Metamizole (sodium salt)

Item No. 15771

CAS Registry No.: 68-89-3
Formal Name: 1-[(2,3-dihydro-1,5-dimethyl-3-oxo-2-phenyl-1H-pyrazol-4-yl)methylamino]-methanesulfonic acid, monosodium salt

Synonyms: Dipirona, Metamizol
MF: C_{16}H_{16}N_{2}O_{5}S • Na
FW: 333.3

Purity: ≥98%

Stability: ≥2 years at -20°C

Supplied as: A crystalline solid

UV/Vis: λ_{max} 238, 267 nm

Laboratory Procedures

For long term storage, we suggest that metamizole (sodium salt) be stored as supplied at -20°C. It should be stable for at least two years.

Metamizole (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the metamizole (sodium salt) in the solvent of choice. Metamizole (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of metamizole (sodium salt) in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

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 metamizole (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metamizole (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Metamizole (sodium salt) is a nonopioid produg that is rapidly hydrolyzed to the metabolites 4-methylaminoantipyrine (MAA) and 4-aminoantipyrine, which have analgesic and antipyretic effects. MAA has been shown to inhibit COX activity 8-9-fold more potently than 4-aminoantipyrine (COX-1: IC_{50} = 2.6 and 20.8 µM, respectively, and COX-2: IC_{50} = 4.7 and 41.8 µM, respectively). These metabolites can be further acylated with arachidonic acid (Item No. 90010) to form compounds that can bind to central and peripheral cannabinoid (CB₁ and CB₂) receptors and TRPV1 receptors at low micromolar concentrations. Metamizole is associated with a risk of agranulocytosis and has been banned against using in clinical and pharmacological settings in the United States since 1977.

References


WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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