Aspirin  
Item No. 70260

CAS Registry No.: 50-78-2  
Formal Name: 2-(acetyloxy)-benzoic acid  
Synonym: Acetylsalicylic Acid  
MF: C9H8O4  
FW: 180.2  
Purity: ≥99%  
UV/Vis.: \( \lambda_{\text{max}} \): 226, 275 nm  
Supplied as: A crystalline solid  
Storage: Room temperature  
Stability: ≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Aspirin is supplied as a crystalline solid. A stock solution may be made by dissolving the aspirin in the solvent of choice. Aspirin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of aspirin in these solvents is approximately 80, 41, and 30 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of aspirin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of aspirin in PBS, pH 7.2, is approximately 2.7 mg/ml. Avoid adding aspirin to basic solutions (pH > 7.4), since base treatment will hydrolyze aspirin to salicylic acid. Store aqueous solutions of aspirin on ice and use within 30 minutes of preparation.

Description

Aspirin is a non-selective, irreversible COX inhibitor. The IC\(_{50}\) values for ovine COX-1 and -2 are 0.75 and 1.25 mM, respectively.\(^1\) Aspirin acetylates COX-1 at Ser\(^530\) and COX-2 at Ser\(^516\) resulting in irreversible enzyme inhibition.

Reference