

# PRODUCT INFORMATION

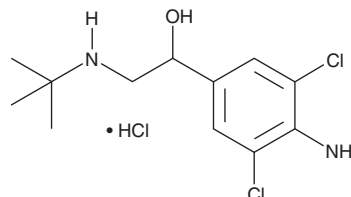


## Clenbuterol (hydrochloride)

Item No. 26293

**CAS Registry No.:** 21898-19-1  
**Formal Name:** 4-amino-3,5-dichloro- $\alpha$ -  
[[[(1,1-dimethylethyl)amino]  
methyl]-benzenemethanol,  
monohydrochloride

**Synonym:** NAB 365  
**MF:** C<sub>12</sub>H<sub>18</sub>Cl<sub>2</sub>N<sub>2</sub>O • HCl  
**FW:** 313.7  
**Purity:** ≥95%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 212, 246, 302 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥5 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Description

Clenbuterol (hydrochloride) (Item No. 26293) is an analytical reference standard categorized as a  $\beta_2$ -adrenergic receptor agonist.<sup>1</sup> Clenbuterol has anabolic properties and formulations containing clenbuterol have been used to enhance physical performance in athletes and to promote growth in show-ring and food-producing livestock.<sup>1-3</sup> This product is intended for use in analytical forensic applications. This product is also available as a general research tool (Item No. 14985).

### References

1. Rothwell, N.J., Stock, M.J., and Sudera, D.K. Changes in tissue blood flow and  $\beta$ -receptor density of skeletal muscle in rats treated with the  $\beta_2$ -adrenoceptor agonist clenbuterol. *Br. J. Pharmacol.* **90(3)**, 601-607 (1987).
2. Thein, L.A., Thein, J.M., and Landry, G.L. Ergogenic aids. *Phys. Ther.* **75(5)**, 426-439 (1995).
3. Mitchell, G.A. and Dunnavan, G. Illegal use of beta-adrenergic agonists in the United States. *J. Anim. Sci.* **76(1)**, 208-211 (1998).

#### 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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 07/17/2023

#### 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