

Comparison of the Saxitoxins (PSP), Microcystins/Nodularins (ADDA) (EPA ETV) and Cylindrospermopsin ELISA kits Solver Spreadsheet with the Abraxis Reader and Softmax Pro software

In order to compare the results by using the solver spreadsheet for algal toxins kits (based in a 4- parameter logistic fit), several samples were analyzed in parallel by using the Solver evaluation tool (Excel v. 2016. Microsoft Corp, USA), the software for Awareness Model 4303 Microplate Reader (Abraxis Reader software v. 6.4.3.294, Awareness Technology, USA) and the software Softmax Pro (Softmax Pro v. 7.1, build number 246936)

The comparison is acceptable if the values of samples concentration are equal between the three systems to the third decimal.

Saxitoxin

| | Absorbances | 4303 Concentrations | Solver Concentrations | Softmax Concentrations |
|------------|-------------|---------------------|-----------------------|------------------------|
| Standard 0 | 1,315 | | | |
| Standard 0 | 1,321 | | | |
| Standard 1 | 1,064 | | | |
| Standard 1 | 1,043 | | | |
| Standard 2 | 0,773 | | | |
| Standard 2 | 0,758 | | | |
| Standard 3 | 0,534 | | | |
| Standard 3 | 0,519 | | | |
| Standard 4 | 0,352 | | | |
| Standard 4 | 0,341 | | | |
| Standard 5 | 0,242 | | | |
| Standard 5 | 0,234 | | | |
| Control | 0,633 | 0,073 | 0,073 | 0,073 |
| Control | 0,622 | 0,075 | 0,075 | 0,075 |
| Blank | 1,414 | 0 | 0 | 0 |
| Blank | 1,393 | 0 | 0 | 0 |
| Blank | 1,395 | 0 | 0 | 0 |
| Blank | 1,424 | 0 | 0 | 0 |
| Blank | 1,419 | 0 | 0 | 0 |
| Blank | 1,395 | 0 | 0 | 0 |
| 0,05 | 0,877 | 0,036 | 0,036 | 0,036 |
| 0,05 | 0,867 | 0,037 | 0,037 | 0,037 |
| 0,1 | 0,606 | 0,079 | 0,079 | 0,079 |
| 0,1 | 0,558 | 0,091 | 0,091 | 0,091 |
| R2 | | 1 | 1 | 1 |

Cylindrospermopsin

| | Absorbances | 4303 Concentrations | Solver Concentrations | Softmax Concentrations |
|------------|-------------|---------------------|-----------------------|------------------------|
| Standard 0 | 1,493 | | | |
| Standard 0 | 1,449 | | | |
| Standard 1 | 1,276 | | | |
| Standard 1 | 1,276 | | | |
| Standard 2 | 1,117 | | | |
| Standard 2 | 1,12 | | | |
| Standard 3 | 0,811 | | | |
| Standard 3 | 0,812 | | | |
| Standard 4 | 0,593 | | | |
| Standard 4 | 0,613 | | | |
| Standard 5 | 0,386 | | | |
| Standard 5 | 0,393 | | | |
| Standard 6 | 0,242 | | | |
| Standard 6 | 0,246 | | | |
| LRB | 1,391 | 0,018 | 0,018 | 0,018 |
| LRB | 1,424 | 0,011 | 0,011 | 0,011 |
| Control | 0,535 | 0,593 | 0,593 | 0,593 |
| Control | 0,49 | 0,687 | 0,687 | 0,687 |
| Blank | 1,421 | 0,011 | 0,011 | 0,011 |
| Blank | 1,42 | 0,012 | 0,012 | 0,012 |
| 0.5 ppb | 0,57 | 0,531 | 0,531 | 0,531 |
| 0.5 ppb | 0,58 | 0,514 | 0,515 | 0,515 |
| 1.0 ppb | 0,38 | 1,033 | 1,033 | 1,033 |
| 1.0 ppb | 0,38 | 1,033 | 1,033 | 1,033 |
| R2 | | 0,99956 | 0,99957 | 1 |

Microcystins

| | Absorbances | 4303 Concentrations | Solver Concentrations | Softmax Concentrations |
|------------|-------------|---------------------|-----------------------|------------------------|
| Standard 0 | 1,782 | | | |
| Standard 0 | 1,741 | | | |
| Standard 1 | 1,459 | | | |
| Standard 1 | 1,518 | | | |
| Standard 2 | 1,09 | | | |
| Standard 2 | 1,109 | | | |
| Standard 3 | 0,805 | | | |
| Standard 3 | 0,843 | | | |
| Standard 4 | 0,547 | | | |
| Standard 4 | 0,584 | | | |
| Standard 5 | 0,403 | | | |
| Standard 5 | 0,407 | | | |
| LRB | 1,611 | 0,072 | 0,072 | 0,072 |
| LRB | 1,59 | 0,082 | 0,082 | 0,082 |
| QCS | 0,899 | 0,743 | 0,743 | 0,743 |
| QCS | 0,866 | 0,81 | 0,81 | 0,81 |
| Blank | 1,706 | 0,028 | 0,028 | 0,028 |
| Blank | 1,721 | 0,021 | 0,021 | 0,021 |
| Blank | 1,714 | 0,024 | 0,024 | 0,024 |
| Blank | 1,749 | 0,009 | 0,009 | 0,009 |
| 0.5 ppb | 0,722 | 0,397 | 0,429 | 0,429 |
| 0.5 ppb | 0,735 | 0,58 | 0,581 | 0,581 |
| 1 ppb | 1,114 | 1,215 | 1,214 | 1,214 |
| 1 ppb | 0,995 | 1,168 | 1,168 | 1,168 |
| R2 | | 0,99731 | 0,997 | 0,999 |

CONCLUSION

The above results show that there is no significant difference between the results from the Abraxis Reader and the Softmax Pro software and the results evaluated with the solver spreadsheet. Furthermore, the acceptance criteria are satisfied in all the cases.

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