

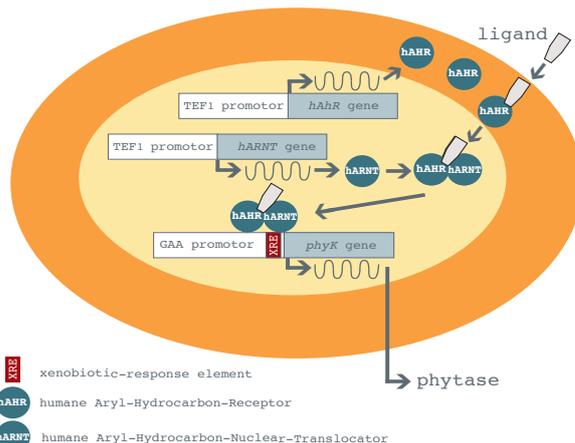
A - YDS

Innovative biological measurement system for the detection of Ah-receptor activating substances

The biological test system **A-YDS** is an effect-directed, yeast cell-based assay for a highly sensitive detection of Ah-receptor activating substances in all types of aqueous samples including eluates and extracts. The **A-YDS** measures the cumulative Ah-receptor activity of a sample in a fast, easy, economic and reliable manner. It is therefore ideal for pharmaceutical research and for food and environmental analysis.

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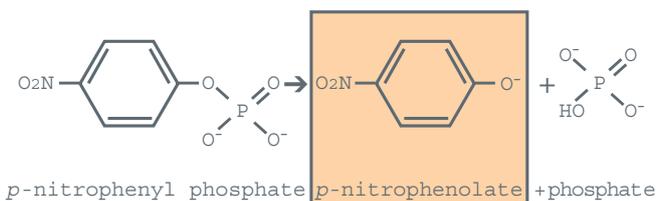
The **A-YDS** uses the salt- and temperature-tolerant yeast *Arxula adenivorans* as test organism, in which the human gene for the aryl hydrocarbon receptor (hAhR) and the aryl hydrocarbon nuclear translocator (hARNT) have been integrated. Upon binding of a substance to the Ah-receptor, a receptor-dimer is formed (AhR/ARNT) which will subsequently activate the production of the reporter enzyme phytase. The amount of the reporter enzyme produced correlates with the total concentration of Ah-receptor active substances in the sample. After addition of a chromogenic substrate, the reporter enzyme concentration can be measured photometrically. β -Naphthoflavone (β -NF) is used as reference standard for the calibration.



▲ A-YDS Test-Kit

APPLICATIONS

- Environmental monitoring of Ah-receptor activating substances 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*-nitrophenylphosphate into *p*-nitrophenolate (yellow)

Duration of Assay	approx. 26 h
Number of Samples (NEQ)	max. 40
Validation	in-house
Calibration Range	0 - 10 µg/l β -NF
Limit of Detection	59 ng/l β -NF



ADVANTAGES OF THE A-YDS

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

LABORATORY REQUIREMENTS

- BSL1 laboratory (GMOs)
- Multichannel pipette (nominal vol. 100 µl)
- Temperature-controlled shaker (T = 86 °F, Orbit mind. 3 mm)
- Microlitre/ Microplate centrifuge
- Photometer for microtiter plates (λ = 405 and 630 nm)