NEUROMICS

TTFA Data Sheet

Catalog Number:	MC11122	**Product Type:**	Small Molecule
Bio-Activity:	Mitochondrial Complex II inhibitor	**CAS #:**	326-91-0
Research Categories:	Oxidative stress, cancer	**Chemical Name:**	4,4,4-Trifluoro-1-(2-thienyl)-1,3-butanedione
Solubility:	Soluble in DMSO (up to 25 mg/ml) or in Ethanol (up to 25 mg/ml)	**Molecular Formula:**	C8H5F3O2S
Purity:	> 98%	**Molecular Weight:**	222.18
Format:	Powder	**Ship Temp:**	Ambient
Storage:	-20°C		

Application Notes

Description/Data:
TTFA blocks the respiratory chain complex II causing inhibition of mitochondrial respiration. Respiratory chain complex II inhibition is caused via binding of TTFA to two ubiquinone binding sites, Qp and Qd [1]. Inhibition of Complex II by TFA has been shown to cause a delay in overall cell cycle progression leading to oxidative stress [2,3]. TTFA also was found to inhibit porcine liver carboxylesterase (IC50 = 0.54 µM) [4].

References:

1) Sun et al. (2005), Crystal Structure of Mitochondrial Respiratory Membrane Protein Complex II; Cell 121 1043

2) Byon et al. (2008), Mitochondrial dysfunction by complex II inhibition delays overall cell cycle progression via reactive oxygen species production; J.Cell Biochem. 104 1747

3) Siebels and Dröse (2013), Q-site inhibitor induced ROS production of mitochondrial complex II is attenuated by TCA cycle dicarboxylates; Biochim.Biophys.Acta 1827 1156

4) Zhang and Fariss (2002), Thenoyltrifluoroacetone, a potent inhibitor of carboxylesterase activity; Biochem.Pharmacol. 63 751

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