

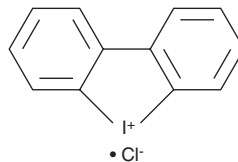
PRODUCT INFORMATION



Diphenyleneiodonium (chloride)

Item No. 81050

CAS Registry No.: 4673-26-1
Formal Name: dibenziodolium chloride
Synonym: DPI
MF: C₁₂H₈I • Cl
FW: 314.6
Purity: ≥98%
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥4 years



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

Laboratory Procedures

Diphenyleneiodonium (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the diphenyleneiodonium (chloride) in the solvent of choice, which should be purged with an inert gas. Diphenyleneiodonium (chloride) is soluble in organic solvents such as ethanol, methanol, and DMSO. The solubility of diphenyleneiodonium (chloride) in ethanol and methanol is approximately 100 µg/ml and approximately 500 µg/ml in DMSO.

Description

Diphenyleneiodonium (DPI) is an inhibitor of NADPH oxidase (NOX; EC₅₀ = 0.1 µM in HeLa cells).¹ It also inhibits nitric oxide synthase (NOS; IC₅₀ = 0.05 µM in isolated mouse peritoneal macrophages).² DPI (10, 50, and 100 µM) induces the production of reactive oxygen species (ROS) in, and apoptosis of, human umbilical vein endothelial cells (HUVECs).³ It inhibits NETosis induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) in isolated human neutrophils when used at a concentration of 10 µM.⁴ DPI (2 mg/kg) reduces tumor growth in HT-29 and LS 174T colon cancer mouse xenograft models.⁵

References

1. Morré, D.J. Preferential inhibition of the plasma membrane NADH oxidase (NOX) activity by diphenyleneiodonium chloride with NADPH as donor. *Antioxid. Redox Signal.* **4(1)**, 207-212 (2002).
2. Stuehr, D.J., Fasehun, O.A., Kwon, N.S., *et al.* Inhibition of macrophage and endothelial cell nitric oxide synthase by diphenyleneiodonium and its analogs. *FASEB J.* **5(1)**, 98-103 (1991).
3. Balcerzyk, A., Soszynski, M., Rybaczek, D., *et al.* Induction of apoptosis and modulation of production of reactive oxygen species in human endothelial cells by diphenyleneiodonium. *Biochem. Pharmacol.* **69(8)**, 1263-1273 (2005).
4. Ostafin, M., Pruchniak, M.P., Ciepiela, O., *et al.* Different procedures of diphenyleneiodonium chloride addition affect neutrophil extracellular trap formation. *Anal. Biochem.* **509**, 60-66 (2016).
5. Doroshov, J.H., Gaur, S., Markel, S., *et al.* Effects of iodonium-class flavin dehydrogenase inhibitors on growth, reactive oxygen production, cell cycle progression, NADPH oxidase 1 levels, and gene expression in human colon cancer cells and xenografts. *Free Radic. Biol. Med.* **57**, 162-175 (2013).

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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