Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@hellobio.com

DATASHEET

JC-10

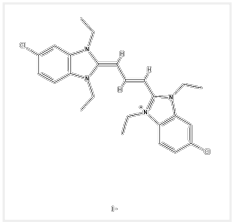
Product overview

Name	JC-10
Cat No	HB19967
Biological description	JC-10 is a highly soluble fluorescent probe ideal for assessing mitochondrial membrane potential. In healthy cells with polarized mitochondria, JC-10 aggregates, emitting a strong orange fluorescence (Ex/Em: 540nm/590nm). However, in cells with depolarized mitochondria, a hallmark of apoptosis and other cellular stresses, JC-10 reverts to its monomeric form, resulting in a shift to green fluorescence (Ex/Em: 490nm/525nm). This reversible, ratiometric change in fluorescence emission provides a reliable indicator of mitochondrial health. JC-10's superior aqueous solubility to JC-1 makes it a convenient and robust tool for various applications, including fluorescence microscopy, flow cytometry, and high-throughput screening.
Biological action	Dyes & stains
Applications	fluorescence imaging, live cell imaging
Purity	>98%
Description	Fluorescent mitochondrial membrane potential dye

Solubility & Handling

Storage instructions	-20°C
Solubility overview	Soluble in DMSO (5mg/ml) and H_2O (1μM)
Handling	JC-10 is light sensitive; exposure to light may affect compound performance. We therefore recommend storing the solid material and any solutions in the dark and protecting from light.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	(2E)-5-chloro-2-[(E)-3-(5-chloro-1,3-diethylbenzimidazol-1-ium-2-yl)prop-2-enylidene]-1,3-diethylbenzimidazole;iodide
Molecular Weight	583.3
Chemical structure	
Molecular Formula	$C_{25}H_{29}Cl_2IN_4$
CAS Number	5563-28-0
PubChem identifier	171361437
SMILES	CCN\1C2=C(C=C(C=C2)Cl)N(/C1=C/C=C/C3=[N+](C4=C(N3CC)C=C(C=C4)Cl)CC)CC.[I-]
InChiKey	WBMULJOQZAKELP-UHFFFAOYSA-M
Excitation	490nm / 540nm
Emission	525nm / 590nm

References

JC-10 probe as a novel method for analyzing the mitochondrial membrane potential and cell stress in whole zebrafish embryos.

Younes N et al (2022) Toxicology research 11
PubMedID 35237413

Dual Effects of Cyclooxygenase Inhibitors in Combination With CD19.CAR-T Cell Immunotherapy.

Yang M et al (2021) Frontiers in immunology 12
PubMedID 34122428

Growth Differentiation Factor 15 Protects SH-SY5Y Cells From Rotenone-Induced Toxicity by Suppressing Mitochondrial Apoptosis.

Li P et al (2022) Frontiers in aging neuroscience 14
PubMedID 35721026