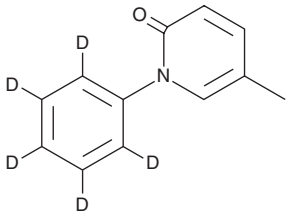
PRODUCT INFORMATION

Pirfenidone-d_5

Item No. 26452

CAS Registry No.: 1020719-62-3
Formal Name: 5-methyl-1-(phenyl-2,3,4,5,6-d_5)-2(1H)-pyridinone
MF: $C_{12}H_6D_5NO$
FW: 190.3
Chemical Purity: ≥98% (Pirfenidone)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pirfenidone-d_5 is intended for use as an internal standard for the quantification of pirfenidone (Item No. 13986) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Pirfenidone-d_5 is supplied as a solid. A stock solution may be made by dissolving the pirfenidone-d_5 in the solvent of choice. Pirfenidone-d_5 is soluble in organic solvents such as methanol and chloroform, which should be purged with an inert gas.

Description

Pirfenidone is an orally bioavailable pyridone derivative with antifibrotic, anti-inflammatory, and antioxidant activities.[1-5] It inhibits TGF-β1-stimulated increases in collagen type I, fibronectin, and Hsp47 expression in A549 lung cancer cells in a concentration-dependent manner.[4] Pirfenidone (300 mg/kg per day) inhibits fibrosis and inhibits increases in collagen content, fibrocyte pool size, and the levels of chemokines CCL2 and CCL12 in lung in a mouse model of pulmonary fibrosis induced by bleomycin (Item No. 13877).[2] In a mouse model of non-alcoholic steatohepatitis (NASH), pirfenidone inhibits fibrosis and increases in hepatocyte apoptosis, lobular inflammation, and hepatic expression of the fibrosis-related genes *Col1a1*, *Timp1*, *Tgfb1*, *Pdgfb*, and *Fgf2* when administered at a dose of 280 mg/kg but has no effect on steatosis.[1] Pirfenidone also inhibits NADPH-dependent lipid peroxidation in sheep liver microsomes and scavenges hydroxyl radicals (IC_{50}s = ~6 and ~2.5 mM, respectively).[3] Formulations containing pirfenidone have been used in the treatment of idiopathic pulmonary fibrosis.

References

1. Komiya, C., Tanaka, M., Tsuchiya, K., *et al. Sci. Rep.* **7:44754** (2017).
2. Inomata, M., Kamio, K., Azuma, A., *et al. Respir. Res.* **15:16** (2014).
3. Misra, H.P. and Rabideau, C. *Mol. Cell. Biochem.* **204(1-2)**, 119-126 (2000).
4. Hisatomi, K., Mukae, H., Sakamoto, N., *et al. BMC Pulm. Med.* **12:24** (2012).
5. Moeller, A., Ask, K., Warburton, D., *et al. Int. J. Biochem. Cell Biol.* **40(3)**, 362-382 (2008).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM