new_diagnostics

Speed-YES[MD]

Fast biological measurement system for the detection of estrogenic activity in water

The ***Speed*-YES[MD]** (Speed-Yeast Estrogen Screen) is a biological measurement system for the fast detection of summary estrogenic activity in aqueous samples. The test is capable in particular for screening purposes of surface water and extracts. Due to the standardized production and the ready-to-use biosensor and reagents the working time in your lab will be reduced significantly. Within approx. **six hours** you get a result of the estrogenic effects expressed as EEQ (17β-Estradiol equivalent concentration) of your analyzed samples. The whole test can be performed under unsterile conditions.

MEASUREMENT PRINCIPLE

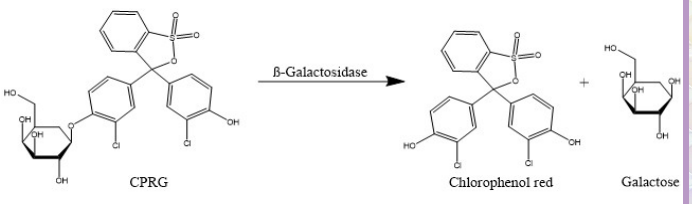
The test ***Speed*-YES[MD]** uses genetic modified *Saccharomyces cerevisiae* BJ3505 yeast cells [1, 2]. Every yeast cell contains two plasmids: The receptor plasmid contains specific regulation sequences and the gene for the human estrogen receptor α. The reporter plasmid contains specific regulation sequences as well and the gene for the reporter enzyme β-Galactosidase. The binding of estrogen active substances to the receptor will subsequently activate the production of the reporter enzyme β-Galactosidase. The amount of the reporter enzyme correlates with the total concentration of estrogenic active substances in the sample. After addition of chromogenic substrate, the reporter enzyme activity can be measured photometrically. 17β-Estradiol (E2) is used as reference standard for the calibration.

[1] McDonnell et. al, 1991. In situ distinction between steroid receptor binding and transactivation at a target gene.
[2] McDonnell et. al, 1991. High level expression of biologically active estrogen receptor in *Saccharomyces cerevisiae*.

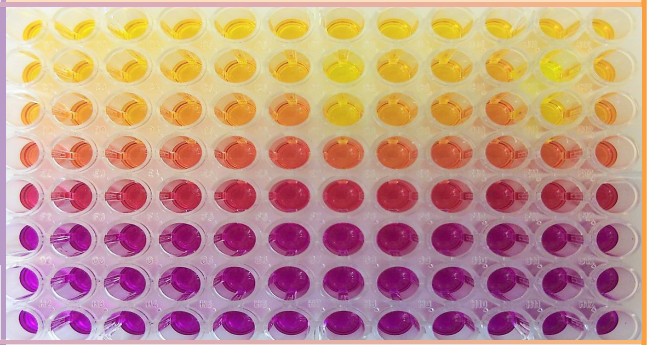
▲ *Speed*-YES[MD] test kit

APPLICATIONS

- Aqueous extracts
- Drinking and mineral water
- Ground and surface water
- Process water
- Wastewater



▲ Schematic reaction of β-galactosidase: Cleavage of CPRG into chlorophenol red and galactose



ADVANTAGES OF THE *Speed*-YES[MD]

- Short processing time (approx. 6 hours)
- ready-to-use-reagents
- Easy handling
- No precultures necessary
- No sterile working conditions required

LABORATORY REQUIREMENTS

- BSL1 laboratory
- Multichannel pipette (nominal vol. 100 µl)
- Temperature controlled shaker (T = 37 °C, Orbit 3 – 4.5 mm)
- Microliter centrifuge
- Photometer for microtiter plates (λ = 580 and 600 or 620 nm)

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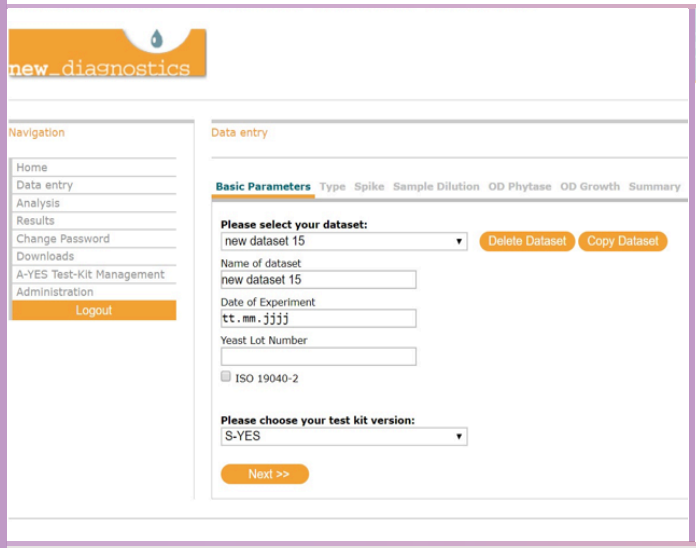
Speed-YES^{MD}

