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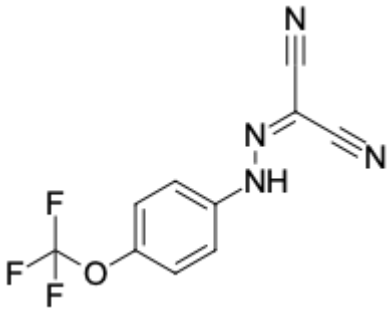
FCCP, ATPase inhibitor

http://www.lumiprobe.com/p/fccp-trifluoromethoxy-carbonylcyanide-phenylhydrazone

FCCP (trifluoromethoxy carbonylcyanide phenylhydrazone, carbonyl cyanide 4-(trifluoromethoxy)phenylhydrazone) is a proton (H^+) ionophore and a potent mitochondrial uncoupling agent, which lowers ROS production and Ca^{2+} overload. This compound turns the mitochondrial membrane permeable to protons, thus dissipating the mitochondrial membrane potential and uncoupling oxidative phosphorylation from ATP synthesis.

FCCP is widely used to analyze mitochondrial function in living tissues, cells, and isolated mitochondrial preparations. It is also used to investigate the mechanisms of autophagy by inducing mitochondrial degradation through the disruption of the mitochondrial membrane potential.

A low concentration of FCCP (1 µM) results in a complete loss of mitochondrial membrane potential without triggering mitophagy, whereas a high concentration (10 µM) leads to increased cytosol acidification, and mitochondrial degradation is attained.



Structure of FCCP, ATPase inhibitor

General properties

Appearance:	bright yellow crystals
Molecular weight:	254.17
CAS number:	370-86-5
Molecular formula:	$C_{10}H_5F_3N_4O$
IUPAC name:	2-[2-[4-(trifluoromethoxy)phenyl]hydrazinylidene]-propanedinitrile
Solubility:	Soluble in DMSO (100 mM). Soluble in methanol, ethanol, and acetone to 20 mg/mL. Insoluble in water.
Quality control:	NMR ^1H and HPLC-MS (95+%)
Storage conditions:	24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.