

# TRANSGENESIS OF YEAST

Reference : TRAN/SMAC



Strain, reagents and pouring medium (3 bottles of 350 ml)

## **The Earth in the universe, life and the evolution of life**

Cognitive objective:

Transgenesis shows that genetic information is contained in the DNA molecule, and that it is written there in a universal language.

The Ade2 strain is :

Unable to grow on adenine-free medium.

Colored red on rich medium (YPD2).

This phenotype is due to a mutation in the adenine biosynthesis pathway.

Principle :

After introduction of a plasmid DNA fragment carrying the wild-type allele of the Ade2 gene into the Ade2 - strain, the latter will be able to grow on adenine-free medium and its staining on adenine-free medium will turn white.

Composition :

### **STRAINS, reagents and casting media (ref. TRAN/SMAC):**

- Saccharomyces cerevisiae Ade2 on Petri dish
- MEDIA and reagents :
  - 1 liter of selective medium
  - 100 ml rich medium for strain subculture

- 50 µl plasmid
- 20 ml lithium buffer
- 5 ml transformation buffer
- 3 tubes of sterile water

**Equipment (for 40 students): optional (ref. TRAN/MAT)**

- 50 Petri dishes, diameter 90 mm
- 40 color-coded microtubes with conical bottoms
- 20 inoculators
- 50 sterile spreaders
- 4 sterile bulbs

Technical and teaching guide: online

**Equipment required :**

- Centrifuge (3,000 rpm)
- Water bath (42 °C)
- Micropipettes

Storage: 2 months

Swabs and strain: refrigerator. Beware: the strain turns white in the fridge, so you'll need to re-transplant it if you keep it for more than two weeks.

Plasmid: freezer