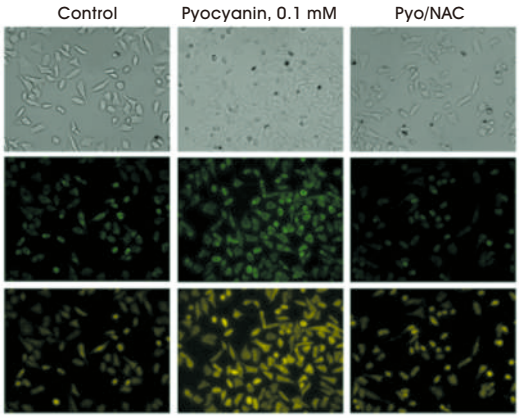
氧化壓力研究產品專刊
Oxidative Stress Assay Tools

氧化自由基分析 / Free Radical Detection

熱門商品

ROS-ID® Total ROS/Superoxide Detection Kit

- **鑑別性佳：**含兩種不同顏色螢光染劑，可在細胞內及時偵測區別所產生的氧化自由基類型。
  - 綠色螢光 - Total ROS detection (Hydrogen peroxide (H_2O_2), Peroxynitrite (NO_3^-) and Hydroxyl radicals (OH^-))。
  - 橘色螢光 - Superoxide detection (O_2^-)。
- **配件齊全：**Kit 內含 ROS inducer 及 ROS inhibitor。
- **彈性應用：**貼附或懸浮細胞皆可適用。

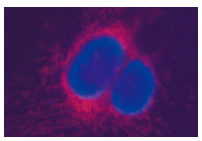


Profiling of reactive oxygen species formation by fluorescence microscopy was achieved in HeLa cells loaded with ROS/Superoxide detection reagents and treated with pyocyanin. General oxidative stress levels were monitored in the green channel, while superoxide production was detected in the orange channel. Pretreatment with NAC, a general ROS inhibitor, prevents formation of ROS.

熱門商品

Mitochondrial Superoxide Indicator Assay Kit

- **高度專一：**專一性地檢測粒線體中的 Superoxide，不會受到其他氧化自由基干擾。
- **配件齊全：**除 Superoxide Detection Agent 之外，另含 DMSO、HBSS Buffer 及 Hoechst 33342 核染試劑。



HeLa (human epithelial cell line from cervix adenocarcinoma) cells stained with Mitochondrial superoxide indicator **(red)**.

產品功能	Product	Instruments	Detection
檢測活細胞氧化自由基	ROS-ID® Total ROS/Superoxide Detection Kit（見上方說明）	Microscopy, Flow Cytometry, Microplate Reader	Total ROS: 490/525 nm Superoxide: 550/620 nm
	ROS-ID® Total ROS Detection Kit	Microscopy, Flow Cytometry, Microplate Reader	Total ROS: 490/525 nm
	DCFDA / H2DCFDA - Cellular ROS Assay Kit	Microscopy, Flow Cytometry, Microplate Reader	Total ROS: 485/535 nm
	ROS-ID® Superoxide Detection Kit	Microscopy, Flow Cytometry, Microplate Reader	Superoxide: 550/620 nm
	ROS-ID® NO Detection Kit	Microscopy	NO: 650/670 nm

（更多產品請見下頁）

Microscopy Flow Cytometry Microplate Reader

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氧化自由基分析 / Free Radical Detection（接續上頁）

產品功能	Product	Instruments	Detection
檢測活細胞氧化自由基	ROS-ID® ROS/RNS Detection Kit		Total ROS: 490/525 nm Superoxide: 550/620 nm NO: 650/670 nm
	Hydrogen Peroxide Assay Kit (Cell-based)		H_2O_2: 490/520 nm
檢測粒線體氧化自由基	Mitochondrial Superoxide Indicator Assay Kit（見前頁說明）		Ex/Em = 531/593 nm
	Mitochondrial Hydroxyl Radical Detection Assay Kit		Ex/Em = 540/590 nm
檢測液態樣本氧化自由基	Hydrogen Peroxide Assay Kit		λmax = 570 nm Ex/Em = 535/587 nm
	Nitric Oxide Assay Kit		λmax = 540 nm

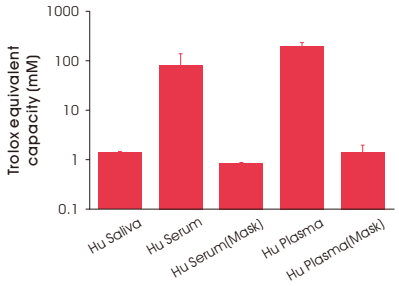
Microscopy Microplate Reader

抗氧化分析 / Antioxidants Detection

熱門商品

Total Antioxidant Capacity Assay Kit

- **泛用型抗氧化能力偵測試劑：**可直接檢測樣本中來自於小分子（例如 Ascorbate, Uric acid, GSH, Vitamin E）或蛋白質（例如 Albumin, Transferrin）的非酵素型總抗氧化能力。
- **高度彈性：**搭配使用試劑盒中的 Protein Mask，可專一性偵測來自於小分子的抗氧化能力。
- **絕對定量：**試劑使用 Trolox 作為標準品，以 Trolox equivalent capacity 作為量化指標。



Trolox equivalent capacity measured in biological fluids. Results following blocking of protein activity is shown **(Mask)**.

