

Product Data Sheet

Product Name: (S)-Ketoprofen

Cat. No.: GC15977

Chemical Properties

Cas. No. 22161-81-5

Chemical Name (S)-3-benzoyl- α -methyl-benzeneacetic acid

SMILES O=C(C1=CC=CC([C@H](C)C(O)=O)=C1)C2=CC=CC=C2

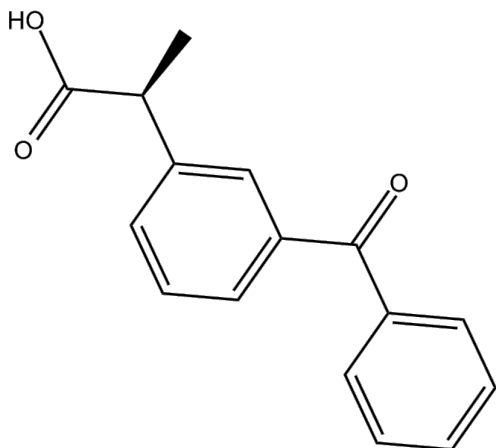
Formula $C_{16}H_{14}O_3$ M.Wt 254.3

Solubility $\geq 10.6\text{mg/mL}$ in DMSO 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, or blue ice upon request.

Structure



Background

(S)-Ketoprofen, a dual COX1/2 inhibitor, can be used as a nonsteroidal anti-inflammatory drug to treat arthritis-related inflammatory pains. Ketoprofen is photolabile and undergoes degradation when irradiated by sunlight to induce various skin diseases [1].

In vitro: The combination of UVB irradiation with ketoprofen dose-dependently induced the

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cytotoxicity and suppressed DNA synthesis in HaCaT cells. UVB-irradiated KP inhibited the cell growth and induced G2/M cell cycle arrest by regulating the levels of cdc2, cyclin B1, Chk1, Tyr15-phosphorylated cdc2 and p21. The DAPI staining results has revealed that KP accentuated the apoptotic response to UVB radiation in HaCaT cells [1].

In vivo: In a placebo-controlled, double-blind study in the rhesus monkeys *Macaca mulatta* with periodontal disease, administration of KP at 1% level in suitable topical vehicles to the gingiva once daily at a standard dose of 1.8 ml per monkey for 6 months effectively inhibited GCF-LTB4 and GCF-PGE2 and positively altered alveolar bone activity [2]. Ketoprofen at a dose of 3.63 mg/kg bwt (phenylbutazone equimolar dose) showed significant analgesic effects and reduced hoof pain and lameness to a greater extent [3]. Treatment with Ketoprofen (40 and 80 mg/kg diet) greatly reduced the incidence of transitional cell carcinoma of the urinary bladder by >70% from that seen in dietary mice [4].

References:

- [1]. Liu S, Mizu H, Yamauchi H. Molecular response to phototoxic stress of UVB-irradiated ketoprofen through arresting cell cycle in G2/M phase and inducing apoptosis[J]. Biochemical and biophysical research communications, 2007, 364(3): 650-655.
- [2]. Li K L, Vogel R, Jeffcoat M K, et al. The effect of ketoprofen creams on periodontal disease in rhesus monkeys[J]. Journal of periodontal research, 1996, 31(8): 525-532.
- [3]. Owens J G, Kamerling S G, Stanton S R, et al. Effects of ketoprofen and phenylbutazone on chronic hoof pain and lameness in the horse[J]. Equine Veterinary Journal, 1995, 27(4): 296-300.
- [4]. Hawk E T, Kelloff G J, McCormick D L. Differential activity of aspirin, ketoprofen and sulindac as cancer chemopreventive agents in the mouse urinary bladder[J]. Carcinogenesis, 1996, 17(5): 1435-1438.

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