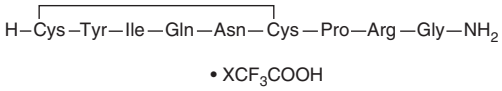
PRODUCT INFORMATION

Arginine Vasotocin (trifluoroacetate salt)

Item No. 24768

Formal Name: 8-L-arginine-oxytocin , trifluoroacetate salt
Synonyms: [Arg^8]-Vasotocin, AVT
MF: $C_{43}H_{67}N_{15}O_{12}S_2 \bullet XCF_3COOH$
FW: 1,050.2
Purity: ≥95%
Supplied as: A lyophilized powder
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

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

Description

Arginine vasotocin is a nonapeptide hormone agonist of the AVT receptor (EC_{50} = 13 nM for eliciting membrane currents in *X. laevis* oocytes).[1] Arginine vasotocin is synthesized in the pineal recess and subcommissural organ by ependymal cells and released into the cerebrospinal fluid.[2] It inhibits the induction of sleep and release of hypothalamic releasing and inhibiting hormones. Arginine vasotocin stimulates glycogen phosphorylase α activity and incorporation of phosphate into phosphatidylinositol in rat hepatocytes (EC_{50}s = 0.5 nM and 6.3 nM, respectively).[3] Following a two-minute pulse of arginine vasotocin (1 µM) to neurons isolated from rat suprachiasmatic nuclei, 40.6% of neurons show an increase in firing rate with 11% of the activated neurons responding only to arginine vasotocin and not argipressin (Item No. 24154).[4] Arginine vasotocin (0.1 µg, i.c.v.) activates sexual behavior in male newts and increases the number of clasps per male from saline control levels of 0.6 to 2.9 in an eight-hour period.[5] In rainbow trout, arginine vasotocin (0.1 ng/g, i.c.v.) reduces food intake by over 95% and, after eight hours, increases cortisol and glucose levels by 89% and 27%, respectively.[6]

References

1. Mahlmann, S., Meyerhof, W., Hausmann, H., *et al.* Structure, function, and phylogeny of [Arg^8]vasotocin receptors from teleost fish and toad. *Proc. Natl. Acad. Sci. U.S.A.* **91(4)**, 1342-1345 (1994).
2. Pavel, S. Arginine vasotocin as a pineal hormone. *J. Neural Transm. Suppl.* **13**, 135-155 (1978).
3. Kirk, C.J., Rodrigues, L.M., and Hems, D.A. The influence of vasopressin and related peptides on glycogen phosphorylase activity and phosphatidylinositol metabolism in hepatocytes. *Biochem J.* **178(2)**, 493-496 (1979).
4. Mihai, R., Coculescu, M., Wakerley, J.B., *et al.* The effects of [Arg^8]vasopressin and [Arg^8]vasotocin on the firing rate of suprachiasmatic neurons *in vitro*. *Neuroscience* **62(3)**, 783-792 (1994).
5. Moore, F.L. and Miller, L.J. Arginine vasotocin induces sexual behavior of newts by acting on cells in the brain. *Peptides* **4(1)**, 97-102 (1983).
6. Gesto, M., Soengas, J.L., Rodríguez-Illamola, A., *et al.* Arginine vasotocin treatment induces a stress response and exerts a potent anorexigenic effect in rainbow trout, *Oncorhynchus mykiss*. *J. Neuroendocrinol.* **26(2)**, 89-99 (2014).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM