

## Datasheet: ICT943

**BATCH NUMBER 168863**

<b>Description:</b>	MITOCHONDRIAL PERMEABILITY TRANSITION KIT
<b>Name:</b>	MITOCHONDRIAL PERMEABILITY TRANSITION:MitoPT JC-1 KIT
<b>Format:</b>	JC-1 Dye (Dual Green/Red Fluorescence)
<b>Product Type:</b>	Kits
<b>Quantity:</b>	100 TESTS

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			
Immunofluorescence	▪			

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

### Product Information

**The MitoPT JC-1 kit** uses a quick and easy staining method to clearly differentiate between non-apoptotic and apoptotic cells through mitochondrial functionality.

### Test Principle

An early indication of apoptosis involves a collapse in the electrochemical gradient across the mitochondrial membrane. Loss of mitochondrial membrane potential can be detected by a unique fluorescent cationic dye known as JC-1 (5,5',6,6'-tetrachloro-1,1',3,3'-tetraethylbenzamidazolocarboxyanin iodide) that has been incorporated into the MitoPT JC-1 kit.

The MitoPT JC-1 reagent easily penetrates cells and enters the mitochondria. It aggregates in the mitochondria of non-apoptotic cells and fluoresces red, whilst in apoptotic cells it diffuses throughout the cell. Once dispersed, the reagent assumes a monomeric form and fluoresces green. This allows an easy distinction between non-apoptotic red fluorescent cells and apoptotic green fluorescent cells which can be read with a flow cytometer, fluorescence microscope or a fluorescence plate reader using black microtitre plates.

### Reagents In The Kit

MitoPT JC-1 Reagent, 100 tests  
 10x Assay Buffer, 60 mL  
 CCCP (50 mM in DMSO), 125 ul.

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**Instructions For Use** Instructions for use can be found at [www.bio-rad-antibodies.com/uploads/IFU/ICT943.pdf](http://www.bio-rad-antibodies.com/uploads/IFU/ICT943.pdf)

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**References**

1. Jasek, E. *et al.* (2012) Effect of histone deacetylase inhibitors trichostatin A and valproic acid on etoposide-induced apoptosis in leukemia cells. [Anticancer Res. 32 \(7\): 2791-9.](#)
2. Wei, X. *et al.* (2014) *In Vitro* Comparative Effect of Three Novel Borate Bioglasses on the Behaviors of Osteoblastic MC3T3-E1 Cells [J Mat Sci Technol. 30 \(10\): 979-83.](#)
3. Gizak, A. *et al.* (2019) Targeting a moonlighting function of aldolase induces apoptosis in cancer cells. [Cell Death Dis. 10 \(10\): 712.](#)
4. Gizak, A. *et al.* (2021) A novel remitting leukodystrophy associated with a variant in FBP2. [Brain Commun. 3 \(2\): fcab036.](#)
5. Lasota, M. *et al.* (2022) Property of a new Prussian blue-bounded iron complex able to peroxidate non-saturated fatty acids with a tendency to create conditions that may encourage ferroptosis. [J Physiol Pharmacol. 73 \(5\)Mar 16 \[Epub ahead of print\].](#)

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**Storage** Store the unopened kit and each unopened component at -20°C until the expiration date. Once opened, some components may be stored at 2-8°C until the expiration date. CCCP should be stored frozen. Once reconstituted with DMSO, dilute and use MitoPT reagent immediately, or store at ≤-20°C for 12 months protected from light and thawed no more than twice.

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**Guarantee** Guaranteed until date of expiry. Please see product label.

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**Acknowledgements** MitoPT is a trademark of Immunochemistry Technologies, LLC.

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**Health And Safety Information** Material Safety Datasheet documentation #20291 #10474 #10479 available at: <https://www.bio-rad-antibodies.com/SDS/ICT943>  
MitoPT JC-1 Reagent (20291)  
10x Assay Buffer (10474)  
CCCP Reagent (10479)

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**Regulatory** For research purposes only.

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## Related Products

### Recommended Useful Reagents

[MITOCHONDRIAL PERMEABILITY TRANSITION KIT \(ICT944\)](#)

**North & South** Tel: +1 800 265 7376

**America** Fax: +1 919 878 3751

Email: [antibody\\_sales\\_us@bio-rad.com](mailto:antibody_sales_us@bio-rad.com)

**Worldwide**

Tel: +44 (0)1865 852 700

Fax: +44 (0)1865 852 739

Email: [antibody\\_sales\\_uk@bio-rad.com](mailto:antibody_sales_uk@bio-rad.com)

**Europe**

Tel: +49 (0) 89 8090 95 21

Fax: +49 (0) 89 8090 95 50

Email: [antibody\\_sales\\_de@bio-rad.com](mailto:antibody_sales_de@bio-rad.com)

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](http://bio-rad-antibodies.com/datasheets)

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