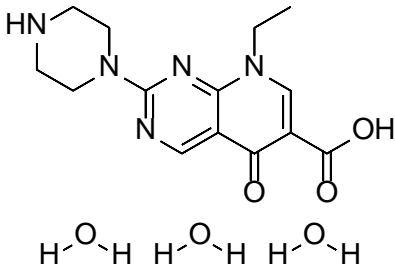


Product data sheet



MedKoo Cat#: 464557 Name: Pipemidic Acid hydrate CAS: 72571-82-5 (hydrate) Chemical Formula: C ₁₄ H ₂₃ N ₅ O ₆ Exact Mass: 357.1648 Molecular Weight: 357.367	
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:

Pipemidic acid is an antibiotic and derivative of piromidic acid. It is active against clinical isolates of *E. coli*, *P. mirabilis*, *P. inconstans*, *Shigella*, *Salmonella*, *Alcaligenes*, and *V. parahaemolyticus* (MICs = 0.78-100 µg/ml), as well as drug-resistant clinical isolates of *E. coli*, *P. mirabilis*, *Klebsiella*, and *Shigella* (MICs = 1.56-6.25 µg/ml). Pipemidic acid is protective against systemic *S. aureus*, *E. coli*, *K. pneumoniae*, and *P. aeruginosa* infections in mice (ED50s = 237.5, 204.1, 28.6, and 99.5 mg/kg, respectively). It is also protective against *P. aeruginosa*-induced pulmonary and dermal infections (ED50s = 81.7 and 173.2 mg/kg, respectively), as well as *E. coli*, *K. pneumoniae*, and *P. aeruginosa* urinary bladder infections (ED50s = 4.8, 11.9, and 30.6 mg/kg, respectively), in mice.

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
DMF	0.5	1.40
DMSO	1.0	2.80
DMSO:PBS (pH 7.2) (1:4)	0.20	0.56

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.80 mL	13.99 mL	27.98 mL
5 mM	0.56 mL	2.80 mL	5.60 mL
10 mM	0.28 mL	1.40 mL	2.80 mL
50 mM	0.06 mL	0.28 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

- Lavorgna M, Iacovino R, Russo C, Di Donato C, Piscitelli C, Isidori M. A New Approach for Improving the Antibacterial and Tumor Cytotoxic Activities of Pipemidic Acid by Including It in Trimethyl-β-cyclodextrin. *Int J Mol Sci.* 2019 Jan 18;20(2):416. doi: 10.3390/ijms20020416. PMID: 30669399; PMCID: PMC6359225.
- Arriaga-Alba M, Barrón-Moreno F, Flores-Paz R, García-Jiménez E, Rivera-Sánchez R. Genotoxic evaluation of norfloxacin and pipemidic acid with the *Escherichia coli* Pol A-/Pol A+ and the ames test. *Arch Med Res.* 1998 Autumn;29(3):235-40. PMID: 9775457.

In vivo study

TBD

Product data sheet



7. Bioactivity

Biological target:

Pipemidic acid trihydrate inhibits DNA gyrase.

In vitro activity

The inclusion complex of HPPA with TRIMEB was prepared in solid state by the kneading method and confirmed by FT-IR and powdered X-ray diffraction. The association in aqueous solutions of pipemidic acid with TRIMEB was investigated by UV-Vis spectroscopy. Job's plots have been drawn by UV-visible spectroscopy to confirm the 1:1 stoichiometry of the host-guest assembly. The antibacterial activity of HPPA, TRIMEB and of their complex was tested on Escherichia coli, Pseudomonas aeruginosa, and Staphilococcus aureus. The complex was able to increase 47.36% of the median antibacterial activity of the free HPPA against E. coli (IC₅₀ = 249 μM vs. 473 μM). Furthermore, these samples were tested on HepG-2 and MCF-7. After 72 h, the median tumoral cytotoxicity exerted by the complex was increased by 78.08% and 94.27% for HepG-2 and MCF-7 respectively.

Reference: Int J Mol Sci. 2019 Jan 18;20(2):416. <https://pubmed.ncbi.nlm.nih.gov/30669399/>

In vivo activity

TBD

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.