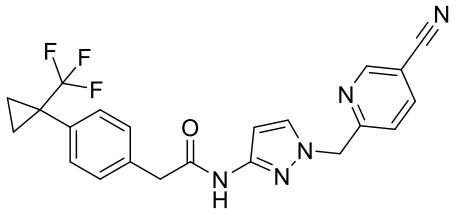
Product data sheet

MedKoo Cat#: 530984 Name: ACT-709478 CAS#: 1838651-58-3 Chemical Formula: $C_{22}H_{18}F_3N_5O$ Exact Mass: 425.1463 Molecular Weight: 425.4152	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.



1. Product description:
ACT-709478 is a Potent, Selective T-type Calcium Channel Blocker as a Drug Candidate for the Treatment of Generalized Epilepsies.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	125.0	293.83

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.35 mL	11.75 mL	23.51 mL
5 mM	0.47 mL	2.35 mL	4.70 mL
10 mM	0.24 mL	1.18 mL	2.35 mL
50 mM	0.05 mL	0.24 mL	0.47 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

TBD

In vivo study

1. Bezençon O, Heidmann B, Siegrist R, Stamm S, Richard S, Pozzi D, Corminboeuf O, Roch C, Kessler M, Ertel EA, Reymond I, Pfeifer T, de Kanter R, Toeroek-Schafroth M, Moccia LG, Mawet J, Moon R, Rey M, Capeleto B, Fournier E. Discovery of a Potent, Selective T-type Calcium Channel Blocker as a Drug Candidate for the Treatment of Generalized Epilepsies. J Med Chem. 2017 Dec 14;60(23):9769-9789. doi: 10.1021/acs.jmedchem.7b01236. Epub 2017 Nov 20. PMID: 29116786.

7. Bioactivity
Biological target:

ACT-709478 is a potent, selective, orally active, and brain penetrating T-type calcium channel blocker.

In vitro activity

TBD

In vivo activity

In WAG/Rij rats, 10 mg/kg po of 66b (ACT-709478), 66d, or 66e significantly decreased the cumulative duration of absence-like seizures over the next 12 h period by 93, 35, and 79%, respectively, compared to a matched vehicle group ($p < 0.001$ for 66b and 66e

and $p < 0.01$ for 66d, paired t test, Figure 5a,c,e). Compounds 66b and 66e completely suppressed the absence-type seizures over the first 6 h following administration (Figure 5a,e).

Reference: J Med Chem. 2017 Dec 14;60(23):9769-9789. https://pubmed.ncbi.nlm.nih.gov/29116786/