

Product Data Sheet

Product Name: Diquat-d4 (bromide)

Cat. No.: GC47240

Chemical Properties

Cas. No. N/A

SMILES [2H]C1([2H])[N+]2=CC=CC=C2C3=[N+](C=CC=C3)C1([2H])[2H].[Br-].[Br-]

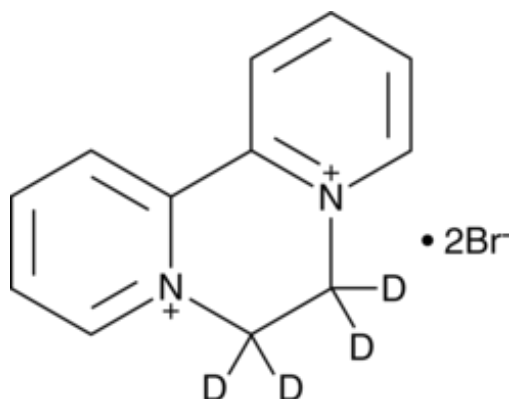
Formula C₁₂H₈D₄N₂.2Br M.Wt 348.1

Solubility DMSO: slightly soluble, Methanol: slightly soluble, Water: slightly soluble
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Diquat-d₄ is intended for use as an internal standard for the quantification of diquat by GC- or LC-MS. Diquat is a bipyridylium herbicide that, as a stable radical, acts as an electron acceptor in the electron transport chain and is reoxidized by molecular oxygen, producing reactive oxygen species (ROS).¹ Diquat administration has been used to induce oxidative stress *in vitro* and in animal models.^{2,3,4} It increases the production of ROS and decreases the mitochondrial membrane potential in mitochondria isolated from porcine intestine leading to mitophagy when administered at a dose of 100 mg/kg.² Formulations containing diquat have been used in agriculture for crop

Caution: Product has not been fully validated for medical applications. For research use only.

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desiccation and defoliation.

1. Moreland, D.E. Mechanisms of action of herbicides. *Ann. Rev. Plant Physiol.* 31:597-638 (1980) 2. Cao, S., Wu, H., Wang, C., et al. Diquat-induced oxidative stress increases intestinal permeability, impairs mitochondrial function, and triggers mitophagy in piglets. *J. Anim. Sci.* 96(5):1795-1805 (2018) 3. Singh, P., Hanson, P.S., and Morris, C.M. Sirtuin-2 protects neural cells from oxidative stress and is elevated in neurodegeneration. *Parkinsons Dis.* 2017:2643587 (2017) 4. Tomášek, O., Gabrielová, B., Kačer, P., et al. Opposing effects of oxidative challenge and carotenoids on antioxidant status and condition-dependent sexual signalling. *Sci. Rep.* 6:23546 (2016)

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