



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

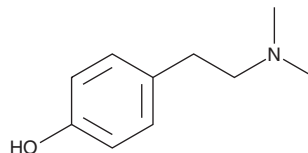
# PRODUCT INFORMATION



## 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:** C<sub>10</sub>H<sub>15</sub>NO  
**FW:** 165.2  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 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.<sup>1,2</sup> It is biosynthesized by the step-wise double methylation of tyramine (Item No. 18601).<sup>3</sup> Hordenine binds to and activates the dopamine D<sub>2</sub> receptor (K<sub>i</sub> = 13 μM) but antagonizes D<sub>2</sub> receptor β-arrestin recruitment.<sup>4</sup> It inhibits tyrosinase activity and expression at concentrations ≥ 50 μM resulting in reduced melanin accumulation in human melanocytes.<sup>2</sup> 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.<sup>5</sup> 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 D<sub>2</sub> 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<sup>+</sup> 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.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
[WWW.CAYMANCHEM.COM](http://WWW.CAYMANCHEM.COM)