

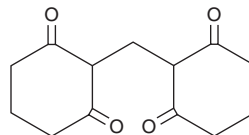
# PRODUCT INFORMATION



**M50054**

Item No. 20810

**CAS Registry No.:** 54135-60-3  
**Formal Name:** 2,2'-methylenebis-1,3-cyclohexanedione  
**MF:** C<sub>13</sub>H<sub>16</sub>O<sub>4</sub>  
**FW:** 236.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 254 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

## Laboratory Procedures

M50054 is supplied as a crystalline solid. A stock solution may be made by dissolving the M50054 in the solvent of choice, which should be purged with an inert gas. M50054 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of M50054 in ethanol and DMSO is approximately 10 mg/ml and approximately 25 mg/ml in DMF.

M50054 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, M50054 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. M50054 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.

## Description

M50054 is a cell-permeable inhibitor of the activation of caspase-3, blocking characteristic features of apoptosis, including DNA fragmentation and externalization of phosphatidylserine.<sup>1</sup> It blocks apoptosis in a variety of cell lines induced by different stimuli, including Fas ligand and etoposide (Item No. 12092).<sup>1</sup> M50054 has been used to inhibit apoptosis in skin, *Xenopus* larvae, teleost fish, and planaria, particularly in the context of tissue regeneration.<sup>2-5</sup>

## References

1. Tsuda, T., Ohmori, Y., Muramatsu, H., *et al.* Inhibitory effect of M50054, a novel inhibitor of apoptosis, on anti-FAS-antibody-induced hepatitis and chemotherapy-induced alopecia. *Eur. J. Pharmacol.* **433(1)**, 37-45 (2001).
2. Beane, W.S., Morokuma, J., Lemire, J.M., *et al.* Bioelectric signaling regulates head and organ size during planarian regeneration. *Develop.* **140**, 313-322 (2013).
3. Durant, F., Lobo, D., Hammelman, J., *et al.* Physiological controls of large-scale patterning in planarian regeneration: A molecular and computational perspective on growth and form. *Regeneration* **3(2)**, 78-102 (2016).
4. Tseng, A.-S., Adams, D.S., Qiu, D., *et al.* Apoptosis is required during early stages of tail regeneration in *Xenopus laevis*. *Dev. Biol.* **301(1)**, 62-69 (2007).
5. Sirbulescu, R.F. and Zupanc, G.K. Inhibition of caspase-3-mediated apoptosis improves spinal cord repair in a regeneration-competent vertebrate system. *Neuroscience* **171(2)**, 599-612 (2010).

### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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