

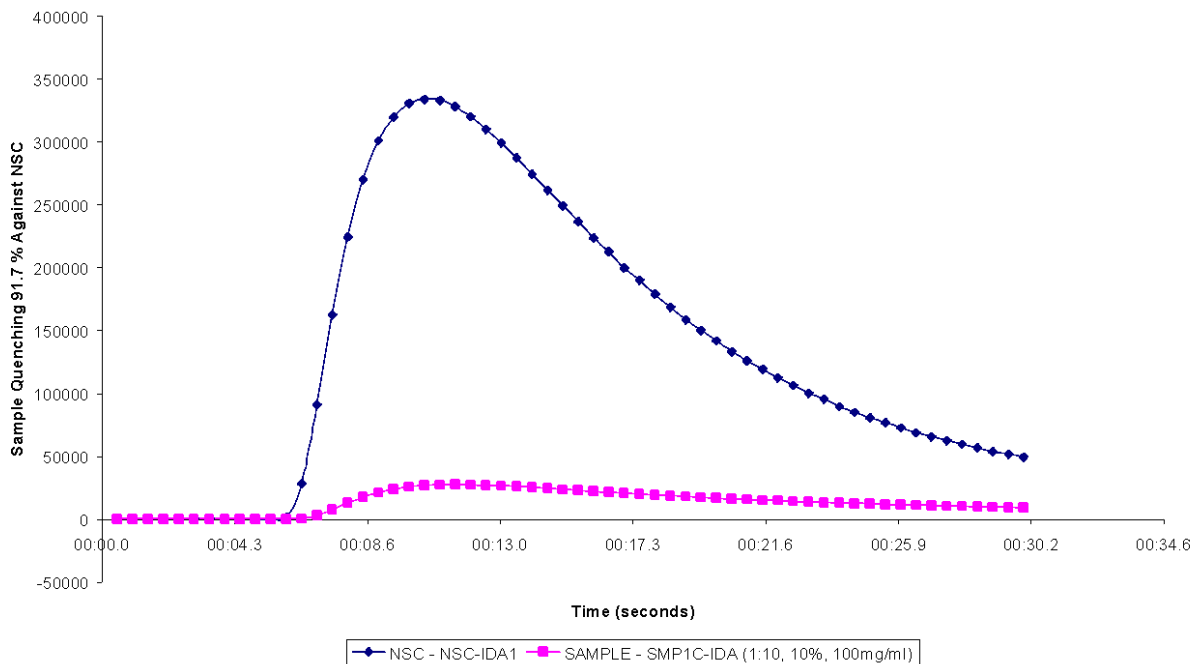


YOUR RESULTS (Using Halogenated Oxidants)

15/03/17

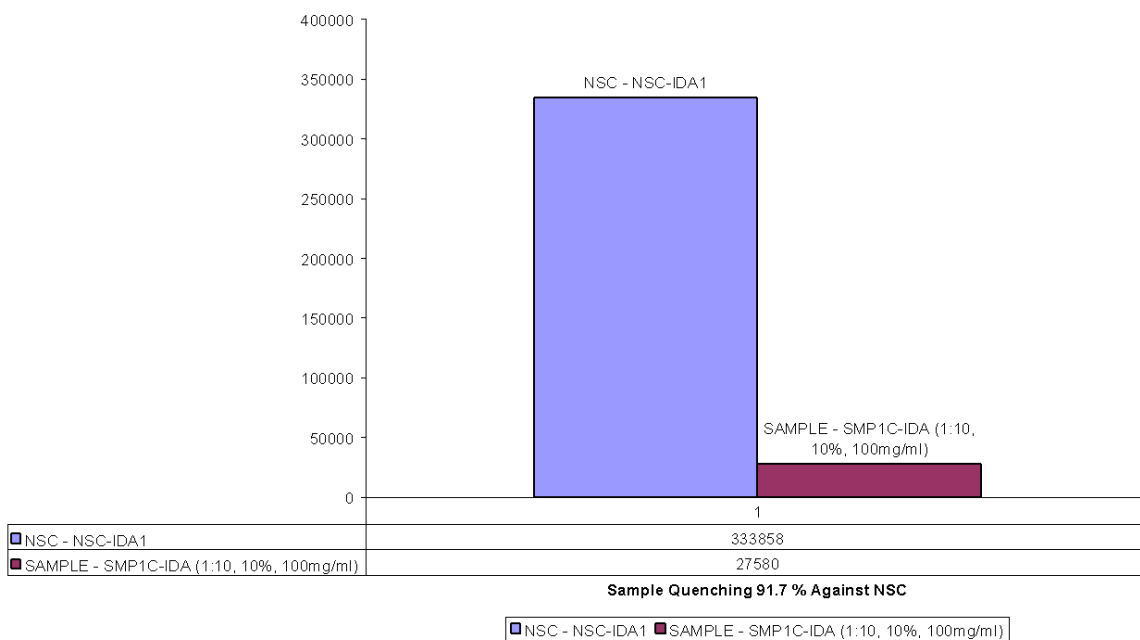
Actual Graph Output

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



Conclusion

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Dear ,

We enclose the results of the recent sample(s) you sent for testing in Ethanol (IDA 99%) showing 91.7% quenching (Anti Oxidant Capacity, AOC) against a no sample control (NSC).

