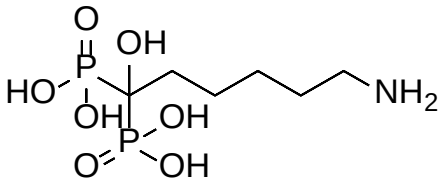
Product data sheet

MedKoo Cat#: 326681 Name: Neridronic acid CAS: 79778-41-9 (free acid) Chemical Formula: $C_6H_{17}NO_7P_2$ Exact Mass: 277.048 Molecular Weight: 277.1495	
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:
Neridronic acid, also known neridronate, is a bisphosphonate. In Italy it is used to treat Osteogenesis imperfecta and Paget's disease of bone. Neridronic acid treatment has been reported to be effective also in other skeletal diseases such as osteoporosis, algodystrophy, hypercalcemia of malignancy and bone metastasis. Neridronic acid has been developed only for parenteral use, and it is the only one used as intramuscular injection.

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
Water	5.0	18.04

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.61 mL	18.04 mL	36.08 mL
5 mM	0.72 mL	3.61 mL	7.22 mL
10 mM	0.36 mL	1.80 mL	3.61 mL
50 mM	0.07 mL	0.36 mL	0.72 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. Chebbi I, Migianu-Griffoni E, Sainte-Catherine O, Lecouvey M, Seksek O. In vitro assessment of liposomal neridronate on MDA-MB-231 human breast cancer cells. Int J Pharm. 2010 Jan 4;383(1-2):116-22. doi: 10.1016/j.ijpharm.2009.09.011. Epub 2009 Sep 11. PMID: 19748562.

2. Corrado A, Cantatore FP, Grano M, Colucci S. Neridronate and human osteoblasts in normal, osteoporotic and osteoarthritic subjects. Clin Rheumatol. 2005 Sep;24(5):527-34. doi: 10.1007/s10067-005-1100-2. Epub 2005 Aug 10. PMID: 16091841.

In vivo study

1. Ribatti D, Nico B, Mangieri D, Maruotti N, Longo V, Vacca A, Cantatore FP. Neridronate inhibits angiogenesis in vitro and in vivo. Clin Rheumatol. 2007 Jul;26(7):1094-8. doi: 10.1007/s10067-006-0455-3. Epub 2006 Nov 15. PMID: 17106617.

7. Bioactivity
Biological target:
Neridronic acid, also known neridronate, is a bisphosphonate.

Product data sheet

In vitro activity

In order to allow a better delivery of neridronate (a N-containing bisphosphonate with relatively poor activity), liposomes were evaluated in vitro on cancer cell lines (MDA-MB-231, U87-MG and Caco2). The influence of neridronate (free or liposomal) on cell viability or proliferation after treatment was evaluated using the MTT method, as well as cell migration and invasion assays; these techniques showed a drastic improvement of the action of neridronate on MDA-MB-231 cells with an EC(50) 50 times lower when neridronate was encapsulated.

Reference: Int J Pharm. 2010 Jan 4;383(1-2):116-22. https://pubmed.ncbi.nlm.nih.gov/19748562/

In vivo activity

The effects of the amino-bisphosphonate neridronate on endothelial cell functions involved in angiogenesis, namely, proliferation and morphogenesis on Matrigel were tested in vitro, whereas its effects on angiogenesis were studied in vivo, by using the chick embryo chorioallantoic membrane (CAM) assay. In vivo, when tested in the CAM assay, neridronate again displayed the capability to inhibit FGF-2-induced angiogenesis.

Reference: Clin Rheumatol. 2007 Jul;26(7):1094-8. https://pubmed.ncbi.nlm.nih.gov/17106617/