Chemical Properties

Product Name: Ibuprofen
Cas No.: 15687-27-1
M.Wt: 206.28
Formula: C13H18O2

Chemical Name: 2-[4-(2-methylpropyl)phenyl]propanoic acid
Canonical SMILES: CC(C)CC1=CC=C(C=C1)C(C)C(=O)O
Solubility: Soluble in DMSO > 10 mM
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.
Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: Neuroscience
Pathways: COX
Description:
Ibuprofen is an inhibitor of cyclooxygenase 1 and cyclooxygenase 2 with IC50 values of 12 and 80 μM, respectively [1].
Cyclooxygenase (COX) is an enzyme that is responsible for the formation of prostaglandins, prostacyclin and thromboxane.
In HCT-116 p53wt or HCT-116 p53-/– colon carcinoma cell lines, S- and R-ibuprofen induced apoptosis and blocked cell cycle is in part dependent on p53. The anti-proliferative effects were
significantly higher in the p53wt cell line than in the p53-deficient cells [2].
In nude mice model bearing HCT-116 p53wt and p53-/- xenografts, R-ibuprofen significantly
inhibited the growth of p53wt expressing xenografts and only a small inhibition of p53-/-
exenografts [2]. In hypercholesterolemic animals, ibuprofen reduced the levels of total cholesterol,
VLDL, LDL, triglycerides and atherogenic index. Also, ibuprofen inhibited COX enzymes and
inhibited the generation of free radicals during prostaglandins synthesis, which reduced the
levels of lipid peroxidation, superoxide dismutase [3]. In rats, ibuprofen (60 mg/kg) improved
mechanical hyperalgesia through reducing central hyperexcitability [4].

Reference:
non-steroidal anti-inflammatory drugs: investigation using human peripheral monocytes. J Pharm
[4] Redondo-Castro E, Navarro X. Chronic ibuprofen administration reduces neuropathic pain
but does not exert neuroprotection after spinal cord injury in adult rats. Exp Neurol, 2014, 252:
95-103.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet.
Most ApexBio products are stable under the recommended conditions. Products are sometimes
shipped at a temperature that differs from the recommended storage temperature. Shortterm
storage of many products are stable in the short-term at temperatures that differ from that
required for long-term storage. We ensure that the product is shipped under conditions that will
maintain the quality of the reagents. Upon receipt of the product, follow the storage
recommendations on the product data sheet.

ApexBio Technology

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