



# Institut für Mikrobiologie und Genetik

## Abt. Genetik eukaryotischer Mikroorganismen

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[spoegge@gwdg.de](mailto:spoegge@gwdg.de) Tel.: 3913930

### ▪ **Fruchtkörperentwicklung bei Pilzen**

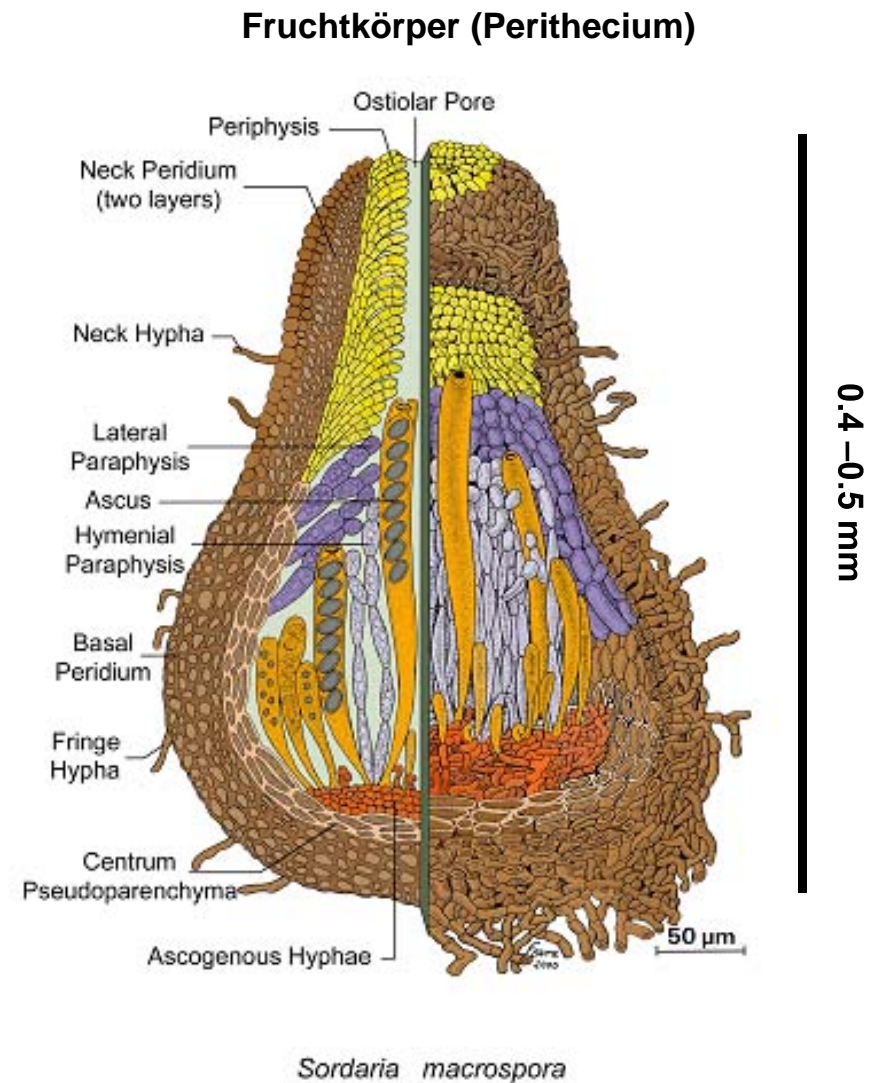
**Kreuzungstyp-Gene, Pheromone, Rezeptoren,  
STRIPAK-Komplex, Autophagie**

## Major Research Interests

Fruiting-body development in filamentous ascomycetes is a complex cellular differentiation process that requires special environmental conditions. For the formation of fruiting bodies many developmentally regulated genes are necessary. One of our main projects is to identify and analyze the genes regulating this development process. We use the self-fertile, filamentous ascomycete *Sordaria macrospora* as a model organism. Since *S. macrospora* is able to complete the sexual cycle without a mating partner, recessive mutations affecting fruiting body development are directly visible.

