

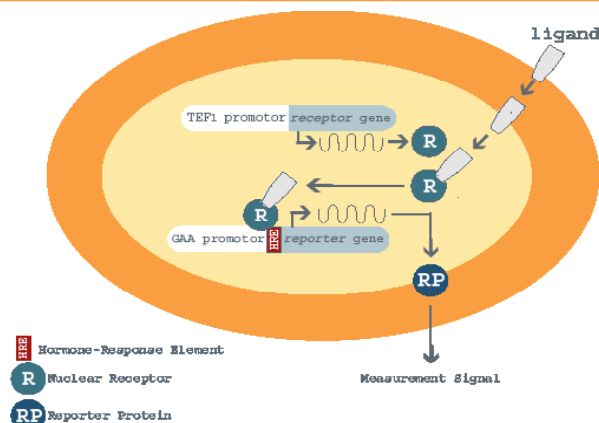
A - YES

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

The biological test system **A-YES** is an effect-directed, yeast cell-based assay for a highly sensitive detection of estrogenic activity in all types of aqueous samples including saline water, eluates and extracts. The **A-YES** measures the cumulative estrogenic activity of a sample in a fast, easy, economic, and reliable manner. It is therefore ideal for food and environmental analysis. With the **A-YES** you can determine the estrogenic effect of a sample (EEQ) as well as the the dilution level at which an estrogenic effect does no longer occur (LID - lowest ineffective dilution). The **A-YES** is ISO standardized (ISO 19040-2:2018).

MEASUREMENT PRINCIPLE

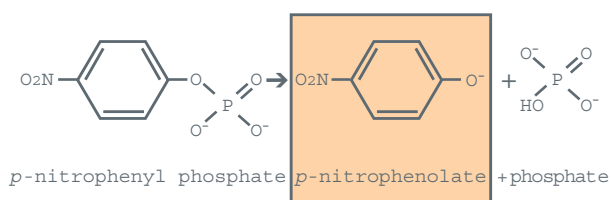
The **A-YES** uses the salt- and temperature-tolerant yeast *Arxula adenivorans* as test organism, in which the human gene for estrogen receptor alpha (hER α) and a reporter gene have been integrated. The binding of estrogenic substances to the receptor will subsequently activate the production of the reporter enzyme phytase. The amount of the reporter enzyme produced correlates with the total concentration of estrogenic active substances in the sample. After addition of a chromogenic substrate, the reporter enzyme concentration can be measured photometrically. 17 β -Estradiol (E2) is used as reference standard for the calibration.



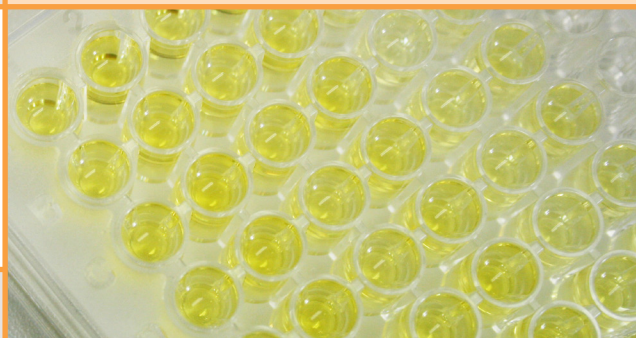
▲ A-YES test kit

APPLICATIONS

- Environmental monitoring of estrogenic activity in salt water (sea and brackish water)
- Environmental monitoring of estrogenic activity in wastewater, ground and surface water
- Pharmaceutical and cosmetic industry
- Quality control of ultrapure, drinking and mineral water



▲ Schematic reaction of phytase: Cleavage of *p*-nitrophenyl-phosphate into *p*-nitrophenolate (yellow)



ADVANTAGES OF THE A-YES

- Short processing time
- Easy handling
- Minimal effort for sample preparation
- No cell disruption necessary
- No sterile workplace required

LABORATORY REQUIREMENTS

- Genetic BSL1 laboratory
- Multichannel pipette (nominal vol. 100 μ l)
- Temperature-controlled shaker (T = 86 $^{\circ}$ F, Orbit at least 3 mm)
- Microlitre/ Microplate centrifuge
- Photometer for microtiter plates (λ = 405 and 630 nm)

