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Datasheet for KLD-004

Intracellular ThiolEZ™ Cell Survival Assay Kit

Overview

Description:	Intracellular ThiolEZ™ Cell Survival Assay Kit - KLD-004
Item No.:	KLD-004
Size:	1 Kit
Applications:	Biochemical Assay

Product Details

Background:	Intracellular ThiolEZ™ Cell Survival Assay Kit is an easy to use assay for measurement of thiols in cells; it measures total intracellular thiols including glutathione and cysteine. Glutathione is a natural antioxidant and a major thiol that limits cellular damage in healthy tissues during oxidative stress. It is also involved in repairing damage induced by cancer drugs and radiation and in the detoxification of several commonly used cancer chemotherapeutic drugs. Cysteine, which is a precursor for glutathione synthesis, is a further thiol present in cells. Cysteine is 10 times less abundant than the glutathione. Intracellular thiolEZ™ is ideal for investigators involved in aging research, oxidative stress, antioxidant screening, chemotherapy response and toxicology.
Synonyms:	Total intracellular thiol Assay, glutathione and cysteine assay, cell viability, cell survival, cellular viability, cellular survival, antioxidant assay
Detection Kit Type:	Cell Survival Kit

Target Details

Relevant Links:

- Intracellular Thiol EZ kit insert

Application Details

Suggested Applications:	Biochemical Assay (Based on references)
Application Note:	Intracellular ThiolEZ™ Cell Survival Assay Kit contains enough reagents for 100 assays using a 6-well plate.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.

Other:	100 assays using a 6-well plate

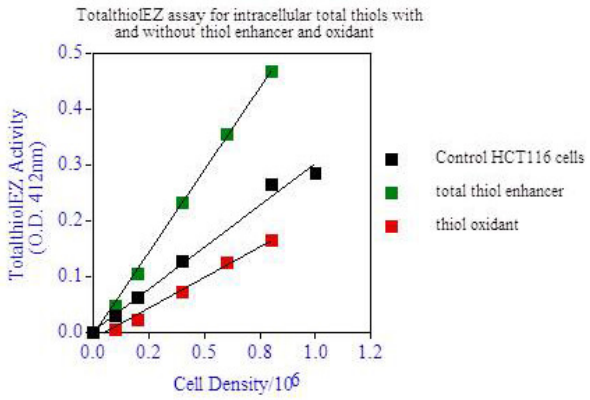
Formulation

Physical State:	n/a

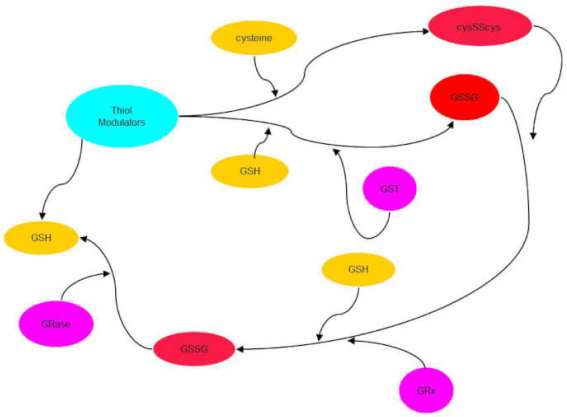
Shipping & Handling

Shipping Condition:	Wet Ice
Storage Condition:	Store Kit at 4-8° C prior to opening. See kit insert for complete instructions.
Expiration:	See kit insert for complete instructions.

Images

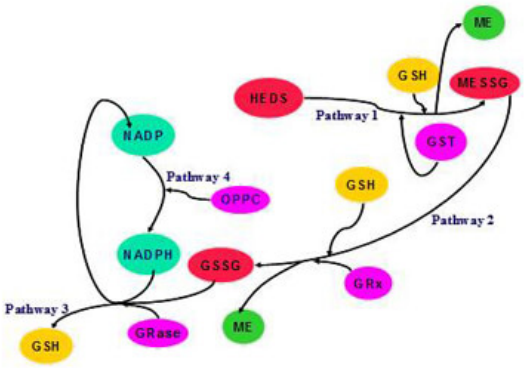


ELISA
Intracellular ThiolEZ™ Cell Survival Assay Kit is an easy to use assay for measurement of thiols in cells; it measures total intracellular thiols including glutathione and cysteine. Total ThiolEZ assay for intracellular total thiols with and without thiol enhancer and oxidant. y=0.301x+0.004 r2=0.989; y=0.597x-0.007 r2=0.999; y=0.222x-0.011 r2=0.988.



Pathway

Pathways involved in thiol homeostasis in cells exposed to thiol modulators. Thiol modulators may react spontaneously with GSH and cysteine or in a reaction catalyzed by glutathione-S-transferase (GST) may produce disulfide of glutathione (GSH) or cysteine. Thiol modulators may also react with GSH to produce oxidized GSH (GSSG) and mixed disulfide with other molecules through the catalytic action of glutaredoxin (GRX). Thiol modulators may also enhance GSH either by bioreduction or synthesis.



Pathway

Schematic representation of the various pathways involved in the cellular interactions of HEDS. HEDS reacts spontaneously with glutathione (GSH) or in a reaction catalyzed by glutathione-S-transferase (GST) to produce mixed disulfide (MESSG) of GSH and mercaptoethanol (ME) (Pathway 1). The mixed disulfide MESSG reacts with GSH and produces ME and GSSG by the catalytic action of glutaredoxin (GRX) (Pathway 2). The glutathione disulfide GSSG reacts with NADPH and produces GSH by the catalytic action of glutathione reductase (GRase) (Pathway 3). The conversion of GSSG to GSH i.e. GSH recycling requires NADPH recycling (NADP+ NADPH) by oxidative pentose phosphate cycle (OPPC) (Pathway 4)

Disclaimer

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