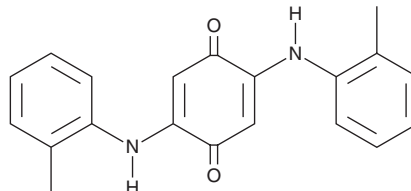


PRODUCT INFORMATION

DTPD-Q

Item No. 40612

CAS Registry No.: 252950-56-4
Formal Name: 2,5-bis[(2-methylphenyl)amino]-2,5-cyclohexadiene-1,4-dione
Synonyms: 2,5-Bis(o-tolylamino)cyclohexa-2,5-diene-1,4-dione, DTPD-quinone
MF: C₂₀H₁₈N₂O₂
FW: 318.4
Purity: ≥95%
Supplied as: A 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

DTPD-Q is supplied as a solid. A stock solution may be made by dissolving the DTPD-Q in the solvent of choice, which should be purged with an inert gas. DTPD-Q is slightly soluble (0.1-1 mg/ml) in ethanol and DMSO.

Aqueous solutions of DTPD-Q can be prepared by directly dissolving the solid in aqueous buffers. DTPD-Q is slightly soluble (0.1-1 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

DTPD-Q is an oxidized derivative of the antioxidant and methylphenyl substituted *p*-phenylenediamine DTPD.¹ It is an inhibitor of dynamin 1 (IC₅₀ = 273 μM) and reduces clathrin-mediated endocytosis in serum-starved U2OS cells (IC₅₀ = 120 μM). DTPD-Q is less toxic to the aquatic bacterium *V. fischeri* than DTPD (EC₅₀ = 1.98 mg/L).² It increases intestinal permeability of, and production of reactive oxygen species (ROS) in, *C. elegans* when used at concentrations of 1 or 10 μg/ml.³ DTPD-Q has been found in roadway runoff water and roadside soils, indoor dust, as well as consumer products made from recycled tire rubber.⁴⁻⁶

References

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- Wang, Y., Liang, G., Chao, J., *et al.* Comparison of intestinal toxicity in enhancing intestinal permeability and in causing ROS production of six PPD quinones in *Caenorhabditis elegans*. *Sci. Total Environ.* **927**, 172306 (2024).
- Cao, G., Wang, W., Zhang, J., *et al.* New evidence of rubber-derived quinones in water, air, and soil. *Environ. Sci. Technol.* **56**(7), 4142-4150 (2022).
- Zhu, J., Guo, R., Jiang, S., *et al.* Occurrence of *p*-phenylenediamine antioxidants (PPDs) and PPDs-derived quinones in indoor dust. *Sci. Total Environ.* **912**, 169325 (2024).
- Zhao, H.N., Hu, X., Gonzalez, M., *et al.* Screening *p*-phenylenediamine antioxidants, their transformation products, and industrial chemical additives in crumb rubber and elastomeric consumer products. *Environ. Sci. Technol.* **57**(7), 2779-2791 (2023).

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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