

Lyticase-assisted Yeast Estrogen Screen (L-YES) with *Saccharomyces cerevisiae*

Bioassay with genetically engineered yeast cells for detecting estrogenic effects of natural and synthetic substances

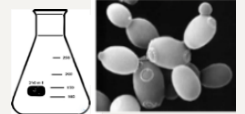
Storage of yeast cells in glycerol

- max. 3 months at -20°C,
- long-term, max. 12 months at -80°C



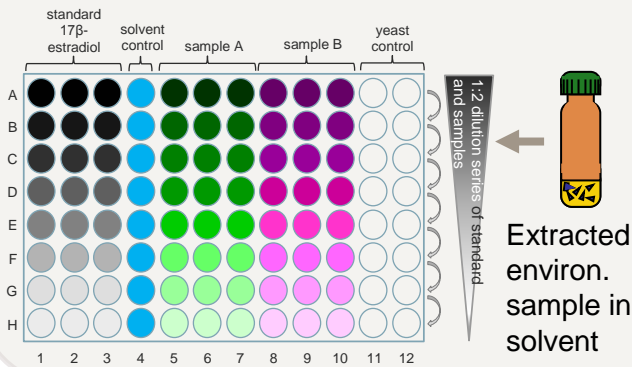
Growth culture

- growth medium
- + yeast glycerol stock



Filling of the microtiter plate

- pipet samples and controls on plate
- evaporate solvent, dissolve in water



Culture for inoculation of microtiter plate

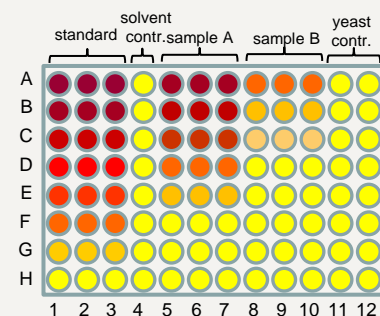
- adjust growth culture to specific density with exposure medium

Pipet yeasts on microtiter plate

- pipet yeasts on microtiter plate
- incubate 18h

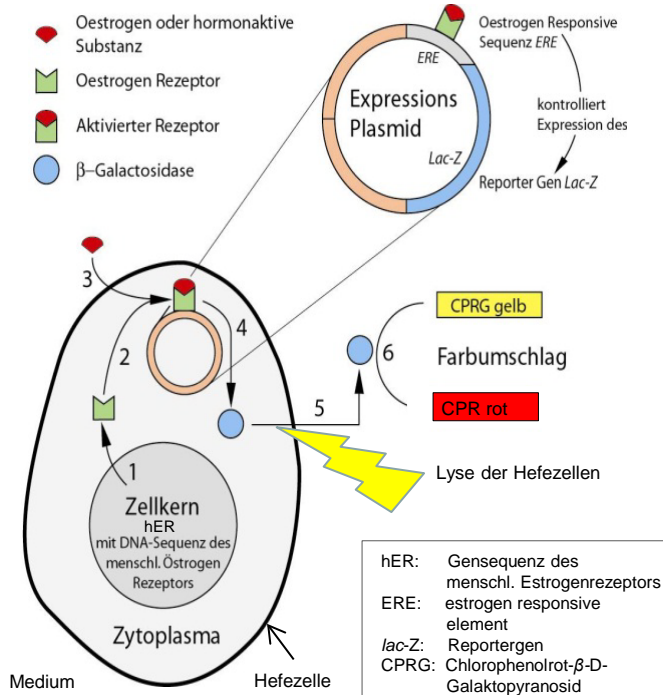
Lysis of cells and measurement of absorption

- measure cell density (OD_{600nm})
- add lyticase buffer and CPRG
- incubate 1h
- measure induction of colour (OD_{580nm})



Test principle

- If estrogenic substance is present
- expression of the human estrogen receptor
 - activation of the reporter gene
 - Formation of the enzyme β-galactosidase
 - lysis of yeast cells after 18h incubation
 - detection through colour change



Analysis

Calculate estradiol equivalent concentration of environmental samples with the help of standard graph for 17β-estradiol

