Forchlorfenuron

Cat. No.: HY-B1841

CAS No.: 68157-60-8

Molecular Formula: $C_{12}H_{10}ClN_3O$

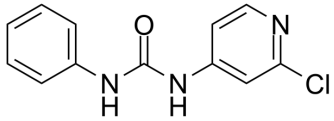
Molecular Weight: 247.68

Target: Others

Pathway: Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (403.75 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.0375 mL	20.1873 mL	40.3747 mL
5 mM	0.8075 mL	4.0375 mL	8.0749 mL
10 mM	0.4037 mL	2.0187 mL	4.0375 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Forchlorfenuron is plant growth regulator and cytokinin; can be used to increase fruit size of fruits, such as kiwi fruit and grapes.

In Vitro

Forchlorfenuron is a plant growth regulator, applied extensively to increase kiwifruit size and weight. Cytotoxicity of forchlorfenuron and its metabolites are tested through Sulforhodamine B assays against CHO cells. Forchlorfenuron exhibits significant cytotoxicity against CHO cells with an IC_{50} of 12.12±2.14 μM[1]. The half-lives offorchlorfenuron were 15.8-23.0

days, the final residues of forchlorfenuron in pulp were all ≤0.002 mg/kg, and most of the residues were concentrated in the peel. The risk assessment revealed that no significant potential health risk would be induced by forchlorfenuron in citrus fruits. Therefore, it could be safe to apply forchlorfenuron in citrus fruits[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]

CHO cells are cultured in high-glucose DMEM medium. Forchlorfenuron and its kiwifruit metabolites are dissolved in DMSO and diluted in culture media. Cells are seeded in a 96-well flat microtiter plate for 24 h and are then incubated for an additional 48 h with various concentrations of the compounds. Next, cells are fixed with 10% trichloroacetic acid and incubated for 60 min at 4 °C. The supernatant is discarded, then the plates are washed. Using 0.4% SRB solution dissolved in 1% acetic acid, the cell layer is strained, then the plates are incubated for 20 min at room temperature. The stained cells is solubilized in 10 mM un-buffered Tris base and optical density (OD) is measured at 560 nm[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Zhang Z, et al. Identification, synthesis, and safety assessment of forchlorfenuron (1-(2-chloro-4-pyridyl)-3-phenylurea) and its metabolites in kiwifruits. J Agric Food Chem. 2015 Mar 25;63(11):3059-66.

[2]. Chen W, et al. Dissipation and residue of forchlorfenuron in citrus fruits. Bull Environ Contam Toxicol. 2013 Jun;90(6):756-60.

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