Human CD23/Fcε RII Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF123

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD23/Fcε RII in direct ELISAs and Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CD23/Fcε RII Met150-Ser321 Accession # P06734
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

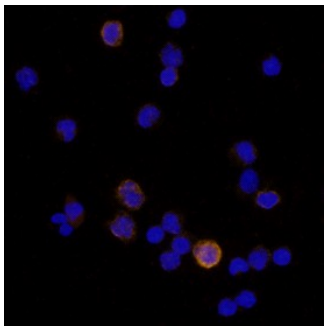
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human CD23/Fcε RII (Catalog # 123-FE)
Immunocytochemistry	5-15 µg/mL	See Below
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.5-2.5 µg/mL of this antibody will block 50% of the binding of 500 ng/mL of human IgE to immobilized Recombinant Human CD23/Fcε RII (Catalog # 123-FE) coated at 2 µg/mL (100 µL/well). At 10 µg/mL, this antibody will block >90% of the binding.	

DATA

Immunocytochemistry



CD23/Fcε RII in Human PBMCs. CD23/Fcε RII was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using 10 µg/mL Goat Anti-Human CD23/Fcε RII Antigen Affinity-purified Polyclonal Antibody (Catalog # AF123) for 3 hours at room temperature. Cells were stained with the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

Human CD23/Fcε RII Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF123

BACKGROUND

CD23 (also named B cell differentiation antigen) is a member of subgroup II of the C-type (Ca^{++}-dependent) lectin superfamily (1-5). Human CD23 is a 47 kDa, type II transmembrane glycoprotein that is expressed by a wide variety of cell types (6-10). The full-length receptor is 321 amino acids (aa) in length and contains a 274 aa extracellular region, a 26 aa transmembrane segment, and a 21 aa cytoplasmic domain. The extracellular region contains a C-type lectin domain and a connecting stalk with coiled-coil topography (3, 11). The lectin domain binds both protein and carbohydrate in an apparently Ca^{++} independent manner (11). The coiled-coil region contributes to oligomerization (11, 12). The lectin domain in human CD23 (aa 162-284) shares 64%, 62%, and 68% aa sequence identity with the lectin domains in mouse, rat, and bovine CD23, respectively. In the cytoplasmic region, two FC isoforms exist which arise from alternate start sites (6, 12). The “a” (or long) isoform begins with the sequence MEEGQYS and is constitutively expressed by B cells. It is believed to participate in IgE-mediated endocytosis (13). The “b” (or short) isoform begins with MNPPSQ and is induced on a wide variety of cell types by IL-4 (6). Fcb reportedly contributes to IgE-mediated phagocytosis (13). Fcb expressing cells include eosinophils, monocytes, visceral smooth muscle and intestinal epithelium (6, 14, 15). At least four soluble forms of CD23 are known to exist. They range in molecular weight from 25 kDa to 37 kDa, with the 25 kDa form predominating in sera (16). Soluble CD23 (sFc) is generated by metalloprotease (ADAM8; ADAM15; ADAM28) and cysteine-protease activity (16-18). Cleavage usually occurs between aa 150-160 (7, 8). It is unclear if sequential metalloprotease-cysteine protease activity is necessary for the generation of all soluble forms. Both soluble and membrane-bound CD23 show bioactivity. Ligands for CD23 include CD21, IgE, CD11b, and CD11c (19-21). CD23 binding to CD11b and Cd11c on monocytes results in oxidative product generation and proinflammatory cytokine release (21). On B cells, sCD23 induces IgE secretion by binding CD21. Conversely, secreted IgE will, in turn, bind B cell membrane CD23, rendering it unavailable for cleavage, and thus shutting down IgE production (11).

References:

1. Kijimoto-Ochiai, S. (2002) Cell. Mol. Life Sci. **59**:648.
2. Heyman, B. (2000) Annu. Rev. Immunol. **18**:709.
3. Bajorath, J. and A. Aruffo (1996) Protein Sci. **5**:240.
4. Drickamer, K. (1993) Curr. Opin. Struct. Biol. **3**:393.
5. Drickamer, K. (1999) Curr. Opin. Struct. Biol. **9**:585.
6. Yokota, A. *et al.* (1988) Cell **55**:611.
7. Ludin, C. *et al.* (1987) EMBO J. **6**:109.
8. Ikuta, K. *et al.* (1987) Proc. Natl. Acad. Sci. USA **84**:819.
9. Kikutani, H. *et al.* (1986) Cell **47**:657.
10. Letellier, M. *et al.* (1988) J. Immunol. **141**:2374.
11. Hibbert, R.G. *et al.* (2005) J. Exp. Med. **202**:751.
12. Beavuil, A.J. *et al.* (1992) Proc. Natl. Acad. Sci. USA **89**:753.
13. Yokota, A. *et al.* (1992) Proc. Natl. Acad. Sci. USA **89**:5030.
14. Belleau, J.T. *et al.* (2005) Clin. Mol. Allergy **3**:6.
15. Tu, Y. *et al.* (2005) Gastroenterology **129**:928.
16. Marolewski, A.E. *et al.* (1998) Biochem. J. **333**:573.
17. Fourie, A.M. *et al.* (2003) J. Biol. Chem. **278**:30469.
18. Karagiannis, S.N. *et al.* (2001) Immunology **103**:319.
19. Aubry, J-P. *et al.* (1992) Nature **358**:505.
20. Sarfati, M. and G. Delespeese (1988) J. Immunol. **141**:2195.
21. Lecoanet-Henchoz, S. *et al.* (1995) Immunity **3**:119.