

## Anti- FcεR1α (human IgE receptor) monoclonal antibody (CRA2)

Cat.#72-005, Size:100 ug

### Background:

FcεR1α is subunit of the high affinity receptor for IgE to which IgE directly binds. FcεR1 is a tetrameric complex consisting of one α, one β and two γ subunits. The latter two subunits are required for signal transduction activity. The FcεR1α complex plays an important role in triggering allergic responses. The CRA2 (AER24) monoclonal antibody reacts with the FcεR1α subunit on a region that overlaps the region of the IgE binding site, thus it competes with IgE for the receptor binding. Since the CRA1 (AER37) monoclonal antibody reacts with the site different from the IgE binding site on FcεR1α, it does not compete with IgE for the receptor binding. Combining the two antibodies, one can quantitatively measure the amounts of the IgE-bound FcεR1α.

### Specifications:

**Isotype:** IgG1 (κ)

**Purity:** This product is the IgG fraction purified from serum free culture medium of mouse hybridoma (CRA2) by propriety chromatography under mild conditions.

**Form:** 1mg/ml in PBS (pH 7.4), 50% glycerol, filter-sterilized, azide and carrier free

**Reactivity:** human

**Immunogen:** Recombinant extracellular portion of human FcεR1α (corresponding to amino acids Met-26-197, where signal peptide is 1-25)

**Epitope:** Amino acids 110-197 of FcεR1α (Ref 3)

**Storage:** Ship at 4°C and store at -20°C (Do not store below -20°C)

### Applications:

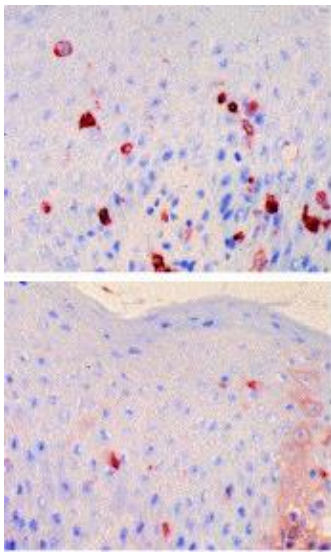
- Western blotting (~1ug/ml) (Ref 2, 3)
- Flow-Cytometry (Ref 1,2)
- Immunohistochemistry (Paraffin and Frozen) and immunocytochemistry (Ref 4)
- Inhibition of binding of IgE with FcεR1α (Ref 2)
- Titration of IgE-bound fraction of the FcεR1α using CRA1 and CRA2 antibodies (Ref 2)
- Stimulation of serotonin release from human platelets. (Ref 1)

**Data Link:** UniProtKB/Swiss-Prot [P12319](#) (FCERA\_HUMAN)

kDa 1 2 3 4 5 6



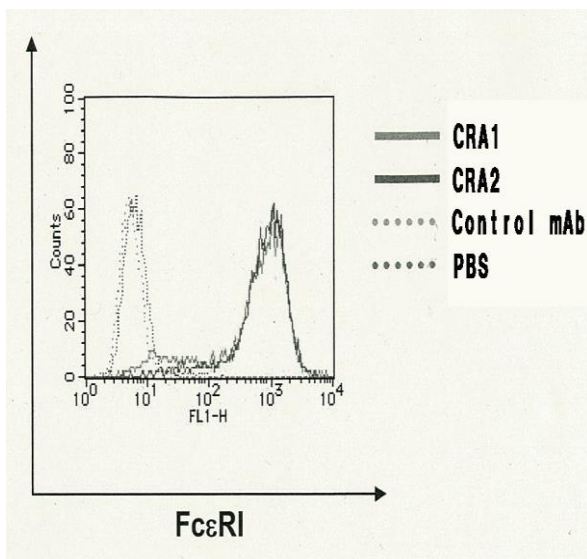
**Fig.1 Epitope mapping of clone CRA2 of anti- FcεR1α monoclonal antibody by western blotting.** Samples are maltose binding protein fused truncated Extra-cellular domain of FcεR1α expressed in E.coli.  
1.MalE-LacZ; 2. 26-197 ; 3. 68-197; 4. 26-109; 5. 26-153; 6. 68-153



**Fig.2 Immunohistochemical staining of skin sections from atopic dermatitis lesional skin with anti- FcεR1α antibodies.**

Aceton-fixed cryostat sections were incubated with either anti- FcεR1α antibody clone CRA1 (above) or CRA2 (below) and positive reactions were visualized using the LLSAB kit (Dako, Denmark).

CRA1 recognizes non-IgE binding site of FcεR1α while CRA2 recognizes IgE binding site. Thus CRA2 cannot bind to IgE-bound FcεR1α.



**Fig.3 Flow-cytometry of CHO/FcεR1α cells with CRA1 and CRA2 antibodies**

CHO cells were transfected with plasmid expressing human FcεR1α. The second antibody is FITC-conjugated anti-mouse IgG2b antibody.

**References:** This antibody has been used in the following publications.

1. Hasegawa S *et al.* "Functional Expression of the High Affinity Receptor for IgE (FcεR1) in Human Platelets and Its' Intracellular Expression in Human Megakaryocytes" *Blood* 93: 2543-2551 (1999) PMID: [10194433](#) **FC, Serotonin release (human)**
2. Takai T *et al.* "Epitope analysis and primary structures of variable regions of anti-human FcεR1 monoclonal antibodies, and expression of the chimeric antibodies fused with human constant regions" *Biosci Biotechnol Biochem* 64:1856-1867(2000) PMID: [11055388](#) **WB, FC (human)**

3. Takai T *et al* "Direct expression of the extracellular portion of human FcepsilonR1alpha chain as inclusion bodies in Escherichia coli " *Biosci Biotechnol Biochem* 65:79-85 (2001) PMID: [11272849](#)  
**WB (human)**
4. Goto T *et al*. " Enhanced expression of the high-affinity receptor for IgE (Fc(epsilon)RI) associated with decreased numbers of Langerhans cells in the lesional epidermis of atopic dermatitis" *J Dermatol Sci.* 27:156-61 (2001) PMID: [11641054](#) **IHC-F (human)**

**Related products:**

- #72-001 Anti- FcεR1α (human) monoclonal antibody (CRA1)
- # 72-003 Anti- FcεR1α (human) monoclonal antibody (CRA1), biotinylated
- #72-004 Anti- FcεR1α (human) monoclonal antibody (CRA1), FITC conjugated
- #72-007 Anti- FcεR1α (human) monoclonal antibody (CRA2), biotinylated
- #72-008 Anti- FcεR1α (human) monoclonal antibody (CRA2), FITC conjugated