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## Recombinant Mouse Interleukin-1 alpha (IL-1 $\alpha$ )

(Cat. No.: C041)

### Background:

IL-1 $\alpha$  is distinct from the other agonist member of the IL-1 family, IL-1 $\beta$ . Although IL-1 $\alpha$  triggers the same IL-1 receptor and although many of the biological effects of IL-1 $\alpha$  are similar to those of IL-1 $\beta$ , in humans IL-1 $\alpha$  is predominantly an intracellular molecule. In fact, there is evidence that IL-1 $\alpha$  has both intracellular functions as a precursor molecule due to a nuclear localization sequence. IL-1 $\alpha$  as an unprocessed precursor is biologically as active as the processed form. IL-1 $\alpha$  is also found constitutively in epithelial cells, whereas constitutive expression of IL-1 $\beta$  is rare. In many ways, IL-1 $\alpha$  appears to be closer to the fibroblast growth factor family than the secreted IL-1 $\beta$  form. Therapeutic strategies for blocking IL-1 $\beta$  predominate over those for blocking IL-1 $\alpha$ . Many humans have circulating neutralizing antibodies to IL-1 $\alpha$  but not IL-1 $\beta$ .

### Description:

Recombinant Mouse IL-1 alpha produced in *E. coli* is a non-glycosylated polypeptide chain containing 156 amino acids and having a molecular mass of 18000 Dalton.

### Quality Control:

**Biological activity:** The ED50 as determined by the dose-dependant stimulation of mouse D10S cells was found to be less than 0.01 ng/ml, corresponding to a Specific Activity of  $1.0 \times 10^8$  IU/mg.

**Purity:** Greater than 98% as determined by

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel..

**Amino-Acid Sequence:** The sequence of the first five N-terminal amino acids was determined and was found to be Ser-Ala-Pro-Tyr-Thr.

**Endotoxin:** Less than 0.1ng/ $\mu$ g (1IEU/ $\mu$ g) of IL-1 $\alpha$ .

**Formulation:** Mouse IL-1 $\alpha$  was lyophilized after extensive dialysis against PBS.

**Storage:** Lyophilized rmIL-1 $\alpha$  although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rmIL-1 $\alpha$  should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

**Please avoid freeze-thaw cycles.**

**Reconstitution:** It is recommended to reconstitute the lyophilized rmIL-1 $\alpha$  in sterile 18M $\Omega$ -cm H<sub>2</sub>O not less than 100 $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

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