

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-27 p28/IL-30 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant mouse IL-27/IL-35 EBI3 subunit, recombinant human (rh) IL-27/IL-35 EBI3 subunit, or rhIL-27 heterodimer is observed.
Source	Monoclonal Rat IgG _{2B} Clone # 744015
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse IL-27 p28/IL-30 Phe29-Ser234 Accession # Q8K3I6
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Interleukin-27 p28, also known as IL-30, is a secreted 28 kDa protein that is considered a member of the IL-6/IL-12 interfamily cytokine family. p28/IL-30 is one of several α-chain proteins that can associate with various β-chain proteins to form heterodimeric cytokines in these families. The α-chains (e.g. IL-6, IL-11, Cardiotrophin-1, CLC/CNTF, LIF, Oncostatin M, IL-23 p19, IL-27 p28/IL-30, IL-12/IL-35 p35) have a four-helix bundle structure, while the β-chains (e.g. EBI-3, CLF-1, IL-12/IL-23 p40) resemble class 1 cytokine receptors. These cytokines utilize heteromeric cell surface receptors which contain shared as well as ligand-specific subunits. Divergent biological responses are obtained from the combinatorial association of cytokine subunits and their interaction with various combinations of receptor subunits. Complexity in this system is increased by the generation of soluble receptors and by the competition between proteins for shared subunit pairing (1-3). p28/IL-30 is expressed by macrophages and dendritic cells, and is upregulated in these cells by inflammatory stimuli (4-9). It was first described as a partner with EBI-3 in the heterodimeric cytokine IL-27 (4). IL-27 signals through a receptor complex composed of IL-27 Rα/WSX-1/TCCR and gp130 (4, 10, 11). This interaction enhances the proinflammatory activation of naïve CD4⁺ T cells, NK cells, mast cells, and monocytes and the cytotoxic activity of CD8⁺ T cells (4, 10, 12). IL-27 also exhibits anti-inflammatory activity, including the induction of IL-10 production by naïve and memory T cells, the activation of regulatory T cells (Treg), and the suppression of Th17 cytokine secretion (13, 14). Alternatively, p28/IL-30 associates with CLF-1 to create a cytokine that triggers responses through IL-27 Rα, IL-6 Rα, and gp130 (6). Like IL-27, p28-CLF-1 heterodimers costimulate IFN-γ production by NK cells, and induce IL-10 secretion by CD4⁺ T cells (6). In contrast to IL-27, however, p28-CLF-1 is reported to promote the differentiation of Th17 cells (6). A third mode of p28 action enables it to stimulate cells that express both IL-6 Rα and gp130, but lack IL-27 Rα (11). Similar to the IL-6 system, the presence of IL-6 Rα on the cell surface is not even required if p28/IL-30 associates with a soluble form of IL-6 Rα. This combination can trigger *trans* signaling through gp130, a mechanism that has been demonstrated for complexes of IL-6 with soluble IL-6 Rα (11). Overexpression of p28/IL-30 *in vivo* interferes with humoral antibody responses and protects from IL-12 induced liver inflammation (7, 15). Mature mouse p28/IL-30 shares 70% and 89% amino acid sequence identity with human and rat p28, respectively.

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