

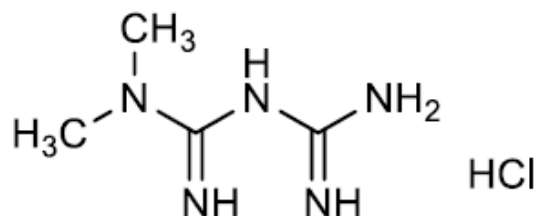
Metformin HCl

Cat#: orb546064 (CoA)

Metformin HCl

1,1-Dimethylbiguanide hydrochloride

Lot # MC5442



Physical Properties: White crystalline powder, MP=223-226°C

MW=165.6 C₄H₁₁N₅ • HCl

Analysis: >98% (HPLC); NMR conforms

Solubilization: May be dissolved in DMSO (8 mg/ml); or water (16 mg/ml)

Storage: Store desiccated as supplied at ambient temperature for up to 2 years. Store solutions at -20°C for up to 2 months.

Pharmacology: Clinically useful anti diabetic agent. Lowers plasma glucose levels and improves insulin sensitivity. Inhibits hepatic gluconeogenesis by activation of the AMP activated protein kinase (AMPK) pathway^{1,2}. Displays anti proliferative and pro-apoptotic actions in a variety of cancer cell lines^{3,4}. Induces autophagy via inhibition of the mTOR pathway. Activates PGC1 α and improves mitochondrial dynamics in renal tubular cells⁵.

Upregulates SIRT1 activity in endothelial cells⁶. Neuro protective and lowers α -synuclein phosphorylation in the Parkinson's disease MPTP mouse model⁷.

References:

1. G Zhou *et al. J. Clin. Invest* 2001 108:1167
2. RJ Shaw *et al. Science* 2005 310:1642
3. WY Shi *et al. Cell Death Dis.* 2012 3:e275
4. DF Rego *et al. Oncol. Lett.* 2017 13:554
5. SY Lee *et al. J. Diabetes Res.* 2017 2017:6483572
6. Z Zheng *et al. Diabetes.* 2012 61:217
7. N Katila *et al. Neuropharmacology* 2017 125:396

Not for human therapeutic use or for medicinal purposes. For research applications only.

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