Phe-Met-Arg-Phe amide trifluoroacetate

Cat. No.: HY-P0249A

CAS No.: 159237-99-7

Molecular Formula: $C_{33}H_{44}F_6N_8O_8S$

Molecular Weight: 826.81

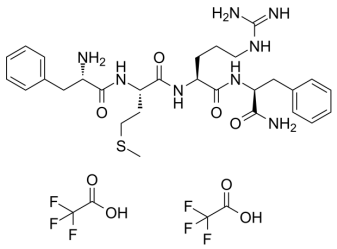
Sequence: Phe-Met-Arg-Phe-NH2

Sequence Shortening: FMRF-NH2

Target: Potassium Channel

Pathway: Membrane Transporter/Ion Channel

Storage: Sealed storage, away from moisture
Powder -80°C 2 years
-20°C 1 year
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (120.95 mM; Need ultrasonic)
H_2O : 20 mg/mL (24.19 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.2095 mL	6.0473 mL	12.0947 mL
	5 mM	0.2419 mL	1.2095 mL	2.4189 mL
	10 mM	0.1209 mL	0.6047 mL	1.2095 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (3.02 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (3.02 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (3.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Phe-Met-Arg-Phe amide trifluoroacetate is an activator of K^+ current, with ED_{50} of 23 nM in the peptidergic caudodorsal neurons.

IC_{50} & Target

ED50: 23 nM (K^+ current)[1]

In Vitro	In the molluscan central nervous system, Phe-Met-Arg-Phe amide (FMRFa) acts on K^+ channels in sensory, motor-, and neuroendocrine neurones. Phe-Met-Arg-Phe amide activates a novel K^+ current that is characterized by a combined voltage- and receptor-dependent gating mechanism, with both factors being necessary for opening of the channels[1]. Phe-Met-Arg-Phe amide (1 μM) significantly inhibits glucose stimulated (300 mg/dL) insulin release ($p<0.005$) and somatostatin release ($p<0.01$) from the isolated perfused pancreas. Phe-Met-Arg-Phe amide (FMRF-NH2) (1 and 10 μM) is without effect on glucagon secretion, either in low glucose (50 mg/dL), high glucose (300 mg/dL), or during arginine stimulation (5 mM)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Phe-Met-Arg-Phe amide (FMRFamide) stimulates growth hormone secretion in conscious OVX rats. The presence of Phe-Met-Arg-Phe amide-like immunoreactivity in neuronal elements in the hypothalamus suggested a role for this in the hypothalamic control of the anterior pituitary function. The injection of 200 ng (313.8 picomoles) of FMRFamide (in 2 uL) produces a significantly increased plasma GH 15 min after injection. The GH-increasing effect of 400-800 ng (627-1255 picomoles) of FMRFamide is already developed after 5 min and lasted up to 30 min[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Kits KS, et al. Phe-Met-Arg-Phe-amide activates a novel voltage-dependent K+ current through a lipoxygenasepathway in molluscan neurones. J Gen Physiol. 1997 Nov;110(5):611-28.

[2]. Sorenson RL, et al. Phe-met-arg-phe-amide (FMRF-NH2) inhibits insulin and somatostatin secretion and anti-FMRF-NH2 sera detects pancreatic polypeptide cells in the rat islet. Peptides. 1984 Jul-Aug;5(4):777-82.

[3]. Ottlecz A, et al. Phe-Met-Arg-Phe-amide (FMRFamide) stimulated growth hormone secretion in conscious OVX rats. Neuropeptides. 1987 Feb-Mar;9(2):161-7.

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