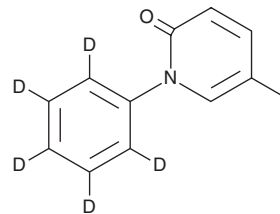


# PRODUCT INFORMATION



## Pirfenidone-d<sub>5</sub> Item No. 26452

**CAS Registry No.:** 1020719-62-3  
**Formal Name:** 5-methyl-1-(phenyl-2,3,4,5,6-d<sub>5</sub>)-2(1H)-pyridinone  
**MF:** C<sub>12</sub>H<sub>6</sub>D<sub>5</sub>NO  
**FW:** 190.3  
**Chemical Purity:** ≥98% (Pirfenidone)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>  
**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<sub>5</sub> 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<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the pirfenidone-d<sub>5</sub> in the solvent of choice. Pirfenidone-d<sub>5</sub> 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.<sup>1-5</sup> It inhibits TGF-β1-stimulated increases in collagen type I, fibronectin, and Hsp47 expression in A549 lung cancer cells in a concentration-dependent manner.<sup>4</sup> 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).<sup>2</sup> 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.<sup>1</sup> Pirfenidone also inhibits NADPH-dependent lipid peroxidation in sheep liver microsomes and scavenges hydroxyl radicals (IC<sub>50</sub>s = ~6 and ~2.5 mM, respectively).<sup>3</sup> 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 02/07/2019

#### 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