

# Product Information

## JC-1

Catalog Number: J4001

Product Size: 5 mg

### Parameters

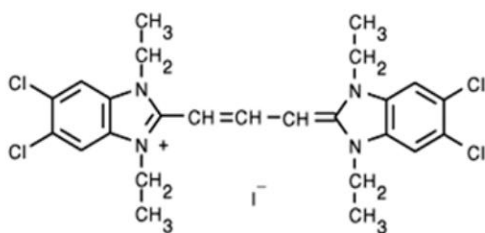
Appearance: Red solid soluble in DMSO

CAS No.: 47729-63-5

Molecular Formula: C<sub>25</sub>H<sub>27</sub>Cl<sub>4</sub>N<sub>4</sub>

Molecular Weight: 652

Molecular Structure:



### Storage

Store at 4°C and protect from light. When stored as directed, product is stable for at least 12 months.

### Description

JC-1 is a membrane permeable dye widely used for determining mitochondrial membrane potential with flow cytometry or fluorescent microscopy. This dye can selectively enter the mitochondria where it reversibly changes color as membrane potentials increase. This property is due to the reversible formation of JC-1 aggregates upon membrane polarization that causes shifts in emitted light from 530 nm to 590 nm when excited at 488 nm. Both colors can be detected

using FITC and PE filter, respectively. JC-1 is qualitative in regards to the shift from green to red fluorescence emission, and can be quantitated as measured by fluorescence intensity in both filter sets. JC-1 can be used to indicate the initiation of apoptosis.

### Protocol

Dissolve JC-1 in anhydrous DMSO to prepare a certain concentration of stock solution and dilute it with PBS to a working solution. The commonly used concentration range is 1-20 µg / mL.

1. Collect cells: Discard the medium in the well plate and wash the cells twice with PBS;
2. Add a certain volume of the staining working solution to the well plate; Table 1 summarizes several different cell staining schemes;
3. Detection by fluorescence microscope

### Notes

1. If the usage amount of jc-1 is small at one time, each tube should be properly divided to avoid repeated freeze-thaw.
2. There are quenching problems with fluorescent dyes. Please avoid light to slow down the fluorescence quenching.
3. For your safety and health, please wear lab coats and disposable gloves.



Table 1. JC-1 cell staining conditions

Method	Cell Type	Adherent /Dissociated	Incubation Conditions		
			Dye Concentration	Temperature	Time
microscope	Neurons (rat)	Adherent	2.0 µg/mL	37°C	20–30 min
	Neurons (rat)	Adherent	1.0 µg/mL	37°C	20 min
	O-2A oligodendrocytes (rat)	Adherent	10 µg/mL	37°C	10 min
	PC12	Adherent	10 µg/mL	37°C	10 min
	Cardiac myocytes (rat)	Dissociated	10 µg/mL	37°C	10 min
Flow cytometer	Human fibroblasts	Dissociated	0.3 µg/mL	37°C	1 hour
	Colo-205	Dissociated	10 µg/mL	37°C	10 min
	U937	Dissociated	10 µg/mL	22°C	10 min

