



Information Sheet - Herbal Materials Testing Service using ABEL Meter

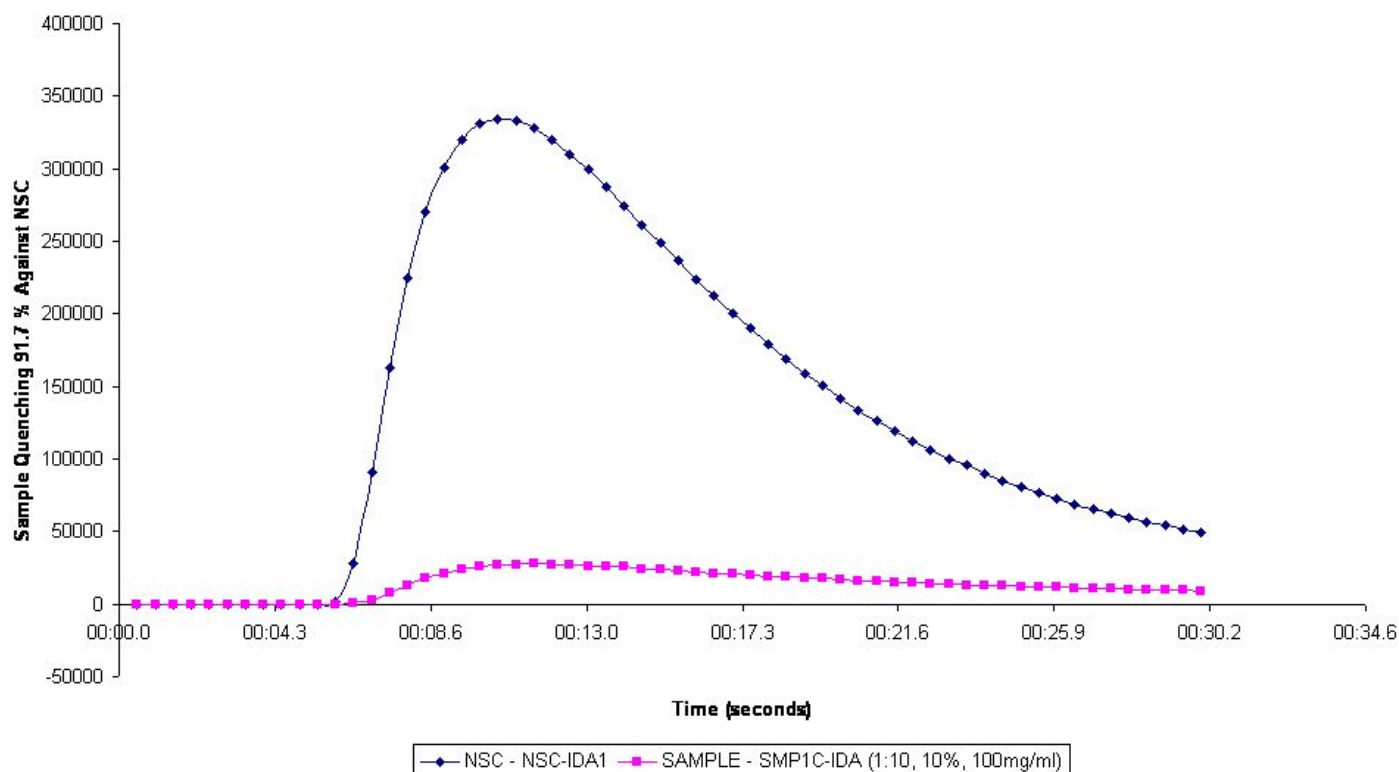
Please note we are offering 'relative' testing if you need standard or 'absolute' testing that produces an ABEL-RAC score then we can refer you to Knight Scientific Ltd at a discount on the full price.

