

Datasheet for KLD-002

Oxphos™ Cell Survival Assay Kit**Overview**

Description:	Oxphos™ Cell Survival Assay Kit - KLD-002
Item No.:	KLD-002
Size:	1 Kit
Applications:	Biochemical Assay

Product Details

Background:	OxPhos™ is a medium based metabolic probe that can measure glutathione recycling capacity/glutathione function and glucose dependent antioxidant capacity of cells in tissue culture and whole blood. Oxphos™ is based on the ability of mammalian cells to rapidly and efficiently convert hydroxyethyl disulfide (HEDS) into mercaptoethanol (ME) through a bioconversion mechanism. Bioconversion of HEDS to ME relies on the activity of the oxidative pentose phosphate cycle (OPPC). OxPhos™ measures ME in the extracellular medium without the need for cellular lysis and extraction methods. Cell media is used in the assay, avoiding the need to lyse cells and thereby saving time and cost while preserving the ability to perform other cellular tests in the same culture system. OxPhos™ may have multiple applications in aging, oxidative stress, antioxidant screening, chemotherapy response and toxicology.
Synonyms:	Glutathione recycling, glutathione function, and glucose dependent antioxidant capacity assay, cell viability, cell survival cellular viability, cellular survival, antioxidant assay
Detection Kit Type:	Cell Survival Kit

Target Details

Relevant Links:	Oxphos Kit Insert
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Application Details

Suggested Applications:	Biochemical Assay (Based on references)
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Application Note:	Oxphos™ gives a linear response for mammalian cells (0; 100,000; 200,000; 400,000; 600,000; and 800,000) plated in 1mL growth medium in a six well plate with up to 15% fetal bovine serum and measured 20 hours after plating. It also gives a linear response for human blood (0, 10, 20, 40, 60, 80, 100 µL) suspended in a total volume of 200 µL saline in a microfuge tube and incubated with 10 µL of reagent 6 for 2hrs. Oxphos™ 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

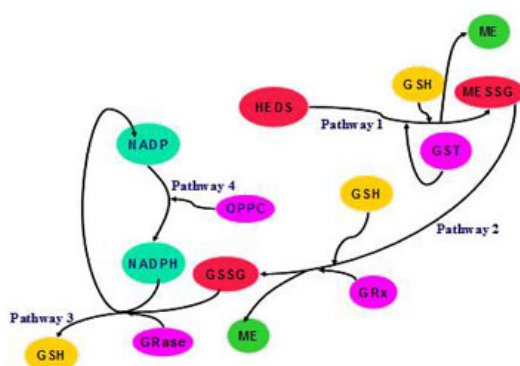
Formulation

Physical State:	n/a
Concentration:	n/a

Shipping & Handling

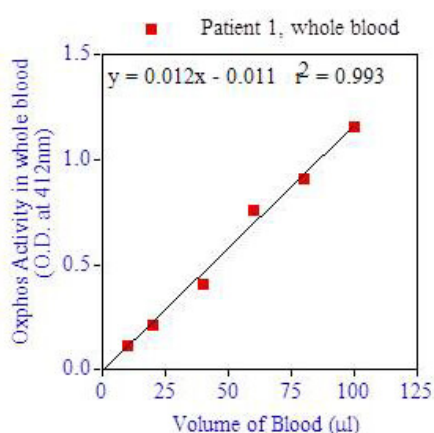
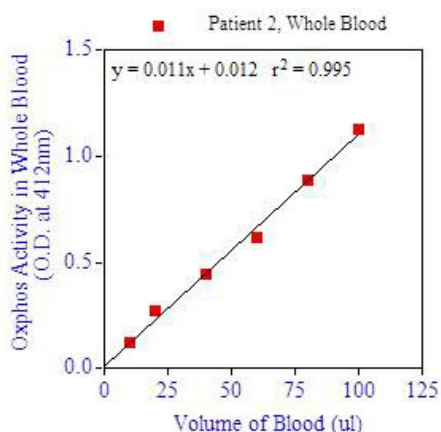
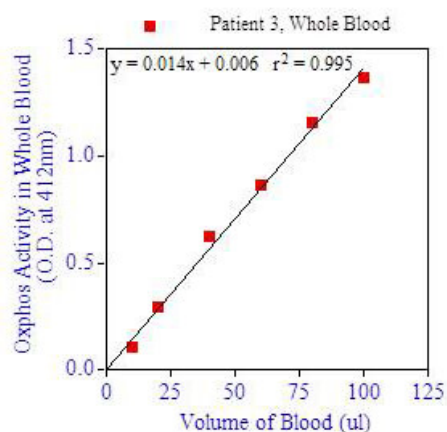
Shipping Condition:	Wet Ice
Storage Condition:	Store kit at 2-8° C prior to opening. See kit insert for complete instructions.
Expiration:	See kit insert for complete instructions.

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

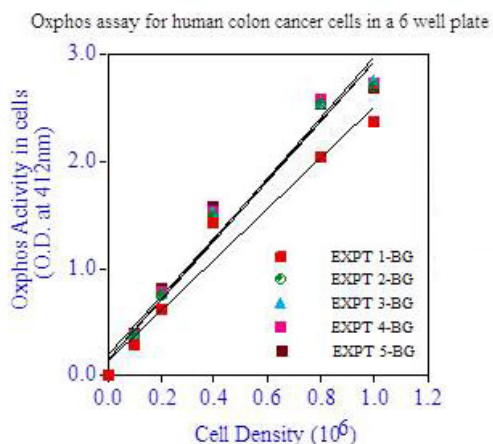
OxPhos™ gives a linear response for human blood (0, 10, 20, 40, 60, 80, 100 µL) suspended in a total volume of 200 µL saline in a microfuge tube and incubated with 10 µL of reagent 6 for 2hrs. OxPhos™ is a medium based metabolic probe that can measure glutathione recycling capacity/glutathione function and glucose dependent antioxidant capacity of cells in tissue culture and whole blood.

ELISA

OxPhos™ gives a linear response for human blood (0, 10, 20, 40, 60, 80, 100 µL) suspended in a total volume of 200 µL saline in a microfuge tube and incubated with 10 µL of reagent 6 for 2hrs. OxPhos™ is a medium based metabolic probe that can measure glutathione recycling capacity/glutathione function and glucose dependent antioxidant capacity of cells in tissue culture and whole blood.

ELISA

OxPhos™ gives a linear response for human blood (0, 10, 20, 40, 60, 80, 100 µL) suspended in a total volume of 200 µL saline in a microfuge tube and incubated with 10 µL of reagent 6 for 2hrs. OxPhos™ is a medium based metabolic probe that can measure glutathione recycling capacity/glutathione function and glucose dependent antioxidant capacity of cells in tissue culture and whole blood.



ELISA

OxPhos™ Cell Survival Assay for human colon cancer cells in a 6 well plate. This assay gives a linear response for mammalian cells (0; 100,000; 200,000; 400,000; 600,000; and 800,000) plated in 1mL growth medium in a six well plate with up to 15% fetal bovine serum and measured 20 hours after plating. The background (BG) O.D. is between 0.231-0.235 that is subtracted from the data for each of the cell density. A mean r^2 values of 0.97 demonstrate the dynamic range up to 1 million cells.

$y=2.376x+0.138$
 $r^2=0.964$
 $y=2.774x+0.158$ $r^2=0.976$
 $y=2.819x+0.163$
 $r^2=0.976$
 $y=2.814x+0.164$ $r^2=0.973$
 $y=2.736x+0.199$
 $r^2=0.965$

Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.