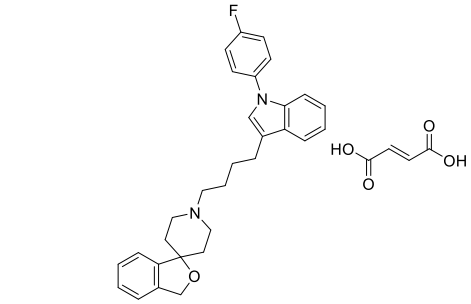
Product data sheet

MedKoo Cat#: 529521 Name: Siramesine fumarate CAS#: 163630-79-3 (fumarate) Chemical Formula: $C_{34}H_{35}FN_2O_5$ Molecular Weight: 570.66	
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:
Siramesine fumarate is a sigma receptor agonist potentially for the treatment of generalized anxiety disorder

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	1.75 mL	8.76 mL	17.52 mL
5 mM	0.35 mL	1.75 mL	3.50 mL
10 mM	0.18 mL	0.88 mL	1.75 mL
50 mM	0.04 mL	0.18 mL	0.35 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. Garcia EA, Bhatti I, Henson ES, Gibson SB. Prostate Cancer Cells Are Sensitive to Lysosomotropic Agent Siramesine through Generation Reactive Oxygen Species and in Combination with Tyrosine Kinase Inhibitors. Cancers (Basel). 2022 Nov 8;14(22):5478. doi: 10.3390/cancers14225478. PMID: 36428570; PMCID: PMC9688505.
2. Česen MH, Repnik U, Turk V, Turk B. Siramesine triggers cell death through destabilisation of mitochondria, but not lysosomes. Cell Death Dis. 2013 Oct 3;4(10):e818. doi: 10.1038/cddis.2013.361. PMID: 24091661; PMCID: PMC3824671.

In vivo study

1. Klawonn AM, Nilsson A, Rådberg CF, Lindström SH, Ericson M, Granseth B, Engblom D, Fritz M. The Sigma-2 Receptor Selective Agonist Siramesine (Lu 28-179) Decreases Cocaine-Reinforced Pavlovian Learning and Alters Glutamatergic and Dopaminergic Input to the Striatum. Front Pharmacol. 2017 Oct 10;8:714. doi: 10.3389/fphar.2017.00714. PMID: 29066971; PMCID: PMC5641388.
2. Hagforsen E, Lampinen M, Paivandy A, Weström S, Velin H, Öberg S, Pejler G, Rollman O. Siramesine causes preferential apoptosis of mast cells in skin biopsies from psoriatic lesions. Br J Dermatol. 2017 Jul;177(1):179-187. doi: 10.1111/bjd.15336. Epub 2017 May 15. PMID: 28117878.

7. Bioactivity
Biological target:

Siramesine is a sigma receptor agonist, selective for the σ2 subtype In animal studies, siramesine produced anxiolytic and antidepressant effects. Siramesine has been shown to produce an enhanced antidepressant effect when co-administered with NMDA

antagonists. It has also been used to study the σ2 activity of cocaine, and has been shown to produce anticancer properties both in vitro and in vivo.

In vitro activity

Cell death in siramesine-treated cells is mitochondria-dependent and occurs independently of lysosomal membrane permeabilization. Siramesine induces rapid cell death in a number of cell lines. In HaCaT cells, cell death was accompanied by caspase activation, rapid loss of mitochondrial membrane potential (MMP), cytochrome c release, cardiolipin peroxidation and typical apoptotic morphology, whereas in U-87MG cells most apoptotic hallmarks were not notable, although MMP was rapidly lost.

Reference: Cell Death Dis. 2013 Oct 3;4(10):e818. https://pubmed.ncbi.nlm.nih.gov/24091661/

In vivo activity

Siramesine holds promise as a treatment for cutaneous mastocytoses and inflammatory skin diseases aggravated by dermal mast cells. Siramesine significantly reduced the total number of mast cells in both lesional and uninvolved psoriatic skin biopsies without affecting the gross morphology of the tissue. Siramesine reduced the density of IL-6- and IL-17-positive mast cells, and showed antiproliferative effects on epidermal keratinocytes with no apparent cytotoxic effect on keratinocytes or dermal fibroblasts.

Reference: Br J Dermatol. 2017 Jul;177(1):179-187. https://pubmed.ncbi.nlm.nih.gov/28117878/