ROS-ID®
Hypoxia/Oxidative stress detection kit

Widely cited kit for the simultaneous analysis of hypoxia and oxidative stress by microscopy and flow cytometry applications

Enzo Life Sciences' ROS-ID® Hypoxia/Oxidative stress detection kit is designed for functional detection of hypoxia and oxidative stress levels in live cells (both suspension and adherent) using fluorescent microscopy or flow cytometry. This kit includes fluorogenic probes for hypoxia (red) and for oxidative stress levels (green) as two major components.

The Hypoxia (Red) dye takes advantage of the nitroreductase activity present in hypoxic cells by converting the Nitro group to hydroxylamine (NHOH) and amino (NH_2) and releasing the fluorescent probe.

The Oxidative Stress Detection Reagent is a non-fluorescent, cell-permeable total ROS detection dye which reacts directly with a wide range of reactive species. The generated fluorescent products can be visualized using a wide-field fluorescence microscope equipped with standard fluorescein (490/525 nm) and Texas Red (596/670 nm) filters, confocal microscopy, or cytometrically using any flow cytometer equipped with a blue (488 nm) laser.

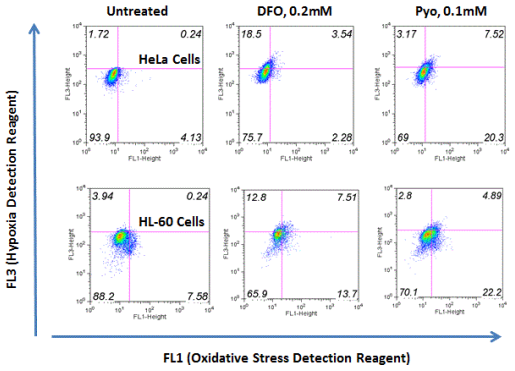
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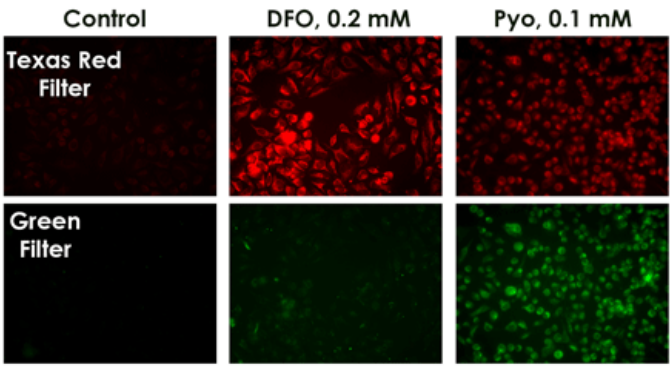
ENZ-51042-0125	125 tests
ENZ-51042-K500	500 tests

Manuals, SDS & CofA View Online »

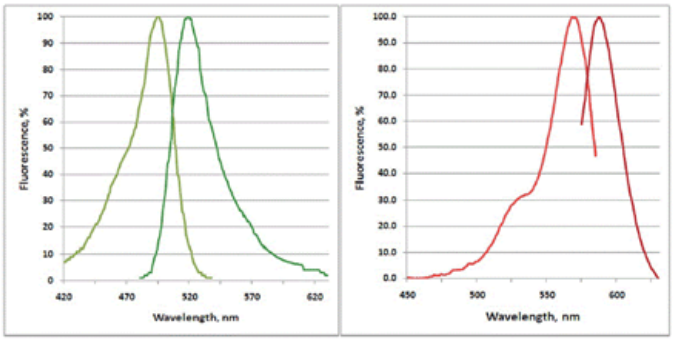
- Highly sensitive and specific fluorogenic probes to measure hypoxia and oxidative stress in live cells
- Used with adherent or suspension cell lines
- Complete set of reagents, including ROS and Hypoxia inducers



Detection of hypoxia and oxidative stress levels in cultured human HeLa and HL-60 cells. Cells were treated with hypoxia inducer (DFO) and ROS inducer (pyocyanin). Numbers in each quadrant reflects the percentage of cells (population). Results indicate that hypoxia and oxidative stress dye are specific



HeLa cells were subject to treatment. Bright red fluorescence of the Hypoxia probe is observed following its conversion by cellular nitroreductases under hypoxic conditions such as those induced chemically by treatment with the hypoxia-mimetic desferrioxamine (DFO).



A B

The absorption and emission peaks for the Oxidative Stress (A) and Hypoxia Red (B) detection dyes are 504nm/524nm and 580nm/595nm, respectively. The dyes can be excited with an argon ion laser at 488 nm, and detected in the FL1 channel (Oxidative Stress dye) and FL3 Channel (Hypoxia Red dye) on ost bench flow cytometers.

Handling & Storage

Use/Stability	With proper storage, the kit components are stable up to the date noted on the product label.
Handling	Avoid freeze/thaw cycles.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Dry Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	ROS / Nitroreductrase
Application	Flow Cytometry, Fluorescence microscopy, Fluorescent detection, HTS
Application Notes	This kit is designed for fluorescence microscopy and/or flow cytometry using adherent or suspension cells.
Contents	Hypoxia Red Detection Reagent Oxidative Stress Detection Reagent (Green) ROS Inducer (Pyocyanin) Hypoxia Inducer (DFO)
Quality Control	The testing is accomplished using flow cytometry method for assessment of hypoxic cells and/or cells with high levels of total oxidative stress in conjunction with dyes (provided in kit). Microscopy images are also obtained.
Quantity	For -K500 size: 500 fluorescence microscopy assays or 100 flow cytometry assays. For -0125 size: 125 fluorescence microscopy assays or 25 flow cytometry assays.

Technical Info / Product Notes

The ROS-ID® Hypoxia/Oxidative stress detection kit is a member of the CELLESTIAL® product line, reagents and assay kits comprising fluorescent molecular probes that have been extensively benchmarked for live cell analysis applications. CELLESTIAL® reagents and kits are optimal for use in demanding cell analysis applications involving confocal microscopy, flow cytometry, microplate readers and HCS/HTS, where consistency and reproducibility are required.

Application Notes:

3D Culture Application: Inhibition of Hypoxic Tumor Cells using a Three-Dimensional Spheroid Model

3D Culture Application: PMT and Image-Based Analysis of Hypoxia Induction using a 3D Spheroid Model

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