Biological measurement system for the detection of estrogenic activity in water

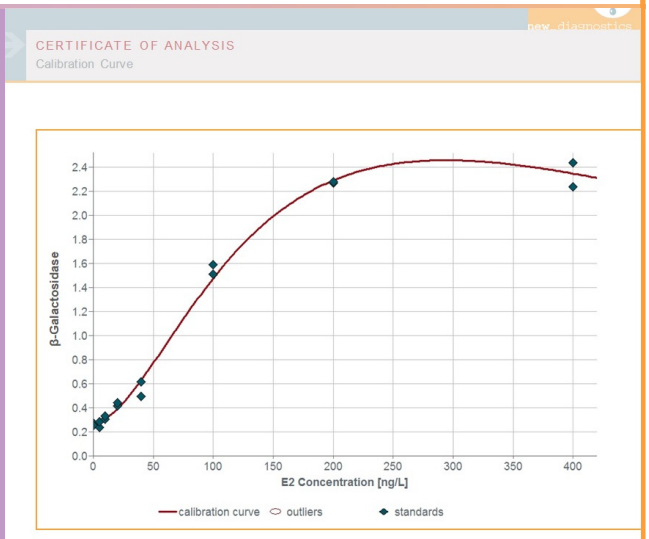
Duration of assay	ca. 6 h
Number of samples	max. 40 (80 for *Speed*-YES^{MD} plus)
Validation	in-house study
Calibration range	0 – 400 ng/L 17β-Estradiol (E2)
Limit of detection	6.8 ng/L 17β-Estradiol (E2)

BioVAL® - SOFTWARE FOR EXPERIMENTAL DESIGN AND STATISTICAL ANALYSIS

We will give you access to BioVAL® for an easy, reliable, and uniform statistical analysis. The web-based software enables you to analyse your data in a standardized manner without special statistical knowledge. The results are presented in a comprehensive report.



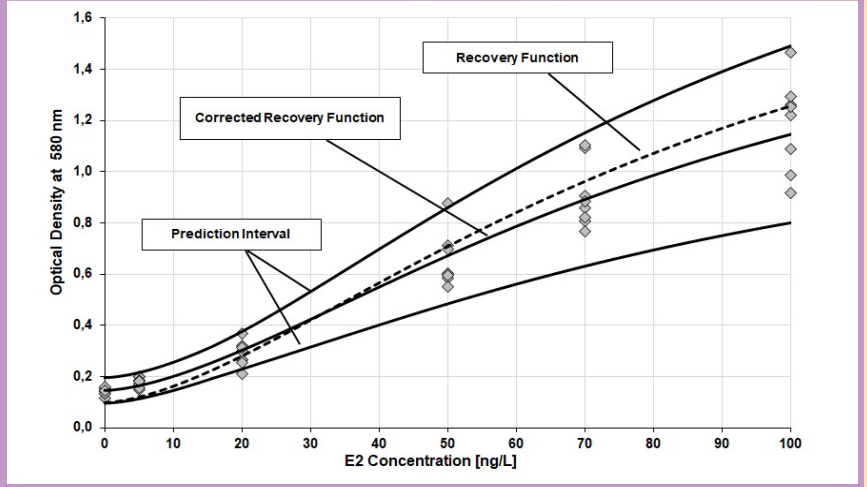
▲ Data analysis via BioVAL® webinterface



▲ Excerpt of the certificate of analysis

QuoData CERTIFICATE

The *Speed*-YES^{MD} test kit has been awarded the QuoData certificate of matrix comprehensive validation.This guarantees continuously high quality and reliability of our test kits.



▲ OD580 nm measurement values with 90 % prediction interval for the ***Speed*-YES^{MD}**

The validation of the ***Speed*-YES^{MD}** was performed according a factorial in-house validation study with eight different water samples each spiked with different concentrations of E2.

The range of water types comprised a heterogeneous set of samples with different samples matrices e. g. surface water and and samples from wasterwater treatment plants. The planning and evaluation of the validation was realized by QuoData GmbH.

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