



## MONOCLONAL ANTIBODY

*For research use only. Not for clinical diagnosis.*

**Catalog No. 72-003EX**

### **Anti-Fc $\epsilon$ R1 $\alpha$ (human IgE receptor) (CRA1), Biotinylated**

#### **BACKGROUND**

Fc $\epsilon$ R1 $\alpha$  is subunit of the high affinity receptor for IgE to which IgE directly binds. Fc $\epsilon$ R1 is a tetrameric complex consisting of one  $\alpha$ , one  $\beta$  and two  $\gamma$  subunits. The latter two are required for signal transduction activity. The Fc $\epsilon$ R1 complex plays an important role in triggering allergic responses.

The CRA1 (AER37) monoclonal antibody reacts with the Fc $\epsilon$ R1 $\alpha$  subunit on a region that does not overlap the region of the IgE binding site, thus it does not compete with IgE for the receptor binding. Since the CRA2 (AER24) monoclonal antibody reacts with the IgE binding site on Fc $\epsilon$ R1 $\alpha$ , it competes with IgE for the receptor binding. Combining the two antibodies, one can quantitatively measure the amounts of the IgE-bound Fc $\epsilon$ R1 $\alpha$ .

The IgG fraction was purified from serum free culture medium of mouse hybridoma (CRA1) by propriety chromatography under mild conditions. This product is a biotinylated IgG ([biotin]/[IgG] = 8.9) produced from the IgG fraction.

<b>Product type</b>	Primary antibodies
<b>Host</b>	Mouse
<b>Source</b>	
<b>Form</b>	Biotynylated monoclonal antibody (IgG) 1.6 mg/ml in PBS (pH 7.4), 50% glycerol, filter-sterilized, azide free
<b>Volume</b>	50 $\mu$ g
<b>Concentration</b>	
<b>Epitope</b>	Amino acids 1-84 of Fc $\epsilon$ R1 $\alpha$ (Ref.5)
<b>Isotype</b>	IgG2b ( $\kappa$ )

<b>Application notes</b>	1) Western blotting ( $\sim$ 1 ug/ml)      2) FACS 3) Immuno-histochemistry and immuno-cytochemistry (Ref 7) 4) Titration of IgE-bound receptor in combination with CRA2 antibody
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Other applications have not been tested.

Optimal dilutions/concentrations should be determined by the end user.

UniProtKB/Swiss-Prot [P12319](#) (FCERA\_HUMAN)

<b>Data Link</b>	
<b>Reactivity</b>	Reacts with human EID1 protein. Not tested for other species.
<b>Storage</b>	-20°C

#### **References**

This product was used in Ref 3-7.

1. Ra C *et al* "A macrophage Fc gamma receptor and the mast cell receptor for IgE share an identical subunit" *Nature* **341**:752-754 (1989) PMID: [2529442](#)
2. Hakimi J *et al* "The alpha subunit of the human IgE receptor (Fc $\epsilon$ R1) is sufficient for high affinity IgE binding" *J Biol Chem* **265**:22079-22089 (1990) PMID: [2148316](#)
3. Yamaguchi M *et al* "IgE enhances Fc epsilon receptor I expression and IgE-dependent release of histamine and lipid mediators from human umbilical cord blood-derived mast cells: synergistic effect of IL-4 and IgE on human mast cell Fc

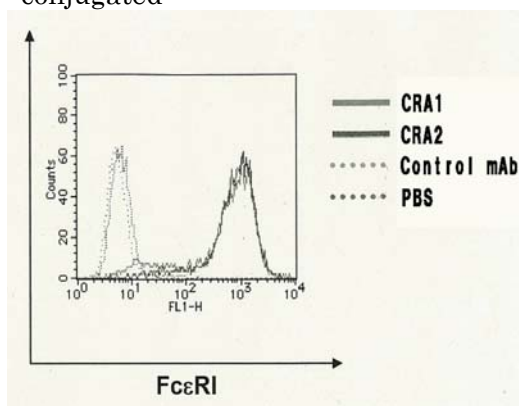


## Anti-FcεR1α (human IgE receptor) (CRA1), Biotinylated

- epsilon receptor I expression and mediator release" *J Immunol* **162**:5455-5465 (1999) PMID: [10228025](#)
4. Suzukawa M *et al* "IgE- and FcepsilonRI-mediated migration of human basophils" *Int Immunol* **17**: 1249-1255 (2005) PMID: [16103029](#)
5. Takai T *et al* "Epitope analysis and primary structures of variable regions of anti-human FcepsilonRI monoclonal antibodies, and expression of the chimeric antibodies fused with human constant regions" *Biosci Biotechnol Biochem* **64**:1856-1867(2000) PMID:[11055388](#)
6. Takai T *et al* "Direct expression of the extracellular portion of human FcepsilonRIalpha chain as inclusion bodies in *Escherichia coli*" *Biosci Biotechnol Biochem* **65**:79-85 (2001) PMID: [11272849](#)
7. Untersmayr E *et al* "The High Affinity IgE Receptor FcεRI Is Expressed by Human Intestinal Epithelial Cells" *PLoS ONE* **5** (2):1-11 (2010) PLoS ONE: [0009023](#)

### Related Product

- # [72-001EX](#) Anti- FcεR1α (human IgE receptor) monoclonal (CRA1)
- # [72-004EX](#) Anti- FcεR1α (human IgE receptor) monoclonal (CRA1), FITC conjugated
- # [72-005EX](#) Anti-FcεR1α (human IgE receptor) monoclonal (CRA2)
- # [72-007EX](#) Anti-FcεR1α (human IgE receptor) monoclonal (CRA2), biotinylated
- # [72-008EX](#) Anti-FcεR1α (human IgE receptor) monoclonal (CRA2), FITC conjugated



**Figure:** FACS analysis of CHO/αβγ cells (1x10<sup>5</sup>) with CRA1 and CRA2 antibodies by indirect-immunostaining, using FITC-labeled secondary antibody.

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COSMO BIO CO., LTD.

Inspiration for Life Science

TOYO 2CHOME, KOTO-KU, TOKYO, 135-0016, JAPAN

URL: <http://www.cosmobio.co.jp>

e-mail: [export@cosmobio.co.jp](mailto:export@cosmobio.co.jp)

[Outside Japan] Phone : +81-3-5632-9617

[国内連絡先] Phone : +81-3-5632-9610

FAX : +81-3-5632-9618

FAX : +81-3-5632-9619