

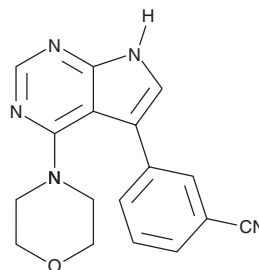
# PRODUCT INFORMATION



**PF-06447475**

Item No. 18375

**CAS Registry No.:** 1527473-33-1  
**Formal Name:** 3-[4-(4-morpholinyl)-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-benzonitrile  
**MF:** C<sub>17</sub>H<sub>15</sub>N<sub>5</sub>O  
**FW:** 305.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 224, 294 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

## Laboratory Procedures

PF-06447475 is supplied as a crystalline solid. A stock solution may be made by dissolving the PF-06447475 in the solvent of choice, which should be purged with an inert gas. PF-06447475 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of PF-06447475 in these solvents is approximately 2 and 5 mg/ml, respectively.

PF-06447475 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PF-06447475 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. PF-06447475 has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

## Description

PF-06447475 is an inhibitor of leucine-rich repeat kinase 2 (LRRK2; IC<sub>50</sub> = 3 nM).<sup>1</sup> It also inhibits LRRK2 containing a glycine-to-serine substitution at position 2019 (LRRK2<sup>G2019S</sup>; IC<sub>50</sub> = 11 nM). PF-06447475 inhibits LRRK2 autoactivation in cells (IC<sub>50</sub> = 25 nM). It inhibits paraquat-induced locomotor deficits, decreases in survival, and increases in cranial homogenate levels of malondialdehyde (MDA) in *D. melanogaster*.<sup>2</sup> PF-06447475 (30 mg/kg twice per day) increases the number of total and tyrosine hydroxylase-expressing neurons and decreases the number of inducible nitric oxide synthase-expressing neurons in rat substantia nigra pars compacta (SNPC) in a transgenic model of Lrrk2<sup>G2019S</sup>- and α-synuclein-induced model of Parkinson's disease.<sup>3</sup> It reduces levels of macrophage infiltration in the ipsilateral SNPC in the same model at the same dose.

## References

1. Henderson, J.L., Kormos, B.L., Hayward, M.M., *et al.* Discovery and preclinical profiling of 3-[4-(morpholin-4-yl)-7H-pyrrolo[2,3-d]pyrimidin-5-yl]benzonitrile (PF-06447475), a highly potent, selective, brain penetrant, and in vivo active LRRK2 kinase inhibitor. *J. Med. Chem.* **58**(1), 419-432 (2015).
2. Quintero-Espinosa, D.A., Jimenez-Del-Rio, M., and Velez-Pardo, C. LRRK2 kinase inhibitor PF-06447475 protects *Drosophila melanogaster* against paraquat-induced locomotor impairment, life span reduction, and oxidative stress. *Neurochem. Res.* **49**(9), 2440-2452 (2024).
3. Daher, J.P.L., Abdelmotilib, H.A., Hu, X., *et al.* Leucine-rich Repeat Kinase 2 (LRRK2) Pharmacological Inhibition Abates α-Synuclein Gene-induced Neurodegeneration. *J. Bio. Chem.* **290**(32), 19433-19444 (2015).

### 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

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