BioLab

A **compact, easy** to use, **portable lab kit** which allows the USER to measure DRINK and BEVERAGE **Antioxidant capacity**.

The set offers all required equipment—instruments to contact the above tests and a specially developed application which guides the user in every step of the testing procedure.

SCIENCE FACTS

Free radicals are highly unstable molecules that are naturally formed when you exercise and when your body converts food into energy. Your body can also be exposed to free radicals from a variety of environmental sources, such as cigarette smoke, air pollution, and sunlight. Free radicals can cause, **"oxidative stress"** a process that can trigger **cell damage**. Oxidative stress is thought to play a role in a variety of diseases including cancer, cardiovascular diseases, diabetes, Alzheimer's disease, Parkinson's disease, and eye diseases such as cataracts and age-related macular degeneration.

Antioxidants are man-made or natural substances that **prevent** or **delay** some types of **cell damages**. Antioxidant molecules have been shown to **counteract oxidative stress** in laboratory experiments (for example, in cells or animal studies). Diets high in vegetables and fruits, which are good sources of antioxidants, have been found to be healthy. Examples of antioxidants include **vitamins C** and **E**, selenium, and carotenoids, such as beta-carotene, lycopene, lutein, and zeaxanthin.

The OBJECTIVE

Biolab was created in order to offer to the scientific lab and the market a **simple**, specific **lab tool**, at **low cost,** which can easily and practically **estimate the antioxidant effect** of our every day consumed **drinks and beverages** i.e. Coffee, tea, juices, wine, beer, Sodas etc. It is a test set based on a simplified method using the **DPPH** technique and produced very high accuracy results.

Biolab technology in combination with its low cost, portability and simplicity, aims to cover the need of internal (not outsourced) testing, measurement, and determination of the antioxidant capacity of various type Drinks and Beverages produced by different groups in the sector of this Industry (Producers, Bottlers, Distributors etc) in order to either improve or maintain the quality of their products by knowing its **antioxidan capacity**.

The software application of **BioLab V1.0** has been developed jointly by **Polytech** SA and Professor of Biochemistry **D.KOURETAS-PhD**

It Includes

This portable lab tester is housed in an aluminum profile briefcase. It offers all the facilities needed to contact the testing and measurements including the application which drives the set process.

Its panel incorporates: ♦falcon tube holders, ♦a small stirrer, battery operated (batteries are removable), ♦eppendorf tubes 2ml holders, ♦bottle holders and reusable bottles 4 x 50 ml, ♦a colorimeter with detection wavelength 520nm, 410nm powered by USB port and ♦an Android pad * which manages with the installed ♦BioLab 1.0 application the process and the measurements in a step by step procedure.

Additionally it includes:

♦One variable volume pipette (20 - 200ml)
♦One variable volume pipette (100 - 1000 ml)
♦Two set of consumable tips for the pipettes (2x25pcs)
♦One set of consumable eppendorf 2ml mini tubes (30pcs)
Dimensions (LxWxH) : 38,5cm x 27cm x 12,5cm
Weight : 3,0 Kg (Including PAD)
Power: Battery 3V and USB port operated

* *Android pad: User can purchase his/her own Android PAD. Purchasing a PAD with BioLab is optional. Users PAD must be able to run on Android 4.4 or later version and must have 4G memory*

BioLab V1.0

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The Application

BioLab V1.0 is the application which facilitates the user to manage all the test work as keeping inventory records of products and test samples, guide him in a step by step and time recording process, record the test results and evaluate them and finally create any type of reports.
It offers a versatile data base for Products, categories and types, samples, reference values for testing results per category of product, timer and time stamps, on- line test value recording and acceptance, cross references and an on line help menu.
It offers Links over the Internet to libraries or relevant documentation sites. It directs the user to the process of measurements in a step by step way, error proof.
Alarms the user for any test results which do not fall within the limits according to referenced values. It offers a user friendly GUI, easy to operate.

Consumables

To perform the tests, a user will need the following consumables.

	Consumables
1	Methanol - 150 ml (initial quantity comes with BioLab kit.
2	Pipette tips - 2 sets of 25 pcs in the initial Biolab kit.
3	DPPH- This reagent needs special care for cold transportation and storage (2 to 8 ^{0}C). The reagent is delivered in 15 ml falcon tubes in ice packs and needs refrigeration when delivered. Each package contains 30 or 60 tubes. It can be used for the next 24 hours from taking it out from refrigeration. Each of the dosages in the tube, when mixed with methanol (according to BioLab Protocol) can be used normally for up to 30 sample tests per day.
4	Eppendorf tubes– 30 pieces in the initial Biolab Kit