Metformin (hydrochloride)

Item No. 13118

CAS Registry No.: 1115-70-4
Formal Name: N,N-dimethyl-imidodicarbonimidic diamide, monohydrochloride
Synonyms: 1,1-Dimethylbiguanide hydrochloride
MF: C₆H₁₁N₅ • HCl
FW: 165.6
Purity: ≥98%
UV/Vis.: λmax: 237 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

Metformin (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of metformin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metformin (hydrochloride) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Metformin is a biguanide with diverse biological activities.1-4 Metformin (250 mg/kg, i.p.) increases hepatic AMPK activity and reduces blood glucose by more than 50% in a liver kinase B1-dependent manner in mice fed normal and high-fat diets, respectively, and reduces blood glucose by 40% in ob/ob mice.2 It reduces weight gain, hepatic lipid droplet content, and total cholesterol, LDL cholesterol, and triglyceride levels in the plasma of diet-induced obese mice when administered at doses of 10 or 50 mg/kg per day.4 It also reverses increased hepatic triglyceride and apolipoprotein A5 levels, as well as hepatic steatosis, in a dose-dependent manner in an ob/ob mouse model of non-alcoholic fatty liver disease (NAFLD).5 Metformin (250 mg/kg) reduces tumor growth in an HCT116 p53-/- human colon cancer mouse xenograft model, but has no effect on HCT116 p53-/- tumors overexpressing recombinant S. cerevisiae Ndi1 NADH dehydrogenase, a single-subunit ortholog of the multi-subunit mammalian mitochondrial complex I.3 Formulations containing metformin have been used in the treatment of type 2 diabetes.

References