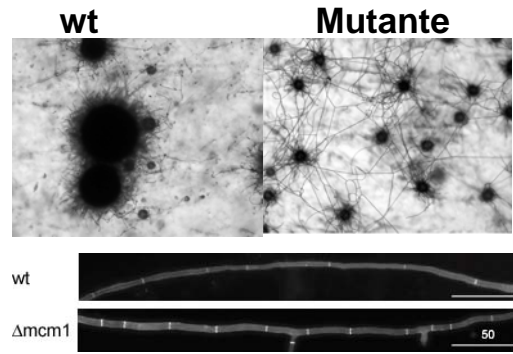
# Fruchtkörperentwicklung bei Ascomyceten Modell: *Sordaria macrospora*

Welche Gene kontrollieren die Entwicklung von Fruchtkörpern ?

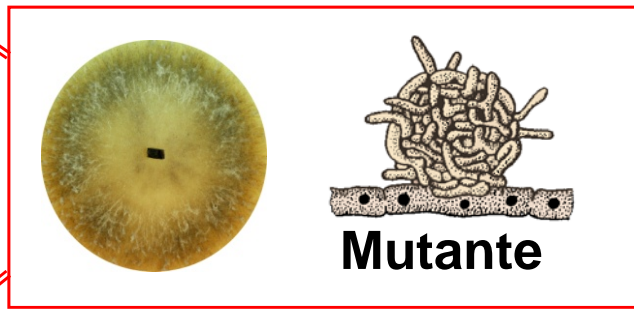


# Molekulare Charakterisierung von Entwicklungsmutanten

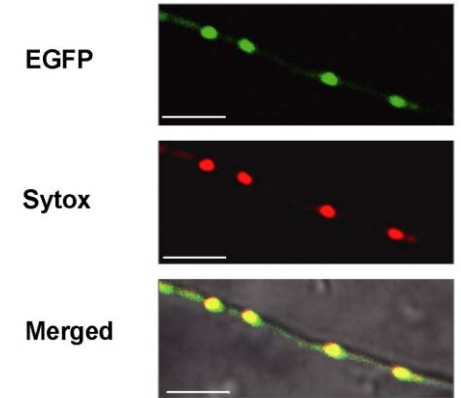
## Phänotypische Charakterisierung



veg. Entwicklung  
sex. Entwicklung

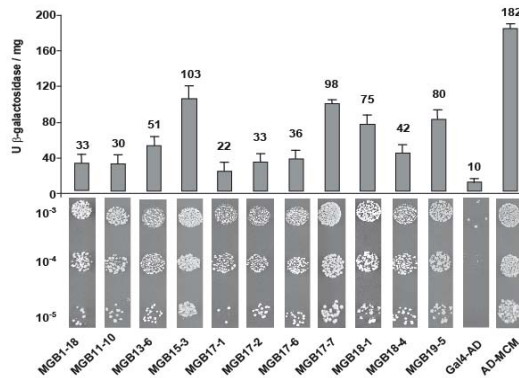


## Proteinlokalisierung



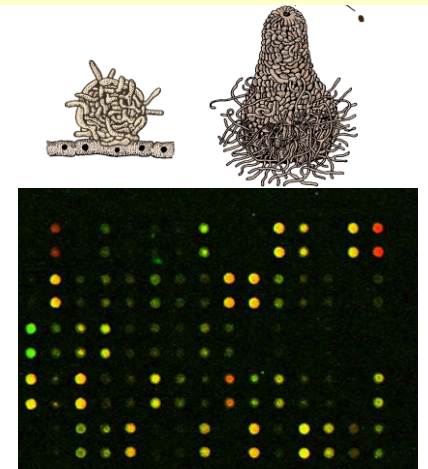
Fluoreszenz-  
Mikroskopie

## Protein-Protein Interaktion



2H-Analyse  
*in-vitro* Analysen  
*in-vivo* Analysen

