

产品名称：羰基氰基 4-(三氟甲氧基)苯胺  
产品别名：FCCP

| 生物活性:              |   |   |           |            |
|--------------------|---|---|-----------|------------|
| Description        | FCCP is an uncoupler of oxidative phosphorylation in mitochondria. FCCP induces activation of PINK1 leading to Parkin Ser65 phosphorylation.  |   |           |            |
| In Vitro           | FCCP (5 $\mu$ M) results in a concentration-dependent decrease in A $\beta$ and APPs $\beta$ 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 $\mu$ M 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]. |   |           |            |
| Solvent&Solubility | <b>In Vitro:</b><br><b>DMSO : <math>\geq</math> 100 mg/mL (393.44 mM)</b><br><b>Ethanol : <math>\geq</math> 33.3 mg/mL (131.01 mM)</b><br><small>* "<math>\geq</math>" means soluble, but saturation unknown.</small>   |   |           |            |
|                    | <div>Preparing Stock Solutions</div>  | <div>Solvent Mass<br/>Concentration</div> | 1 mg      | 5 mg       |
|                    |   | 1 mM                                      | 3.9344 mL | 19.6719 mL |
|                    |   | 5 mM                                      | 0.7869 mL | 3.9344 mL  |
|                    |   | 10 mM                                     | 0.3934 mL | 1.9672 mL  |
|                    | *请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。<br>储备液的保存方式和期限：-80℃，6 months；-20℃，1 month。 -80℃ 储存时，请在 6 个月内使用，-20℃ 储存时，请在 1 个月内使用。  |   |           |            |
|                    | <b>In Vivo:</b><br>请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 <b>In Vitro</b> 方式配制澄清的储备液，再依次添加助溶剂：<br>——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶   |   |           |            |
|                    | 1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline<br>Solubility: 2.5 mg/mL (9.84 mM); Suspended solution; Need ultrasonic and warming<br>此方案可获得 2.5 mg/mL (9.84 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。<br>以 1 mL 工作液为例，取 100 $\mu$ L 25.0 mg/mL 的澄清 DMSO 储备液加到 400 $\mu$ L PEG300 中，混合均匀<br>向上述体系中加入 50 $\mu$ L Tween-80，混合均匀；然后继续加入 450 $\mu$ L 生理盐水定容至 1 mL。   |   |           |            |
|                    | 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE- $\beta$ -CD in saline)<br>Solubility: 2.5 mg/mL (9.84 mM); Suspended solution; Need ultrasonic and warming<br>此方案可获得 2.5 mg/mL (9.84 mM)的均匀悬浊液，悬浊液可用于口服和腹腔注射。<br>以 1 mL 工作液为例，取 100 $\mu$ L 25.0 mg/mL 的澄清 DMSO 储备液加到 900 $\mu$ L 20% 的 SBE- $\beta$ -CD 生理盐水溶液中，混合均匀。   |   |           |            |
|                    |   |   |           |            |

|            |   |
|------------|---|
|            | <p>3.请依序添加每种溶剂： 10% DMSO →90% corn oil</p> <p>Solubility: <math>\geq 2.5</math> mg/mL (9.84 mM); Clear solution</p> <p>此方案可获得 <math>\geq 2.5</math> mg/mL (9.84 mM, 饱和度未知) 的澄清溶液, 此方案不适用于实验周期在半个月以上的实验。</p> <p>以 1 mL 工作液为例, 取 100 <math>\mu</math>L 25.0 mg/mL 的澄清 DMSO 储备液加到 900 <math>\mu</math>L 玉米油中, 混合均匀。</p>  |
| References | <p>[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.</p> <p>[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.</p> <p>[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.</p> |
| 实验参考:      |   |
| Cell Assay | <p>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 <math>\mu</math>M) 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].</p>                                  |
| References | <p>[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.</p> <p>[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.</p> <p>[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.</p> |

源叶生物