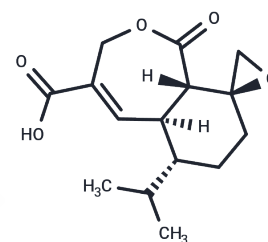


## Heptelidic acid

## Chemical Properties

CAS No. :	57710-57-3
Formula:	C <sub>15</sub> H <sub>20</sub> O <sub>5</sub>
Molecular Weight:	280.32
Storage:	Store at low temperature Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	Heptelidic acid (Koningic acid) is a sesquiterpenoid lactone antibiotic derived from the probiotic fungus <i>Aspergillus oryzae</i> , a selective GAPDH inhibitor. It downregulates caspase to inhibit etoposide-induced apoptosis. Heptelidic acid inhibits tau fibrillation in a concentration-dependent manner and exerts antitumor effects on extra-intestinal melanoma by controlling glyceraldehyde-3-phosphate dehydrogenase activity.
Targets(IC50)	Apoptosis,Caspase,Antibiotic
In vitro	<p>Heptelidic acid is a sesquiterpenoid antibiotic found in the culture filtrates of three different fungal strains isolated from soil samples. The process of its production involves culture, fermentation, isolation, and characterization of the organisms. [1]</p> <p>Heptelidic acid prevents etoposide-induced apoptosis in human leukemia U937 cells. [2]</p> <p>The IC<sub>50</sub> value for the inhibitory effect of Heptelidic acid on caspase-3 activity in U937 cells after 8 h of etoposide treatment was 40 μM. [2]</p> <p>As a natural product extracted from <i>Trichoderma</i>, Heptelidic acid can directly bind to the active site of human GAPDH.[2] Heptelidic acid has been shown to inhibit caspase-3 activity in <i>T. koningii</i> KA. Cells expressing <i>T. koningii</i> KAR-GAPDH were able to successfully restore the survival of Heptelidic acid-treated human cells. HEK293T cells treated with 0-200 μM Heptelidic acid showed complete survival with an IC<sub>50</sub> of 5 μM in the presence of <i>T. koningii</i> KAR-GAPDH.[2] Heptelidic acid is a natural product extracted from <i>Trichoderma</i> species. Its IC<sub>50</sub> was 5 μM. [3]</p>
In vivo	In 6-week-old female Foxn1nu mice bearing BT-474 tumors, 1, 2.5, 5, and 10 mg/kg of Heptelidic acid were administered by intraperitoneal injection once a day for 24 hours. Based on behavioral monitoring and adverse events (e.g., hemolysis, hematuria, and anemia) at high doses, 1 mg/kg was identified as the maximum tolerated dose (MTD). [3]

## Solubility Information

Solubility	DMSO: 20 mg/mL (71.35 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	3.5674 mL	17.8368 mL	35.6735 mL
5 mM	0.7135 mL	3.5674 mL	7.1347 mL
10 mM	0.3567 mL	1.7837 mL	3.5674 mL
50 mM	0.0713 mL	0.3567 mL	0.7135 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Itoh Y, et al. A new sesquiterpene antibiotic, heptelidic acid producing organisms, fermentation, isolation and characterization. *J Antibiot (Tokyo)*. 1980 May;33(5):468-73.

Kim JH, et al. Heptelidic acid, a sesquiterpene lactone, inhibits Etoposide-induced apoptosis in human leukemia U937 cells. *J Microbiol Biotechnol*. 2009 Aug;19(8):787-91.

Liberti MV, et al. A Predictive Model for Selective Targeting of the Warburg Effect through GAPDH Inhibition with a Natural Product. *Cell Metab*. 2017 Oct 3;26(4):648-659.e8.

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