PRODUCT INFORMATION

M40 (trifluoroacetate salt)

Item No. 39726

Formal Name:	glycyl-L-tryptophyl-L-threonyl-L-leucyl-L-asparaginyl-L-seryl-L-alanylglycyl-L-tyrosyl-L-leucyl-L-leucylglycyl-L-prolyl-L-prolyl-L-prolyl-L-alanyl-L-leucyl-L-alanyl-L-leucyl-L-alaninamide, trifluoroacetate salt
Synonym:	Galanin-(1-12)-Pro_3-$(Ala\text{-}Leu)_2$-Ala amide
Peptide Sequence:	GYTLNSAGYLLGPPPALALA-NH_2
MF:	$C_{94}H_{145}N_{23}O_{24} \bullet XCF_3COOH$
FW:	1,981.3
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years

H–Gly–Trp–Thr–Leu–Asn–Ser–Ala–Gly–Tyr–Leu–
Leu–Gly–Pro–Pro–Pro–Ala–Leu–Ala–Leu–Ala–NH_2
• XCF_3COOH

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

Laboratory Procedures

M40 (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the M40 (trifluoroacetate salt) in water. We do not recommend storing the aqueous solution for more than one day.

Description

M40 is a chimeric galanin-derived peptide and galanin-1 (GAL_1) receptor antagonist and GAL_2 receptor agonist (K_is = 2.4 and 4.07 nM, respectively).[1,2] It is selective for the GAL_1 and GAL_2 receptors over the GAL_3 receptor (K_i = 288 nM).[1] M40 induces inositol phosphate accumulation in CHO cells expressing the human GAL_2 receptor (EC_{50} = 16.2 nM) and inhibits forskolin-induced cAMP accumulation in RIN-m5F pancreatic β-cells when used at concentrations of 10 or 100 nM.[1,2] *In vivo*, M40 (9.36 nmol/animal, i.c.v.) reverses galanin-induced inhibition of scopolamine-induced hippocampal acetylcholine (ACh) release in conscious rats.[2] M40 reduces galanin-induced increases in food intake in rats. It improves cardiac function and decreases cardiac fibrosis in a rat model of heart failure induced by sustained coronary artery ligation when administered at a dose of 30 nmol/kg.[3] M40 (20 µg/animal) increases the intromission frequency and ejaculation latency in sexually sluggish male mice.[4]

References

1. Borowsky, B., Walker, M.W., Huang, L.Y., *et al.* Cloning and characterization of the human galanin GALR2 receptor. *Peptides* **19(10),** 1771-1781 (1998).
2. Bartfai, T., Langel, Ü., Bedecs, K., *et al.* Galanin-receptor ligand M40 peptide distinguishes between putative galanin-receptor subtypes. *Proc. Natl. Acad. Sci. USA* **90(23),** 11287-11291 (1993).
3. Chen, A., Li, M., Song, L., *et al.* Effects of the galanin receptor antagonist M40 on cardiac function and remodeling in rats with heart failure. *Cardiovasc. Ther.* **33(5),** 288-293 (2015).
4. Benelli, A., Bertolini, A., Zoli, M., *et al.* Pharmacological manipulation of brain galaninergic system and sexual behavior in male mice. *Psychopharmacology (Berl)* **160(3),** 325-330 (2002).

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