

## Anti-IL-9 Antibody (2G981)

## Product Details

Ig Type:	Mouse IgG1
Reactivity:	Rat
Conjugation:	Unconjugated
Clone:	2G981
Purification:	Protein A

## Applications

Application:	ELISA
Recommended	ELISA: 1:1000-1:2000

## Properties

Stability & Storage:	Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles. Preservative-Free.
Shipping:	Shipping with blue ice.

## Antigen Details

Immunogen:	Recombinant Protein: Rat IL-9 Protein (TMPY-00459)
Antigen Species:	Rat
Synonyms:	IL-9;interleukin 9;P40

## Research Background

Interleukin 9, also known as IL-9, is a cytokine (cell signaling molecule) belonging to the group of interleukins. IL-9 is a cytokine that acts as a regulator of a variety of hematopoietic cells. This cytokine stimulates cell proliferation and prevents apoptosis. It functions through the interleukin 9 receptor (IL-9R), which activates different signal transducer and activator (STAT) proteins and thus connects this cytokine to various biological processes. Genetic studies on a mouse model of asthma demonstrated that this cytokine is a determining factor in the pathogenesis of bronchial hyperresponsiveness. IL-9 is a key molecule that affects the differentiation of TH17 cells and Treg function. IL-9 predominantly produced by TH17 cells synergizes with TGF- $\beta$ 1 to differentiate naive CD4+ T cells into TH17 cells, while IL-9 secretion by TH17 cells is regulated by IL-23. Interestingly, IL-9 enhances the suppressive functions of FoxP3+ CD4+ Treg cells in vitro, and the absence of IL-9 signaling weakens the suppressive activity of nTregs in vivo, leading to an increase in effector cells and worsening of experimental autoimmune encephalomyelitis. The mechanism of IL-9 effects on TH17 and Tregs is through activation of STAT3 and STAT5 signaling. Our findings highlight the role of IL-9 as a regulator of pathogenic versus protective mechanisms of immune responses.

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