產品功能	Product	Instruments	Detection
泛用型抗氧化力檢測	Total Antioxidant Capacity Assay Kit（見上方說明）		λmax = 570 nm
專一性抗氧化力檢測	Ascorbic Acid Assay Kit		λmax = 593 nm
	NAD/NADH Assay Kit		λmax = 576 nm Ex/Em = 540/590 nm
	NADP/NADPH Assay Kit		λmax = 576 nm Ex/Em = 540/590 nm
	Glutathione (GSSG/GSH) detection kit		λmax = 405 nm
	Intracellular glutathione (GSH) Detection Assay Kit		Ex/Em = 490/520 nm
	GST Assay Kit		λmax = 340 nm
	SOD activity kit		λmax = 450 nm
	Glutathione peroxidase activity kit		λmax = 340 nm
	Catalase Activity Assay Kit		λmax = 570 nm Ex/Em = 535/587 nm
	Glutathione Reductase (GR) Assay Kit		λmax = 405 nm
	Xanthine Oxidase Activity Assay Kit		λmax = 570 nm Ex/Em = 535/587 nm

Flow Cytometry Microplate Reader

氧化產物分析 / Biomarkers of Oxidative Stress Detection

產品功能	Product	Instruments	Detection
檢測 DNA 氧化產物	8-hydroxy 2 deoxyguanosine ELISA Kit		λmax = 450 nm
檢測脂質氧化產物	8-iso-PGF2α ELISA kit		λmax = 405 nm
	Lipid Peroxidation (MDA) Assay Kit		λmax = 532 nm Ex/Em = 532/553 nm
	Lipid Peroxidation (4-HNE) Assay Kit		λmax = 450 nm
	Lipid Hydroperoxide (LPO) Assay Kit		λmax = 500 nm
檢測蛋白質氧化產物	Protein Carbonyl Content Assay Kit		λmax = 375 nm
	Protein Carbonyl Assay Kit (Western Blot)		Western Blot

Microplate Reader

缺氧分析 / Hypoxia Detection

熱門商品

ROS-ID® Hypoxia/Oxidative stress detection kit

- **高度專一：**透過螢光染劑可在細胞中同時偵測細胞缺氧 Hypoxia (red) 及產生氧化自由基 ROS (green) 的現象。
- **流程簡單：**不需透過 Western blot 來分析 Hypoxia 相關 marker（例如 HIF-1α）。
- **配件完整：**Kit 內含 ROS & Hypoxia inducer controls。

產品功能	Product	Instruments	Detection
檢測細胞缺氧程度	ROS-ID® Hypoxia/Oxidative stress detection kit		Oxidative stress: 490/525 nm Hypoxia: 596/670 nm

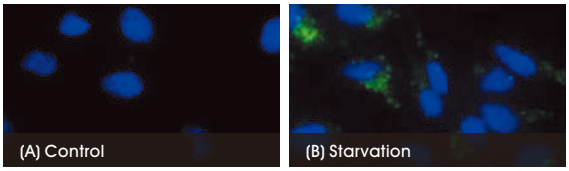
Microscopy Flow Cytometry

細胞自噬分析 / Autophagy Detection

熱門商品

CYTO-ID® Autophagy detection kit

- **流程簡單：**無須進行 LC3-GFP transfection，僅需加入染劑即可偵測，適合高通量分析 (HTS)。
- **結果更精確：**可避免因轉染效率不佳導致的結果誤判。
- **高度專一：**綠色螢光染劑可專一性地偵測 pre-autophagosomes、autophagosomes 與 autolysosomes (autophagolysosomes)。
- **配件完整：**Kit 內含 Autophagy inducer (Rapamycin) 及 Lysosomal inhibitor (Chloroquine) 作為 Control 使用。



Profile autophagy without transfection. Starvation induces an increase in green fluorescence intensity as demonstrated by the presence of punctate cytoplasmic structures **(B)** compared to control cells **(A)**. Nuclei counterstained with Hoechst dye (blue).