Relative testing: A **Suitable Test** can be used as a guideline, baseline or 'standard' to compare the same material at a later date, compare to new material received or compare to other similar material. Our standard test is a 1 in 10 dilution in either purified water or ethanol as requested. If the test shows over 90% quenching*, then another test is needed at a greater dilution 1 in 100 and so on until around 30-50% quenching* is seen, this is a **Suitable Test**. (See graphs below) Please note if in our experience we know the dilution to use for your material to obtain a **Suitable Test** then we will automatically use this dilution reducing the number of tests per material needed.

* The ability of the tested substance to compete, demonstrating the anti-oxidant capacity of the material.

Sample Showing >90% Quenching Against No Sample Control Result: **SATURATED**

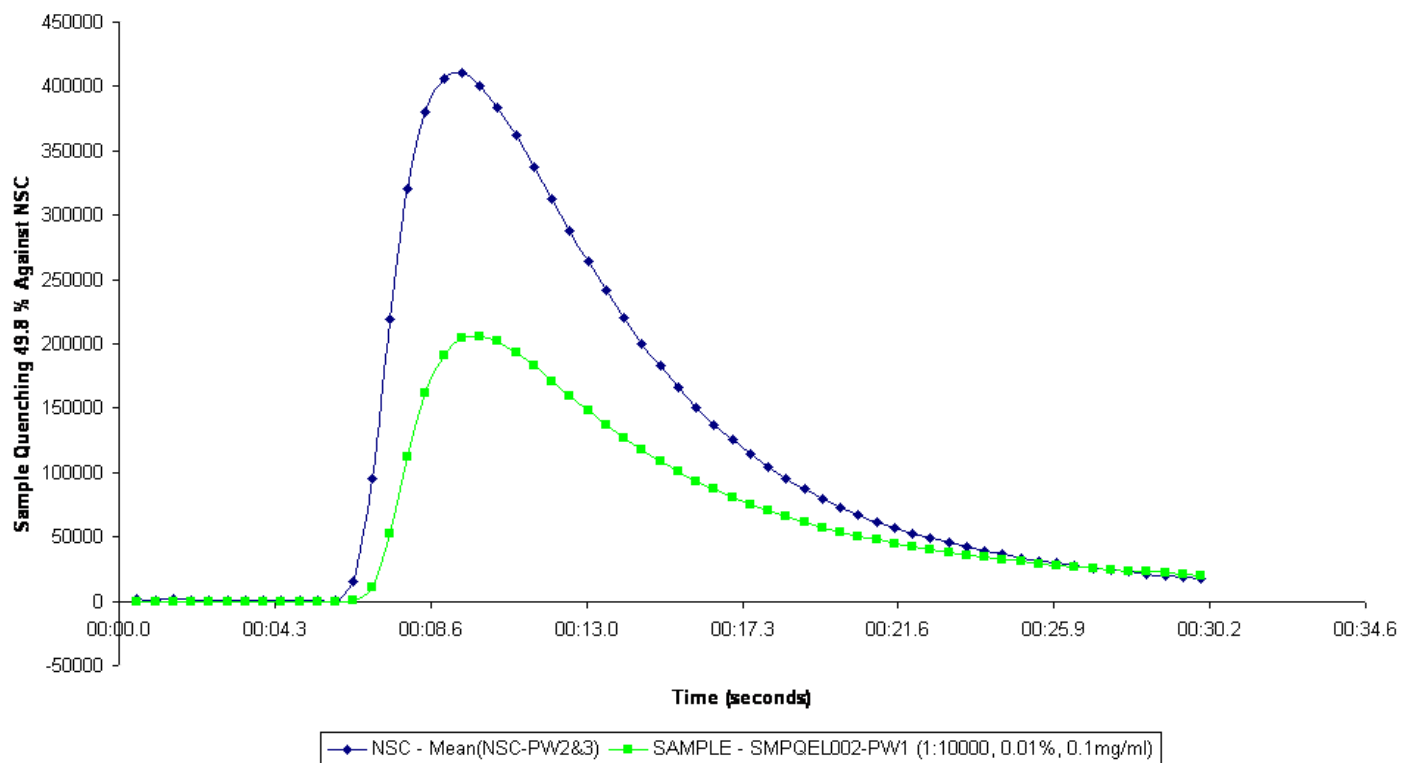
REF: QEL2017-001 - YOUR RESULTS - SATURATED > 90%



