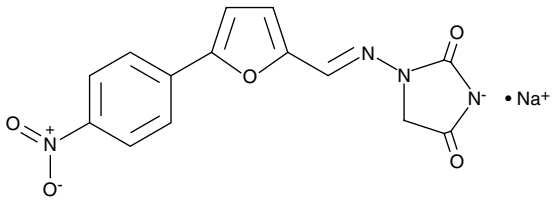
Product Information

Dantrolene (sodium salt)

Item No. 14326

CAS Registry No.: 14663-23-1
Formal Name: 1-[[[5-(4-nitrophenyl)-2-furanyl]methylene]amino]-2,4-imidazolidinedione, monosodium salt
Synonym: F 440
MF: $C_{14}H_9N_4O_5 \bullet Na$
FW: 336.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 226, 309, 348, 387 nm



Laboratory Procedures

For long term storage, we suggest that dantrolene (sodium salt) be stored as supplied at -20°C. It should be stable for at least two years.

Dantrolene (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the dantrolene (sodium salt) in the solvent of choice. Dantrolene (sodium salt) is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dantrolene (sodium salt) in these solvents is approximately 2.5 and 12.5 mg/ml, respectively.

Dantrolene (sodium salt) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, dantrolene (sodium salt) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Dantrolene (sodium salt) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Dantrolene is a skeletal muscle relaxant that depresses excitation-contraction coupling in skeletal muscle by binding to the type 1 ryanodine receptor and decreasing free intracellular calcium concentration.[1,2] Dantrolene (10 µM) inhibits L-type currents in developing myotubes by shifting the voltage-dependence of skeletal L-type Ca^{2+} channel activation to more depolarizing potentials.[3] It has been used for the treatment of malignant hyperthermia, the management of neuroleptic malignant syndrome, spasticity, and Ecstasy intoxication.[1]

References

1. Krause, T., Gerbershagen, M.U., Fiege, M., *et al.* Dantrolene - a review of its pharmacology, therapeutic use and new developments. *Anaesthesia* **59**, 364-373 (2004).
2. Paul-Pletzer, K., Yamamoto, T., Bhat, M.B., *et al.* Identification of a dantrolene-binding sequence on the skeletal muscle ryanodine receptor. *J. Biol. Chem.* **277(38)**, 34918-34923 (2002).
3. Bannister, R.A. Dantrolene-induced inhibition of skeletal L-type Ca^{2+} current requires RyR1 expression. *Biomed. Res. Int.* **2013**, (2013).

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Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com