產品功能	Product	Instruments	Detection
檢測細胞自噬	CYTO-ID® Autophagy detection kit		Ex/Em = 480/530 nm

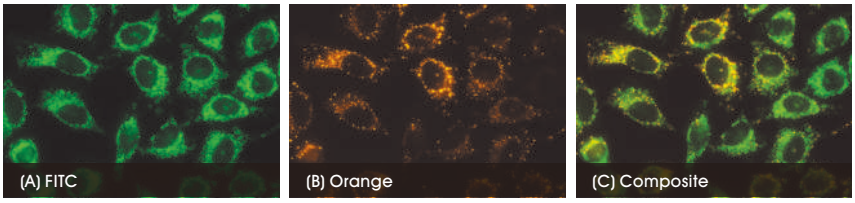
Microscopy Flow Cytometry Microplate Reader

粒線體功能分析 / Mitochondrial Function Assay

熱門商品

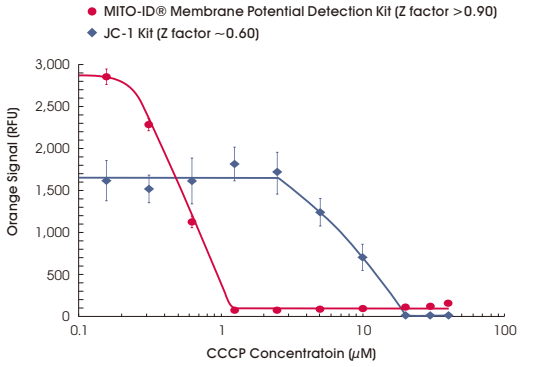
MITO-ID® Membrane potential detection kit

- **靈敏度更高：**能區分出小至 10mV 的膜電位差異，較傳統 JC-1（僅能區分出約 100mV 膜電位差異）及 JC-10 染劑具有更高的偵測靈敏度！
- **使用便利：**適用於顯微鏡及流式細胞儀偵測，亦有螢光微量盤讀取儀偵測套組可供選擇。



細胞正常狀態下，粒線體膜電位正常，MITO-ID® 染劑在細胞質會呈現綠色 **(A)**，在粒線體會呈現橘紅色 **(B)**，於顯微鏡下可觀察到細胞呈現兩種螢光顏色 **(C)**。當細胞發生凋亡時，粒線體膜電位下降，MITO-ID® 染劑在細胞質及粒線體皆呈現綠色，於顯微鏡下觀察細胞將主要呈現綠色，橘紅色螢光訊號會明顯地大幅下降。

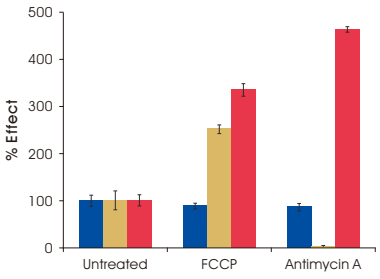
MITO-ID® Membrane potential detection kit is 10X more sensitive than JC-1 with superior aqueous solubility.



熱門商品

Extracellular Oxygen Consumption Assay

- **無需昂貴的儀器設備：**使用對氧氣敏感的螢光探針，搭配時差性螢光偵測儀 (TRF reader)，即可即時動態偵測細胞耗氧率 (oxygen consumption rate, OCR)。
- **完整可靠的實驗結果：**可搭配【Glycolysis Assay kit】及【ATP Detection kit】同時分析細胞產酸率 (extra cellular acidification rate, ECAR) 及 ATP 生成量。



Simultaneous quantification of mitochondrial respiration and glycolytic flux. Cellular Energy Flux for HepG2 cells (seeded at 65,000 per well), treated with a combination of drug compounds modulating the ETC (Antimycin A [1 μM] and FCCP [2.5 μM]), shown as a percentage relative to untreated control cells. Comparative measurements were taken with Extracellular Oxygen Consumption Assay **(gold column)** and Glycolysis Assay [Extracellular acidification] **(red column)** show the shift between mitochondrial respiration and glycolysis and the cellular control of energy (ATP; measured 1h post-treatment using Luminescent ATP Detection Assay kit **(blue column)**).

產品功能	Product	Instruments	Detection
檢測粒線體膜電位	MITO-ID® Membrane potential detection kit（見上方說明）	Microscopy, Flow Cytometry	Low MMP: 485/530 nm High MMP: 540/570 nm
	JC-1 - Mitochondrial Membrane Potential Assay Kit	Microplate Reader	Low MMP: 475/530 nm High MMP: 530/590 nm
	JC-10 Mitochondrial Membrane Potential Assay Kit	Microplate Reader	Low MMP: 490/525 nm High MMP: 540/590 nm
	TMRE-Mitochondrial Membrane Potential Assay Kit	Microscopy, Flow Cytometry, Microplate Reader	Ex/Em = 549/575 nm
檢測細胞耗氧率	Extracellular Oxygen Consumption Assay（見上方說明）	Microplate Reader	Ex/Em = 380/650 nm (TRF)
	Intracellular Oxygen Concentration Assay	Microplate Reader	Ex/Em = 380/650 nm (TRF)
檢測細胞產酸率	Glycolysis Assay [Extracellular acidification]	Microplate Reader	Ex/Em = 380/650 nm (TRF)
檢測 ATP 生合成	ATP Detection Assay kit	Microplate Reader	Luminescence

Microscopy　Flow Cytometry　Microplate Reader

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