

## Technical Data Sheet

### Anti-Human IL-4

**Catalog Number:** 110701

**Size:** 500 ug

**Target Name:** IL-4, Interleukin-4, MCGF-2 (Mast cell growth factor-2), MFF (Macrophage fusion factor), TCGF-2 (T cell growth factor-2)

**Regulatory Status:** RUO

#### Product Details

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**Clone:** MP4-25D2

**Application:** FC

**Reactivity:** Human

**Format:** Purified

**Isotype:** Rat IgG1

**Antibody Type:** Monoclonal

**Formulation:** Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide

**Protein Concentration:** 0.5 mg/mL

**Storage&Handling:** The antibody solution should be stored between 2°C and 8°C

**Release Date:** Nov-25

#### Background Information

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Interleukin-4 (IL-4) is a pleiotropic, immune-modulatory cytokine produced by activated T cells, mast cells, and bone marrow stromal cells. It plays a central role in adaptive immunity, regulating T and B cell proliferation, survival, gene expression, and differentiation. IL-4 directs naive CD4<sup>+</sup> T cells (Th0) into Th2 cells and promotes immunoglobulin class switching to IgG1 and IgE, while stimulating B-cell activation, T-cell proliferation, and macrophage polarization to M2 phenotype, contributing to allergic inflammation, wound repair, and tissue remodeling. IL-4 signals through two receptor complexes: the Type I receptor (IL-4R $\alpha$ /IL-13R $\alpha$ 2) on hematopoietic cells, critical for Th2 differentiation, and the Type II receptor (IL-4R $\alpha$ /IL-13R $\alpha$ 1) on non-hematopoietic cells, mediating airway hypersensitivity and mucus production. STAT6 is the key transcription factor in IL-4 signaling. Structurally, IL-4 is a compact globular protein stabilized by three disulfide bonds, featuring a four-alpha-helix bundle and a small beta-sheet, forming a stable functional fold.