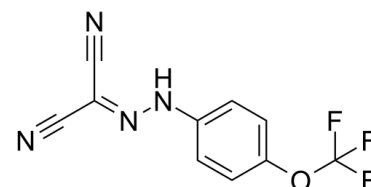


Data Sheet

Product Name:	FCCP
Cat. No.:	CS-5732
CAS No.:	370-86-5
Molecular Formula:	C ₁₀ H ₅ F ₃ N ₄ O
Molecular Weight:	254.17
Target:	Mitochondrial Metabolism
Pathway:	Metabolic Enzyme/Protease
Solubility:	DMSO : ≥ 100 mg/mL (393.44 mM); Ethanol : ≥ 33.3 mg/mL (131.01 mM)



BIOLOGICAL ACTIVITY:

FCCP is an uncoupler of oxidative phosphorylation in mitochondria. FCCP induces activation of PINK1 leading to Parkin Ser65 phosphorylation. **In Vitro:** FCCP (5 μM) results in a concentration-dependent decrease in Aβ and APPsβ production in K695sw cells. FCCP inhibits processing of wild-type APP. FCCP does not alter cellular ATP levels at any of the concentrations measured. The effects of FCCP on APP catabolism are independent of secondary effects on oxidative phosphorylation or the result of reduced cell viability. FCCP (5 μM or 500 nM), baf A1, and NH₄Cl induce changes in Tf-Tx and Tf-F cellular fluorescence in K695 cells^[1]. FCCP (200 nM) protects and enhances the follicle integrity in cat ovarian tissue during short-term in vitro culture. But FCCP does not appear to exert a beneficial or detrimental effect during ovarian tissue cryopreservation^[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: FCCP is dissolved in pure ethanol, and diluted with medium to a concentration of 0.05% ethanol^[1]. K695sw cells are maintained and exposed to vehicle or various concentrations of FCCP as mentioned above with the exception that cells are plated at a density of 20,000 cells per well in 96-well plates. Twenty-four hours after plating, cells are exposed to various treatments in Dulbecco's modified Eagle's medium supplemented with sodium pyruvate (1 mM). At the same time as drug exposures, YO-PRO (4 μM) is added to each well, and its uptake is quantified every 30 min for 1 day at 37°C using a Cytofluor 2350 fluorometric plate reader. As a positive control, all wells are exposed to 0.1% Triton X-100 at the end of the experiment^[1].

References:

- [1]. Connop BP et al. Novel effects of FCCP [carbonyl cyanide p-(trifluoromethoxy)phenylhydrazone] on amyloid precursor protein processing. J Neurochem. 1999 Apr;72(4):1457-65.
- [2]. Tanpradit N, et al. Carbonyl cyanide 4-(trifluoromethoxy)phenylhydrazone (FCCP) pre-exposure ensures follicle integrity during in vitro culture of ovarian tissue but not during cryopreservation in the domestic cat model. J Assist Reprod Genet. 2016 Dec;33(12):1621-1631. Epub 2016 Sep 17.
- [3]. Kondapalli C, et al. PINK1 is activated by mitochondrial membrane potential depolarization and stimulates Parkin E3 ligase activity by phosphorylating Serine 65. Open Biol. 2012 May;2(5):120080.

CAIndexNames:

Propanedinitrile, 2-[2-[4-(trifluoromethoxy)phenyl]hydrazinylidene]-

SMILES:

N#C/C(C#N)=N/NC1=CC=C(OC(F)(F)F)C=C1

Caution: Product has not been fully validated for medical applications. For research use only.

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