

PRODUCT:	JC-1 (5,5',6,6'-tetrachloro-1,1',3,3'-tetraethyl-benzimidazolylcarbocyanine Chloride)
CATALOG #:	1130-5
AMOUNT:	5 mg
LOT #:	_____
STORAGE CONDITION:	Store at -20°C, protected from light.
SHELF LIFE:	1 year under proper storage conditions
PHYSICAL APPEARANCE:	Red solid
MOLECULAR FORMULA:	C ₂₅ H ₂₇ Cl ₃ N ₄
MOLECULAR WEIGHT:	561.5
PURITY:	>98% by HPLC
SOLUBILITY:	Soluble in DMSO

EXTINCTION COEFFICIENT: $\epsilon = 190,000 \text{ M}^{-1}\text{cm}^{-1}$ (505 nm; in MeOH)

APPLICATION:

JC-1 is a mitochondrial dye that stains mitochondria in living cells in a membrane potential-dependent fashion. JC-1 monomer is in equilibrium with so called J-aggregates, which are favored at higher mitochondrial membrane potential. The monomer JC-1 has green fluorescence ($\lambda_{em} = 527 \text{ nm}$), while the J-aggregates have red fluorescence ($\lambda_{em} = 590 \text{ nm}$). Therefore, it has been possible to use fluorescence ratioing technique to study mitochondrial membrane potential. JC-1 is particularly useful for apoptosis studies. In apoptotic cells, the dye stays in the cytoplasm and fluoresces green, while in healthy cells, the dye aggregates in the mitochondria and fluoresces red.

REFERENCES:

- Smiley, S.T., *et al.* (1991) *PNAS* **88**:3671.
- Reers, M., *et al.* (1991) *Biochemistry* **30**:4480.

RELATED PRODUCTS:

- KinaseSTAR™ JNK & Akt Activity Assay Kit
- Histone Deacetylase Fluorometric & Colorimetric Assay Kits
- Calpain Activity Assay Kit
- Apoptotic Cell Isolation Kit
- MitoCapture™ Mitochondrial Apoptosis Detection Kit
- Mitochondria/Cytosol Fractionation Kit
- Nuclear/Cytosol Fractionation Kit
- Cytochrome c Releasing Apoptosis Assay Kit
- ApoSENSOR™ ATP Determination Kit & ADP/ATP Ratio Assay Kit
- ApoGSH™ Glutathione Detection Kit
- Nitric Oxide Fluorometric & Colorimetric Detection Kits
- Annexin V-FITC, -Cy3, -Cy5, -EGFP, -PE, -Biotin Kits and Bulk Reagents
- CaspSCREEN™ Flow Cytometric Caspase Assay Kit
- CaspGLOW™ Active Caspase Staining Kits
- CaspSELECT™ Caspase-3 & -7 Immunoassay Kits
- Caspase-1,-2,-3,-5,-6,-8,-9,-10 Activity Assay Kits
- Recombinant Human, Mouse, Rat Active Caspases & Procaspsases
- Ready-to-use Caspase Inhibitors & Sets
- Ready-to-use Caspase Substrates and Sets
- Quick Apoptotic DNA Ladder Detection Kit
- TUNEL-based DNA Fragmentation Assay Kits
- Ready-to-use Apoptosis Inducers and Set
- Quick Cell Proliferation Assay Kit
- LDH-Cytotoxicity Assay Kit
- Live-Dead Cell Staining Kit
- Anti-Caspase-1,-2,-3,-4,-5,-6,-7,-8,-9,-10,-11,-12,-13,-14 & Active Caspases
- Anti-Apaf-1, Bcl-2, Bcl-x, Bax, Bad, Bid, Bim/Bod, Mcl-1, Cytochrome c
- Anti-DFF40, DFF45, FADD, p53, IRAK, Wee1, CD40, DcR2, cFLIP, CTGF
- Many Other Apoptosis & Cell Signaling Related Antibodies
- Anti-GFP, His, GST, and Other Tag Antibodies
- Growth Factors, Cytokines & Chemokines (many)
- Link-FAST™ 5 Minutes DNA Ligation Kit
- Gel-FAST™ 20 Minutes Gel Staining/Destaining Kit
- Protease Inhibitor Cocktail