Tolbutamide

Product Number T 0891
Store at Room Temperature

Product Description
Molecular Formula: \( C_{12}H_{18}N_{2}O_{3}S \)
Molecular Weight: 270.4
CAS Number: 64-77-7
Melting Point: 128.5-129.5 °C\(^1\)
pK\(_a\): 5.3\(^2\)
Synonyms: 1-butyl-3-(4-methylbenzenesulfonyl)urea, 3-(p-tolyl-4-sulfonyl)-1-butylurea, \( N \)-[(butylamino)carbonyl]-4-methylbenzenesulfonamide \(^1\)

Tolbutamide is a sulfonylurea compound that is a hypoglycemic agent. It was historically developed as part of the sulfanilamide family of compounds and has been utilized in diabetes research.\(^1,3,4\) A review of insulin desensitization in \( \beta \)-cells and a discussion of the role of tolbutamide in this process has been published.\(^5\)

Various agents, including tolbutamide, have been used in a cDNA microarray assay to probe changes in gene expression in HepG2 cells upon their administration.\(^6\) It has been utilized to counteract insulin activity in a patch-clamp investigation of ATP-sensitive K\(^+\) channels in mouse pancreatic \( \beta \)-cells.\(^7\)

The activity of various biotransformation enzymes in cultured primary rat proximal tubular cells in the presence of tolbutamide and other compounds has been studied.\(^8\)

A protocol for capture of low levels of tolbutamide from an analytical HPLC column for subsequent MS analysis has been described.\(^9\) A method for LC/MS analysis of tolbutamide in serum has been reported.\(^10\)

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in ethanol (50 mg/ml), with heat as needed. It has been reported to be soluble in acetone, chloroform, and dilute alkali hydroxide solutions.\(^3\)

References
1. The Merck Index, 12th ed., Entry# 9646.

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