

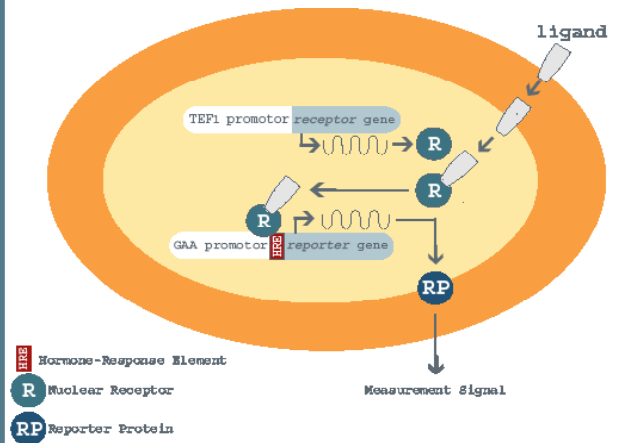
# A - YDS

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.

## MESSPRINZIP

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.  $\beta$ -Naphthoflavone ( $\beta$ -NF) is used as reference standard for the calibration.

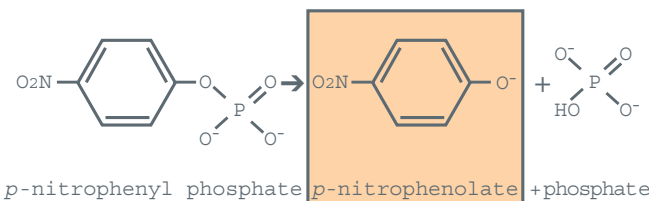


## APPLICATIONS

- 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



▲ A-YDS Test-Kit



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

<b>Duration of Assay</b>	approx. 26 h
<b>Number of Samples (NEQ)</b>	max. 40
<b>Validation</b>	in-house
<b>Calibration Range</b>	0 - 10 µg/l $\beta$ -NF
<b>Limit of Detection</b>	59 ng/l $\beta$ -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 ( $\lambda$  = 405 and 630 nm)