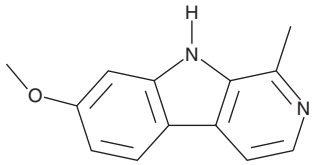
PRODUCT INFORMATION

Harmine

Item No. 10010324

CAS Registry No.:	442-51-3
Formal Name:	7-methoxy-1-methyl-9H-pyrido[3,4-b]indole
MF:	$C_{13}H_{12}N_2O$
FW:	212.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 242, 302 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

Harmine is supplied as a crystalline solid. A stock solution may be made by dissolving the harmine in the solvent of choice, which should be purged with an inert gas. Harmine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of harmine in DMSO is approximately 2 mg/ml and approximately 1.5 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of harmine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of harmine in PBS (pH 7.2) is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Peroxisome proliferator-activated receptor γ (PPARγ) is a central regulator of adipocyte differentiation and is the principle target of the thiazolidinedione (TZD) class of antidiabetic drugs.[1] Harmine is a β-carboline alkaloid that was first isolated from seeds of *Peganum harmala* (Syrian rue) and *Banisteriopsis caapi*. Recent work indicates that harmine is a unique regulator of PPARγ expression that acts by inhibiting the Wnt signalling pathway in a cell-specific manner.[2] Administration of harmine (30 mg/kg) to obese *db/db* mice resulted in reduced blood glucose, free fatty acids, and triglyceride levels, delayed hyperglycemia, and improved insulin sensitivity. Harmine also attenuates inflammatory gene expression (TNFα, IL-1β, iNOS) and macrophage accumulation in adipose tissue.[2]

References

1. Hauner, H. The mode of action of thiazolidinediones. *Diabetes Metab. Res. Rev.* **18(Suppl. 2)**, S10-S15 (2002).
2. Waki, H., Park, K.W., Mitro, N., *et al.* The small molecule harmine is an antidiabetic cell-type-specific regulator of PPARγ expression. *Cell Metab.* **5(5)**, 357-370 (2007).

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