Demonstrates that at this dilution the anti-oxidant capacity (AOC) of the material is at **saturation** for the test

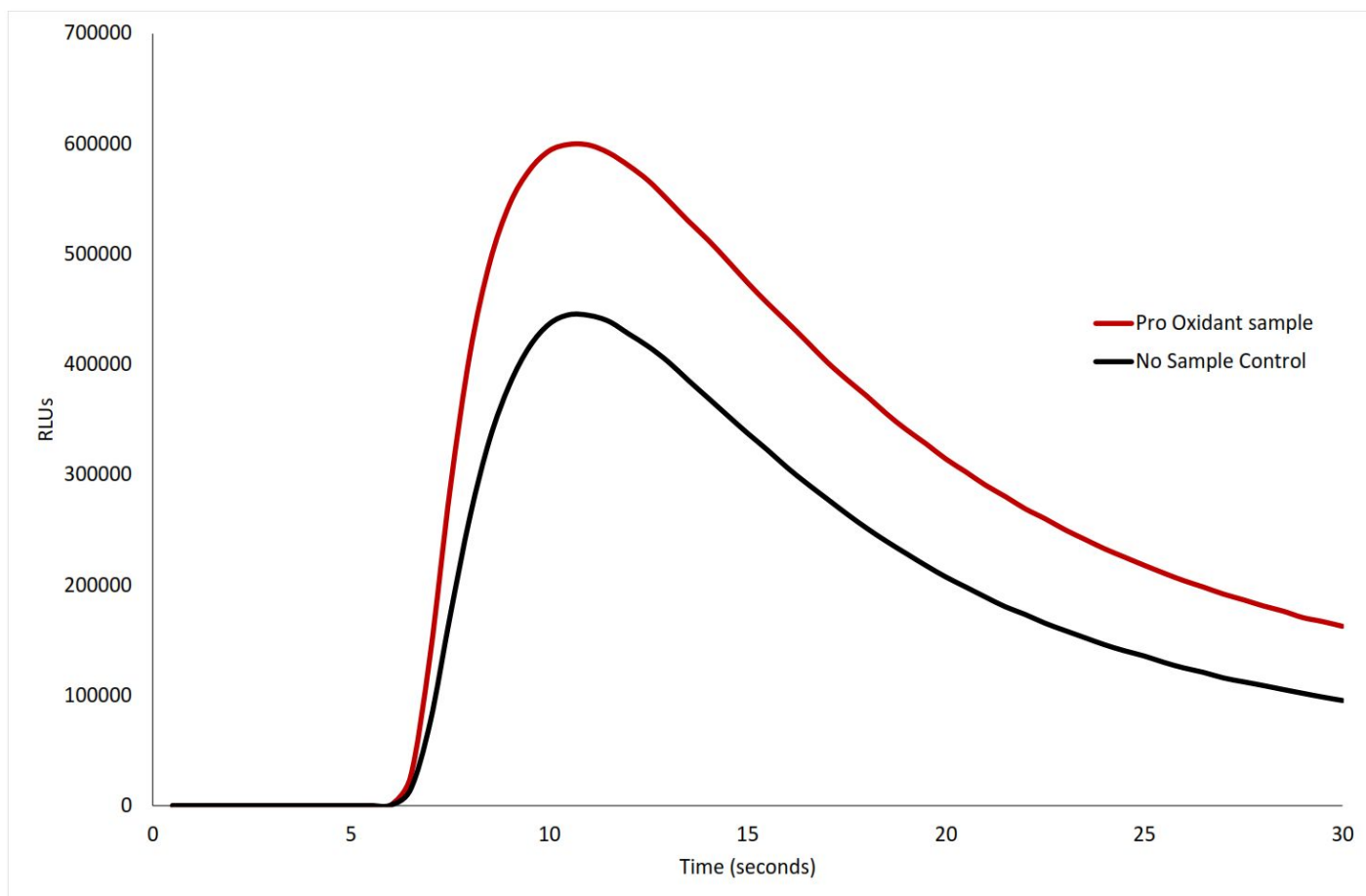
Sample Showing 30-50% Quenching Against No Sample Control Result: **SUITABLE TEST**

REF: QEL2017-002 - YOUR RESULTS - SUITABLE 30-50%



Demonstrates a **Suitable Test** the dilution of the material is suitable to measure the anti-oxidant capacity (AOC).

Sample Showing <100% Quenching Against No Sample Control Result: **PRO OXIDANT**



Pro-oxidant the dilution of the material means that free radicals are actually being generated by the material

Absolute testing: Gives a standard number or ABEL-RAC score that can be compared to other different items and used as a measure of actual anti-oxidant capacity (AOC). It takes extensive testing of a particular material and the result is relevant to the particular batch tested. Can be used as a basis to make health claims of anti-oxidant capacity. (Referred to Knight Scientific Ltd)

Suitable Test: Once you have a **Suitable Test** result then the PDF graph of the test (also any other tests done) you receive will show the dilution of the material used, the actual test compared to a no sample control and give the degree or % of quenching of material tested. Please note that since the test is relative it can only be used to compare between batches of similar materials and no score or number can be marked on the material. It is ideal for your internal quality control:

Example of Use: Dried herbs e.g. Nettle (*Urtica dioica*). You send in a sample, we prepare the sample in purified water or ethanol as requested and then test at a starting dilution of 1 in 10. (Or if the material is previously known to us we will test at a dilution that we know produces a **Suitable Test** for that material.) Once a **Suitable Test** is obtained then you may want to send the same material in again 6 months later to monitor your storage system. A similar result means the material is keeping activity/viability well, a loss of 5-10% over a year gives you a good idea of the shelf life. If you buy in/collect/make new material then you may want to check how it compares to see if it's at least as good etc. In such a case you will simply test again at the dilution you know produces a **Suitable Test** and see the % variation from your original known good material.

You can perform this type of testing for any materials/products that you wish to be sure are the same quality/activity each time. e.g. you could test a particular tea blend, tincture, cream, oil, extract etc. We can perform the test in either purified water or ethanol according to your request. Please note the same substance

can give very different results in each medium. Please also remember that ethanol can contribute some anti-oxidant activity itself which is why a no sample control is needed with each test.

Sample preparation: Once we receive your materials to test then we will prepare the materials in a standard way in either ethanol or purified water before testing. We do not retain your materials. Please note that the test is very sensitive, denoting the 'activity' or viability of the material which will depend on how the material has grown, been harvested, processed and stored. The activity/viability of the material can be damaged at all or any stage and therefore a baseline for material that you are happy with is very useful indeed. Also it is important that your materials arrive to us in a good condition. If you prefer then we can offer on site testing:

Site visit: Potentially the most economical option if you have lots of materials to test by cutting out any shipping costs. Please note travel to and from your premises is the only additional cost. We will also offer a reduced rate per test as we are able to do many tests using one no sample control. Please note that unless a material is known to us it may take a few dilutions to get a **Suitable Test** on each material. See Below:

Unknown Sample/Material: We usually use a 1 in 10 dilution to start with however if we have tested the material before we may be able to advise another dilution to start with to obtain a **Suitable Test** straightaway. Most of the time the potential anti-oxidant capacity (AOC) of the material will be unknown to both parties and therefore testing needs to progress through a number of dilutions until a **Suitable Test** of approximately 30-50% or just below is obtained. With an unknown substance therefore it may be more economical to purchase a higher number of tests to start with to ensure a **Suitable Test** is obtained. If there are 'spare' tests left over then these can be used to test any other materials you have sent in.

Materials suitable for testing

For each material sent in please state whether each test is to be done in alcohol (ethanol) or purified water or both. Please note one test is needed each time per dilution per medium per material.

Dried plant material e.g. Raw whole herbs, herbal powders, herbal teas, aerial parts, flowers, roots, barks etc.

Tinctures Concentration and alcohol content MUST be stated e.g. 1:5 25% ethanol as results will depend on this i.e. dilution made needs to be accurate per mg of material per volume.

Granules or Extracts or Powders All common forms of these, you may prefer to state concentration if not 1:1

Oils e.g. Whole cold pressed, macerated, Essential etc

Glycerites Again as for tinctures any dilution/concentration should be stated

Creams/Ointments/Salves We can test finished products and their ingredients: *Butters, Waxes* etc.

Capsules

Please enquire if you are uncertain of the suitability of your material for testing or the best way to test. Please remember you can send in mixtures for testing too.

Sample Size

Dried Material/Powder/Extract/Granules	20g-60g per test preferably more if possible
Tincture/Glycerite/Oils	20mls per test more if possible
Essential Oils	1-2mls per test more if possible

Creams/Ointments/Salves/Ingredients	20g/mls per test more if possible
Capsules	20 pieces more if possible
Unlisted/Unknown material	Please enquire

Please be sure to pack your materials suitably sealed etc., please note any prolonged exposure to excessive heat/cold/humidity etc. may affect the material. We will report any samples that appear to arrive damaged.

We Want to Help You: Please note each test is charged for therefore with an unknown material it may be more economical to purchase a number of tests initially so that testing can proceed immediately with further dilutions of the sample. Or you may wish to see/be informed of the initial test result and then purchase more depending on that. This can be done immediately so that testing can proceed in the most efficient way. Where we are familiar with the material and know the dilution which produces a **Suitable Test** then we will automatically default to that. Please enquire beforehand if we have tested the material before, if you prefer.

Some Uses of Testing

Your reputation may be depending on something

You may want to be sure about a new supplier or ingredient you are using

You may want to know that each time you make something it's as good as the last. To ensure that items you make or mixtures are of the same quality/activity each time

You may want to check your storage/processing systems are functioning correctly preserving the activity/quality/viability of the materials

You may want to check if an 'expired' item is still viable

Are things you grow, gather prepare consistent? Ensure that materials you receive/use/grow/collect are of the same quality/activity each time

We can assist in your development projects by checking how different ingredients affect each other. To check for optimisation of ingredients i.e. is the activity of a blend enhanced compared to tests on individual items. How does dilution of the material affect activity etc.

There are many exciting ways we can help and support you to achieve your goals all with total confidentiality

Summary

For any one material in order for a test to be useful it needs to be a **Suitable Test** i.e. produce approx 30-50% quenching or just below on the graph against a no sample control. If we know for a particular material which dilution achieves this then we will automatically test at that dilution, reducing your costs and our time. If the material is unknown then tests at different dilutions may need to be done until a **Suitable Test** results, Each test is charged for therefore buying more tests in this case may work out cheaper. Once a **Suitable Test** is obtained then a retest at that dilution is all that is needed to check % deviation,

We are always happy to help advise on testing please contact us: info@qiessence.co.uk

Sending Samples

- The **Test** is very sensitive therefore take care to reduce **contamination** of samples using/clean containers/bags/gloves etc. Also be aware that prolonged exposure to **excessive** heat/cold/humidity can adversely affect samples. Ensure samples are well sealed/No cross contamination etc.

- **Label everything clearly** the minimum required is the name of the sample Latin binominal preferred, amount, format e.g. Dried Herb, Tincture 1:2 90%, Glycerite 1:5 25%, Cold Pressed Oil etc. You may want to be more specific e.g. Tincture made from Fresh herb etc. Also indicate the medium each is to be tested in: Purified Water, Ethanol, Both. If you prefer a blind test then please provide a name you would like us to use and the format e.g. Cream, Ointment, Dried Herbs blend. You can also provide batch numbers, products numbers etc. if you prefer. Minimum Information:

Sample no	Sample batch	Sample Name	Sample Format	Amount Received	Test Medium
Advisable	Optional	✓	✓	✓	✓

✓ - Essential

Example:

Urtica dioica

Dried Aerial parts

20g

Both