

Product Information

4-Chloro-1-naphthol

Tablet

C6788

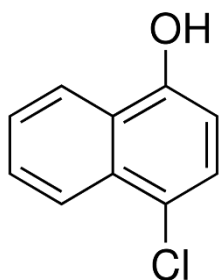
Product Description

Synonyms: 4-chloronaphthalen-1-ol, 4-CN
(4-chloro-1-naphthol component)

CAS Registry Number: 604-44-4 (4-CN component)

Molecular Formula: C₁₀H₇OCl (4-CN component)

Molecular Weight: 178.61 (4-CN component)



4-Chloro-1-naphthol (4CN) is a horseradish peroxidase (HRP) substrate. The reaction of 4CN with HRP produces 4-chloro-1-naphthol, a blue insoluble end-product that can be visually observed.²⁻⁴ 4CN is suitable for various applications, including:

- Immunoblotting procedures^{5,6}
- Dot blot procedures⁷⁻¹⁰
- Dot ELISA procedures^{11,12}
- Immunocytochemistry analysis¹³

Several theses^{14,15} and dissertations¹⁶⁻²¹ have cited use of product C6788 in their research protocols.

Reagent

Each tablet contains 30 mg of 4CN. This product comes in various package sizes, with the following specified numbers of tablets per box:

- 5 tablets (5TAB)
- 50 tablets (50TAB)
- 100 tablets (100TAB)

The tablets are individually foil wrapped for ease of use, storage, and safety.

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the tablets at -20 °C. Protect from heat, light, and moisture.

Preparation Instructions

Triethanolamine-buffered saline preparation

To prepare 1 L of Triethanolamine-buffered saline:

1. Add 7.5 g of NaCl 2.8 mL of triethanolamine, and 17 mL of 1 M HCl to ~800 mL of water.
2. Adjust the pH to 7.5 if necessary.
3. Bring the final volume to 1 L with water.

Substrate Solution Preparation

1. Allow tablet to reach room temperature before use.
2. Dissolve 1 tablet in 10 mL of methanol.
3. Add 2 mL of tablet stock solution in methanol to 10 mL of triethanolamine-buffered saline, pH 7.5.
4. Add 5 µL of fresh 30% hydrogen peroxide (H₂O₂) immediately prior to use.

References

1. Fortin, E. *et al.*, *Analyst*, **131(2)**, 186-193 (2006).
2. Nakane, P.K., *J. Histochem. Cytochem.*, **16(9)**, 557-560 (1968).
3. Wolfe, J., and Feng, S., *Development*, **102**, 699-708 (1988).

4. Hu, H. *et al.*, *J. Clin. Invest.*, **103(5)**, 747-753 (1999).
5. Kloor, D. *et al.*, *J. Histochem. Cytochem.*, **48(2)**, 211-218 (2000).
6. Borkowska-Opacka, B., and Kędrak, A., *Bull. Vet. Inst. Pulawy*, **46(2)**, 157-164 (2002).
7. Hawkes, R. *et al.*, *Anal. Biochem.*, **119(1)**, 142-147 (1982),
8. Hardie, K.R. *et al.*, *J. Med. Microbiol.*, **39(3)**, 218-224 (1993).
9. Bakrač, B. *et al.*, *J. Biol. Chem.*, **283(27)**, 18665-18677 (2008).
10. Valdés, G. *et al.*, *Biol. Reprod.*, **55(2)**, 236-245 (1996).
11. Barnes, R. *et al.*, *J. Clin. Microbiol.*, **22(4)**, 609-613 (1985).
12. Huang, A.J.W., and Tseng, S.C.G., *Invest. Ophthalmol. Vis. Sci.*, **28(9)**, 1483-1491 (1987).
13. Frickhofen, N., *et al.*, *J. Clin. Pathol.*, **38(6)**, 671-676 (1985).
14. White, Elaine M., "Development of a novel diagnostic system based on the use of the compact disc as a platform for biological analysis". University of Glasgow, M.Sc. thesis, p. 35 (1999).
15. Cave, Nicholas J., "The Nutritional Management of Food Hypersensitivity of Dogs and Cats: An Assessment of a Protein Hydrolysate". Massey University, M.Sc. thesis, p. 184 (2001).
16. Weimann, Dirk, "Proteolyse-induzierte Spaltprodukte des Plasminogens: Entstehung und pathobiochemische Bedeutung für das Entzündungs- und Tumorgeschehen" ("Proteolysis-induced cleavage products of plasminogen: formation and pathobiochemical significance for the inflammatory and tumor process"). Ludwig-Maximilians-Universität zu München, Dr. med. dissertation, p. 33 (2002).
17. Töpfer, Katharina, "Charakterisierung der humoralen Immunantwort im Hund nach Impfung mit verschiedenen Impfstoffen gegen den Erreger der Lyme-Borreliose, *Borrelia burgdorferi*, unter Berücksichtigung zweier verschiedener Impfstrategien" ("Characterization of the humoral immune response in dogs after vaccination with different vaccines against the causative agent of Lyme disease, *Borrelia burgdorferi*, considering two different vaccination strategies"). Universität Leipzig, Dr. med. vet. dissertation, p. 35 (2005).
18. Coll, Anna Fábrega, "A molecular approach on sperm changes during epididymal maturation, ejaculation and *in vitro* capacitation of boar spermatozoa". Universitat di Girona, Ph.D. dissertation, p. 33 (2012).
19. Johnston, Emily Jane, "Stress and signalling in *Arabidopsis* in response to the pollutant 2,4,6-trinitrotoluene (TNT)". University of York, Ph.D. dissertation, p. 48 (2015).
20. Schuppers, Manon Esther, "Development of a risk-based surveillance program for *Trichinella* spp. in domestic swine and wildlife in Switzerland". ETH Zürich, Dr. sci. dissertation, p. 55 (2010).
21. Poh, Wee-Peng, "Insights into the complex interactions involving respiratory viruses, bacteria and the human host at the epithelial surface of the conducting airways". University of Western Australia, Ph.D. dissertation, p. 73 (2021).

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C6788pis Rev 01/23 KCP,GCY,MAM

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