

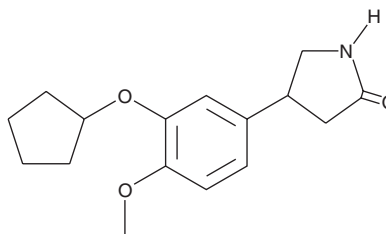
Product Information



Rolipram

Item No. 10011132

CAS Registry No.: 61413-54-5
Formal Name: 4-[3-(cyclopentyloxy)-4-methoxyphenyl]-2-pyrrolidinone
Synonyms: SB 95952, ZK 62711
MF: C₁₆H₂₁NO₃
FW: 275.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that rolipram be stored as supplied at -20°C. It should be stable for at least two years.

Rolipram is supplied as a crystalline solid. A stock solution may be made by dissolving the rolipram in an organic solvent purged with an inert gas. Rolipram is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of rolipram in ethanol is approximately 5 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Rolipram is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, rolipram should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Rolipram has a solubility of approximately 0.5 mg/ml in a 1:9 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Type 4 cyclic nucleotide phosphodiesterases (PDE4) isoforms selectively inactivate the second messenger cAMP by hydrolyzing the phosphodiester bond, producing AMP. Rolipram is a cell-permeable selective PDE4 inhibitor. Since PDE4 is abundant in leukocytes, rolipram inhibits inflammation by suppressing leukocyte function, inhibiting C5a-stimulated LTC₄ synthesis in eosinophils (IC₅₀ = 200 nM),¹ and lipopolysaccharide-induced TNF synthesis in monocytes (IC₅₀ = 360 nM).² Rolipram also enhances neuronal survival,³ has antipsychotic effects in mice,⁴ and suppresses bone loss in ovariectomized rats.⁵

References

1. Tenor, H., Hatzelmann, A., Church, M.K., *et al.* Effects of theophylline and rolipram on leukotriene C₄ (LTC₄) synthesis and chemotaxis of human eosinophils from normal and atopic subjects. *Br. J. Pharmacol.* **118**, 1727-1735 (1996).
2. Souness, J.E., Griffin, M., Maslen, C., *et al.* Evidence that cyclic AMP phosphodiesterase inhibitors suppress TNFα generation from human monocytes by interacting with a 'low-affinity' phosphodiesterase 4 conformer. *Br. J. Pharmacol.* **118**, 649-658 (1996).
3. Sasaki, T., Kitagawa, K., Omura-Matsuoka, E., *et al.* The phosphodiesterase inhibitor rolipram promotes survival of newborn hippocampal neurons after ischemia. *Stroke* **38**, 1597-1605 (2007).
4. Kanes, S.J., Tokarczyk, J., Siegel, S.J., *et al.* Rolipram: A specific phosphodiesterase 4 inhibitor with potential antipsychotic activity. *Neuroscience* **144**, 239-246 (2007).
5. Yao, W., Tian, X.Y., Chen, J., *et al.* Rolipram, a phosphodiesterase 4 inhibitor, prevented cancellous and cortical bone loss by inhibiting endosteal bone resorption and maintaining the elevated periosteal bone formation in adult ovariectomized rats. *J. Musculoskelet. Neuronal. Interact.* **7(2)**, 119-130 (2007).

Related Products

Milrinone - Item No. 13357 • Zaprinast - Item No. 10010421 • Papaverine - Item No. 10011133

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent under separate cover to the MSDS supervisor at your institution.

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