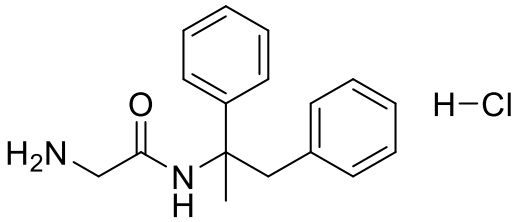
Product data sheet

MedKoo Cat#: 326897 Name: Remacemide HCl CAS#: 111686-79-4 (HCl) Chemical Formula: $C_{17}H_{21}ClN_2O$ Molecular Weight: 304.82	
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:

Remacemide, also known as PR-934423 and FPL 12924AA, is a low-affinity NMDA antagonist with sodium channel blocking properties. It has been studied for the treatment of acute ischemic stroke, epilepsy, Huntington's disease, and Parkinson's disease. Remacemide binds weakly and noncompetitively to the ionic channel site of the NMDA receptor complex. Remacemide binds both allosterically and in the channel. However, because remacemide binds so weakly to NMDAR, much of remacemide's in vivo effect against excitotoxicity is thought to be caused by its metabolic transformation to the more potent desglycine derivative FPL 12495.

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
To be determined	To be determined	To be determined

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.28 mL	16.40 mL	32.81 mL
5 mM	0.66 mL	3.28 mL	6.56 mL
10 mM	0.32 mL	1.64 mL	3.28 mL
50 mM	0.07 mL	0.32 mL	0.66 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

1. Calabresi P, Marti M, Picconi B, Saulle E, Costa C, Centonze D, Pisani F, Bernardi G. Lamotrigine and remacemide protect striatal neurons against in vitro ischemia: an electrophysiological study. Exp Neurol. 2003 Aug;182(2):461-9. doi: 10.1016/s0014-4886(03)00117-1. PMID: 12895457.
2. Norris SK, King AE. Electrophysiological effects of the anticonvulsant remacemide hydrochloride and its metabolite ARL 12495AA on rat CA1 hippocampal neurons in vitro. Neuropharmacology. 1997 Jul;36(7):951-9. doi: 10.1016/s0028-3908(97)00069-5. PMID: 9257939.

In vivo study

1. Borowicz KK, Malek R, Luszczki JJ, Ratnaraj N, Patsalos PN, Czuczwar SJ. Isobolographic analysis of interactions between remacemide and conventional antiepileptic drugs in the mouse model of maximal electroshock. Epilepsy Behav. 2007 Aug;11(1):6-12. doi: 10.1016/j.yebeh.2007.04.018. Epub 2007 Jun 29. PMID: 17602881.
2. Wright LK, Pearson EC, Hammond TG, Paule MG. Behavioral effects associated with chronic ketamine or remacemide exposure in rats. Neurotoxicol Teratol. 2007 May-Jun;29(3):348-59. doi: 10.1016/j.ntt.2006.12.004. Epub 2007 Jan 16. PMID: 17291718.
Arjona Ferreira JC, Migoya E. Development of relugolix combination therapy as a medical treatment option for women with

uterine fibroids or endometriosis. F S Rep. 2022 Nov 21;4(2 Suppl):73-82. doi: 10.1016/j.xfre.2022.11.010. PMID: 37223761; PMCID: PMC10201285.

7. Bioactivity

Biological target:

Remacemide hydrochloride is an non-competitive NMDA receptor antagonist that blocks ion channel and allosteric modulatory site (IC50 = 8 - 68 mM). Remacemide hydrochloride is anticonvulsant in vivo and metabolizes to a more potent desglycine analog. Weakly blocks voltage-dependent Na+ channels (IC50 = 161 mM). In an animal model of Huntington's disease, it extends survival and delays disease; this effect is more pronounced when combined with Coenzyme Q10.

In vitro activity

Electrophysiological recordings and cell swelling measurements were performed from striatal neurons in control condition and during combined oxygen and glucose deprivation in a brain slice preparation. Remacemide and lamotrigine were neuroprotective against the irreversible field potential loss and cell swelling induced by in vitro ischemia, and their coadministration exerted an additive neuroprotective action.

Reference: Exp Neurol. 2003 Aug;182(2):461-9. https://pubmed.ncbi.nlm.nih.gov/12895457/

In vivo activity

Chronic treatment with ketamine or remacemide had no effect on the acquisition of incremental repeated acquisition (IRA) task performance of food-reinforced operant behaviors in female Sprague-Dawley rats at any dose tested. Chronic treatment with low-dose remacemide delayed the acquisition of audio/visual discrimination (AVD) task performance briefly midway through treatment, but chronic treatment with high-dose remacemide delayed the acquisition of AVD task performance until late in treatment.

Reference: F S Rep. 2022 Nov 21;4(2 Suppl):73-82. https://pubmed.ncbi.nlm.nih.gov/17291718/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.