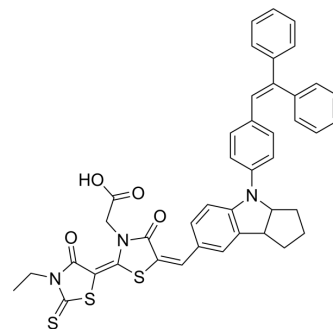


D149 Dye

Cat. No.:	HY-50938
CAS No.:	786643-20-7
Molecular Formula:	C ₄₂ H ₃₅ N ₃ O ₄ S ₃
Molecular Weight:	741.94
Target:	Fluorescent Dye
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 1 mg/mL (1.35 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (insoluble)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		1.3478 mL	6.7391 mL	13.4782 mL
	5 mM		---	---	---
	10 mM		---	---	---

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

D149 Dye is an indoline-based dye, which is a high-extinction-coefficient metal-free organic sensitizer.

In Vitro

D149 is a metal-free organic dye, which is promising all-organic alternatives. D149 displays power conversion efficiency of up to 9%. Furthermore, D149 has a peak extinction co-efficient of 68700 M⁻¹ cm⁻¹ at 540 nm, significantly higher than 13900 M⁻¹cm⁻¹ at 535 nm for N719^[1]. D149, a metal-free indoline dye, is one of the most promising sensitizers for dye-sensitized solar cells (DSSCs) and has shown very high solar energy conversion efficiencies of 9%. D149 shows a large number of unresolved aromatic and olefinic signals between 7 and 7.5 ppm^[2]
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[1]

The porous TiO₂ films are immersed in a 0.5 mM D149 (1-material) dye solution in a 1:1 (v/v) mixture of acetonitrile (HPLC) and tert-butanol (LR) overnight once their temperature decreased to approximately 110°C. The samples are then taken out of the dye bath, washed with acetonitrile, and dried. The working electrode and Pt counter electrode [produced using a pre-

drilled piece of 2.3 mm FTO glass, coated with one drop of 10 mM platinum acid solution [H_2PtCl_6] and heated to 400°C for 20 min] are assembled into a sandwich type cell and sealed with a spacer of 25 μm Surlyn. An I^-/I_3^- organic solvent based electrolyte solution [50 mM iodine, 0.6 M 1,2-dimethyl-3-propylimidazolium iodide, 0.1 M lithium iodide in methoxypropionitrile] is introduced via vacuum back-filling. The hole is sealed with a piece of aluminium foil-backed Surlyn [1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Lin J, et al. 3D hierarchical rutile TiO_2 and metal-free organic sensitizer producing dye-sensitized solar cells 8.6% conversion efficiency. *Sci Rep*. 2014 Aug 29;4:5769.
- [2]. El-Zohry A, et al. Isomerization and Aggregation of the Solar Cell Dye D149. *J Phys Chem C Nanomater Interfaces*. 2012 Dec 20;116(50):26144-26153.
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Caution: Product has not been fully validated for medical applications. For research use only.

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