

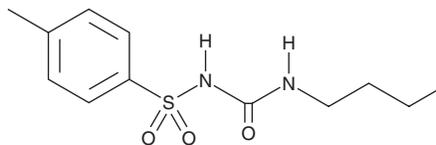
# PRODUCT INFORMATION



## Tolbutamide

Item No. 19888

**CAS Registry No.:** 64-77-7  
**Formal Name:** N-[(butylamino)carbonyl]-4-methylbenzenesulfonamide  
**Synonyms:** D 860, NSC 23813, NSC 87833, U-2043  
**MF:** C<sub>12</sub>H<sub>18</sub>N<sub>2</sub>O<sub>3</sub>S  
**FW:** 270.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 229 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

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

Tolbutamide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tolbutamide should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Tolbutamide has a solubility of approximately 0.14 mg/ml in a 1:6 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Tolbutamide is an inhibitor of sulfonylurea receptor 1 (SUR1) linked to ATP-sensitive potassium channel K<sub>ir</sub>6.2 (IC<sub>50</sub> = 4.9 μM).<sup>1</sup> It is selective for SUR1/K<sub>ir</sub>6.2 over SUR2A/K<sub>ir</sub>6.2 and SUR2B/K<sub>ir</sub>6.2 channels (IC<sub>50</sub>s = 85 and 88 μM, respectively). Tolbutamide increases glucose-induced insulin secretion and calcium influx in isolated mouse pancreatic islets.<sup>2</sup> *In vivo*, tolbutamide (80 mg/kg) reduces blood glucose levels in a mouse model of diabetes induced by streptozotocin (STZ; Item No. 13104).<sup>3</sup> 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 07/02/2020

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM