

THE FASTEST ANTIOXIDANT CAPACITY QUANTIFICATION METHOD e-BQC NATURAL INGREDIENTS

Bio
Qu^oChem





e-BQC Natural Ingredients is a portable device designed to measure the antioxidant capacity of aqueous and non-aqueous plant and food-based products dissolved in non-organic and organic solvents



Accurate

Low detection limits and high sensitivity



Easy to use

No specialized personnel required



e-BQC Value

Results easy to interpret



Simple

No need for laboratory



Quick

Instant results (< 1 min)



Portable

Ready-to-use anywhere

1 What does it measure?

The global antioxidant status of the sample, which is translated into antioxidant capacity.

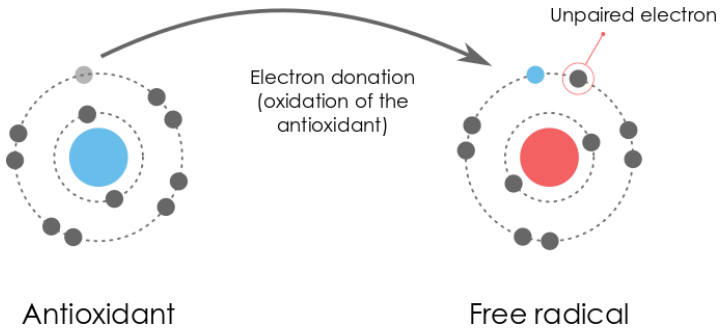
On what is it based?

2

The device is based in the most powerful analytical technique: electrochemistry.

What is an antioxidant in electrochemistry?

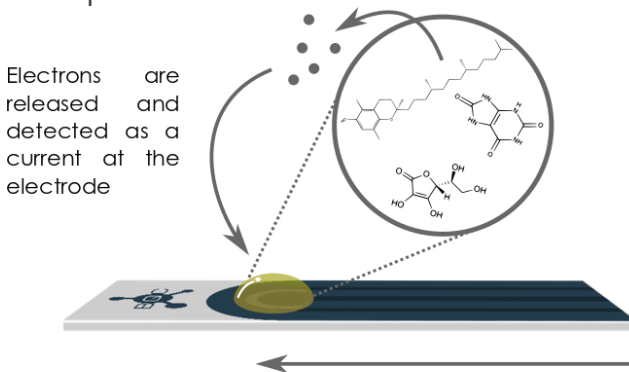
A substance that is oxidized at low potentials, and so protects other biomolecules that oxidize at higher potentials: lipids, proteins and DNA.



4

How does the e-BQC measure?

It oxidizes the sample by applying a variable potential.



A variable voltage is applied to the electrode to "activate" the antioxidants, so they cede the electrons

What do the results mean?

5

The results are given as the total charge of the electrons that are able to be donated to a free radical to neutralize it in the sample. These results are translated into e-BQC Value.

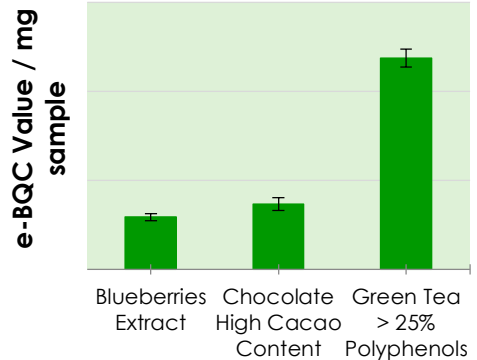
6

How can I express my results?

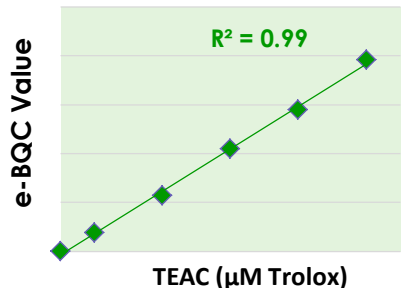
This technology allows the expression of the results according to your necessities:

e-BQC Value:

Comparison of the antioxidant capacity among samples.



By performing **standard calibration curves** it could also be translated into **TEAC** (Trolox Equivalent Antioxidant Capacity).



e-BQC Natural Ingredients is very easy to use: mix your sample with the Working Solution, put the strip in the slot, dispense de drop of sample and click the button to measure



e-BQC Natural Ingredients works with disposable strips with an inert carbon material to dispense the drop on.

Available in 4 sizes according to your necessities: 50 – 250 – 500 – 1000 units





CLASSICAL METHODS

(ABTS, FRAP, ORAC, DMPD, DPPH, CUPRAC)



Use radical initiators



Require spectrophotometer



Partial TAC measurement



Modified sample native conditions

e-BQC Natural Ingredients



Without radical initiators



Fast and simple procedure



Total TAC measurement



Sample native conditions

The e-BQC Natural Ingredients technology works with a wide variety of samples: aqueous, non-aqueous, liquid, powder, samples dissolved in organic and non-organic solvents. It has been tested on the following:



PLANT, VEGETABLE AND FOODS

- Milk
- Honey
- Juice
- Wine
- Plant and vegetable extracts
- Food Extracts
- Chocolate bar



Is your sample not included on this list?
Ask us at info@bioquochem.com and
our team will advise you without cost

BROAD RANGE OF APPLICATIONS

e-BQC is a very versatile tool due to its ability to measure in almost every liquid sample and can be used in many research/industrial fields

Plants and vegetables:

Study the antioxidant properties of plant and vegetable extracts

Nutraceuticals

Study the antioxidant properties of nutraceuticals

Food:

Study the properties of natural antioxidants as food additives and food samples





RESULTS

e-BQC Value: Total Antioxidant Capacity of plant and food-based samples



SAMPLES

Useful for samples with any solvent that require or do not require pretreatment or extraction processes. Useful for powder samples dissolved in the Working Solution



USERS

Researchers, technicians and experts in the antioxidant field



UNIQUE FEATURE

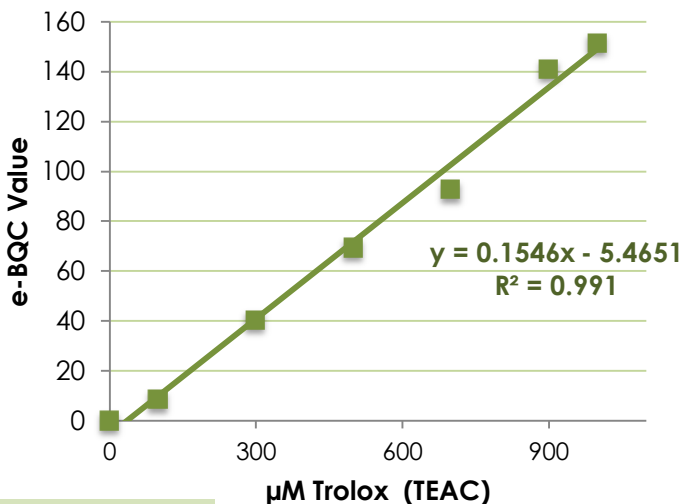
Freedom to use any solvent mixed with the Working Solution, transform the results to any classical antioxidant standard: CEAC, TEAC or GAE in your specific experimental conditions. Low detection limits

e-BQC Natural Ingredientes TECHNICAL SPECIFICATIONS

Referred to **Trolox standard** curve in Working Solution (WS) with Reagent A for Trolox Standard (Bioquochem Kit)

For low concentrations

Standard Calibration Curve



TEAC (μM)	e-BQC Value (mean of quintuplicates)
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0	15.2
100	23.6
300	55.6
500	84.4
700	107.8
900	156.2
1000	166.6

