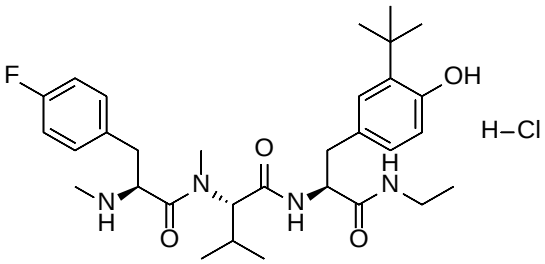
Product data sheet

MedKoo Cat#: 532174 Name: MA-2029 CAS: 287206-61-5 Chemical Formula: $C_{31}H_{46}ClFN_4O_4$ Exact Mass: 592.3192 Molecular Weight: 593.1814	
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:
MA-2029 is a novel selective and competitive motilin receptor antagonist. It inhibits motilin-induced intestinal contractions and visceral pain in rabbits.

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	43.33	73.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.69 mL	8.43 mL	16.86 mL
5 mM	0.34 mL	1.69 mL	3.37 mL
10 mM	0.17 mL	0.84 mL	1.69 mL
50 mM	0.03 mL	0.17 mL	0.34 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. Tabo M, Komatsu R, Honda M, Itoh M, Kimura K. Cardiovascular safety profile of MA-2029, a novel motilin receptor antagonist. J Toxicol Sci. 2008 Dec;33(5):631-9. doi: 10.2131/jts.33.631. PMID: 19043284.

In vivo study

1. Kuroda K, Hequing H, Mondal A, Yoshimura M, Ito K, Mikami T, Takemi S, Jogahara T, Sakata I, Sakai T. Ghrelin Is an Essential Factor for Motilin-Induced Gastric Contraction in Suncus murinus. Endocrinology. 2015 Dec;156(12):4437-47. doi: 10.1210/en.2015-1561. Epub 2015 Oct 6. PMID: 26441238.

2. Ozaki K, Onoma M, Muramatsu H, Sudo H, Yoshida S, Shiokawa R, Yogo K, Kamei K, Cynshi O, Kuromaru O, Peeters TL, Takanashi H. An orally active motilin receptor antagonist, MA-2029, inhibits motilin-induced gastrointestinal motility, increase in fundic tone, and diarrhea in conscious dogs without affecting gastric emptying. Eur J Pharmacol. 2009 Aug 1;615(1-3):185-92. doi: 10.1016/j.ejphar.2009.04.059. Epub 2009 May 13. PMID: 19445919.

7. Bioactivity
Biological target:
MA-2029 is a selective, orally active, and competitive motilin receptor antagonist (IC_{50}=4.9 nM).

Product data sheet

In vitro activity

MA-2029 at 100 microg/ml also decreased the maximum rising velocity and action potential amplitude in the action potential study, indicating that MA-2029 has Na(+) channel blocking potential.

Reference: J Toxicol Sci. 2008 Dec;33(5):631-9. https://pubmed.ncbi.nlm.nih.gov/19043284/

In vivo activity

This study determined the coordinated action of motilin and ghrelin on gastric motility during fasted and postprandial contractions by using house musk shrew (Suncus murinus; order: Insectivora, suncus named as the laboratory strain). Administration of the motilin receptor antagonist MA-2029 (0.1 mg/kg) and/or (D-Lys(3))-GHRP-6 (0.6 mg/kg) at the peak of phase III abolished the spontaneous gastric phase III contractions in vivo.

Reference: Endocrinology. 2015 Dec;156(12):4437-47. https://pubmed.ncbi.nlm.nih.gov/26441238/

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.