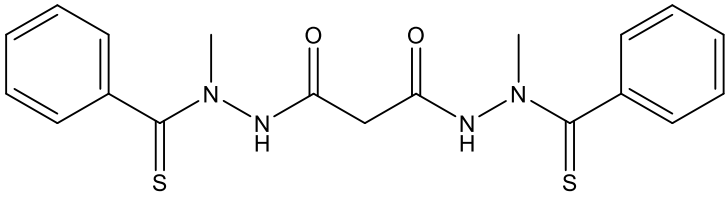
Catalog # 10-4238
Elesclomol

CAS# 488832-69-5

N’1,N’3-Dimethyl-N’1,N’3-di(phenylcarbonothioyl)malonohydrazide; STA-4783; GSK842879A

Lot # FBS3038



Elesclomol induced oxidative stress in cancer cells *via* rapid generation of reactive oxygen species.[1] It preferentially binds copper ions outside the cell and selectively transports inside the mitochondria with subsequent reactive oxygen species generation leading to apoptosis.[2,3] Elesclomol can restore copper homeostasis in models of copper deficiency and disorders of copper metabolism.[4,5] Copper-induced cell death (Cuproptosis) caused by Elesclomol is now believed to occur *via* direct binding of copper to lipoylated components of the tricarboxylic acid cycle causing protein aggregation and subsequent iron-sulfur protein loss leading to proteotoxic stress and cell death.[6]

1) Kirshner *et al*. (2008), *Elesclomol induces cancer cell apoptosis through oxidative stress*; Mol. Cancer Ther. **7** 2319

2) Blackman *et al*. (2012), *Mitochondrial electron transport is the cellular target of the oncology drug elesclomol*; PLoS One **7** e29798

3) Nagai *et al*. (2012), *The oncology drug elesclomol selectively transports copper to the mitochondria to induce oxidative stress in cancer cells*; Free Radic. Biol. Med. **52** 2142

4) Soma *et al*. (2018), *Elesclomol restores mitochondrial function in genetic models of copper deficiency*; Proc. Natl. Acad. Sci. USA **115** 8161

5) Guthrie *et al*. (2020), *Elesclomol Alleviates Menkes pathology and mortality by escorting Cu to cuproenzymes in mice*; Science **368** 620

6) Tsvetkov *et al*. (2022), *Copper induces cell death by targeting lipoylated TCA cycle proteins*; Science **375** 1254

PHYSICAL DATA

Molecular Weight:	400.52
Molecular Formula:	$C_{19}H_{20}N_4O_2S_2$
Purity:	98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (at least 50 mg/ml)
Physical Description:	Pale yellow solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 1 month.

Focus Biomolecules LLC 400 Davis Drive, Suite 600 Plymouth Meeting PA 19462

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