

# PRODUCT INFORMATION

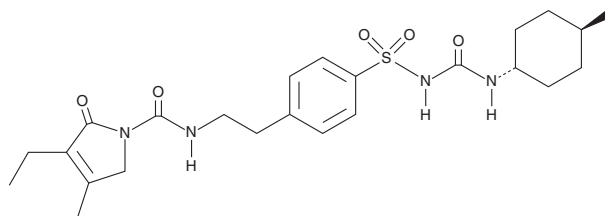


## Glimepiride

Item No. 12090

**CAS Registry No.:** 93479-97-1  
**Formal Name:** 3-ethyl-2,5-dihydro-4-methyl-N-[2-[4-[[[(trans-4-methylcyclohexyl)amino]carbonyl]amino]sulfonyl]phenyl]ethyl]-2-oxo-1H-pyrrole-1-carboxamide

**Synonym:** HOE 490  
**MF:** C<sub>24</sub>H<sub>34</sub>N<sub>4</sub>O<sub>5</sub>S  
**FW:** 490.6  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 228 nm  
**Supplied as:** A crystalline 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

Glimepiride is supplied as a crystalline solid. A stock solution may be made by dissolving the glimepiride in the solvent of choice. Glimepiride is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of glimepiride in these solvents is approximately 3 and 10 mg/ml, respectively.

Glimepiride is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, glimepiride should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Glimepiride has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Glimepiride is an inhibitor of sulfonylurea receptors (SURs) linked to the inwardly rectifying potassium channel (K<sub>ir</sub>6.2; IC<sub>50</sub>S = 3, 5.4, and 7.3 nM for SUR1/K<sub>ir</sub>6.2, SUR2A/K<sub>ir</sub>6.2, and SUR2B/K<sub>ir</sub>6.2, respectively, in *Xenopus* oocytes expressing the mouse receptor).<sup>1</sup> It also induces intracellular insulin receptor (InsR) complex dissociation and insulin degradation in HepG2 cells when used at a concentration of 20 μM.<sup>2</sup> Glimepiride (0.05 mg/kg per day) decreases blood glucose and plasma insulin levels in a KKAY mouse model of insulin-resistant type 2 diabetes.<sup>3</sup> It reduces hemoglobin A1c (HbA1c) levels in the same model when administered at a dose of 0.5 mg/kg per day. Formulations containing glimepiride have been used in the treatment of type 2 diabetes mellitus.

### References

1. Song, D.K. and Ashcroft, F.M. Glimepiride block of cloned β-cell, cardiac and smooth muscle K<sub>ATP</sub> channels. *Br. J. Pharmacol.* **133**(1), 193-199 (2001).
2. Hribal, M.L., D'Alfonso, R., Giovannone, B., *et al.* The sulfonylurea glimepiride regulates intracellular routing of the insulin-receptor complexes through their interaction with specific protein kinase C isoforms. *Mol. Pharmacol.* **59**(2), 322-330 (2001).
3. Müller, G., Satoh, Y., and Geisen, K. Extraparacrine effects of sulfonylureas - a comparison between glimepiride and conventional sulfonylureas. *Diabetes Res. Clin. Pract.* **28**(Suppl 1), S115-S137 (1995).

#### 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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