

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Rat                                                                                                                                                                                                                                                                         |
| <b>Specificity</b>        | Detects rat IL-9 in direct ELISAs and Western blots. In direct ELISAs, approximately 30% cross-reactivity with recombinant mouse IL-9 is observed, and approximately 10% cross-reactivity with recombinant human IL-9 is observed.                                          |
| <b>Source</b>             | Polyclonal Sheep IgG                                                                                                                                                                                                                                                        |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant rat IL-9<br>Gln19-Ala144<br>Accession # NP_001099217                                                                                                                                                                        |
| <b>Conjugate</b>          | Alexa Fluor 488<br>Excitation Wavelength: 488 nm<br>Emission Wavelength: 515-545 nm                                                                                                                                                                                         |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*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.

|                                                 |                                                                        |
|-------------------------------------------------|------------------------------------------------------------------------|
| <b>CyTOF-ready</b>                              | Optimal dilution of this antibody should be experimentally determined. |
| <b>Neutralization</b>                           | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>                             | Optimal dilution of this antibody should be experimentally determined. |
| <b>Intracellular Staining by Flow Cytometry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Rat interleukin-9 (IL-9; also T-cell growth factor P40 and MEA) is a 20-30 kDa secreted glycoprotein that belongs to the IL-7/IL-9 family of hematopoietic cytokines. It is best considered an atypical Th2-type cytokine (1-4). Rat IL-9 was initially isolated from the 4437A rat thymoma cell line (5). The IL-9 precursor is 144 amino acids (aa) in length and contains an 18 aa signal sequence plus a 126 aa mature segment (5). An extended, 219 aa alternate precursor form is reported in GenBank (Accession # XP\_001068265). It shows a 113 aa substitution for the first 38 aa of the standard form. Its significance is unknown. Mature rat IL-9 is 75%, 74% and 58% aa identical to cotton rat, mouse and human IL-9, respectively (6-9). There is variability in cross-species reactivity. Canine and mouse IL-9 are purportedly active on human cells (9-11), while human IL-9 is inactive on mouse cells (9). Cells reported to express IL-9 include activated CD4+ T cells and eosinophils (12, 13). The receptor for rat IL-9 is composed of the 62 kDa rat IL-9Rα chain and the 64 kDa rat common cytokine receptor γ-chain (5, 14, 15). IL-9 is suggested to play a significant, but likely supporting role in allergy and asthma. Its synthesis is induced upon exposure to allergen (10, 13). Following release, it is known to upregulate IgE production by IL-4-stimulated B cells (16). It also stimulates mucin secretion and IL-13 production through a direct action on respiratory epithelium (10, 17). In the bone marrow, it promotes eosinophilia, likely through IL-5 induction (18, 19). And once produced, eosinophils are chemoattracted to the bronchi through the IL-9-induced secretion of eotaxin-1 by airway smooth muscle cells (20).

## PRODUCT SPECIFIC NOTICES

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