

Reactive Oxygen Species Assay Kit

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Keep away from direct sunlight
Store at -20°C

Actual storage temperature shall be subject to the COA.

Biological Description

Description

TargetMol's Reactive Oxygen Species (ROS) Assay Kit utilizes DCFH-DA as a fluorescent probe to detect intracellular ROS levels. Reactive oxygen species (ROS) are oxygen-derived molecules or ions with high chemical reactivity, including hydrogen peroxide (H₂O₂), superoxide anions, and hydroxyl radicals. At physiological levels, ROS act as important signaling molecules involved in various biological processes such as immune defense. However, when ROS production exceeds the capacity of the antioxidant system, oxidative stress occurs, leading to DNA and protein damage and potentially triggering various diseases.

DCFH-DA (2',7'-Dichlorodihydrofluorescein diacetate) is a cell-permeable fluorescent probe. The presence of two acetate groups in its structure allows DCFH-DA to freely cross cell membranes. Inside the cell, DCFH-DA is hydrolyzed by non-specific esterases to remove the acetate groups, generating non-fluorescent 2',7'-dichlorodihydrofluorescein (DCFH), which becomes trapped within the cell. When ROS are present, DCFH is oxidized to 2',7'-dichlorofluorescein (DCF), which emits a bright green fluorescence (excitation: 488 nm, emission: 525 nm). The fluorescence intensity is directly proportional to the intracellular ROS levels, enabling quantitative analysis of ROS generation.

This kit is compatible with multiple detection instruments, including fluorescence microscopes, confocal microscopes, fluorescence spectrophotometers, and flow cytometers.

For use in 6-well plates, each well requires 1 mL of working solution, providing approximately 100 assays.

For use in 96-well plates, each well requires 100 µL of working solution, providing approximately 1,000 assays.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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