

# PRODUCT INFORMATION



## β-Endorphin (rat) (trifluoroacetate salt)

Item No. 24153

**Formal Name:** L-tyrosylglycylglycyl-L-phenylalanyl-L-methionyl-L-threonyl-L-seryl-L-α-glutamyl-L-lysyl-L-seryl-L-glutamyl-L-threonyl-L-prolyl-L-leucyl-L-valyl-L-threonyl-L-leucyl-L-phenylalanyl-L-lysyl-L-asparaginyll-L-alanyl-L-isooleucyl-L-isooleucyl-L-lysyl-L-asparaginyll-L-valyl-L-histidyl-L-lysyl-L-lysylglycyl-L-glutamine, trifluoroacetate salt

**MF:** C<sub>157</sub>H<sub>254</sub>N<sub>42</sub>O<sub>44</sub>S • XCF<sub>3</sub>COOH

**FW:** 3,466.0

**Purity:** ≥95%

**Supplied as:** A lyophilized powder

**Storage:** -20°C

**Stability:** ≥4 years

H—Tyr—Gly—Gly—Phe—Met—Thr—Ser—Glu—Lys—Ser—Gln—  
Thr—Pro—Leu—Val—Thr—Leu—Phe—Lys—Asn—Ala—  
Ile—Ile—Lys—Asn—Val—His—Lys—Lys—Gly—Gln—OH  
• XCF<sub>3</sub>COOH

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

β-Endorphin (rat) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the β-endorphin (rat) (trifluoroacetate salt) in water. The solubility of β-endorphin (rat) (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

β-Endorphin is an endogenous opioid neuropeptide with diverse biological activities.<sup>1</sup> It is produced via pro-melanocortin cleavage in the pituitary gland, hypothalamus, and in lymphocytes, then migrates to its sites of action which include plasma, gut, skin, placenta, cerebrospinal fluid, and cardiac tissues. β-Endorphin induces concentration-dependent decreases in electrically stimulated contraction of the mouse vas deferens that can be reversed by the μ-opioid antagonist CTP and δ-opioid antagonist ICI 174,864.<sup>2</sup> *In vivo*, β-Endorphin (5 μg, i.c.v.) slows gastrointestinal transit in mice. β-Endorphin (0.5 or 5 μg, i.c.v.) stimulates food intake in rats for 4 to 6 hours, however, this effect is not prolonged with continuous infusion.<sup>3</sup> It antagonizes the appetite-suppressive effects of α-melanocyte-stimulating hormone (α-MSH) for the first three days post administration. β-Endorphin also reduces paralytic demyelination induced by the murine coronavirus MHV-JHM in immunocompetent, but not irradiated or immune-incompetent, mice and rats.<sup>4</sup>

### References

1. Herath, H.M., Cabot, P.J., Shaw, P.N., *et al.* Study of beta endorphin metabolism in inflamed tissue, serum and trypsin solution by liquid chromatography-tandem mass spectrometric analysis. *Anal. Bioanal. Chem.* **402(6)**, 2089-2100 (2012).
2. Shook, J.E., Kazmierski, W., Wire, W.S., *et al.* Opioid receptor selectivity of beta-endorphin in vitro and in vivo: Mu, delta and epsilon receptors. *J. Pharmacol. Exp. Ther.* **246(3)**, 1018-1025 (1988).
3. Dutia, R., Meece, K., Dighe, S., *et al.* β-Endorphin antagonizes the effects of α-MSH on food intake and body weight. *Endocrinology* **153(9)**, 4246-4255 (2012).
4. Gilmore, W. and Moradzadeh, D.S. Beta-endorphin protects mice from neurological disease induced by the murine coronavirus MHV-JHM. *J. Neuroimmunol.* **48(1)**, 81-90 (1993).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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