

RedoxSensor™ Red CC-1 (R-14060)

Quick Facts

Storage upon receipt:

- -20°C or -80°C
- Desiccate
- Protect from light

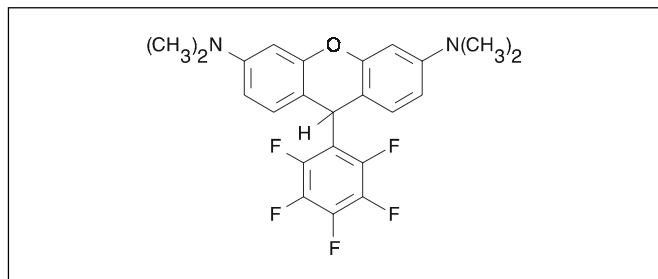


Figure 1. Chemical structure of RedoxSensor Red CC-1

Introduction

RedoxSensor™ Red CC-1 stain is a unique probe whose fluorescence localization appears to be based on a cell's cytosolic redox potential. Scientists at Molecular Probes have found that RedoxSensor Red CC-1 stain passively enters live cells. Once inside, the nonfluorescent probe is either oxidized in the cytosol to a red-fluorescent product (absorption/emission maxima ~540/600nm), which then accumulates in the mitochondria, or the probe is transported to the lysosomes where it is oxidized. The differential distribution of the oxidized product between mitochondria and lysosomes appears to depend on the redox potential of the cytosol. In proliferating cells, mitochondrial staining predominates; whereas in contact-inhibited cells, the staining is primarily lysosomal. The best method we have found to quantitate the distribution of the oxidized product is to use the mitochondrion-selective MitoTracker® Green FM (M-7514) stain in conjunction with RedoxSensor Red CC-1 stain.¹

Materials

Contents

RedoxSensor Red CC-1 stain (MW = 434.4) is supplied as a set of ten vials, each containing 50 µg of material.

Storage

RedoxSensor Red CC-1 stain is air sensitive. The unopened vials, which are sealed under argon, should be stored desiccated at either -20°C or -80°C, protected from light.

Preparation of Stock Solutions

Stock solutions at 1 mM can be prepared by adding 115 µL of DMSO directly to an individual vial of the reagent. Because the RedoxSensor Red CC-1 stain is air sensitive, the material

should be used promptly or flushed with argon or nitrogen and stored frozen at -20°C. For long-term storage, we recommend storing the stock solution at -80°C. Stored properly, stock solutions should remain stable for approximately six months. Solutions that appear highly colored are the result of air oxidation and should be discarded. PROTECT FROM LIGHT.

Application

Adherent cells can be labeled with RedoxSensor Red CC-1 stain by incubating the cells with 1–5 µM RedoxSensor Red CC-1 stain at 37°C for approximately 10 minutes. If desired, cells can be co-incubated with ~1 µM of the green-fluorescent mitochondrial stain, MitoTracker Green FM stain (M-7514), which preferentially accumulates in mitochondria regardless of mitochondrial membrane potential. Mitochondria stained with RedoxSensor Red CC-1 and MitoTracker Green FM stains will have both red and green fluorescence, whereas lysosomes will have predominantly red fluorescence. Thus, red fluorescence that co-localizes with green fluorescence is due to accumulation of the oxidized RedoxSensor Red CC-1 stain in the mitochondria. Cells should be washed with a suitable buffer, for example phosphate-buffered saline (PBS), prior to analysis.

Because RedoxSensor Red CC-1 stain is easily photooxidized, low-level light techniques are advised. We recommend bringing the cells into focus using phase light and then acquiring images using minimal exposure times. For multiple-exposure images, the RedoxSensor Red CC-1 stain should be imaged first. The oxidized product of RedoxSensor Red CC-1 stain has excitation/emission maxima ~540/600 nm, therefore filter sets appropriate for tetramethylrhodamine can be used.

References

1. Free Radic Biol Med 28, 1266 (2000).

Product List *Current prices may be obtained from our Web site or from our Customer Service Department.*

Cat #	Product Name	Unit Size
M-7514	MitoTracker® Green FM *special packaging*	20x50 µg
R-14060	RedoxSensor™ Red CC-1 *special packaging*	10x50 µg

Contact Information

Further information on Molecular Probes' products, including product bibliographies, is available from your local distributor or directly from Molecular Probes. Customers in Europe, Africa and the Middle East should contact our office in Leiden, the Netherlands. All others should contact our Technical Assistance Department in Eugene, Oregon.

Please visit our Web site — www.probes.com — for the most up-to-date information

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