## Expressionsanalyse



Northern-Blot  
Real-time PCR  
Microarray

# Abt. Genetik eukaryotischer Mikroorganismen

## Mögliche Projekte für ein Vertiefungspraktikum / Bachelor-Arbeit

### Analyse von Entwicklungsgenen:

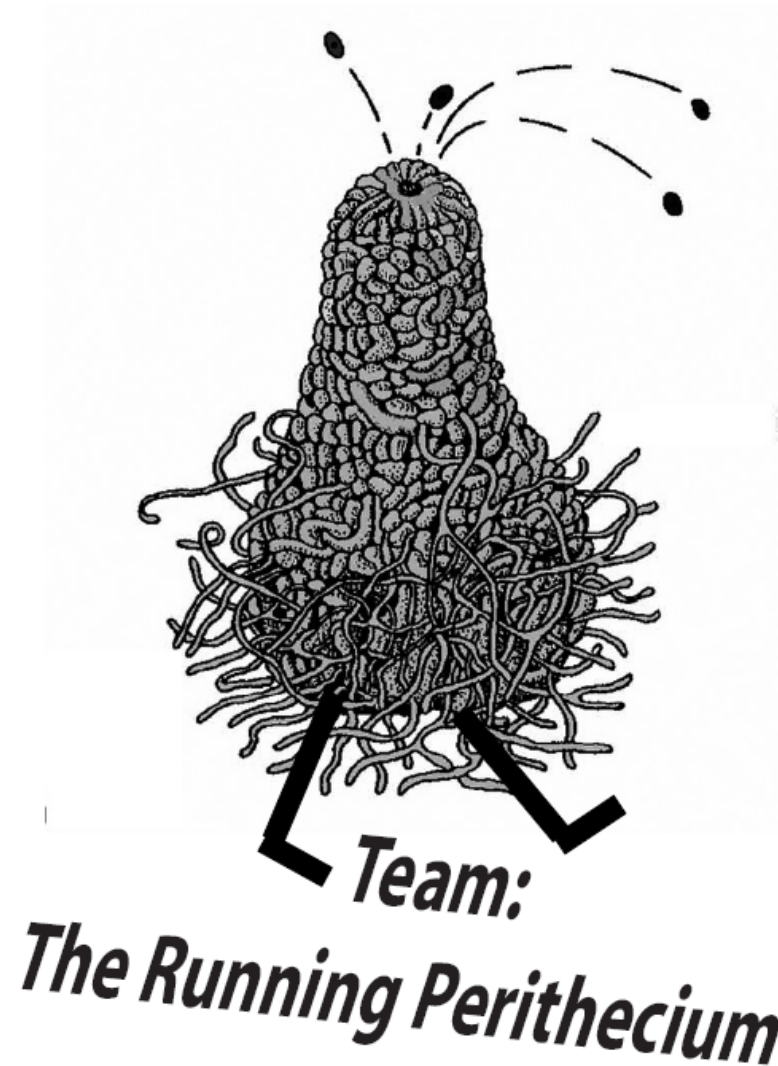
- Isolierung eines Entwicklungsgens aus *S. macrospora*
- Herstellung einer Knock-out Mutante
- Komplementation einer Entwicklungsmutante
- Lokalisierungsstudien (Fluoreszenz-Mikroskopie)
- Expressionsstudien zu Entwicklungsgenen (Northern-Blot und Real Time PCR)
- Protein-Protein Interaktionen (Two-Hybrid Analysen, *in vitro*- und *in-vivo*-Studien)

