

# Product Information

## RANTES Mouse, Recombinant Expressed in *Escherichia coli*

Product Number **R 2274**

### Product Description

RANTES is a member of the  $\beta$  (C-C) chemokine subfamily, which also includes the human proteins MCP-1, MCP-2, MIP-1 $\alpha$ , MIP1 $\beta$ , I-309, and their murine counterparts. Mouse RANTES cDNA encodes a 91 amino acid residue precursor polypeptide with a 23 amino acid residue hydrophobic signal peptide that is cleaved to produce the 68 amino acid residue mature protein (approximately 7.9 kDa).<sup>1</sup> Human and mouse RANTES share approximately 85% amino acid identity.<sup>1</sup>

RANTES (Regulated upon Activation, Normal T cell Expressed and presumably Secreted) was first discovered by subtractive hybridization as a transcript expressed in T cells but not B cells. Eosinophilic chemotactic substances released by thrombin-stimulated human platelets are identical to RANTES. In addition to T cells and platelets, RANTES is expressed by renal tubular epithelium,<sup>2</sup> synovial fibroblasts, and selected tumor cells (rhabdomyosarcoma cells and MG63 osteosarcoma cells). The mouse RANTES gene maps to chromosome 11.<sup>3</sup>

The chemokine RANTES is a chemoattractant for monocytes,<sup>4</sup> T lymphocytes,<sup>5</sup> and NK (natural killer) cells.<sup>6</sup> RANTES selectively attracts T cells of the CD4 $^+$ /CD45RO $^+$  phenotype *in vitro*.<sup>4</sup> RANTES can also chemoattract and degranulate eosinophils,<sup>7</sup> as well as chemoattract and induce histamine release from basophils.<sup>8</sup> RANTES has been shown to inhibit HIV-1 entry via human CCR-5.<sup>9</sup> RANTES and MIP-1 $\alpha$  bind to chemokine receptors (CCR1, CCR4, and CCR5) and induce activation of STAT signaling pathways.<sup>10</sup> Because of its *in vitro* biological activities, RANTES may play an important role in mediating immune and inflammatory responses.

### Reagent

Recombinant Mouse Rantes is supplied as approximately 25  $\mu$ g of protein lyophilized from a 0.2  $\mu$ m filtered solution in 30% acetonitrile and 0.1% trifluoroacetic acid (TFA) containing 1.25 mg bovine serum albumin.

### Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 25  $\mu$ g/ml.

### Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing.

### Product Profile

Recombinant Mouse Rantes is measured by its ability to chemoattract two day cultured human monocytes.<sup>1</sup> The ED<sub>50</sub> for this effect is generally 0.03 to 0.1  $\mu$ g/ml. The ED<sub>50</sub> is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: >95 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin: < 0.1 ng/ $\mu$ g determined by the LAL (Limulus amebocyte lysate) method.

### References

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