Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Ibuprofen

Catalog No: tcsc1931

Available Sizes

Size: 1g

Size: 5g

Specifications

CAS No:
15687-27-1

Formula:
$C_{13}H_{18}O_2$

Pathway:
Immunology/Inflammation

Target:
COX

Purity / Grade:
>98%

Solubility:
H2O :

Alternative Names:
(±)-Ibuprofe

Observed Molecular Weight:
206.28

Product Description

Ibuprofen is an anti-inflammatory inhibitor targeting **COX-1** and **COX-2** with **IC_{50}** of 13 μM and 370 μM, respectively.

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IC50 & Target: IC50: 13 μM (COX-1), 370 μM (COX-2)

In Vitro: Ibuprofen inhibits the enzyme cyclooxygenase COX-1 and COX-2, which convert arachidonic acid to prostaglandin H2 (PGH2). Its action is similar to aspirin, indomethacin and all other NSAIDs in intact cells, broken cells, and purified enzyme preparations[1]. Ibuprofen inhibits the constitutive activation of NF-κB and IKKα in the androgen-independent prostate tumor cells PC-3 and DU-145. It sensitizes prostate cells to ionizing radiation and blocks stimulated activation of NF-κB following exposure to TNFα or ionizing radiation in the androgen-sensitive prostate tumor cell line LNCaP. Both of these cannot be attributed directly to inhibition of IκB-α kinase but to inhibition of an upstream regulator of IKKα[2]. Ibuprofen exerts an anticancer effect by reducing survival of cancer cells. Ibuprofen is more efficacious than aspirin and acetaminophen, and comparable with (R)-flurbiprofen and indomethacin in induction of p75NTR protein expression in cell lines from bladder and other organs[3].

In Vivo: Ibuprofen reacts with the heme group of cyclooxygenase to prevent arachidonic acid conversion. Prior exposure to Ibuprofen in vivo protects cyclooxygenase completely from the irreversible effects of aspirin in platelets[4]. Ibuprofen treatment is effective in attenuating joint inflammation and early articular cartilage degeneration in the adult female Sprague-Dawley rat model induced by high-repetition and high-force (HRHF) task. It dose this by blocking the increases in serum C1 and 2C (a biomarker of collagen I and II degradation) as well as the ratio of collagen degradation to synthesis (C1, 2C/CPII, the latter a biomarker of collage type II synthesis) induced by HRHF[5].