

Atpenin A5 (synthetic)

Mitochondrial complex II inhibitor

Antibiotic. Potent and specific inhibitor of mitochondrial complex II (succinate-ubiquinone oxidoreductase).

Citations: 13

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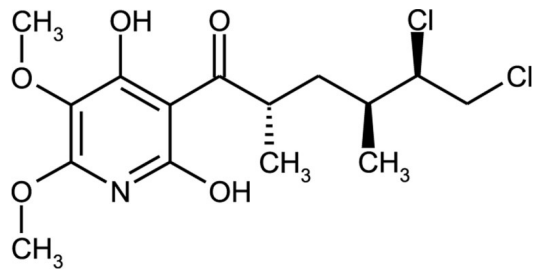
Ordering Information

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ALX-380-313-MC25	0.25mg
ALX-380-313-M001	1mg

Manuals, SDS & CofA

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Handling & Storage

Use/Stability As indicated on product label or CoA when stored as recommended.

Long Term Storage -20°C

Shipping Ambient Temperature

Regulatory Status RUO - Research Use Only

Product Details

Alternative Name	3-[(2S,4S,5R)-5,6-Dichloro-2,4-dimethyl-1-oxohexyl]-4-hydroxy-5,6-dimethoxy-2(1H)-pyridinone
Appearance	White to off-white powder.
CAS	119509-24-9
Couple Target	Mitochondrial complex
Couple Type	Inhibitor
Formula	$C_{15}H_{21}Cl_2NO_5$
MW	366.2
Purity	≥95% (HPLC)
RTECS	CJ8800000
Solubility	Soluble in acetone, acetonitrile, chloroform, ethyl acetate, DMSO, methanol or 100% ethanol; insoluble in water or hexane.
Source	Synthetic. Originally isolated from <i>Penicillium</i> sp. strain FO-125.

The IC₅₀ value against bovine heart complex II is 3.6nM (which is ~300-fold lower than the IC₅₀ value of carboxin (1.1µM)). It also inhibits fumarate reductase of *Ascaris suum* (IC₅₀ = 12nM). Inhibition of *E. coli* succinate dehydrogenase is less potent (IC₅₀ = 5µM). By co-crystallization studies of atpenin A5 and complex II, the binding site of atpenin A5 was found to be the quinone-binding site of complex II. Additionally, atpenin A5 has been shown to have a protective action against ischemia-reperfusion via the activation of mitochondrial K_{ATP} channels.

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ENZO LIFE SCIENCES,
INC.
Phone: 800.942.0430
info-usa@enzolifesciences.com

European Sales Office
ENZO LIFE SCIENCES
(ELS) AG
Phone: +41 61 926 8989
info-eu@enzolifesciences.com

Belgium, The Netherlands
& Luxembourg
Phone: +32 3 466 0420
info-be@enzolifesciences.com

France
Phone: +33 472 440 655
info-fr@enzolifesciences.com

Germany
Phone: +49 7621 5500 526
info-de@enzolifesciences.com

UK & Ireland
Phone (UK customers):
0845 601 1488
Phone: +44 1392 825900
info-uk@enzolifesciences.com