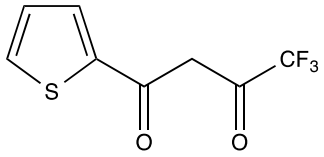
Catalog # 10-4565

TTFA

CAS# 326-91-0

Thenoyltrifluoroacetone; 4,4,4-Trifluoro-1-(2-thienyl)-1,3-butanedione

Lot # FBS1001



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 (IC_{50} = 0.54 µM).[4]

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

PHYSICAL DATA

Molecular Weight:	222.18
Molecular Formula:	$C_8H_5F_3O_2S$
Purity:	>98%
	NMR: (Conforms)
Solubility:	Soluble in DMSO (>25 mg/ml) and ethanol (>25 mg/mL)
Physical Description:	Pale yellow solid
Storage and Stability:	Store as supplied at -20ºC for up to 1 year from the date of purchase. Store solutions in DMSO or ethanol at -20ºC for up to 1 month.

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