no. 554060). The cells in both the shaded histogram and the overlay were gated on 7-AAD negative cells and then the expression of FcεRI is depicted. Flow cytometry was performed on a BD FACSCalibur™ flow cytometry system.*

Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Flow cytometry	Routinely Tested
Immunoprecipitation	Reported
Inhibition	Reported

Recommended Assay Procedure:

Other reported applications include immunoprecipitation, inhibition of IgE binding, and degranulation of rat mast cells by antibody crosslinking. It is recommended that for immunoflourescent staining of rat cells, the BC4 antibody be carefully titrated and used with F(ab')2 secondary reagents to reduce cellular degranulation.

Suggested Companion Products

Catalog Number	Name	Size	Clone
557273	Purified Mouse IgG1, κ Isotype Control	0.5 mg	MOPC-31C
554060	FITC Streptavidin	0.5 mg	(none)
554970	PE Mouse Anti-Rat CD54	0.2 mg	1A29
554656	Stain Buffer (FBS)	500 ml	(none)

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Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.
5. An isotype control should be used at the same concentration as the antibody of interest.

References

Basciano LK, Berenstein EH, Kmak L, Siraganian RP. Monoclonal antibodies that inhibit IgE binding. *J Biol Chem.* 1986; 261(25):11823-11831. (Immunogen: Immunoprecipitation, Inhibition)

Dombrowicz D, Nutten S, Desreumaux P. Role of the high affinity immunoglobulin E receptor in bacterial translocation and intestinal inflammation. *J Exp Med.* 2001; 193(1):25-34. (Biology)

Kinet JP. The high-affinity IgE receptor (Fc epsilon RI): from physiology to pathology. *Annu Rev Immunol.* 1999; :931-972. (Clone-specific: Immunofluorescence)