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DMNP-EDTA

Cat.No. 510 016; , 5 mg

Data Sheet

Reconstitution/ 5 mg DMNP-EDTA dihydrate as powder.

Storage HPLC analysis

Store at -20° C. Protect material from light always.

Name 1-(4,5-dimethoxy-2-nitrophenyl)-1,2-diaminoethane-N,N,N',N'-tetraacetic acid.

MSDS

Molecular form $C_{18}H_{23}N_3O_{12}$ + H_2O . chemical structure
ula

Molecular weight 509.42

Remarks When reconstituted with H_2O , the hardly soluble free acid is obtained. Choose the appropriate base for neutralization to obtain the salt suitable for your application

Selected General References

DM-nitrophen AM is caged magnesium.

Ellis-Davies GC

Cell calcium (2006) 39(6): 471-473.

Kinetic properties of DM-nitrophen binding to calcium and magnesium.

Faas GC, Karacs K, Vergara JL, Mody I

Biophysical journal (2005) 88(6): 4421-33.

Magnesium binding to DM-nitrophen and its effect on the photorelease of calcium.

Ayer RK, Zucker RS

Biophysical journal (1999) 77(6): 3384-93.

Kinetic properties of DM-nitrophen and calcium indicators: rapid transient response to flash photolysis.

Escobar AL, Velez P, Kim AM, Cifuentes F, Fill M, Vergara JL

Pflugers Archiv : European journal of physiology (1997) 434(5): 615-31.

Aspects of calcium-activated chloride currents: a neuronal perspective.

Scott RH, Sutton KG, Griffin A, Stapleton SR, Currie KP

Pharmacology & therapeutics (1995) 66(3): 535-65.

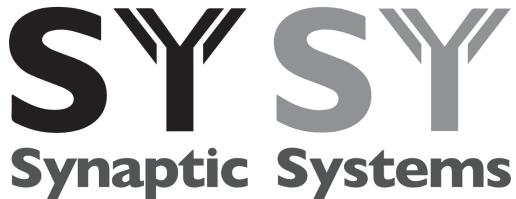
TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Calcium and magnesium are important signalling molecules. They are involved in the regulation of neurotransmission, gene-expression, muscle contraction, and more.

DMNP-EDTA (also known as DM-nitrophen[®]) is a photolabile derivative of EDTA and therefore

functions as either caged Ca^{2+} or caged Mg^{2+} with a preference for Ca^{2+} .

Photolysis by illumination with UV-light decreases the affinity for Ca^{2+} and Mg^{2+} ions and they become physiologically available immediately. By this approach regulatory effects of calcium and magnesium on cellular processes can be studied.



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MATERIAL SAFETY DATA SHEET

1-(4,5-dimethoxy-2-nitrophenyl)-1,2-diaminoethane-N,N,N',N'-tetraacetic acid (DMNP-EDTA)

Catalog Number: 510 016

Unit Size: 5 mg DMNP-EDTA dihydrate powder

Manufacturer/Supplier:

Synaptic Systems GmbH; Rudolf-Wissell-Str. 28, 37079 Goettingen/Germany

Phone: +49-551-50556-0, Fax: +49-551-50556-384; web: <http://www.sysy.com>

Technical Support: Phone: +49-551-50556-358, e-mail: support@sysy.com

1. Product Identification / Composition / Information on Ingredients

CAS Number: 117367-86-9

Name: 1-(4,5-dimethoxy-2-nitrophenyl)-1,2-diaminoethane-N,N,N',N'-tetraacetic acid (DMNP-EDTA, DM-nitrophen®)

Molecular Formula: C₁₈H₂₃N₃O₁₂ + H₂O

Molecular Weight: 509.42

2. Hazards Identification

Emergency Overview: Caution - substance not fully tested. We recommend handling all chemicals with caution.

Potential Health Effects: Not determined

Inhalation: Not determined

Ingestion: Not determined

Skin Contact: Not determined

Eye Contact: Not determined

Chronic Exposure: Not determined

Target Organs: Not determined

3. First Aid Measures

Potentially harmful. Avoid prolonged or repeated exposure. Wash thoroughly after handling. If eye or skin contact occurs, wash affected area with water for 15 minutes and seek medical advice.

If inhaled, move to fresh air and seek medical advise. If swallowed, seek medical advise.

4. Fire Fighting Measures

Use chemical powder or appropriate foam extinguisher

5. Accidental Release Measure

Use appropriate protective equipment and methods to clean up spilled substances. Absorb spill onto appropriate material. Collect and dispose of all waste in accordance with applicable laws.

6. Handling and Storage

Store at = -20°C. **Protect material from light at all times.**

7. Exposure Controls / Personal Protection

Wear appropriate protective gloves, clothing and eyewear. Follow safe laboratory practices

ACGIH/OSHA Permissible Exposure Limit Data: Not determined

8. Physical and Chemical Properties

Appearance: white powder

Odor: No information found

Solubility in Water: High

Specific Gravity: No information found

Boiling Point: No information found

Melting Point: No information found

Flash Point: No information found

Vapor Pressure: No information found

9. Stability and Reactivity

Thermal Decomposition: No decomposition if used according to specifications.

Dangerous Reactions: No dangerous reactions identified.

Dangerous Products of Decomposition: None identified

10. Toxicological Information

RTECS Number: None known

Toxicity: No data on toxicity of this product found.

Health Hazards: No reported health hazards for this product found.

Carcinogenicity: Not listed by NTP, IARC or OSHA.

11. Ecological Information

Do not allow product to reach ground water, water course, or sewage system.

12. Disposal Considerations

Dispose of according to local, state, or national laws and regulations.

13. Transport Information

Not regulated. The product can be shipped as aqueous solution at ambient temperatures without loss of stability/activity.

14. Regulatory Information

US Toxic substances Control Act (TSCA): Not listed

EEC EINECS Number: Not identified

EEC Risk Statements: Not determined

Other Country Regulations: None identified

15. Other Information

This material is only for research purposes and is not required to appear on the TSCA inventory. It is not intended for food, drug, household, agricultural and cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. The above information is correct to the best of our knowledge. Users should make independent decisions regarding completeness of the information based on all sources available. Synaptic Systems GmbH shall not be held liable for any damage resulting from handling or contact with the above product.

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