

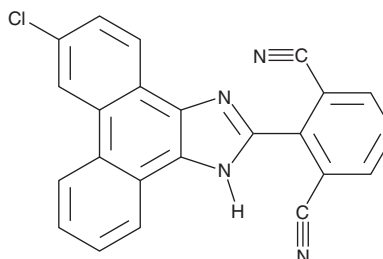
# PRODUCT INFORMATION



## MF63

Item No. 13217

**CAS Registry No.:** 892549-43-8  
**Formal Name:** 2-(9-chloro-1H-phenanthro[9,10-d]imidazol-2-yl)-1,3-benzenedicarbonitrile  
**MF:** C<sub>23</sub>H<sub>11</sub>ClN<sub>4</sub>  
**FW:** 378.8  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 215, 255, 365 nm  
**Supplied as:** A crystalline solid  
**Storage:** Room temperature  
**Stability:** ≥4 years



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

### Laboratory Procedures

MF63 is supplied as a crystalline solid. A stock solution may be made by dissolving the MF63 in the solvent of choice, which should be purged with an inert gas. MF63 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of MF63 in these solvents is approximately 30 mg/ml.

MF63 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MF63 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MF63 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Microsomal prostaglandin E<sub>2</sub> synthase-1 (mPGES-1) is the terminal enzyme in the biosynthesis of PGE<sub>2</sub>.<sup>1-3</sup> MF63 is a potent, selective, and orally active inhibitor of human mPGES-1 (IC<sub>50</sub> = 1.3 nM).<sup>4,5</sup> It displays greater than 1,000-fold selectivity over other prostanoid synthases.<sup>5</sup> MF63 also potently inhibits guinea pig mPGES-1 (IC<sub>50</sub> = 0.9 nM) but not mouse or rat mPGES-1.<sup>5</sup> In guinea pigs or in mice expressing human mPGES-1, MF63 prevents LPS-induced pyresis, hyperalgesia, and iodoacetate-induced osteoarthritic pain.<sup>5</sup> It does not produce the gastrointestinal toxicity that is caused by non-selective COX inhibitors, although it markedly suppresses PGE<sub>2</sub> synthesis in the stomach.<sup>5</sup>

### References

1. Samey, A.V., Monrad, S., and Crofford, L.J. Microsomal prostaglandin E synthase-1: The inducible synthase for prostaglandin E<sub>2</sub>. *Arthritis Res. Ther.* **7**(3), 114-117 (2005).
2. Friesen, R.W. and Mancini, J.A. Microsomal prostaglandin E<sub>2</sub> synthase-1 (mPGES-1): A novel anti-inflammatory therapeutic target. *J. Med. Chem.* **51**(14), 4059-4067 (2008).
3. Hara, S., Kamei, D., Sasaki, Y., et al. Prostaglandin E synthases: Understanding their pathophysiological roles through mouse genetic models. *Biochimie* **92**(6), 651-659 (2010).
4. Côté, B., Boulet, L., Brideau, C., et al. Substituted phenanthrene imidazoles as potent, selective, and orally active mPGES-1 inhibitors. *Bioorg. Med. Chem. Lett.* **17**(24), 6816-6820 (2007).
5. Xu, D., Rowland, S.E., Clark, P., et al. MF63 [2-(6-chloro-1H-phenanthro[9,10-d]imidazol-2-yl)-isophthalonitrile], a selective microsomal prostaglandin E synthase-1 inhibitor, relieves pyresis and pain in preclinical models of inflammation. *J. Pharmacol. Exp. Ther.* **326**(3), 754-763 (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.

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