

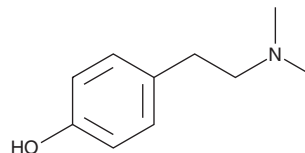
PRODUCT INFORMATION



Hordenine

Item No. 21626

CAS Registry No.: 539-15-1
Formal Name: 4-[2-(dimethylamino)ethyl]-phenol
Synonyms: N,N-dimethyl-4-Hydroxyphenylethylamine,
N,N-dimethyl Tyramine
MF: C₁₀H₁₅NO
FW: 165.2
Purity: ≥95%
UV/Vis.: λ_{max}: 225, 279 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.

Description

Hordenine (Item No. 21626) is a naturally occurring alkaloid found in a variety of plants, most commonly germinated barley (*Hordeum* species) from which the name is derived, and is structurally classified as a phenethylamine.^{1,2} It is biosynthesized by the step-wise double methylation of tyramine (Item No. 18601).³ Hordenine binds to and activates the dopamine D₂ receptor (K_i = 13 μM) but antagonizes D₂ receptor β-arrestin recruitment.⁴ It inhibits tyrosinase activity and expression at concentrations ≥ 50 μM resulting in reduced melanin accumulation in human melanocytes.² Hordenine is present in significant amounts in beer and can be measured in serum in the free form, for up to 2 hours, and the glucuronidated form, for up to 6 hours, after beer consumption.⁵ This product is intended for research and forensic applications.

References

1. Liu, D.L. and Lovett, J.V. Biologically active secondary metabolites of barley. II. Phytotoxicity of barley allelochemicals. *J. Chem. Ecol.* **19(10)**, 2231-2244 (1993).
2. Kim, S.-C., Lee, J.-H., Kim, M.-H., *et al.* Hordenine, a single compound produced during barley germination, inhibits melanogenesis in human melanocytes. *Food Chem.* **141(1)**, 174-181 (2013).
3. Meyer, E. Separation of two distinct S-adenosylmethionine dependent N-methyltransferases involved in hordenine biosynthesis in *Hordeum vulgare*. *Plant Cell Rep.* **1(6)**, 236-239 (1982).
4. Sommer, T., Hübner, H., El Kerdawy, A., *et al.* Identification of the beer component hordenine as food-derived dopamine D₂ receptor agonist by virtual screening a 3D compound database. *Sci. Rep.* **7**, 44201 (2017).
5. Steiner, I., Brauers, G., Temme, O., *et al.* A sensitive method for the determination of hordenine in human serum by ESI⁺ UPLC-MS/MS for forensic toxicological applications. *Anal. Bioanal. Chem.* **408(9)**, 2285-2292 (2016).

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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