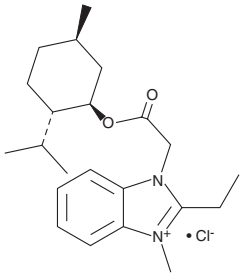
PRODUCT INFORMATION

Gboxin

Item No. 27861

CAS Registry No.:	2101315-36-8
Formal Name:	2-ethyl-1-methyl-3-[2-[[(1R,2S,5R)-5-methyl-2-(1-methylethyl) cyclohexyl]oxy]-2-oxoethyl]-1H-benzimidazolium, monochloride
MF:	$C_{22}H_{33}N_2O_2$ • Cl
FW:	393.0
Purity:	≥98%
UV/Vis.:	λ_{max}: 272, 279 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Gboxin is supplied as a crystalline solid. A stock solution may be made by dissolving the gboxin in the solvent of choice, which should be purged with an inert gas. Gboxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of gboxin in these solvents is approximately 20, 12, and 10 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of gboxin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of gboxin in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Gboxin is an inhibitor of oxidative phosphorylation in cancer cells, which have a higher mitochondrial proton gradient and pH compared with non-cancerous cells.[1] It increases the mitochondrial membrane potential and reduces the oxygen consumption rate, which can be bypassed by the proton ionophore FCCP (Item No. 15218), indicating that it inhibits F_0F_1 ATP synthase/complex V. Gboxin decreases viability of three primary mouse glioblastoma cell lines (IC_{50}s = ~150 nM) and three patient-derived glioblastoma cultures (IC_{50}s = ~1 µM) but does not affect the viability of primary mouse embryonic fibroblasts or astrocytes. It halts the cell cycle in the G_1/G_0 phase and induces apoptosis of primary low-passage glioblastoma cells pooled from multiple tumors.

Reference

1. Shi, Y., Lim, S.K., Liang, Q., *et al.* Gboxin is an oxidative phosphorylation inhibitor that targets glioblastoma. *Nature* **567(7748),** 341-346 (2019).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM