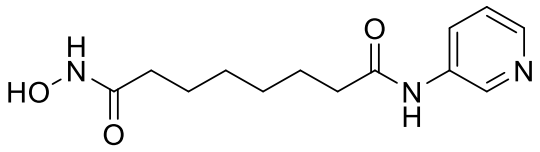
Product data sheet

MedKoo Cat#: 202370 Name: Pyroxamide CAS#: 382180-17-8 Chemical Formula: $C_{13}H_{19}N_3O_3$ Exact Mass: 265.1426 Molecular Weight: 265.31	
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:
Pyroxamide is a synthetic derivative of hydroxamic acid with antineoplastic properties, Pyroxamide inhibits histone deacetylases involved in transcription; induces hyperacetylation of core histones, modulating chromatin structure and affecting transcription of some genes that inhibit tumor growth; and induces growth arrest and apoptosis. Pyroxamide is used in clinical studies for cancer chemotherapy.

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	2	7.54
DMSO	5	18.85

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.77 mL	18.85 mL	37.69 mL
5 mM	0.75 mL	3.77 mL	7.54 mL
10 mM	0.38 mL	1.88 mL	3.77 mL
50 mM	0.08 mL	0.38 mL	0.75 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. Xu Y, Fan S, Liu Y, Shi J, Xie X, Wang X, Wang C, Liu X, Xia G. HDAC1 in the Ovarian Granulosa Cells of Tan Sheep Improves Cumulus Cell Expansion and Oocyte Maturation Independently of the EGF-like Growth Factors. Biology (Basel). 2022 Oct 6;11(10):1464. doi: 10.3390/biology11101464. PMID: 36290368; PMCID: PMC9598242.
2. Kutko MC, Glick RD, Butler LM, Coffey DC, Rifkind RA, Marks PA, Richon VM, LaQuaglia MP. Histone deacetylase inhibitors induce growth suppression and cell death in human rhabdomyosarcoma in vitro. Clin Cancer Res. 2003 Nov 15;9(15):5749-55. PMID: 14654560.

In vivo study

1. Einsiedel HG, Kawan L, Eckert C, Witt O, Fichtner I, Henze G, Seeger K. Histone deacetylase inhibitors have antitumor activity in two NOD/SCID mouse models of B-cell precursor childhood acute lymphoblastic leukemia. Leukemia. 2006 Aug;20(8):1435-6. doi: 10.1038/sj.leu.2404282. Epub 2006 Jun 29. PMID: 16810202.
2. Butler LM, Webb Y, Agus DB, Higgins B, Tolentino TR, Kutko MC, LaQuaglia MP, Drobnjak M, Cordon-Cardo C, Scher HI, Breslow R, Richon VM, Rifkind RA, Marks PA. Inhibition of transformed cell growth and induction of cellular differentiation by pyroxamide, an inhibitor of histone deacetylase. Clin Cancer Res. 2001 Apr;7(4):962-70. PMID: 11309347.

Product data sheet

7. Bioactivity

Biological target:

Pyroxamide is an HDAC inhibitor, including HDAC1 (IC50 = 0.1-0.2 μM). It induces growth suppression and cell death of certain types of cancer cells in culture.

In vitro activity

Pyroxamide induced growth suppression and cell death in human rhabdomyosarcoma cellso. Accumulation of acetylated histones and induction of p21/WAF1 expression were observed in cells exposed to pyroxamide. There was an induction of p21/WAF1 at 15 and 24 h when the cells were cultured with pyroxamide. Pyroxamide increased nuclei with hypodiploid or sub-G(1) fraction in a dose dependent manner.

Reference: Clin Cancer Res. 2003 Nov 15;9(15):5749-55. https://pubmed.ncbi.nlm.nih.gov/14654560/

In vivo activity

Administration of pyroxamide to nude mice caused little evident toxicity significantly suppressed the growth of s.c. CWR22 prostate cancer xenografts. Serum prostate-specific antigen levels in control versus pyroxamide-treated mice were not significantly different. Human CWR22 prostate tumor xenografts from mice treated with pyroxamide showed increased levels of histone acetylation and increased expression of the cell cycle regulator p21/WAF1.

Reference: Clin Cancer Res. 2001 Apr;7(4):962-70. https://pubmed.ncbi.nlm.nih.gov/11309347/

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.