

CellMetrix Intracellular GSH Assay Kit

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CATALOG #
AAA52716

PRODUCT SYNONYMS

CellMetrix Intracellular GSH; CellMetrix Intracellular GSH Assay Kit**; CellMetrix Intracellular GSH assay kit

PRODUCT SPECIFICATIONS

Reagents	green probe
Sample Protocol	Sample Protocol: Prepare samples and controls. Reconstitute ThioBright Green with 500 µL DMSO to produce a 200X stock concentrate. Add ThioBright Green to each sample at 1:200. For example, add 5 µL to 995 µL cultured cells. Incubate 15-30 minutes. Optional: Spin and pellet cells; remove supernatants, and gently resuspend in Assay Buffer or other isotonic buffer. If desired, label with additional stains, such as Hoechst, propidium iodide, 7-AAD, or an antibody. Analyze with a flow cytometer. ThioBright Green excites at 490 nm and emits at 525 nm.
Excitation / Emission	488 nm/ 530 nm
Method of Analysis	Flow Cytometer, Fluorescence Microscope
Types of Samples	Cell Culture
Preparation and Storage	Store at -20 degree C

ADDITIONAL INFORMATION

Related Product Information for CellMetrix Intracellular GSH assay kit	Background: gamma-L-glutamyl-L-cysteinyl-glycine (GSH; glutathione) is the most abundant non-protein thiol in cells. GSH is involved in the regulation of a number of essential biochemical processes within the cell. Primarily recognized as a key intracellular source of reducing power for combating the toxic accumulation of free radical byproducts, GSH is also involved with detoxification and removal of exo/endogenous toxins and alkylating agents. In its role as a cell signaling agent, GSH is involved in DNA synthesis and cell proliferation regulation. Due to the genetically conserved molecular processes by which cells die, intracellular levels of GSH can favor a cell death pathway via apoptosis (adequate intracellular GSH stores) or via necrosis or autophagy (depleted intracellular GSH stores). Detection of a drop in intracellular GSH concentration in an experimental cell population relative to a negative (healthy cell) control is often indicative of an apoptosis induction event. Due to this strong correlation between intracellular GSH depletion and the onset of the apoptotic process, The Intracellular GSH Assay provides a good screening option for assessing the potency of apoptosis inhibitor and activator reagents. The kit provides all the essential reagents and an easy to follow protocol to assess changes in intracellular GSH levels using a flow cytometry analysis method. The key reagent in the assay is a proprietary thiol-sensitive dye, ThioBright™ Green. This thiol-reactive dye quickly penetrates cell membrane structures and accumulates primarily within the cytosol of living cells. In the presence of free-thiol-containing molecules such as GSH, the non-fluorescent ThioBright Green dye molecule binds covalently to the GSH target molecule and converts to the fluorescent form of the dye. During periods of oxidative stress or GSH depletion associated with cell death processes, cytosolic concentrations of the green fluorescent dye form become significantly diminished. The reduction in intracellular GSH concentration directly translates into an easily monitored reduction in the green fluorescence output within the dying or oxidatively stressed cell population. Because the GSH-bound form of ThioBright Green has the fluorescence properties of fluorescein (Ex/Em = 490/525 nm), it is perfectly suited to most standard flow cytometry instrument optical packages. Background fluorescence issues are minimized due to the non-fluorescent nature of the free form of the thiol-sensitive dye. Intracellular GSH Assay requires minimal procedural steps and hands-on time to complete. Experimentally treated suspension or trypsin-EDTA disassociated adherent cells are ready for analysis after briefly staining (15-30 minutes) with the ThioBright Green GSH quantitation dye. Since the unbound reagent is non-fluorescent, subsequent wash steps are not required, thus simplifying the assay procedure. Each kit will enable the assessment of up to 100 (1 mL) samples via flow cytometry. This flow cytometer assay can be adapted for use with a fluorescence microscope or plate reader equipped with FITC/FAM dye-compatible excitation/emission optics. Use and optimization of these alternative fluorescence analysis methods will require additional modifications to this flow cytometer based protocol.
Product Categories/Family for CellMetrix Intracellular GSH assay kit	CellMetrix Intracellular GSH Assay Kit

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/assay-kits/cellmetrix-intracellular-gsh/52716>