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Datasheet for KLD-001

CellCountEZ™ Cell Survival Assay Kit

Overview

Description:	CellCountEZ™ Cell Survival Assay Kit - KLD-001
Item No.:	KLD-001
Size:	1 Kit
Applications:	Biochemical Assay, Cellular Assay

Product Details

Background:	CellCountEZ™ Cell Survival Assay Kit is a tissue culture media-based assay that can measure metabolically active live cells and quantify cell death caused by radiation, chemotherapeutics or toxins. CellCountEZ™ is based on the ability of mammalian cells to rapidly and efficiently convert hydroxyethyl disulfide (HEDS) into mercaptoethanol (ME) through a bioreduction mechanism. Bioconversion of HEDS to ME relies on the activity of the oxidative pentose phosphate cycle (OPPC). CellCountEZ™ measures ME in the extracellular medium without the need for cellular lysis and extraction methods, this preserves the ability to perform other cellular tests in the same culture system. CellCountEZ™ is readily soluble, membrane permeable and converted by live cells intracellularly before transport into the extracellular culture media. CellCountEZ™ offers many advantages that make it superior to common existing methods for quantifying cell growth and survival.
Synonyms:	Toxicity Proliferation and Survival Assay, cell proliferation and cell survival assay, cell viability kit, cell survival kit, cellular viability, cellular survival, HEDS assay, hydroxyethyl disulfide assay, quantifying cell growth and survival, cellular Drug toxicity
Detection Kit Type:	Cell Survival Kit

Target Details

Relevant Links:

- CellCountEZ Kit Insert

Application Details

Suggested Applications:	Biochemical Assay, Cellular Assay (Based on references)

Application Note:	CellCountEZ™ Cell Survival Assay Kit contains enough reagents for 1000 assays using a 96-well plate. This assay gives a linear response for cells (0; 1,000; 5,000; 10,000; 20,000; 40,000) plated in 100 µl growth medium with up to 15% fetal bovine serum in a 96-well plate and measured 20 hours after plating. Drug toxicity could be measured for up to 4 days after treatment with drugs using this assay for 5,000 cells plated in 100 µl growth medium with up to 15% fetal bovine serum in a 96-well plate.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
Other:	This kits provides for 1000 assays using a 96-well plate.

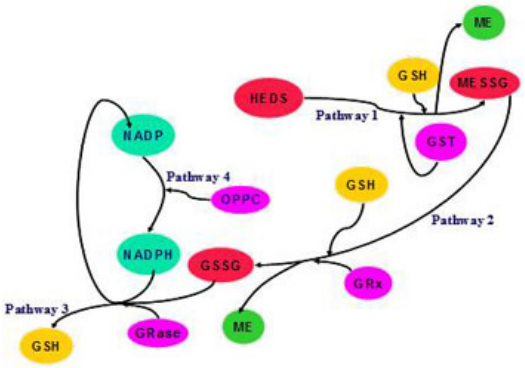
Formulation

Physical State:	n/a
Concentration:	n/a

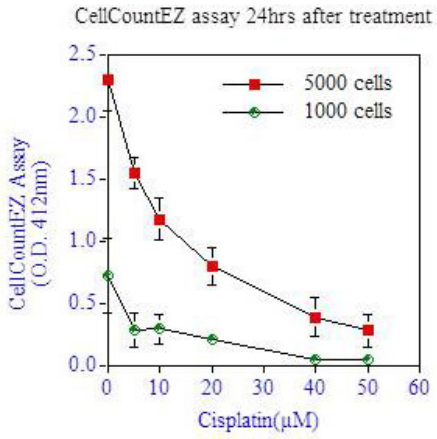
Shipping & Handling

Shipping Condition:	Wet Ice
Storage Condition:	Store kit at 2-8° C prior to opening. See kit insert for complete instructions.
Expiration:	See kit insert for complete instructions.

Images

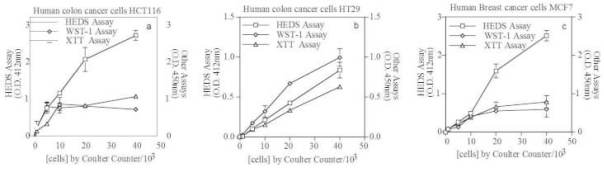


Pathway
Schematic representation of the various pathways involved in the cellular interactions of HEDS. HEDS reacts spontaneously with glutathione (GSH) or in a reaction catalyzed by glutathione-S-transferase (GST) to produce mixed disulfide (MESSG) of GSH and mercaptoethanol (ME) (Pathway 1). The mixed 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).



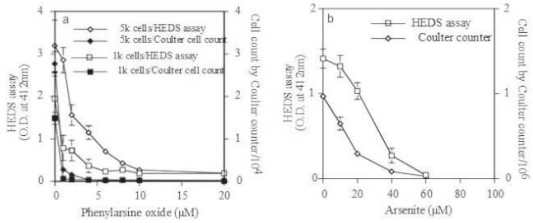
ELISA

CellCountEZ™ Cell Survival Assay Kit is a tissue culture media-based assay that can measure metabolically active live cells and quantify cell death caused by radiation, chemotherapeutics or toxins. CellCountEZ™ Assay after 24 hours treament with 0-50 µM of Cisplatin on human colon cancer cells HCT116 in a 96 well plate.



