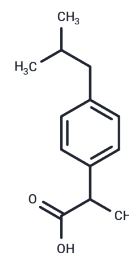


## Ibuprofen

## Chemical Properties

CAS No. :	15687-27-1
Formula:	C <sub>13</sub> H <sub>18</sub> O <sub>2</sub>
Molecular Weight:	206.28
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Ibuprofen (Advil) is a propionic acid derivate and nonsteroidal anti-inflammatory drug (NSAID) with anti-inflammatory, analgesic, and antipyretic effects. Ibuprofen inhibits the activity of cyclo-oxygenase I and II, resulting in a decreased formation of precursors of prostaglandins and thromboxanes.
Targets(IC50)	Apoptosis,Parasite,COX
In vitro	In the adult female Sprague-Dawley rat model induced by the HRHF method, Ibuprofen treats arthritis and early cartilage degeneration by inhibiting serum C1 and 2C as well as collagen degradation and synthesis.
In vivo	Within cells, Ibuprofen inhibits the cyclooxygenases COX-1 and COX-2, and the conversion of arachidonic acid into prostaglandin H <sub>2</sub> (PGH <sub>2</sub> ). In prostate tumor cells, Ibuprofen can suppress the activation of NF-κB and IKKα.
Kinase Assay	Radiochemical enzyme assays for COX-1 and COX-2: 10 μL of purified COX-1 (0.7-0.8 μg) or COX-2 (3.0 units, 0.3μg) is activated with 50 μL of cofactor solution [l-epinephrine (1.3 mg/mL), reduced glutathione (0.3 mg/mL), and hematin (1.3 mg/mL) in oxygen-free Tris-HCl buffer (pH 8.0)]. The enzyme solution (60 μL) is added to Ibuprofen solutions or DMSO (20 μL) after [ <sup>14</sup> C]arachidonic acid is added in 0.2 mL eight-strip test tubes and preincubated 10 minutes on ice. Samples are incubated for 15 minutes at 37 °C, after which the reaction is terminated by addition of 10 μL of 2 M HCl and 5 μL of carrier solution (PGE <sub>2</sub> and PGF <sub>2</sub> α, 0.2 μg/mL of each in EtOH). The unmetabolized arachidonic acid is separated from the prostaglandin products by column chromatography and eluted with n-hexane-dioxane-glacial acetic acid (70:30:1). The prostaglandin products are then eluted with EtOAc-MeOH (85:15), and the samples are counted in a Packard scintillation spectrometer. IC <sub>50</sub> values are obtained by linear regression analysis.
Cell Research	Each cell line is incubated with Ibuprofen of various concentrations for 48 hours. Cell survival is estimated by the MTT assay, and cell death is determined by Hoechst staining used to distinguish between intact cell nuclei and fragmented nuclei undergoing cell death. Cells are lysed and analyzed by western blotting for detection of the p75NTR protein.(Only for Reference)

## Solubility Information

## A DRUG SCREENING EXPERT

Solubility	DMSO: 255 mg/mL (1236.18 mM),Sonication is recommended. Ethanol: 39 mg/mL (189.06 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (9.7 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.8478 mL	24.2389 mL	48.4778 mL
5 mM	0.9696 mL	4.8478 mL	9.6956 mL
10 mM	0.4848 mL	2.4239 mL	4.8478 mL
50 mM	0.097 mL	0.4848 mL	0.9696 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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