Sigma-Aldrich.

Product Information

3,3'-Diaminobenzidine tetrahydrochloride

Tablet, 10 mg substrate per tablet

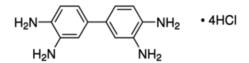
D5905

Product Description

CAS Registry Number: 7411-49-6

Synonyms: DAB, 3,3',4,4'-Biphenyltetramine tetrahydrochloride, 3,3',4,4'-Tetraaminobiphenyl tetrahydrochloride

Structure of 3,3'-Diaminobenzidine (DAB) tetrahydrochloride:



3,3'-Diaminobenzidine tetrahydrochloride (DAB) is a horseradish peroxidase substrate that is suitable for use in immunoblotting and immunohistological staining procedures.¹⁻⁴ This substrate produces an insoluble, brown end product, which can be observed visually. The end product is not soluble in alcohol. Therefore, a variety of counterstains and mounting media can be used.

Several publications⁵ dissertations have cited use of product D5905 in their research.⁶⁻²⁴

Components

This product is provided either as 50 tablets (50TAB) or 100 tablets (100TAB) per box, individually foil-wrapped for ease of use, storage, and safety.

Precautions and Disclaimer

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

- Allow each DAB tablet to reach room temperature before use.
- Dissolve a DAB tablet in 15 mL of Tris-buffered saline, pH 7.6.
- Add 12 µL of fresh 30% hydrogen peroxide prior to use.
- The solution may be filtered through a 0.2 µm filter immediately prior to use if necessary.
- DAB and hydrogen peroxide concentration may be adjusted to suit individual applications.
- Tablets may be gently crushed prior to adding to water, taking up to five minutes to dissolve.
 Dissolving will take somewhat longer for intact tablets added directly to buffer solutions.
- Buffer pH will also affect solubility. High pH will deprotonate DAB to its free base, which is not water-soluble.

References

- 1. Nakane, P.K., and Pierce, G.B., *J. Histochem. Cytochem.*, **14(12)**, 929-931 (1966).
- Barile, F., and Trombetta, L.D., J. Histotechnology, 5(1), 12-14 (1982).
- Detrick, B. *et al.* (eds.), *Manual of Clinical* Laboratory Immunology, 8th edition. ASM Press, Washington, D.C. (2016).
- Hsu, S., and Soban, E., J. Histochem. Cytochem., 30(10), 1079-1082 (1982).
- Danowski, K. et al., Czech J. Anim. Sci., 2012(5), 207-219 (2012).
- Lindo, Ashley Nicolette, "Characterization of KNDy Neuronal Activity in Gilts: Distribution and Effect of A Progestin". West Virginia University, M.S. thesis, pp. 40, 41 (2018).
- Bell, Stuart, "Exocrine Glands of the Caligid Copepod *Lepeophtheirus salmonis* (Krøyer, 1837)". University of Stirling, Ph.D. dissertation, p. 27 (2001).



- Beck, Craig Geoffrey, "IL-13 receptor a2, its expression, regulation and function". University of Bath, Ph.D. dissertation, p. 88 (2005).
- Zuleica de Garcia e Costa, Janina, "B cell epitopes in fish nodavirus". University of Stirling, Ph.D. dissertation, p. 283, Appendix I (2005).
- Laird, Angela S., "Autonomic dysreflexia following high level spinal cord injury: time course, mechanisms and possible intervention". University of New South Wales, Ph.D. dissertation, p. 170 (2007).
- Hartog, Theresia Eline, "Singing on steroids: A story of neuronal plasticity and blood vessels". Vrije Universiteit Amsterdam, Ph.D. dissertation, p. 70 (2009).
- Pate, Kathryn Mackenzie, "Respiratory load compensation responses in conscious animals". University of Florida, Ph.D. dissertation, p. 93 (2010).
- Intlekofer, Karlie A., "Novel Progestin Signaling Molecules in the Brain: Distribution, Regulation and Molecular Mechanism of Action". University of Massachusetts Amherst, Ph.D. dissertation, p. 80 (2011).
- Marx, Manuel, "Intralaminar and translaminar microcircuits involving excitatory and inhibitory neurons in layer 6B of the somatosensory rat barrel cortex: A morphological, physiological and immunofluorescence study". RWTH Aachen Universität, Dr. rer. nat. dissertation, p. 101 (2014).
- Suo, Dong, "The role of Coronin-1 in neurotrophin signaling during sympathetic nervous system development". University of Virginia, Ph.D. dissertation, p. 198 (2014).
- Lee, Peter Hong Ung, "Skeletal Muscle Atrophy in Bioengineered Skeletal Muscle: A New Model System". Brown University, Ph.D. dissertation, p. 28 (2016).
- Clinard, Catherine Tucker, "Investigating the Role of Testosterone Signaling at Androgen Receptors in Resiliency to Social Stress". University of Tennessee Knoxville, Ph.D. dissertation, p. 53 (2016).
- Yuan, Xiaodong, "SOX9 in the development and chemotherapy of cholangiocarcinoma (CCA)". Ruprecht-Karls-Universität zu Heidelberg, Dr. sc. hum. dissertation, p. 20 (2017).
- Gangolli, Mihika, "Radiological Pathological Correlations in Chronic Traumatic Encephalopathy". Washington University in St. Louis, Ph.D. dissertation, p. 107 (2018).

The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

Merck and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

© 2022 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. D5905dat Rev 03/22 RBG,KMR,MAM,GCY

- Lim, Yau Mun, "Generation and characterisation of an *in vitro* TREM2-deficient microglia model". King's College London, Ph.D. dissertation, p. 69 (2018).
- Saites, Louis, "An Interface of the Taste and Reward Systems in the Brainstem and Its Role in Feeding and Its Role in Feeding". University of Tennessee, Ph.D. dissertation, p. 34 (2018).
- 22. de Carvalho, Tayana Silva, "Effects of dietary restriction on ischemic injury, brain remodeling and neuroplasticity after focal cerebral ischemia in mice". Universität Duisberg-Essen, Dr. rer. nat. dissertation, p. 63 (2020).
- Datta, Sanchari, "A Study in Scar20 Neurologic Disorder Reveals Defective Cellular Lipid Homeostasis". University of Texas Southwestern Medical Center at Dallas, Ph.D. dissertation, p. 104 (2020).
- Hanscom, Marie, "Impact of Colonic Inflammation During Chronic Experimental Traumatic Brain Injury in Mice on Long-Term Outcomes". University of Maryland Baltimore, Ph.D. dissertation, p. 71 (2020).

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at <u>SigmaAldrich.com/techservice</u>.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at <u>SigmaAldrich.com/terms</u>.

Contact Information

For the location of the office nearest you, go to <u>SigmaAldrich.com/offices</u>.

