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## Produktinformation



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# PRODUCT INFORMATION



## Urocortin III (mouse) (trifluoroacetate salt)

Item No. 24750

<b>MF:</b>	$C_{186}H_{311}N_{51}O_{53}S_2 \cdot XCF_3COOH$	H-Phe-Thr-Leu-Ser-Leu-Asp-Val-Pro-Thr-Asn-
<b>FW:</b>	4,173.9	Ile-Met-Asn-Ile-Leu-Phe-Asn-Ile-Asp-Lys-
<b>Purity:</b>	≥95%	Ala-Lys-Asn-Leu-Arg-Ala-Lys-Ala-Ala-Ala-
<b>Supplied as:</b>	A lyophilized powder	Asn-Ala-Gln-Leu-Met-Ala-Gln-Ile-OH
<b>Storage:</b>	-20°C	• XCF <sub>3</sub> COOH
<b>Stability:</b>	≥4 years	

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

### Laboratory Procedures

Urocortin III (mouse) (trifluoroacetate salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the urocortin III (mouse) (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. Urocortin III (mouse) (trifluoroacetate salt) is soluble in the organic solvent formic acid at a concentration of approximately 1 mg/ml.

### Description

Urocortin III is a neuropeptide hormone and member of the corticotropin-releasing factor (CRF) family which includes mammalian CRF, urocortin (Item No. 24745), urocortin II (Item No. 24746), frog sauvagine, and piscine urotensin I.<sup>1</sup> Mouse urocortin III shares 90, 40, 37, and 18% identity to human urocortin III (Item No. 24748), mouse urocortin II (Item No. 24747), human urocortin (Item No. 24744), and mouse urocortin, respectively. It is expressed in the hypothalamus, brainstem, lateral septum (LS)/bed nucleus of stria terminalis (BnST) in the CNS and the small intestine, pancreatic  $\beta$ -cells, and skin in the periphery in mice. Urocortin III selectively binds to type 2 CRF receptors ( $K_{iS} = 5, 1.8, \text{ and } >100 \text{ nM}$  for rat CRF<sub>2 $\alpha$</sub> , rat CRF<sub>2 $\beta$</sub> , and human CRF<sub>1</sub>, respectively). It stimulates cAMP production in CHO cells expressing rat CRF<sub>2 $\alpha$</sub>  and mouse CRF<sub>2 $\beta$</sub>  ( $EC_{50S} = 0.073 \text{ and } 0.08 \text{ nM}$ , respectively) as well as in cultured anterior pituitary cells expressing endogenous CRF<sub>2 $\beta$</sub> . *In vivo*, urocortin III (2  $\mu\text{g}$ , i.p.) accelerates metamorphosis of *S. hammondi* tadpoles.<sup>2</sup> Urocortin III (20  $\mu\text{g}$ , i.c.v.) increases exploration in the open field test and decreases latency to enter the lit compartment in the dark-light emergence test in mice, indicating anxiolytic-like activity, and mRNA expression is increased in mouse brain in response to restraint.<sup>3</sup> It is co-released with insulin to potentiate glucose-stimulated somatostatin release *in vitro* and *in vivo* in wild-type mice, however, it is depleted from  $\beta$ -cells in mouse and macaque models of type 2 diabetes, suggesting a role in glycemic control.<sup>4</sup>

### References

1. Lewis, K., Li, C., Perrin, M.H., *et al.* Identification of urocortin III, an additional member of the corticotropin-releasing factor (CRF) family with high affinity for the CRF<sub>2</sub> receptor. *Proc. Natl. Acad. Sci. U.S.A.* **98(13)**, 7570-7575 (2001).
2. Okada, R., Miller, M.F., Yamamoto, K., *et al.* Involvement of the corticotropin-releasing factor (CRF) type 2 receptor in CRF-induced thyrotropin release by the amphibian pituitary gland. *Gen. Comp. Endocrinol.* **150(3)**, 437-444 (2007).
3. Sadhu, C., Dick, K., Tino, W.T., *et al.* Selective role of PI3K $\delta$  in neutrophil inflammatory responses. *Biochem. Biophys. Res. Commun.* **308(4)**, 764-769 (2003).
4. van der Meulen, T., Donaldson, C.J., Cáceres, E., *et al.* Urocortin3 mediates somatostatin-dependent negative feedback control of insulin secretion. *Nat. Med.* **21(7)**, 769-776 (2015).

#### 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.

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