Anti-Fc εR1α (human IgE receptor) monoclonal antibody (CRA1), functional grade

72-001  100ug

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

Reactivity: human, house musk shrew

Immunogen: Recombinant extracellular portion of human Fc ε R1 α (corresponding to amino acids Met-26-197, where signal peptide is 1-25)

Epitope: 26-110 amino acids

Applications:
1) Western blotting (~1ug/ml)
2) Immunoprecipitation (assay dependent)
3) Flow Cytometry (FC) (1-5 ug/ml)
4) IHC-P, IHC-F (~1 ug/ml)
5) Titration of IgE-bound receptor in combination with CRA2 antibody (Ref.3)
6) Promotion of migration of basophils (Ref.5)

Isotype: IgG2b

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

Background: Fc ε R1 α is subunit of the high affinity receptor for IgE to which IgE directly binds. Fc ε R1 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 Fc ε R1 α complex plays an important role in triggering allergic responses.

The CRA1 (AER37) monoclonal antibody reacts with the Fc ε R1 α 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 ε R1 α, it competes with IgE for the receptor binding. Combining the two antibodies, one can quantitatively measure the amounts of the IgE-bound Fc ε R1 α.

This product is the IgG fraction purified from serum-free culture medium of mouse hybridoma (CRA1) by propriety chromatography under mild conditions. Properties of CRA1 and CRA2 antibodies have been extensively characterized by Prof. Chisei Ra (Ref. 3, 4).

Data Link: UniProtKB/Swiss-Prot P12319 (FCERA_HUMAN)
**Fig. 1**  Western blot analysis of Fc ε Rα expression induced by TH-2 cytokines in neutrophils from allergic asthmatics.

Total protein lysates were subjected to immunoprecipitation with IgE/anti-IgE and Western blotting with CRA1. Basophilic cell line (KU812) was used as positive control. Negative control corresponds to neutrophil protein lysate analyzed without IgE/anti-IgE immunoprecipitation.


**Fig. 2**  Immunohistochemical staining of Fc ε Rα in section from intestinal tissue.

(A) Fc ε Rα is detected on the membrane, as well as in the cytoplasm of epithelial cells in small intestine of a cancer patient.


**Fig. 3**  Immunofluorescence staining of Fc ε Rα in human intestinal tumor cell line.

Abundant surface and cytoplasmatic FcεRIα expression is observed only in subconfluent Cao2/TC cells (red). The cells were permeabilized with Triton-X-100.

As the second antibody, goat anti-mouse AlexaFluor 568 was used. Nuclei were stained with DAPI.

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

1. Suzuki K. et al. The Fc receptor (FcR) γ subunit is essential for IgE-binding activity of cell-surface expressed chimeric receptor molecules constructed from human high-affinity IgE receptor (FcεRI) α and FcRγ subunits. Mol Immunol. 1998 Apr;35(5):259-70. WB, IP (human)


Related product:
# 72-003 Anti- Fc ε R1 α (human IgE receptor) monoclonal (CRA1), biotinylated
# 72-004 Anti- Fc ε R1 α (human IgE receptor) monoclonal (CRA1), FITC conjugated
# 72-005 Anti- Fc ε R1 α (human IgE receptor) monoclonal (CRA2)
# 72-007 Anti- Fc ε R1 α (human IgE receptor) monoclonal (CRA2), biotinylated
# 72-008 Anti- Fc ε R1 α (human IgE receptor) monoclonal (CRA2), FITC conjugated