



LKT Laboratories, Inc.

PAC-1

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## Product Information

**Product ID** P004080

**CAS No.** 315183-21-2

**Chemical Name** N'-[(6-oxo-5-prop-2-enyl-1-cyclohexa-2,4-dienylidene)methyl]-2-[4-(phenylmethyl)-1-piperazinyl]acetohydrazide

**Synonym** (4-Benzylpiperazino)acetic acid (3-allyl-2-hydroxybenzylidene)hydrazide, 1-Piperazineacetic acid, 2-(phenylmethyl)-, [[2-hydroxy-3-(2-propenyl)phenyl]methylene]hyrrazide

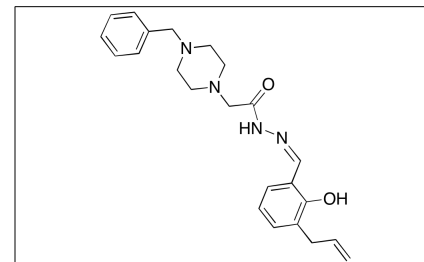
**Formula** C<sub>23</sub>H<sub>28</sub>N<sub>4</sub>O<sub>2</sub>

**Formula Wt.** 392.50

**Melting Point**

**Purity** ≥98%

**Solubility** 100mM in DMSO



**Bulk quantities available upon request**

**Product ID** **Size**

P004080 5 mg

P004080 25 mg

P004080 100 mg

**Store Temp** 4° C

**Ship Temp** Ambient

**Description** PAC-1 (Procaspase Activating Compound 1) has been identified through high-throughput screening as a compound that may enhance the enzymatic activity of procaspase-3 in vitro. Procaspase-3 may be useful as an anticancer strategy due to its low frequency of mutations in cancer and expression of its enzyme in several types of cancers. PAC-1 converts procaspase-3 to active caspase-3 in vitro by chelating zinc ions and thereby inducing cell death in the tumor cells. In multiple cancer cell lines, PAC-1 was shown to trigger endoplasmic reticulum stress signaling and induce autophagy and mitochondria-mediated apoptosis.

**References** Sarkar A, Balakrishnan K, Chen J, et al. Molecular evidence of Zn chelation of the procaspase activating compound B-PAC-1 in B cell lymphoma. *Oncotarget*. 2016 Jan 19;7(3):3461-3476. PMID: 26658105.

Roth HS, Hergenrother PJ. Derivatives of procaspase-activating compound 1 (PAC-1) and their anticancer activities. *Curr Med Chem*. 2016;23(3):201-241. PMID: 26630918.

Seervi M, Sobhan PK, Joseph J, et al. ERO1alpha-dependent endoplasmic reticulum-mitochondrial calcium flux contributes to ER stress and mitochondrial permeabilization by procaspase-activating compound-1 (PAC-1). *Cell Death Dis*. 2013 Dec 19;4:e968. PMID: 24357799.

Lucas PW, Schmit JM, Peterson QP, et al. Pharmacokinetics and derivation of an anticancer dosing regimen for PAC-1, a preferential small molecule activator of procaspase-3, in healthy dogs. *Invest New Drugs*. 2011 Oct;29(5):901-911. PMID: 20499133.

Peterson QP, Goode DR, West DC, et al. PAC-1 activates procaspase-3 in vitro through relief of zinc-mediated inhibition. *J Mol Biol*. 2009 Apr 24;388(1):144-158. PMID: 19281821.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.