

# User Guide

## LipoQ™

### Lipid Quantification Assay

Cat LP01

Version 1.3



## Contents

Product Components.....	3
Storage.....	3
Equipment and materials required but not supplied with this kit.....	3
Introduction and assay principle.....	3
Procedure.....	4
A. Standard Preparation.....	4
B. Assay Procedure.....	5
Purchaser Notification.....	7

# LipoQ™

# Lipid Quantification Assay

---

## Product Components

### LP01-100 LipoQ™ Lipid Quantification Assay

- 1 x Lipid Quantification Reagent, 12 ml
- 1 x Lipid Standard, 1 mg
- 1 x User Guide

## Storage

Store all components at 4°C. LipoQ™ has a shelf life of 12 months from manufacture.

**Please note that the lipid quantification reagent is light-sensitive and should be protected from light until use.**

## Equipment and materials required but not supplied with this kit

- Concentrated Sulfuric Acid (18M)
- 2 mL glass test tubes, 15 mL conical tubes, microcentrifuge tubes, or 96 well plates
- Single and multichannel micropipettes with disposable tips, and multichannel micropipette reservoir
- Thermal heat block
- Bath sonicator

## Introduction and assay principle

LipoQ™ uses the sulfo-phospo-vanillin method to measure the lipid content of a wide variety of sample types. Unsaturated fatty acids within a sample will react with concentrated sulfuric acid, which in combination with phospho-vanillin will form a pink-colored solution. The intensity of the pink colour formed is determined by the total lipid concentration within the sample, enabling a reliable colorimetric assay that can be read using a plate reader.

Each kit provides sufficient reagents to perform 100 tests, including standards.

## Procedure

**Please note: Sulfuric acid is highly corrosive and can damage certain types of plastics. Avoid using plastics that are sensitive to sulfuric acid, and test plastics prior to attempting this assay by adding 100  $\mu\text{L}$  of 18M sulfuric acid and heating to 90°C for 10 minutes. Sulfuric acid should be handled with care (see MSDS). Gloves, a lab coat, and protective eyewear should be worn during handling. Sulfuric acid should be stored in glassware only and pipetted in a fume hood.**

### A. Standard Preparation

1. Add 250  $\mu\text{L}$  deionised water to the dried Lipid Standard powder.
2. Ensure the cap is tightly fastened. Vortex intensively for 2 minutes at max speed.
3. Using a bath sonicator, sonicate at 35 kHz and 45°C for 10 minutes.
4. Ensure the cap is tightly fastened. Vortex intensively for 2 minutes.
5. Prior to assay, form a dilution series of 16  $\mu\text{g}$  – 0.25  $\mu\text{g}$ . See table 1 below.

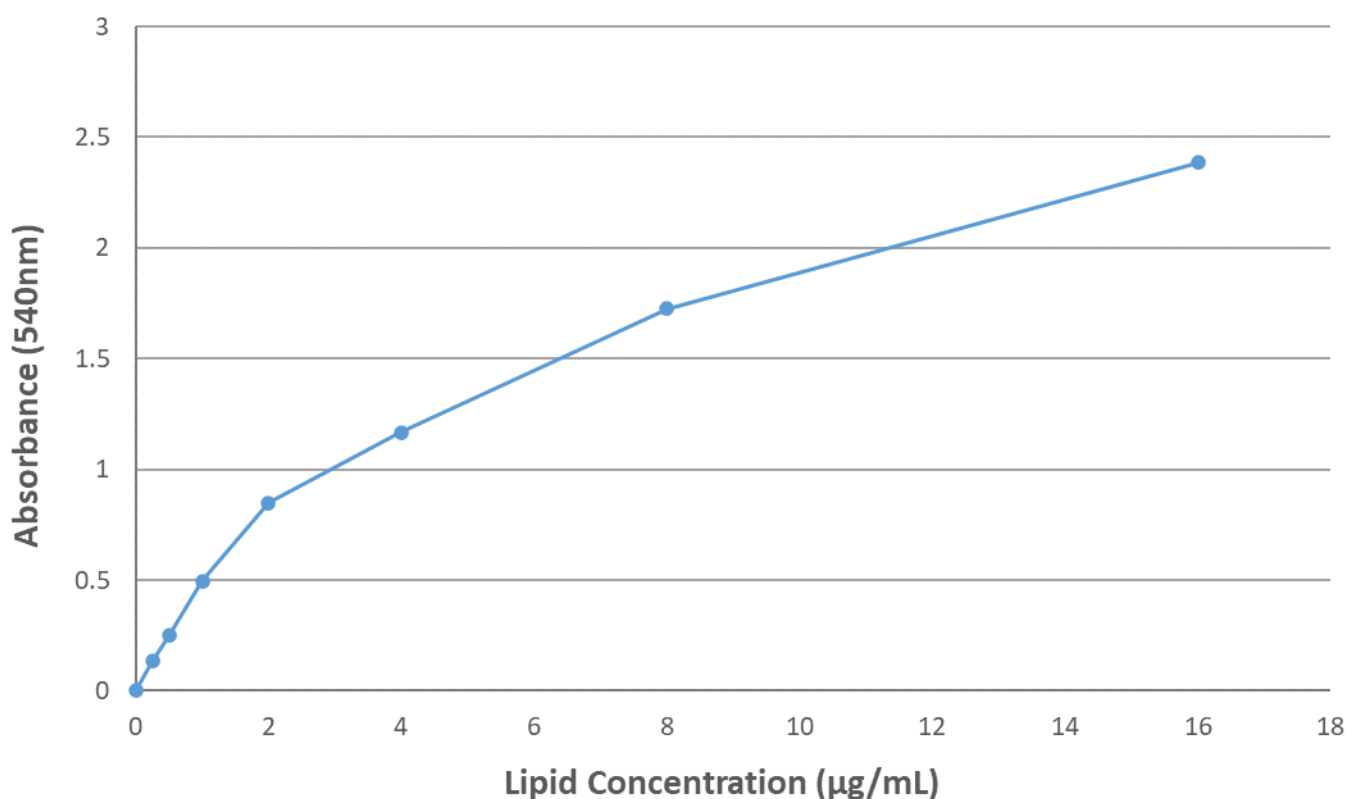
Lipid standard is stable at 4°C for at least three months once reconstituted. Intensive vortexing is required prior to the use of the lipid standard.