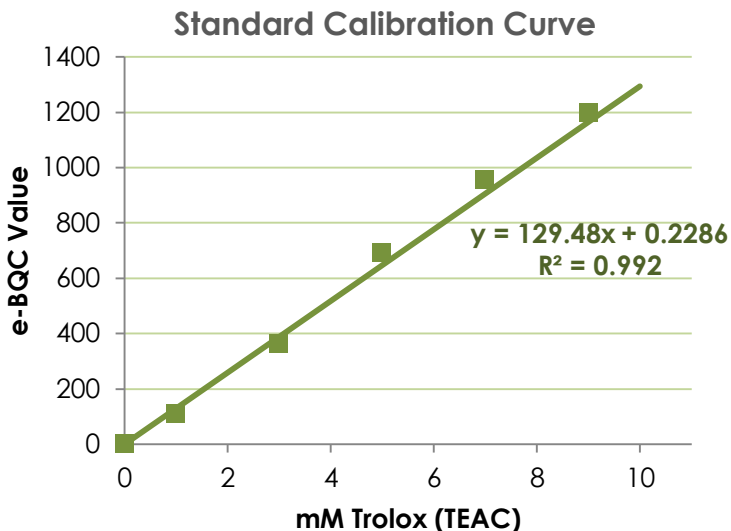
Sensitivity	0.1533 e-BQC/ μM
LOD*	20.97 μM
LOQ*	34.44 μM
RSD*	8.35 %
Linear Range	100 – 1000 μM

LOD: Limit Of Detection, LOQ: Limit Of Quantification, RSD: Relative Standard Deviation

e-BQC Natural Ingredientes TECHNICAL SPECIFICATIONS

Referred to **Trolox standard** curve in Working Solution (WS) with Reagent A for Trolox Standard (Bioquochem Kit)

For high concentrations



TEAC (mM)	e-BQC Value (mean of quintuplicates)
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0 20.4

1 128.0

3 381.8

5 712.0

7 974.0

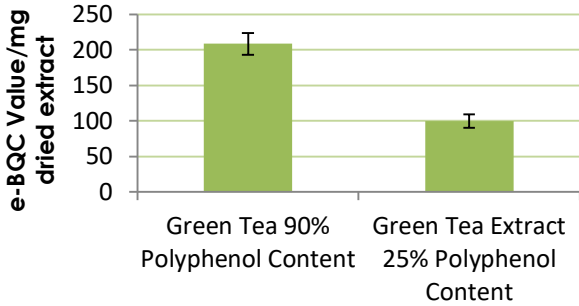
9 1,217.2

10 1,242.8

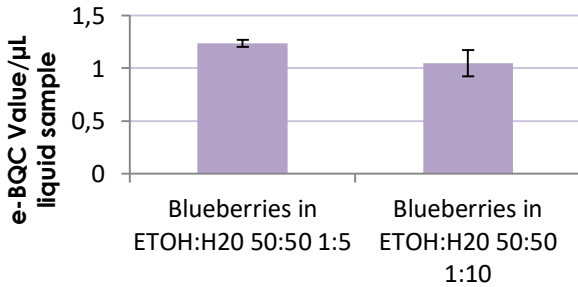
Sensitivity	129.48 e-BQC/ mM
LOD*	31.13 mM
LOQ*	56.18 mM
RSD*	4.63 %
Linear Range	1 – 10 mM

LOD: Limit Of Detection, LOQ: Limit Of Quantification, RSD: Relative Standard Deviation

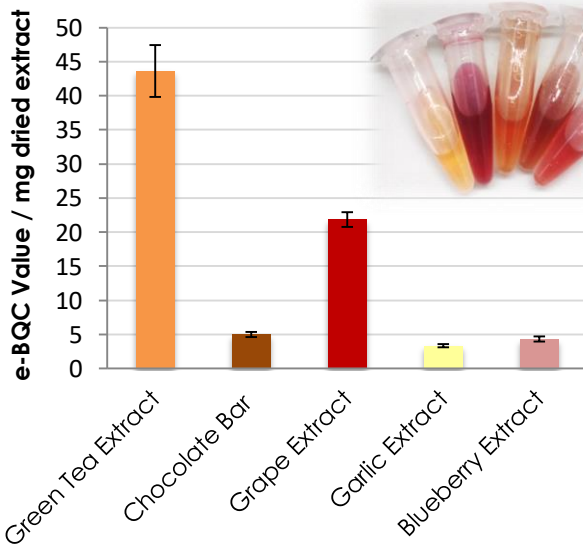
CASE STUDIES



Comparison between two green tea with different antioxidant content dissolved in the WS



e-BQC Value for a liquid blueberries extract in EtOH:H₂O 50:50 with different dilutions in the WS (dilution factor corrected)



Comparison among different plant and food-based samples dissolved in the WS

Electrochemistry is one of the most powerful analytical techniques developed. It is characterized by its high sensitivity and reproducibility





Chemistry for Biology



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