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-NH$_2$  
**Sequence Shortening:** FMRF-NH$_2$  
**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$_2$O: 20 mg/mL (24.19 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Mass (mL)</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing Stock Solutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mM</td>
<td></td>
<td>1.2095 mL</td>
<td>6.0473 mL</td>
<td>12.0947 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.2419 mL</td>
<td>1.2095 mL</td>
<td>2.4189 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.1209 mL</td>
<td>0.6047 mL</td>
<td>1.2095 mL</td>
</tr>
</tbody>
</table>

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**  
ED$_{50}$: 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].

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REFERENCES


Caution: Product has not been fully validated for medical applications. For research use only.
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