

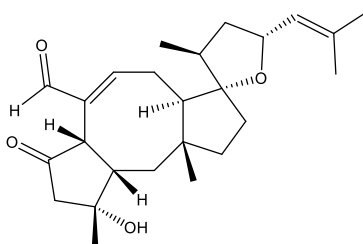
**Catalog # 10-3150**

**Ophiobolin A**

CAS# 4611-05-6

Cochliobolin A; Ophiobalin; NSC 114340

Lot # X108853



Selectively inhibits the growth of cancer cells ( $IC_{50}=0.4-4.3 \mu M$ ) over normal cells ( $IC_{50}=20.9 \mu M$ ).<sup>1</sup> Induces non-apoptotic cell death in glioblastoma cells and is active in an *in vivo* model.<sup>2</sup> Covalently reacts with primary amines such as lysine side chains<sup>2</sup> and phosphatidylethanolamine<sup>3</sup> forming unique pyrrole adducts. Induces ER stress<sup>4</sup>, paraptosis<sup>4</sup> and autophagy<sup>5</sup>. Ophiobolin A activated mitochondrial respiration in a COX5A- and HIGD2A-dependent (Mitochondrial Complex IV) manner, leading to mitochondrial oxidative stress and rapid cell death in cancer cells.<sup>6</sup>

- 1) Bhatia *et al.* (2016), *Anticancer activity of Ophiobolin A, isolated from the endophytic fungus Bipolaris setariae*; Nat. Prod. Res., **30** 1455
- 2) Dasari *et al.* (2015), *Fungal metabolite ophiobolin A as a promising anti-glioma agent: In vivo evaluation, structure-activity relationship and unique pyrrolylation of primary amines*; Bioorg. Med. Chem. Lett., **25** 4544
- 3) Chidley *et al.* (2016), *The anticancer natural product ophiobolin A induces cytotoxicity by covalent modification of phosphatidylethanolamine*; Elife., **5** e14601
- 4) Kim *et al.* (2017), *Ophiobolin A kills human glioblastoma cells by inducing endoplasmic reticulum stress via disruption of thiol proteostasis*; Oncotarget, **8** 106740
- 5) Rodolfo *et al.* (2016), *Ophiobolin A Induces Autophagy and Activates the Mitochondrial Pathway of Apoptosis in Human Melanoma Cells*; PLoS One, **11** e0167672
- 6) Gowans *et al.* (2024), *Ophiobolin A Covalently Targets Mitochondrial Complex IV Leading to Metabolic Collapse in Cancer Cells*; ACS Chem. Biol. **19** 1260

**PHYSICAL DATA**

Molecular Weight:	400.55
Molecular Formula:	C <sub>25</sub> H <sub>36</sub> O <sub>4</sub>
Purity:	98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (up to 10 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 2 months.

**Materials provided by Focus Biomolecules are for laboratory research use only and are not intended for human or veterinary applications.**