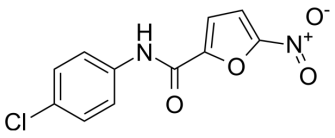
LCS3

Cat. No.:	HY-147328
CAS No.:	109844-92-0
Molecular Formula:	$C_{11}H_7ClN_2O_4$
Molecular Weight:	266.64
Target:	Apoptosis
Pathway:	Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (468.80 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.7504 mL	18.7519 mL	37.5037 mL
5 mM	0.7501 mL	3.7504 mL	7.5007 mL
10 mM	0.3750 mL	1.8752 mL	3.7504 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.38 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

LCS3 is a reversible and uncompetitive glutathione disulfide reductase (GSR) and thioredoxin reductase 1 (TXNRD1) inhibitor (IC_{50}=3.3 μM and 3.8 μM, respectively). LCS3 shows anti-tumor activity, and induces apoptosis. LCS3 can be used in lung adenocarcinoma (LUAD) research[1].

In Vitro

LCS3 (5 nM-10 μM; 96 h) inhibits lung cancer cell lines, but not non-transformed lung cells[1].
LCS3 (3 μM; 3, 6, and 12 h) induces ROS and NRF2 pathway activation in sensitive lung adenocarcinoma (LUAD) cells[1].
LCS3 (3 μM; 96 h) selectively kills lung adenocarcinoma (LUAD) cell lines, in part through the induction of apoptosis[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Non-small cell lung cancer (NSCLC) cells and non-transformed lung cells

Concentration:	5 nM-10 μM
Incubation Time:	96 hours
Result:	Inhibited the growth of 24/25 NSCLC cell lines at low micromolar concentrations (IC_{50}<5 μM), both of the non-transformed lung cell lines were relatively insensitive (IC_{50}>10 μM).

Cell Viability Assay[1]

Cell Line:	H23 and H1650 cells
Concentration:	3 μM
Incubation Time:	3, 6, and 12 hours
Result:	Responded to LCS3 by accumulating ROS and activating the NRF2 transcription program.

Apoptosis Analysis[1]

Cell Line:	lung adenocarcinoma (LUAD) cells
Concentration:	3 μM
Incubation Time:	96 hours
Result:	Increased cleavage of caspase 3, caspase 7 and/or PARP1 in all LCS3-sensitive LUAD cell lines.

Western Blot Analysis[1]

Cell Line:	H23 and H1650 cells
Concentration:	3 μM
Incubation Time:	24 hours
Result:	Increased the protein levels of NRF2 and of the products of selected downstream targets of NRF2 in both cell lines.

REFERENCES

[1]. Fraser D Johnson, et al. Characterization of a small molecule inhibitor of disulfide reductases that induces oxidative stress and lethality in lung cancer cells. Cell Rep. 2022 Feb 8;38(6):110343.

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