Celecoxib
Item No. 10008672

CAS Registry No.: 169590-42-5
Formal Name: 4-[5-(4-methylphenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]-benzenesulfonamide
Synonyms: SC-58635, YM-177
MF: C_{17}H_{14}F_{3}N_{3}O_{2}S
FW: 381.4
Purity: ≥98%
UV/Vis.: λ_{max}^\text{nm}: 204, 254 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

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

Laboratory Procedures

Celecoxib is supplied as a crystalline solid. A stock solution may be made by dissolving the celecoxib in the solvent of choice. Celecoxib is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of celecoxib in ethanol and DMF is approximately 25 mg/ml and approximately 16.6 mg/ml in DMSO.

Celecoxib is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, celecoxib should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Celecoxib has a solubility of approximately 0.2 mg/ml in a 1:4 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Celecoxib is a selective inhibitor of COX-2 (IC_{50} values = 22.9 and 0.05 μM for COX-1 and COX-2, respectively).\(^1,2\) In vivo, celecoxib (0.3 ml of a 0.4% solution) administered intra-articularly reduces production of IL-1β, TNF-α, and MMP-3 as well as articular cartilage damage in a rabbit model of osteoarthritis.\(^3\) It reduces blood glucose and improves renal function and memory deficits via downregulation of COX-2 expression and increased BDNF-TrkB signaling in rats with diabetes induced by streptozotocin (Item No. 13104).\(^4\) Celecoxib also displays chemopreventive activity in multiple tumor types via proapoptotic effects that are independent of COX-2 inhibition.\(^5\) Formulations containing celecoxib have been used in the treatment of inflammation while circumventing the gastrointestinal toxicity associated with traditional non-steroidal anti-inflammatory drugs, however, the use of celecoxib has been tempered due to its ability to induce adverse cardiovascular events.\(^8\)

References