

Product Data Sheet

Product Name: Forchlorfenuron

Cat. No.: GC30279

Chemical Properties

Cas. No. 68157-60-8

SMILES O=C(NC1=CC=CC=C1)NC2=CC(Cl)=NC=C2

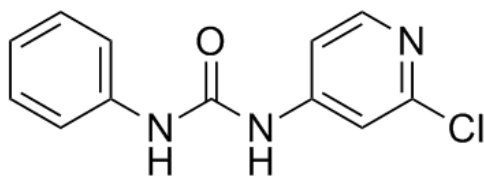
Formula $C_{12}H_{10}ClN_3O$ M.Wt 247.68

Solubility DMSO : ≥ 29 mg/mL (117.09 mM) Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

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

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Cell experiment: 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].

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.

Background

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

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 IC₅₀ of 12.12±2.14 μM[1]. The half-lives of forchlorfenuron 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].

- [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

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