

Anti-FcεR1α (human IgE receptor) antibody, mouse monoclonal (CRA2)

72-005 100 µg

Shipping and Storage: Shipped at 4°C or -20°C and stored at -20°C

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

Form: 1mg/ml in PBS- with 50% glycerol, filter-sterilized, azide and carrier free

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

Isotype: mouse IgG1 κ

Epitope: Amino acids 110-197 of Fc ε R1α (Ref 3)

Reactivity: human

Applications:

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

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.

Data Link: UniProtKB/Swiss-Prot [P12319](#) (FCERA_HUMAN)

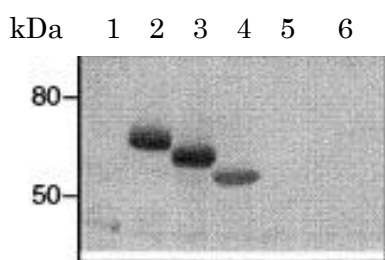


Fig.1 Epitope manpping of clone CRA2 of anti-FcεR1α monoclonal antibody by western blotting.

Samples are maltose binding protein fused truncated Extra-celluar 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

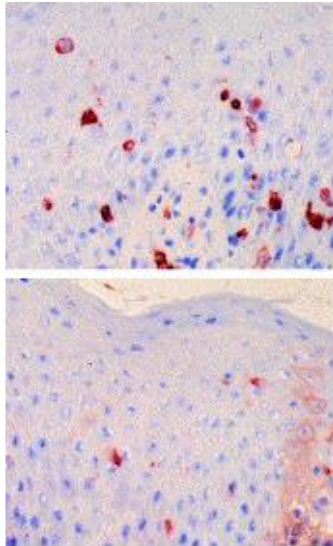


Fig.2 Immunohistochemical staining of skin sections from atopic dermatitis lesional skin with anti- FcεR1α antibodies.

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

CRA1 recognize non-IgE binding site of FcεR1α while CRA2 recognize IgE binding site. Thus CRA2 can not bind to IgE-bound FcεR1α.

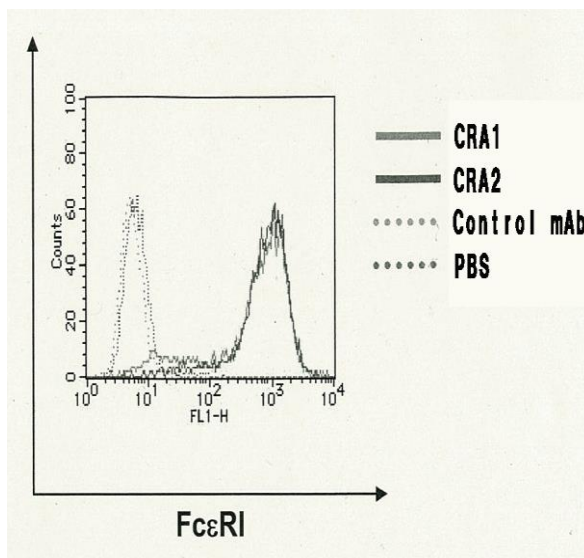


Fig.3 Flow-cytometry of CHO/FcεRIα cells with CRA1 and CRA2 antibodies

CHO cells were transfected with plasmid expressing human FcεRIα. 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 (FcεRI) 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 FcεRI 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 FcεRIα 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 product:

#[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