ROS-ID® Total ROS detection kit
ENZ-51011

Product Number/Sizes
ENZ-51011  1 Kit

- Directly monitors global levels of reactive oxygen species (ROS), but not superoxide in live cells
- Distinguishes between different reactive species, such as hydrogen peroxide, peroxynitrite and hydroxyl radicals when specific inhibitors are used
- High sensitivity, specificity and accuracy for live cell studies
- Compatible with major components of tissue culture media (phenol red, FBS and BSA)
- Complete set of reagents, including ROS inducers and scavengers
- Stringently manufactured, to control and eliminate non-specific assay artifacts

Enzo Life Sciences’ ROS-ID® Total ROS detection kit is designed to directly monitor real time reactive oxygen and/or nitrogen species (ROS/RNS) production in live cells using fluorescence microscopy and/or flow cytometry. The kit includes Oxidative Stress Detection Reagent (Green) as the major component. This non-fluorescent, cell-permeable total ROS detection dye reacts directly with a wide range of reactive species, such as hydrogen peroxide, peroxynitrite and hydroxyl radicals, yielding a green fluorescent product indicative of cellular production of different ROS/RNS types. The kit is not designed to detect superoxide, reactive chlorine or bromine species, as the fluorescent probe included is relatively insensitive to these analytes. Upon staining, the fluorescent product generated can be visualized using a wide-field fluorescence microscope equipped with standard green filter (490/525 nm), or cytometrically using any flow cytometer equipped with a blue (488 nm) laser. The Total ROS Detection Kit contains sufficient reagents for at least 200 microscopy assays or 50 flow cytometry assays using live cells (adherent or in solution).

Product Specifications
ALTERNATIVE NAME: Reactive oxygen species
APPLICATIONS: Flow Cytometry, Fluorescence microscopy, Fluorescent detection, HTS
APPLICATION NOTES: This kit is designed to directly monitor real time reactive oxygen and/or nitrogen species (ROS/RNS) production in live cells using fluorescence microscopy and/or flow cytometry.
QUALITY CONTROL: A sample from each lot of ROS-ID® Total ROS detection kit is used to stain HeLa cells using the procedures described in the user manual. The stained cells are analyzed using a wide-field fluorescence microscope equipped with standard green filter (490/525 nm). The following results are obtained: ROS positive control samples induced with Pyocyanin exhibit bright green fluorescence in the cytoplasm. Cells pretreated with the ROS inhibitor don’t demonstrate any green fluorescence signal upon induction.

QUANTITY: 200 fluorescence microscopy assays or 50 flow cytometry assays.
USE/STABILITY: With proper storage, the kit components are stable up to the date noted on the product label. Store kit at -20°C in a non-frost free freezer, or -80°C for longer term storage.
HANDLING: Protect from light. Avoid freeze/thaw cycles.
SHIPPING: Shipped on Dry Ice
SHORT TERM STORAGE: -20°C
LONG TERM STORAGE: -80°C
CONTENTS: Oxidative Stress Detection Reagent (Green), 300 nmoles
ROS Inducer (Pyocyanin), 1 µmole
ROS Inhibitor (N-acetyl-L-cysteine), 2 x 10 mg
Wash Buffer Salts, 1 pack

TECHNICAL INFO/PRODUCT NOTES:
The ROS-ID® Total ROS 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 imaging applications, such as confocal microscopy, flow cytometry and HCS, where consistency and reproducibility are required.

**Application Note:**
*Image-Based Analysis of a Human Neurosphere Stem Cell Model for the Evaluation of Potential Neurotoxicants*

Figure 1. Jurkat cells were induced with 100&micro;M pyocyanin (general ROS inducer, panel A), or 1 &micro;M of t-butyl-hydroperoxide (peroxide inducer, panel B), stained with Total ROS Detection Reagent and analyzed using flow cytometry. Untreated cells were used as a control. Cell debris were ungated. The numbers in the inserts reflect the mean green fluorescence of the control and treated cells.

**Product Literature References**


Modulation of alveolar macrophage innate response in proinflammatory-, pro-oxidant-, and infection- models by mint extract and chemical constituents: Role of MAPKs N. Yadav & H. Chandra Immunobiology 223 49 (2017)


ASCT2 (SLC1A5) is an EGFR-associated protein that can be co-targeted by cetuximab to sensitize cancer cells to ROS-induced apoptosis H. Lu, et al. Cancer Lett. 381 23 (2016)


Quercetin reduces oxidative damage induced by parquat via modulating expression of antioxidant genes in A549 cells T. Zerin, et al. J. Appl. Toxicol. 33 1460 (2013)

Rutin Suppresses Palmitic Acids-Triggered Inflammation in Macrophages and Blocks High Fat Diet-Induced Obesity and Fatty Liver in Mice M. Gao, et al. Pharm. Res. 30 2940 (2013)


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