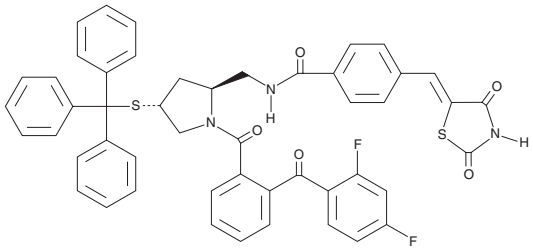
# PRODUCT INFORMATION

## Pyrrophenone

*Item No. 13294*

**CAS Registry No.:** 341973-06-6
**Formal Name:** N-[[(2S,4R)-1-[2-(2,4-difluorobenzoyl) benzoyl]-4-[(triphenylmethyl)thio]-2-pyrrolidinyl]methyl]-4-[(Z)-(2,4-dioxo-5-thiazolidinylidene)methyl]-benzamide
**MF:** $C_{49}H_{37}F_2N_3O_5S_2$
**FW:** 850.0
**Purity:** ≥95%
**UV/Vis.:** $\lambda_{max}$: 332 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

Pyrrophenone is supplied as a crystalline solid. A stock solution may be made by dissolving the pyrrophenone in the solvent of choice, which should be purged with an inert gas. Pyrrophenone is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of pyrrophenone in these solvents is approximately 15 and 12.5 mg/ml, respectively.

Pyrrophenone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, pyrrophenone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Pyrrophenone has a solubility of approximately 0.1 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

The group IVA phospholipase $A_2$ ($PLA_2$), known as calcium-dependent cytosolic $PLA_2$ ($cPLA_2$), selectively releases arachidonic acid (AA) from membrane phospholipids, playing a central role in initiating the synthesis of prostaglandins (PGs) and leukotrienes (LTs).[1,2] Pyrrophenone inhibits $cPLA_2$ with an $IC_{50}$ value of 4.2 nM in enzyme assays and potently blocks the release of AA and the production of $PGE_2$ and $LTC_4$ in cells ($IC_{50}$ = 24, 25, and 14 nM, respectively).[3] Its action is reversible and selective, as pyrrophenone inhibits the secretory type IB and IIA $PLA_2$s with more than a hundred-fold less potency.[4] Pyrrophenone has also been shown to inhibit calcium ionophore (A23187)-stimulated AA release from monocytic cells, interleukin-1-induced $PGE_2$ synthesis in mesangial cells, and the production of $PGE_2$, LTs, and platelet-activating factor by human neutrophils, always with maximal inhibition at concentrations below 1 µM.[4,5]

### References


1. Ghosh, M., Stewart, A., Tucker, D.E., *et al. Am. J. Respir. Cell Mol. Biol.* **30(1)**, 91-100 (2004).
2. Liberty, I.F., Raichel, L., Hazan-Eitan, Z., *et al. J. Leukoc. Biol.* **76(1)**, 176-184 (2004).
3. Seno, K., Okuno, T., Nishi, K., *et al. Bioorg. Medicinal Chem. Letters* **11(4)**, 587-590 (2001).
4. Ono, T., Yamada, K., Chikazawa, Y., *et al. Biochem. J.* **363(Pt 3)**, 727-735 (2002).
5. Flamand, N., Picard, S., Lemieux, L., *et al. Brit. J Pharmacol.* **149(4)**, 385-392 (2006).





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