
Product Data Sheet

Product Name: Indomethacin N-octyl amide

Cat. No.: GC14777

Chemical Properties

Cas. No. 282728-65-8

Chemical Name N-octyl-1-(4-chlorobenzoyl)-5-methoxy-1H-indole-3-acetamide

SMILES ClC1=CC=C(C(N2C(C=CC(OC)=C3)=C3C(CC(N([H])CCCCCCCC)=O)=C2C)=O)C=C1

Formula $C_{27}H_{33}ClN_2O_3$ M.Wt 469.0

Solubility $\leq 2\text{mg/ml}$ in ethanol; 27mg/ml in dimethyl formamide Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT Condition, or blue ice upon request.

Structure

Background

Indomethacin N-octyl amide is a potent and non-selective inhibitor of both COX-1 and COX-2 [1].

Cyclooxygenase (COX) is the key enzyme required for the conversion of arachidonic acid to prostaglandins. Cyclooxygenase enzymes have been involved in diverse physiological situations and disease processes ranging from inflammation to cancer. Until now, two cyclooxygenase isoforms have been identified, COX-1 and COX-2. The COX-1 enzyme is produced constitutively (i.e., gastric mucosa) and COX-2 is inducible (i.e., sites of inflammation) [2].

Indomethacin is a potent but non-selective inhibitor of both COX-1 and COX-2. Indomethacin is a substituted indole acetic acid, wherein the carboxylate can be derivitized as an ester or amide. Conversion of indomethacin into ester and amide derivatives provides a facile strategy for generating highly selective COX-2 inhibitors. Indomethacin N-octyl amide inhibited the activity of ovine COX-1 and human recombinant COX-2 with the IC₅₀ values of $66\ \mu\text{M}$ and $40\ \text{nM}$, respectively. While the IC₅₀ of indomethacin for the inhibition of COX-1 and COX-2 were $0.67\ \mu\text{M}$ and $0.05\ \mu\text{M}$, respectively [1].

Caution: Product has not been fully validated for medical applications. For research use only.

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References:

- [1] Kalgutkar A S, Marnett A B, Crews B C, et al. Ester and amide derivatives of the nonsteroidal antiinflammatory drug, indomethacin, as selective cyclooxygenase-2 inhibitors[J]. Journal of medicinal chemistry, 2000, 43(15): 2860-2870.
- [2] Dubois R N, Abramson S B, Crofford L, et al. Cyclooxygenase in biology and disease[J]. The FASEB journal, 1998, 12(12): 1063-1073.

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