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<b>Products</b>	Human IL-9, research grade. Recombinant human interleukin 9.								
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Content in µg	Order no.								
2	130-093-945								
10	130-093-946								
100	130-103-438								
<b>Biological activity</b>	The ED <sub>50</sub> is ≤0.7 ng/mL corresponding to an activity of ≥1.4×10 <sup>6</sup> U/mg. <b>Note:</b> The ED <sub>50</sub> is determined by dose dependent proliferation of human MO7e cells.								
<b>Primary structure</b>	Single, non-glycosylated polypeptide chain including N-terminal methionine (127 amino acid residues).								
<b>Molecular mass</b>	14.3 kDa.								
<b>Source</b>	Produced in <i>E. coli</i> .								
<b>Product format</b>	Lyophilized from a filtered (0.2 µm) buffer solution.								
<b>Stabilizer</b>	None.								
<b>Purity</b>	>97% as determined by SDS-PAGE analysis.								
<b>Endotoxin level</b>	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.								
<b>Storage</b>	Lyophilized Human IL-9, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.								
<b>Reconstitution</b>	It is recommended to reconstitute lyophilized Human IL-9, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.								

#### 1.1 Background information

Interleukin 9 (IL-9) belongs to the common cytokine receptor γ-chain-dependent family, together with IL-2, IL-4, IL-7, IL-15, and IL-21. It is secreted by stimulated T helper cells, and specifically by a subpopulation classified as TH9 cells. The IL-9

receptor forms a complex that internalizes upon IL-9 binding, and it is expressed both as a membrane-bound and a soluble form. In combination with other immune-stimulatory cytokines, IL-9 acts as a mitogen of lymphoid cells and other immune cells, such as erythroid precursors, mast cells, TH2 cells and eosinophils. Moreover, IL-9 regulates hematopoietic cell differentiation, increases immunoglobulin production, and induces the growth of lymphoma and other T cell-mediated tumors. Mouse and human IL-9 share only a partial homology. Whereas mouse IL-9 is effective on human cells, human IL-9 is inactive in murine cell culture.

#### 1.2 Applications

Human IL-9 can be used for a variety of applications, including:

- T cell stimulation
- Mast cell activation

Optimal concentration for a specific application should be determined by a dose-response experiment.

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