

# PRODUCT INFORMATION



## Neuropeptide S (human) (acetate)

Item No. 24550

<b>Formal Name:</b>	L-seryl-L-phenylalanyl-L-arginyl-L-asparaginylglycyl-L-valylglycyl-L-threonylglycyl-L-methionyl-L-lysyl-L-lysyl-L-threonyl-L-seryl-L-phenylalanyl-L-glutaminy-L-arginyl-L-alanyl-L-lysyl-L-serine, acetate	H—Ser—Phe—Arg—Asn—Gly—Val—Gly—Thr—Gly—Met— Lys—Lys—Thr—Ser—Phe—Gln—Arg—Ala—Lys—Ser—OH
<b>Synonym:</b>	NPS	
<b>MF:</b>	$C_{93}H_{155}N_{31}O_{28}S \cdot XC_2H_4O_2$	• $XCH_3CO_2H$
<b>FW:</b>	2,187.5	
<b>Purity:</b>	≥95%	
<b>Supplied as:</b>	A lyophilized powder	
<b>Storage:</b>	-20°C	
<b>Stability:</b>	≥4 years	

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

### Laboratory Procedures

Neuropeptide S (human) (acetate) is supplied as a lyophilized powder. A stock solution may be made by dissolving the neuropeptide S (human) (acetate) in water. The solubility of neuropeptide S (human) (acetate) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Neuropeptide S is a neuropeptide expressed in the brain, primarily in glutamatergic neurons near the locus coeruleus and in the trigeminal sensory nucleus, as well as in neurons of the lateral parabrachial nucleus in rat brain.<sup>1</sup> It is an agonist of the neuropeptide S receptor (NPSR) with an  $EC_{50}$  value of 9.4 nM for the human peptide to induce intracellular calcium mobilization in HEK293 cells expressing the human receptor.<sup>2</sup> Neuropeptide S (0.1-1 nmol), administered either intracerebroventricularly or into the paraventricular nucleus (PVN) of the hypothalamus, increases plasma adrenocorticotrophic hormone (ACTH) and corticosterone levels in rats.<sup>3</sup> Administration into the PVN also decreases food intake in the hour following doses of 0.1, 0.3, and 1 nmol. Neuropeptide S decreases anxiety-like and fear behaviors in rodents, decreasing defensive burying in rats, increasing the time mice spend in the open arms of the elevated plus maze, and enhancing contextual fear extinction in mice.<sup>4,5</sup>

### References

1. Xu, Y.-L., Gall, C.M., Jackson, V.R., *et al.* Distribution of neuropeptide S receptor mRNA and neurochemical characteristics of neuropeptide S-expressing neurons in the rat brain. *J. Comp. Neurol.* **500(1)**, 84-102 (2007).
2. Xu, Y.-L., Reinscheid, R.K., Huitron-Resendiz, S., *et al.* Neuropeptide S: A neuropeptide promoting arousal and anxiolytic-like effects. *Neuron* **43(4)**, 487-497 (2004).
3. Smith, K.L., Patterson, M.L., Dhillo, W.S., *et al.* Neuropeptide S stimulates the hypothalamo-pituitary-adrenal axis and inhibits food intake. *Endocrinology* **147(7)**, 3510-3518 (2006).
4. Vitale, G., Filaferro, M., Ruggieri, V., *et al.* Anxiolytic-like effect of neuropeptide S in the rat defensive burying. *Peptides* **29(12)**, 2286-2291 (2008).
5. Jüngling, K., Seidenbecher, T., Sosulina, L., *et al.* Neuropeptide S-mediated control of fear expression and extinction: Role of intercalated GABAergic neurons in the amygdala. *Neuron* **59(2)**, 298-310 (2008).

#### 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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