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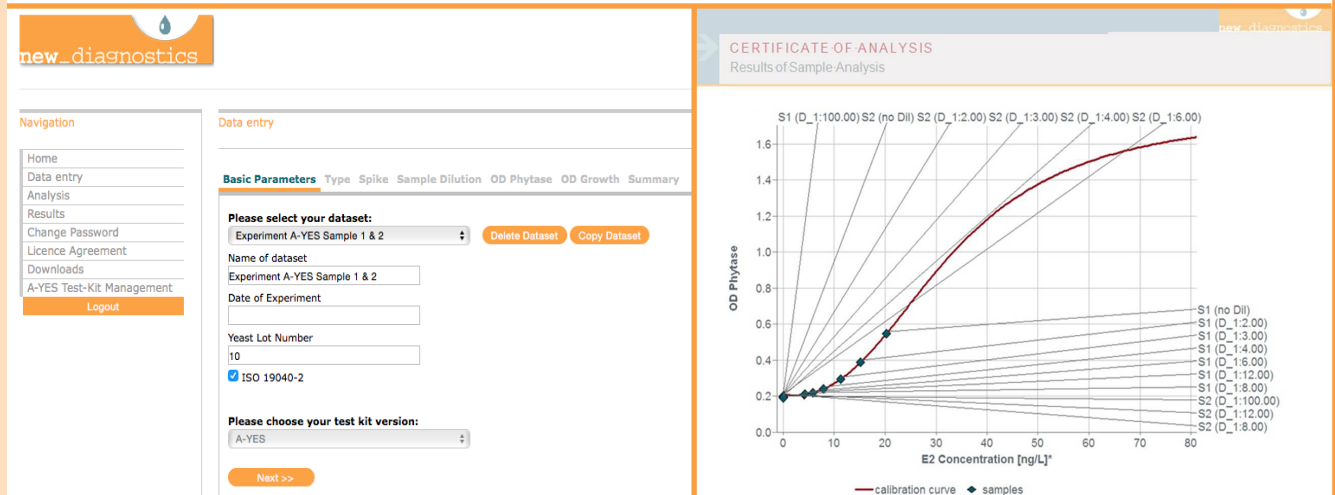
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Duration of Assay	approx. 26 h
Number of Samples (EEQ)	max. 40
Number of Samples (LID)	max. 4
Validation	interlaboratory trial
Calibration Range	0 – 80 ng/L 17 β -Estradiol (E2)
Limit of Detection	1.8 ng/L 17 β -Estradiol (E2)

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.

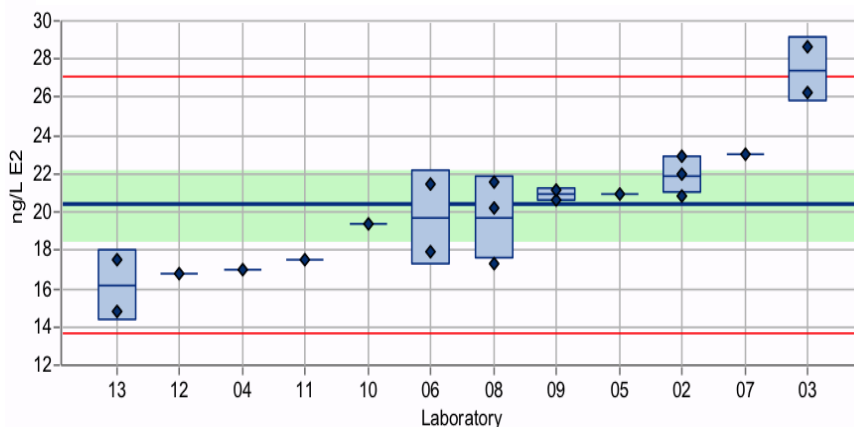


▲ Data analysis via BioVAL webinterface

▲ Excerpt of the certificate of analysis

QuoData CERTIFICATE

The A-YES test kit has been awarded the QuoData certificate of matrix comprehensive validation. This guarantees continuously high quality and reliability of our test kits.



▲ EEQ values for an effluent of a waste water treatment plant

The validation of the A-YES was carried out as an interlaboratory trial with 14 participating laboratories for the determination of the LID and EEQ of environmental samples and extracts. The range of samples included samples with different characteristics and matrix such as salt and fresh water as well as in- and outflow of a sewage treatment plant. The planning and evaluation of the interlaboratory test was realized by QuoData GmbH.