

# ROS/SUPEROXIDE DETECTION

**Total ROS/Superoxide Detection Kit**

ENZ-51010

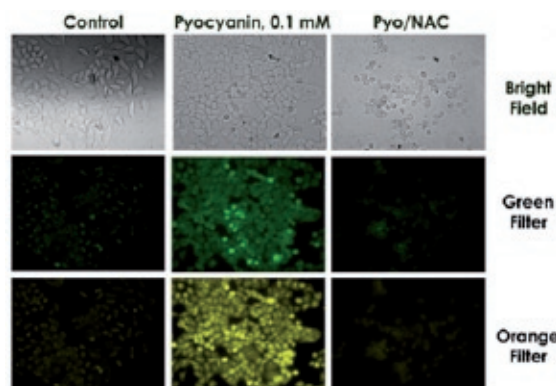
200 Reactions

**HIGHLIGHT**

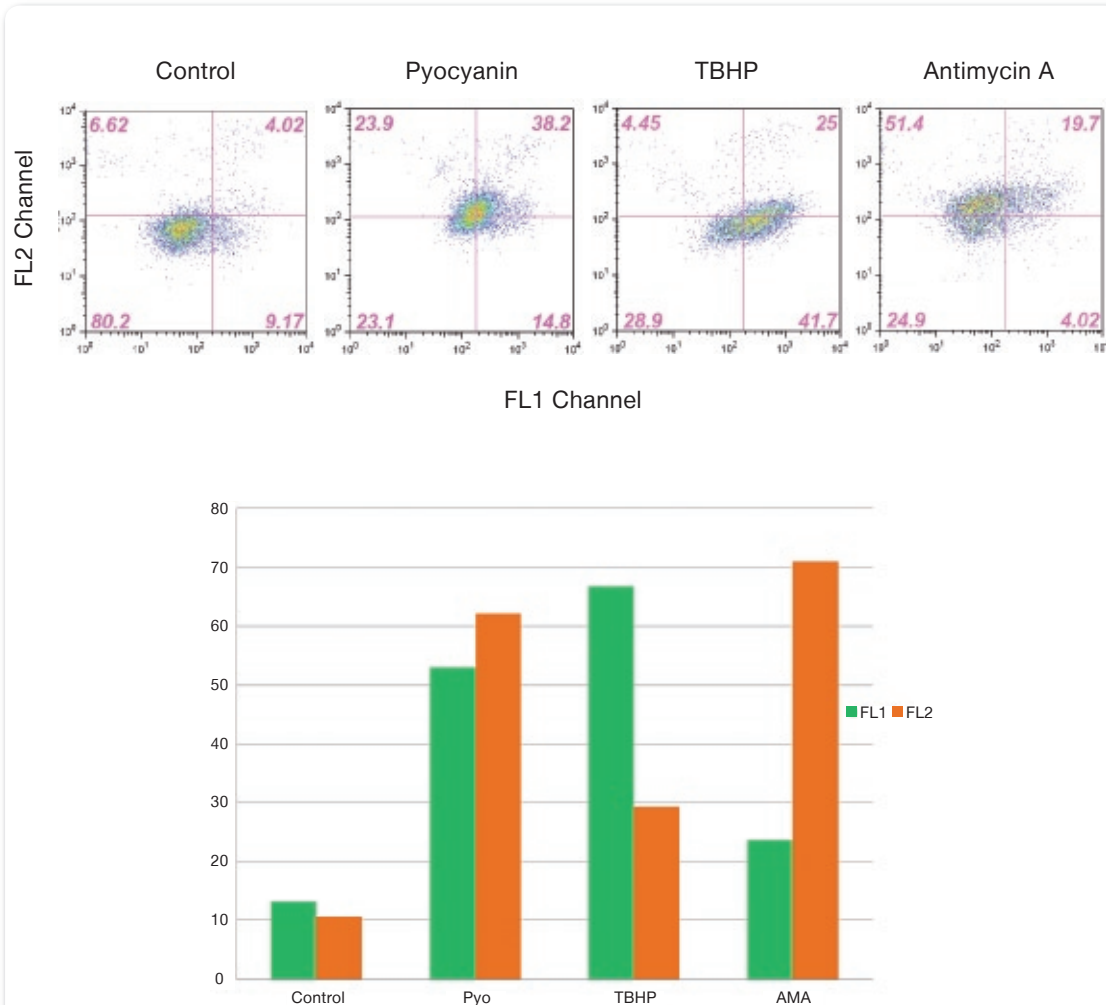
- Directly monitors global levels of reactive oxygen species (ROS), and specifically superoxide, in live cells by fluorescence microscopy or flow cytometry
- Distinguishes between different reactive species, such as hydrogen peroxide, peroxynitrite and hydroxyl radicals
- High sensitivity, specificity 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

Free radicals and other reactive species play seminal roles in many physiological and pathophysiological processes. Once produced within a cell, free radicals can damage a wide variety of cellular constituents, including proteins, lipids and DNA. However, at lower concentrations these very same agents may serve as second messengers in cellular signaling. Information-rich methods are required to quantify the relative levels of various reactive species.

The Total ROS/Superoxide Detection Kit is designed to directly monitor real time reactive oxygen species (ROS) production in live cells using fluorescence microscopy or flow cytometry. The kit includes two fluorescent dyes as major components: Total ROS Detection Reagent (green fluorescent) and specific Superoxide Detection Reagent (orange fluorescent). Through the combination of two specific fluorescent probes, the kit provides a simple and specific assay for the real-time measurement of global levels of reactive oxygen species (ROS), and specifically superoxide in living cells.



**FIGURE 1:** Profiling of reactive oxygen species formation by fluorescence microscopy was achieved in HeLa cells loaded with Enzo Life Sciences' Total 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.



**FIGURE 2:** Profiling of reactive oxygen species formation by flow cytometry was achieved in Jurkat cells: ROS positive control samples, induced with pyocyanin, yields strong fluorescence signal in both the FL1 and FL2 channels (ROS and superoxide generation); Antimycin A yields strong signal that is detectable in the FL2 channel (superoxide generation); TBHP yields strong signal detectable in the FL1 channel (ROS generation).

## Related Products

Product	Prod. No.	Size
<a href="#">ROS/RNS Detection Kit</a>	ENZ-51001	200 Reactions
<a href="#">Red Hydrogen Peroxide Assay Kit</a>	ENZ-51004	500 Reactions
<a href="#">Luminol (Ultra Pure)</a>	ENZ-52354	1 g

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