# PSEM 89S TFA

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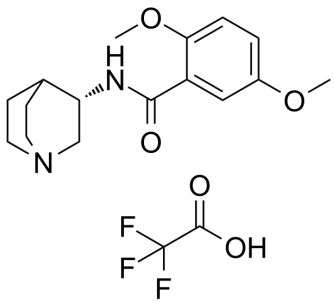
| **Cat. No.:** | HY-112217A |
| **CAS No.:** | 1336913-03-1 |
| **Molecular Formula:** | $C_{18}H_{23}F_3N_2O_5$ |
| **Molecular Weight:** | 404.38 |
| **Target:** | nAChR |
| **Pathway:** | Membrane Transporter/Ion Channel; Neuronal Signaling |
| **Storage:** | -20°C, sealed storage, away from moisture<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |



## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : ≥ 100 mg/mL (247.29 mM)

DMSO : 100 mg/mL (247.29 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.4729 mL | 12.3646 mL | 24.7292 mL |
| 5 mM | 0.4946 mL | 2.4729 mL | 4.9458 mL |
| 10 mM | 0.2473 mL | 1.2365 mL | 2.4729 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 (6.18 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.18 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.18 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

PSEM 89S TFA is a selective and brain penetrant agonists for the resulting ion channels. PSEM 89S TFA is orthogonally selective for Q79G and L141F, respectively[1].

**In Vitro**

PSEM 89S (10 or 30μM) activates layer 2/3 cortical neurons expressing (Pharmacologically Selective Actuator Module) PSAM $^{L141F,Y115F}$-5HT3 high conductance (HC)[1].

PSEM 89S (10 μM) reversibly silenced transfected neurons by reducing cellular input resistance[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

PSEM 89S strongly reduces photostimulation-evoked feeding in mice expressing PSAM$^{L141F,Y115F}$- glycine receptor (GlyR) (30 mg/kg) but not in mice expressing only channelrhodopsin-2 (ChR2) (50 mg/kg)[1].

PSEM 89S (30 mg/kg) shows good brain penetrance in mice after minimally invasive intraperitoneal administration[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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| Animal Model: | Male Agrp-cre mice (3-6 weeks)[1] |
| Dosage: | 30 mg/kg |
| Administration: | I.p. administration |
| Result: | Almost completely suppressed fos (a marker of neuron activation) in ChR2-expressing neurons. |

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|---|---|
| Animal Model: | C57BL/6 mice[1] |
| Dosage: | 30 mg/kg (Pharmacokinetic Analysis) |
| Administration: | I.p. administration |
| Result: | Rised rapidly in serum and brain, and was mostly cleared from both compartments in 1 h. |

## REFERENCES

[1]. Christopher JM, et, al. Chemical and genetic engineering of selective ion channel-ligand interactions. Science. 2011 Sep 2; 333(6047): 1292-6.



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