

CCCP (50 mM) Inducer of Apoptosis

Cat: C6700

Size: 100 μ L

Storage: -20°C storage, valid for 1 year.

Product Attributes:

Another name	Carbonyl cyanide 3-chlorophenylhydrazone; m-Cl-CCP; Mesoxalonitrile 3-chlorophenylhydrazone; (3-Chlorophenyl)hydrazonomalononitrile
CAS	555-60-2
Molecular Formula	C ₉ H ₅ ClN ₄
Molecular weight	204.62
Purity	≥97% (TLC)

Product Introduction:

CCCP, Carbonyl cyanide 3-chlorophenylhydrazone, a proton carrier (H⁺ ionophore), is a powerful mitochondrial oxidative phosphoric acid decoupling agent that promotes the permeability of the inner mitochondrial membrane to H⁺, resulting in the loss of membrane potential on both sides of the inner mitochondrial membrane. Inducing apoptosis. It can also act on chloroplast membrane and inhibit photosynthesis; CCCP can also inhibit protein transport between ER and ER-Golgi, and bind cytochrome C oxidase with high affinity.

CCCP also has other functions: 1) In the sympathetic nerve of bullfrog, CCCP can enhance the release of luteinizing hormone releasing hormone; 2) Acting as a proton conductor to affect E.coli cell activity in the presence of glucose; 3) various regulatory effects on intracellular calcium levels; 4) inhibiting the secretion of lipohepatase; 5) Partial inhibition of pH gradient-activated Cl⁻ uptake and Cl⁻/Cl⁻ exchange in brush marginal membrane.

This product is a CCCP solution dissolved in DMSO, with a concentration of 50mM and a volume of 100 μ L (equivalent to the total amount of 1mg). It is commonly used as a positive control to induce apoptosis, and is combined with the mitochondrial membrane potential detection probe JC-1 or JC-10 for related studies.

Protocols (only for reference):

- 1) After receiving this product (CCCP, 50mM), pack it in a small amount of 10-50 μ L and freeze at -20°C to avoid repeated freezing and thawing.
- 2) The recommended working concentration is 10-100 μ M. In the first experiment, apoptosis induction can be performed at 1000 \times dilute initial concentration (such as 1 μ L initial mother solution added to 1ml cell culture solution) for 20min, and then JC-1 or JC-10 mitochondrial membrane potential loss detection is performed, showing green fluorescence.

【Note】 : For specific cells, the concentration and duration of action of CCCP may be different, which should be determined by referring to relevant literature.

