Revision 6

Store at -20C

#11964

Human IL-4 Neutralizing (D20H1) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
N	H	Rabbit IgG	#P05112	3565

Product Usage Information

Cell Signaling Technology recommends incubation of the neutralizing antibody with the intended target for 1 hr at 37ºC before addition to the experiment at an optimal concentration determined by the user.

Reconstitution:

Add sterile 10 mM HEPES pH 7.0 to a final concentration of greater than 50 µg/ml. Solubilize for 20 min at room temperature with occasional gentle vortexing.

Application	Dilution
Neutralizing	1:1

Formulation

Lyophilized from a 0.2 µm filtered solution in 10 mM HEPES with trehalose.

Storage

Store lyophilized material at -20ºC. After reconstitution, recommended storage at 4ºC for 1 month or -20ºC for 6 months. Avoid repeated freeze/thawing.

Specificity/Sensitivity

Human IL-4 Neutralizing (D20H1) Rabbit mAb binds to human IL-4 (hIL-4) and neutralizes its effects in a TF-1 cell proliferation assay. This antibody does not cross-react with mouse IL-4, human IL-13, or mouse IL-13.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a recombinant human IL-4 protein.

Description

Neutralizing antibodies can be used to inhibit normal biological function through their binding to biological molecules. These reagents can be used to determine the effects that a particular molecule has in biological systems. Human IL-4 Neutralizing (D20H1) Rabbit mAb has been shown to neutralize the proliferation of TF-1 cells *in vitro* with an ND_{50} in the range of 3-19 ng/ml.

Background

Interleukin-4 (IL-4) is produced by T cells, NK T cells, γδ cells, and mast cells (1). Target cells include B cells, T cells, and macrophages (1). IL-4 induces differentiation of naive T cells into the Th2 phenotype. IL-4 also promotes B cell proliferation, antibody isotype switching, and expression of other Th2 cytokines including IL-5 and IL-9. IL-4-induced Th2 polarization is important in developing humoral immunity against extracellular pathogens (1) and is involved in the development of allergy and asthma (2). IL-4 binds to two distinct receptors, the type I receptor and type II receptor. The type I receptor is a heterodimer consisting of IL-4Rα chain and the common gamma chain, γc (3,4). The type II receptor, which is shared with IL-13, is a heterodimer of IL-4Rα and IL-13Rα1. Signaling initiated via type I receptor results in the activation of Jak1/Stat6, Jak3, and the PI3K/Akt pathways (3). The type II receptor activates the Jak1/Stat6 and the Tyk2/Stat3 pathways (3).

Background References

1. Corthay, A. (2006) *Scand J Immunol* 64, 93-6.
2. Nakajima, H. and Takatsu, K. (2007) *Int Arch Allergy Immunol* 142, 265-73.
3. Wills-Karp, M. and Finkelman, F.D. (2008) *Sci Signal* 1, pe55.
4. Mueller, T.D. et al. (2002) *Biochim Biophys Acta* 1592, 237-50.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

N: Neutralizing

Cross-Reactivity Key

H: Human

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