

DATA SHEET

Product Name: Metformin HCl

Catalog #: CV-1023

Alt: CAS # 1115-70-4; 1,1-Dimethylbiguanide hydrochloride

Molecular Mass: 165.6

Analysis: >98% (HPLC); NMR (conforms)

Supplied As: White, crystalline powder

Resuspension: 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.

Description: Clinically useful antidiabetic 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 antiproliferative 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. Neuroprotective and lowers α -synuclein phosphorylation in the Parkinson's disease MPTP mouse model⁷.

References:

1. Zhou, G., et al., (2001) J. Clin. Invest, 108 : 1167
2. Shaw, R.J., et al., (2005) Science, 310 : 1642
3. Shi, W.Y., et al., (2012) Cell Death Dis., 3 : e275
4. Rego, D.F., et al., (2017) Oncol. Lett., 13 : 554
5. Lee, S.Y., et al., (2017) J. Diabetes Res., 2017 : 6483572
6. Zheng, Z., et al., (2012) Diabetes., 61 : 217
7. Katila, N., et al., (2017) Neuropharmacology, 125 : 396

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