

## MASTOPARAN 7

Product Number **M212**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Cas #: 145854-59-7

Synonyms: Ile-Asn-Leu-Lys-Ala-Leu-Ala-Ala-Leu-Ala-Lys-Ala-Leu-Leu-NH<sub>2</sub>; Mas 7

### Product Description

Molecular Formula: C<sub>67</sub> H<sub>124</sub> N<sub>18</sub> O<sub>15</sub>

Molecular Weight: 1422 (peptide free base)

Appearance: Lyophilized hygroscopic powder

Peptide content (lot specific): approx. 75%-80%

Salt form (lot specific): Trifluoroacetate salt (TFA)

The quantity appearing on the container label reflects net peptide content. Thus a 1 mg unit contains 1 mg of bioactive peptide. Total mass is due to the presence of TFA.

Mastoparan 7 is an inflammatory component of yellow jacket venom, a more potent analog of Mastoparan (RBI Cat. No. M-138). Mastoparan 7 mimics the histamine releasing action of substance P on rat peritoneal mast cells via activation of G<sub>o</sub> and G<sub>i</sub> GTPase.<sup>1</sup> Venom toxicity requires the synergistic action of two venom components, a mast cell degranulating peptide mastoparan and phospholipase A1. Both components stimulate prostaglandin E<sub>2</sub> release from murine peritoneal cells and macrophages. Mastoparan showed a weak activity to enhance IgE and IgG1 responses.<sup>2</sup> Mastoparan and mastoparan-7 activate a pertussin toxin-sensitive G protein endothelin-1 (ET-1), which elicits cerebrovasodilation that is blunted following fluid percussion brain injury in an age-dependent manner.<sup>3</sup>

### Preparation Instructions

Warm peptide to room temperature in a desiccator prior to opening the container. Dissolve peptide in distilled water. Peptides containing Asn require special care to avoid oxidation; oxygen-free water should be used. Buffer or saline should be added only after the peptide is fully in solution. If necessary, a few drops of dilute acetic acid or ammonium hydroxide can be added to help solubilize the peptide. If solubilization is still not achieved, the solution may be sonicated briefly.

### Storage/Stability

Store desiccated at  $-20\text{ }^{\circ}\text{C}$ . These peptides have a limited lifetime in a solution and a long term storage is not recommended. Solution should be stored in the pH range of 5.0 to 7.0, in working aliquots at  $-20\text{ }^{\circ}\text{C}$ .

### References

1. Klinker, J. F., et al., Activation of GTP formation and high-affinity GTP hydrolysis by mastoparan in various cell membranes. G-protein activation via nucleoside diphosphate kinase, a possible general mechanism of mastoparan action. *Biochem. Pharmacol.*, **51**, 217-223 (1996).
2. King, T. P., et al., Inflammatory Role of Two Venom Components of Yellow Jackets (*Vespula vulgaris*): A Mast Cell Degranulating Peptide Mastoparan and Phospholipase A1. *Int. Arch. Allergy Immunol.*, **131**, 25-32 (2003).
3. Armstead, W. M., ET-1 contributes to age-dependent G protein impairment after brain injury., *J. Neurotrauma*, **20**, 105-110 (2003).

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