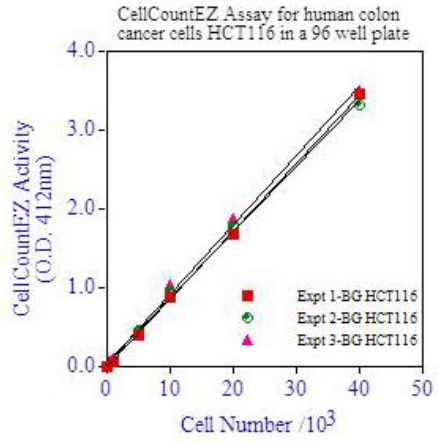
ELISA

CellCountEZ™ Cell Survival Assay Kit is a tissue culture media-based assay that can measure metabolically active live cells and quantify cell death caused by radiation, chemotherapeutics or toxins. HEDS, WST-1, and XTT assays of HCT116, HT29, and MCF7 human cancer cells. CellCountEZ™ is based on the ability of mammalian cells to rapidly and efficiently convert hydroxyethyl disulfide (HEDS) into mercaptoethanol (ME) through a bioreduction mechanism.



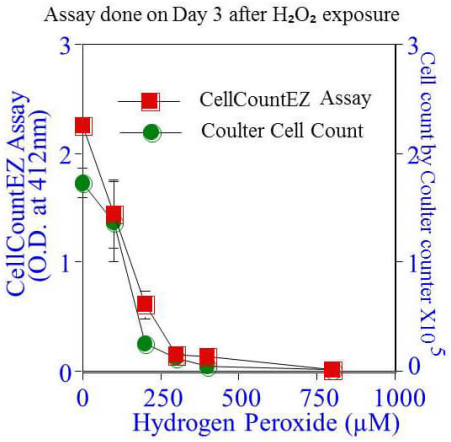
ELISA

CellCountEZ™ Cell Survival Assay Kit is a tissue culture media-based assay that can measure metabolically active live cells and quantify cell death caused by radiation, chemotherapeutics or toxins. HEDS assay after 0-20 µM Phenylarsine oxide treament or 0-60µM Arsenite treatment to human colon cancer cells. CellCountEZ™ is based on the ability of mammalian cells to rapidly and efficiently convert hydroxyethyl disulfide (HEDS) into mercaptoethanol (ME) through a bioreduction mechanism.



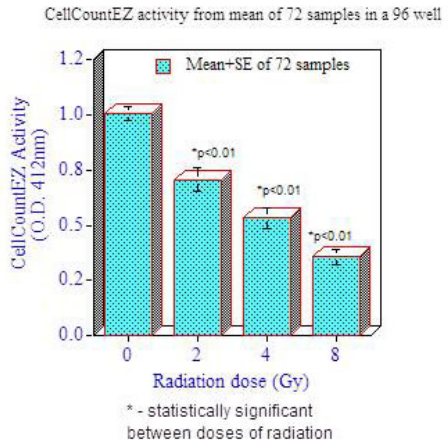
ELISA

CellCountEZ™ Assay for human colon cancer cells HCT116 in a 96 well plate. This assay gives a linear response for cells (0; 1,000; 5,000; 10,000; 20,000; 40,000) plated in 100 µl growth medium with up to 15% fetal bovine serum in a 96-well plate and measured 20 hours after plating. The background (no cells) O.D. is 0.391, 0.381, 0.368 for expt 1,2, and 3 repectively. The r2 values close to 1 demonstrate the dynamic range up to 40,000 cells. y=0.87x-0.008 r2=1.000. y=0.083x+0.045 r2=0.997. y=0.088x+0.052 r2=0.997.



ELISA

CellCountEZ™ Assay after 3 days of treament with 0-1000 µM of hydrogen peroxide on human colon cancer cells HCT116 in a 96 well plate. Drug toxicity could be measured for up to 4 days after treatment with drugs using this assay.



ELISA

CellCountEZ™ activity from the mean of 72 samples in a 96 well. CellCountEZ™ Assay after 0-8 doses of radiation on human colon cancer cells HCT116. CellCountEZ™ measures mercaptoethanol in the extracellular medium without the need for cellular lysis and extraction methods.

References

- Yoo YJ. et al. Synthetic Human β Defensin-3-C15 Peptide in Endodontics: Potential Therapeutic Agent in Streptococcus gordonii Lipoprotein-Stimulated Human Dental Pulp-Derived Cells. *Int J Mol Sci.* (2020)
- Jang, J et al. Berberine activates AMPK to suppress proteolytic processing, nuclear translocation and target DNA binding of SREBP-1c in 3T3-L1 adipocytes. *Molecular Medicine Reports* (2017)
- Huang Y et al. Insights from HuR biology point to potential improvement for second-line ovarian cancer therapy. *Oncotarget.* (2016)
- Li J et al. Hydroxyethyl disulfide as an efficient metabolic assay for cell viability in vitro. *Toxicol In Vitro* (2012)

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