

PRODUCT INFORMATION



Tolbutamide-d₉

Item No. 30738

CAS Registry No.: 1219794-57-6

Formal Name: N-[(butyl-1,1,2,2,3,3,4,4,4-d₉-amino)carbonyl]-4-methylbenzenesulfonamide

Synonyms: D 860-d₉, U-2043-d₉

MF: C₁₂H₉D₉N₂O₃S

FW: 279.4

Chemical Purity: ≥98% (Tolbutamide)

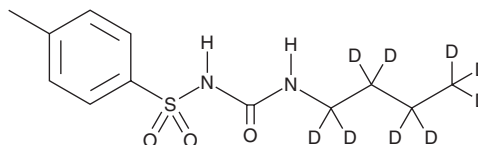
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₉); ≤1% d₀

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

Tolbutamide-d₉ is intended for use as an internal standard for the quantification of tolbutamide (Item No. 19888) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Tolbutamide-d₉ is supplied as a solid. A stock solution may be made by dissolving the tolbutamide-d₉ in the solvent of choice, which should be purged with an inert gas. Tolbutamide-d₉ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of tolbutamide-d₉ in these solvents is approximately 30 mg/ml.

Description

Tolbutamide is an inhibitor of sulfonylurea receptor 1 (SUR1) linked to ATP-sensitive potassium channel K_{ir}6.2 (IC₅₀ = 4.9 μM).¹ It is selective for SUR1/K_{ir}6.2 over SUR2A/K_{ir}6.2 and SUR2B/K_{ir}6.2 channels (IC₅₀s = 85 and 88 μM, respectively). Tolbutamide increases glucose-induced insulin secretion and calcium influx in isolated mouse pancreatic islets.² *In vivo*, tolbutamide (80 mg/kg) reduces blood glucose levels in a mouse model of diabetes induced by streptozotocin (STZ; Item No. 13104).³ Formulations containing tolbutamide have been used in the treatment of type 2 diabetes.

References

1. Proks, P., Reimann, F., Green, N., *et al.* Sulfonylurea stimulation of insulin secretion. *Diabetes* **51**(3), S368-S376 (2002).
2. Ishiyama, N., Ravier, M.A., and Henquin, J.-C. Dual mechanism of the potentiation by glucose of insulin secretion induced by arginine and tolbutamide in mouse islets. *Am. J. Physiol. Endocrinol. Metab.* **290**(3), E540-E549 (2006).
3. Rerup, C. and Tarding, F. Streptozotocin- and alloxan-diabetes in mice. *Eur. J. Pharmacol.* **7**(1), 89-96 (1969).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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