abcam

Product datasheet

Reactive Oxygen Species (ROS) Detection Assay Kit ab287839

3 Images

Overview

Product name	Reactive Oxygen Species (ROS) Detection Assay Kit
Detection method	Flow cytometry-fluorescent
Sample type	Adherent cells, Suspension cells
Assay type	Quantitative
Assay duration	Multiple steps standard assay
Product overview	Constant generation of low levels of reactive oxygen species (ROS) and free radicals is a basic feature of all living cells. Low levels of ROS play an essential role in signaling pathways, whereas increased levels under oxidative stress, results in damage to nucleic acids, proteins and membrane lipids. Accumulation of ROS during oxidative stress is also associated with aging, apoptosis or necrosis, and is implicated in pathological conditions such as vascular diseases, diabetes, renal ischemia, arteriosclerosis, pulmonary disorders, inflammatory diseases, and cancer. Cellular activity of ROS is offset by antioxidants, numerous repair systems, and replacement of damaged DNA. Probes for measuring intracellular ROS levels provide important tools to study oxidative stress inducers and effects of antioxidant therapies. The ROS Detection Assay Kit ab287839 is designed for the detection of hydroxyl, peroxyl, or other reactive oxygen species in live cells. We utilize H2DCFDA, a unique cell-permeable fluorogenic probe compatible with phenol red, FBS and BSA to detect reactive oxygen species in live cells. Upon the cell entry, H2DCFDA is modified by cellular esterases to form a non-fluorescent H2DCF. Oxidation of H2DCF by intracellular ROS yields highly a fluorescent product that can be detected by FACS, microplate reader, or fluorescence microscope (Ex/Em 495/529 nm). The fluorescence intensity is proportional to the ROS levels. Our kit provides a simple and specific assay for the real-time measurement of global levels of ROS in living cells. We include sufficient reagents to perform 100 assays and a common ROS inducer as control for the measurement of ROS levels or antioxidant activity with high sensitivity, specificity and accuracy.
Tested applications	**Suitable for:** FM, Functional Studies
Platform	Flow cytometer, Fluorescence microscope

Properties

Storage instructions	Store at -20°C. Please refer to protocols.

Components	100 tests	250 tests
ROS Assay Buffer I	1 x 25ml	1 x 65ml
250X ROS Inducer	1 x 20µl	1 x 20µl
1000X ROS Label I	1 x 10µl	1 x 25µl

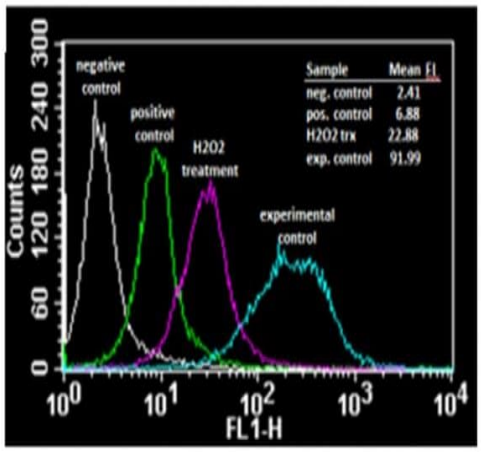
Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab287839 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
FM		Use at an assay dependent concentration.
Functional Studies		Use at an assay dependent concentration.

Images



Reactive Oxygen Species (ROS) Detection Assay Kit Oxidative Stress Analysis

Live cells labeled and treated with ROS Inducer and 100 µM of H_2O_2 according to the kit protocol.

2 x10^4 Jurkat cells per condition were analyzed by FACS. Plotted intensity values show a significant increase in ROS production between treatments and controls

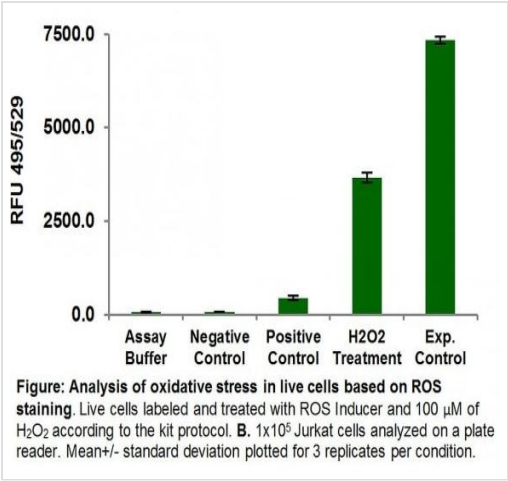
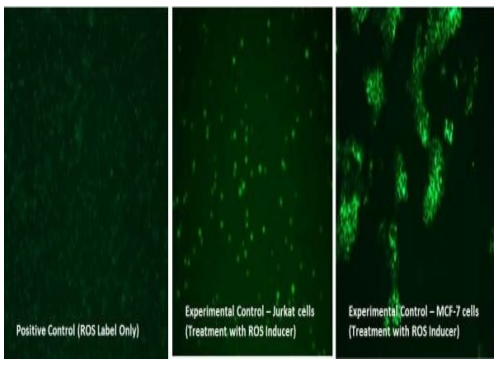


Figure: Analysis of oxidative stress in live cells based on ROS staining. Live cells labeled and treated with ROS Inducer and 100 µM of H_2O_2 according to the kit protocol. **B.** $1x10^5$ Jurkat cells analyzed on a plate reader. Mean+/- standard deviation plotted for 3 replicates per condition.

Reactive Oxygen Species (ROS) Detection Assay Kit Oxidative Stress Analysis 2

Live cells labeled and treated with ROS Inducer and 100µM of H_2O_2 according to the kit protocol.

$1x10^5$ Jurkat cells were analyzed on a plate reader. Mean+/- standard deviation plotted for 3 replicates per condition



Reactive Oxygen Species (ROS) Detection Assay Kit Fluorescence Microscopy

Profiling of ROS formation by Fluorescence Microscopy in Jurkat and MCF-7 live cells.

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