RESULT: **SATURATED >90%**

Recommendations

The sample was tested at a dilution of 1:10 (10%, 100mg/ml). We suggest testing the same sample at a dilution of 1:100 (1%, 10mg/ml) and continuing until a SUITABLE TEST 30-50% quenching is achieved.

To discuss this further please email: info@qiessence.co.uk

Explanation

Halogenated Oxidants: Oxidants generate *Free Radicles* which can then be scavenged by *Anti Oxidants*. If your **Sample** contains *Anti Oxidants* then the sample will 'scavenge' and neutralise the *Free Radicles* generated causing a 'quenching' effect. The degree of quenching can be quantified and represented as a % of a **No Sample Control (NSC)**: Medium used to dissolve **Sample**, either Purified Water or Ethanol (IDA 99)).

No Sample Control (NSC): We prepare your **Samples** in the medium of your choice either Purified Water or Ethanol (IDA 99). It may be best to choose the medium depending on your final application, or the medium which you think will give the best activity for the **Sample**, or if you are unsure then test in both, as results can vary enormously. The **No Sample Control** is simply a test that instead of your **Sample** contains the test medium the **Sample** is dissolved in.

Sample: When you send in a material to test then this is the **Sample**. Unless you state otherwise and if we have no previous known default dilution that we know produces a **Suitable Test** then we prepare your material as a standard 1:10 dilution or 10% or 100mg/ml **Sample** to test. e.g. 1g in 10mls of medium. If your **Sample** contains *Anti Oxidants* then these will compete for and 'scavenge' the *Free Radicles* generated by the **Halogenated Oxidants** indicating the **Anti Oxidant Capacity (AOC)** of the **Sample**.

Anti Oxidant Capacity (AOC): If the AOC of the **Sample** is high then it may rapidly quench all the *Free Radicles* resulting in >90% quenching. In this case it's not clear the extent of unused AOC of the **Sample** so a further dilution is needed to try to establish this. This result is described as SATURATED it's not clear how high the AOC of the **Sample** is.

Recommended Dilutions: If we recommend a further dilution then this is normally 1:100 or 1% or 10mg/ml of the **Sample** to try and establish the extent of the AOC. If this new dilution quenches the *Free Radicles* to 30-50% then this is a **Suitable Test** and can be used as a baseline for comparison. If the **Recommended Dilution** is again outside 30-50% then a further new dilution will be needed:

1. If less than 30-50% quenching then a further dilution of 1:20 or 5% or 50mg/ml would be tried.
2. If less quenching than the **No Sample Control** or PROXIDANT then a further dilution of 1:20 or 5% or 50mg/ml would be tried.
3. If greater than 70% quenching then a further dilution of 1:1000 or 0.1% or 1mg/ml would be tried.

It sounds complicated but simply put all the above are in an attempt to 'move' the level of quenching to between 30-50%. This is a SUITABLE test.

Suitable Test: The sweet spot! When the degree of quenching of the **Sample** falls between 30-50%. Once this point is reached then testing can stop. You can use this dilution of the **Sample** as a baseline to compare similar materials or the same material at a later date etc. Please note if we know for any particular materials, through previous testing, the dilution that produces a **Suitable Test** then we will automatically default to this unless you state otherwise.

What do the graphs mean?

The first graph is the actual output of the test against the **No Sample Control** at the **Sample** dilution indicated.

The second graph shows the highest value achieved in each test by the **No Sample Control** and the diluted **Sample** which is then expressed as a % of quenching and indicates the AOC of the **Sample** at that dilution.



Conclusion

Any result outside of a **Suitable Test** needs further testing at a different dilution to 'move' it into 30-50% quenching. Although we give a **Recommended Dilution** based on a standard way of investigating a **Sample** you may choose another dilution if you prefer. Once a **Suitable Test** is achieved then this can be used as a method of comparison in the future.

Further resources to help understand your results:

[Why Anti-Oxidant Capacity? How Does this Indicate Activity?](#)

[FAQ's](#)

Disclaimer

As per our [Terms and Conditions](#) please note that the testing is relative, it does not allow you to make any health claims, add a number or other marker to the items that have been tested. If you need this then we can refer you to Knight Scientific Limited at a discount on their usual rates.

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