Tube number	Lipid standard ( $\mu\text{L}$ )	Diluted in PBS ( $\mu\text{L}$ )	Lipid standard concentration (500 $\mu\text{L}$ solution)
1	1 mg (resuspended in 250 $\mu\text{L}$ deionised water)	0	4 mg/ml
2	2 $\mu\text{L}$ of Tube #1	498	16 $\mu\text{g}/\text{ml}$
3	250 $\mu\text{L}$ of Tube #2	250	8 $\mu\text{g}/\text{ml}$
4	250 $\mu\text{L}$ of Tube #3	250	4 $\mu\text{g}/\text{ml}$
5	250 $\mu\text{L}$ of Tube #4	250	2 $\mu\text{g}/\text{ml}$
6	250 $\mu\text{L}$ of Tube #5	250	1 $\mu\text{g}/\text{ml}$
7	250 $\mu\text{L}$ of Tube #6	250	0.5 $\mu\text{g}/\text{ml}$
8	250 $\mu\text{L}$ of Tube #7	250	0.25 $\mu\text{g}/\text{ml}$

Table 1. Lipid standard preparation.

## B. Assay Procedure

1. Add 40  $\mu\text{L}$  of sample, prepared in PBS, deionised water, or NaCl HEPES Buffer, or freshly prepared lipid standard serial dilution, in 1.5 mL Safe-Lock tubes.
2. Add 200  $\mu\text{L}$  18M sulfuric acid to the samples and standards.
3. Ensure the cap is tightly fastened. Vortex briefly.
4. In a fume hood, incubate open tubes at 90°C for 20 minutes.
5. Ensure the tube is tightly fastened. Cool to room temperature by placing at 4°C for at least 5 minutes.
6. Add 120  $\mu\text{L}$  of the lipid quantification reagent to each tube.
7. Ensure the tube is tightly fastened. Vortex briefly.
8. Add 280  $\mu\text{L}$  of each tube to a 96 well plate. 280  $\mu\text{L}$  of PBS may be added to the 96 well plate as a negative control.
9. Incubate at 37°C for 1 hour.
10. Measure the absorbance at 540 nm.



Graph 1. Standard curve produced using LipoQ™ lipid quantification reagent upon the lipid standard supplied with the kit.



## Purchaser Notification

Limited warranty Cell Guidance Systems and/or its affiliate(s) warrant their products as set forth in the Terms of Sale found on the Cell Guidance Systems web site at [www.cellgs.com/Pages/Terms\\_and\\_Conditions.html](http://www.cellgs.com/Pages/Terms_and_Conditions.html)

If you have any questions, please contact Cell Guidance Systems.

This product incorporates licensed technologies. The purchase of this product conveys to the purchaser the limited, nontransferable right to use the purchased amount of the product only to perform internal research for the sole benefit of the purchaser. No right to resell this product or any of its components is conveyed. This product is for internal research purposes only and is not for use in commercial services of any kind, including, without limitation, reporting the results of purchaser's activities for a fee or other form of consideration. For information on obtaining additional rights, please contact [info@cellgs.com](mailto:info@cellgs.com).

CELL GUIDANCE SYSTEMS AND/OR ITS AFFILIATE(S) DISCLAIM ALL WARRANTIES WITH RESPECT TO THIS DOCUMENT, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. TO THE EXTENT ALLOWED BY LAW, IN NO EVENT SHALL CELL GUIDANCE SYSTEMS AND/OR ITS AFFILIATE(S) BE LIABLE, WHETHER IN CONTRACT, TORT, WARRANTY, OR UNDER ANY STATUTE OR ON ANY OTHER BASIS FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING BUT NOT LIMITED TO THE USE THEREOF.

Cell Guidance Systems' reagents and services enable control, manipulation and monitoring of the cell, both *in vitro* and *in vivo*.

**Growth Factors**

- Recombinant
- PODS® Sustained Release

**Exosomes**

- Purification
- Detection
- Purified Exosomes
- NTA Service

**Cytogenetics**

- Karyotype Analysis
- Array Hybridization

**Defined Surfaces and ECMs**

- PeptiGels®
- Matrigen Softwell®
- Matrix Proteins

**Other research products and services**

- Primary Human Hepatocytes
- Small Molecules
- Cell Counting Reagent
- Lipid Quantification Assay



General [info@cellgs.com](mailto:info@cellgs.com)  
Technical Enquiries [tech@cellgs.com](mailto:tech@cellgs.com)  
Orders [order@cellgs.com](mailto:order@cellgs.com)

[www.cellgs.com](http://www.cellgs.com)

**EUROPE**

**Cell Guidance Systems Ltd**  
Maia Building  
Babraham Bioscience Campus  
Cambridge  
CB22 3AT  
United Kingdom  
T +44 (0) 1223 967316  
F +44 (0) 1223 750186

**USA**

**Cell Guidance Systems LLC**  
Helix Center  
1100 Corporate Square Drive  
St. Louis  
MO 63132  
USA  
T 760 450 4304  
F 314 485 5424