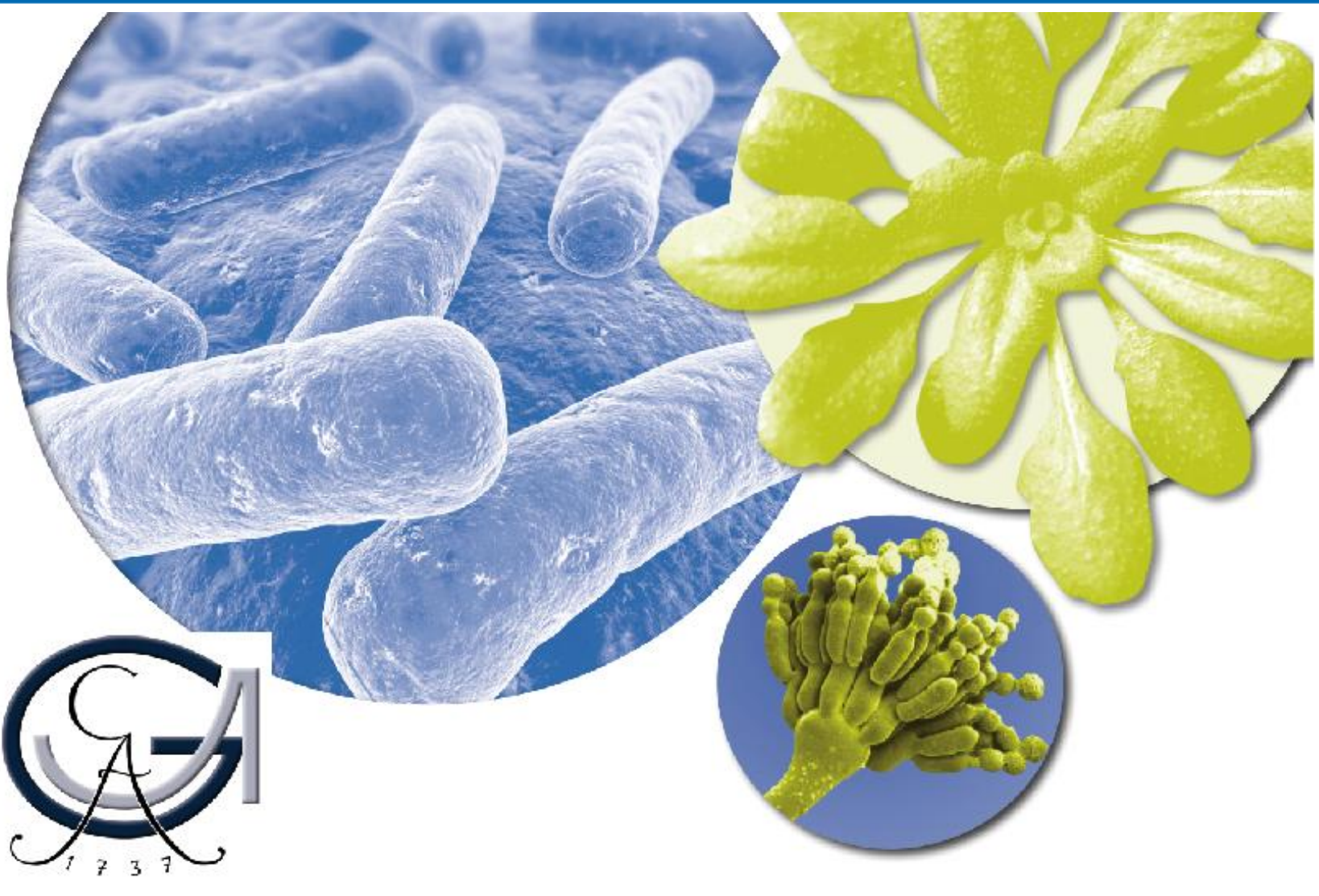
Fragen??

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# Join The Team

Institut für Mikrobiologie und Genetik  
Abt. Genetik eukaryotischer Mikroorganismen





# Microbiology and Biochemistry

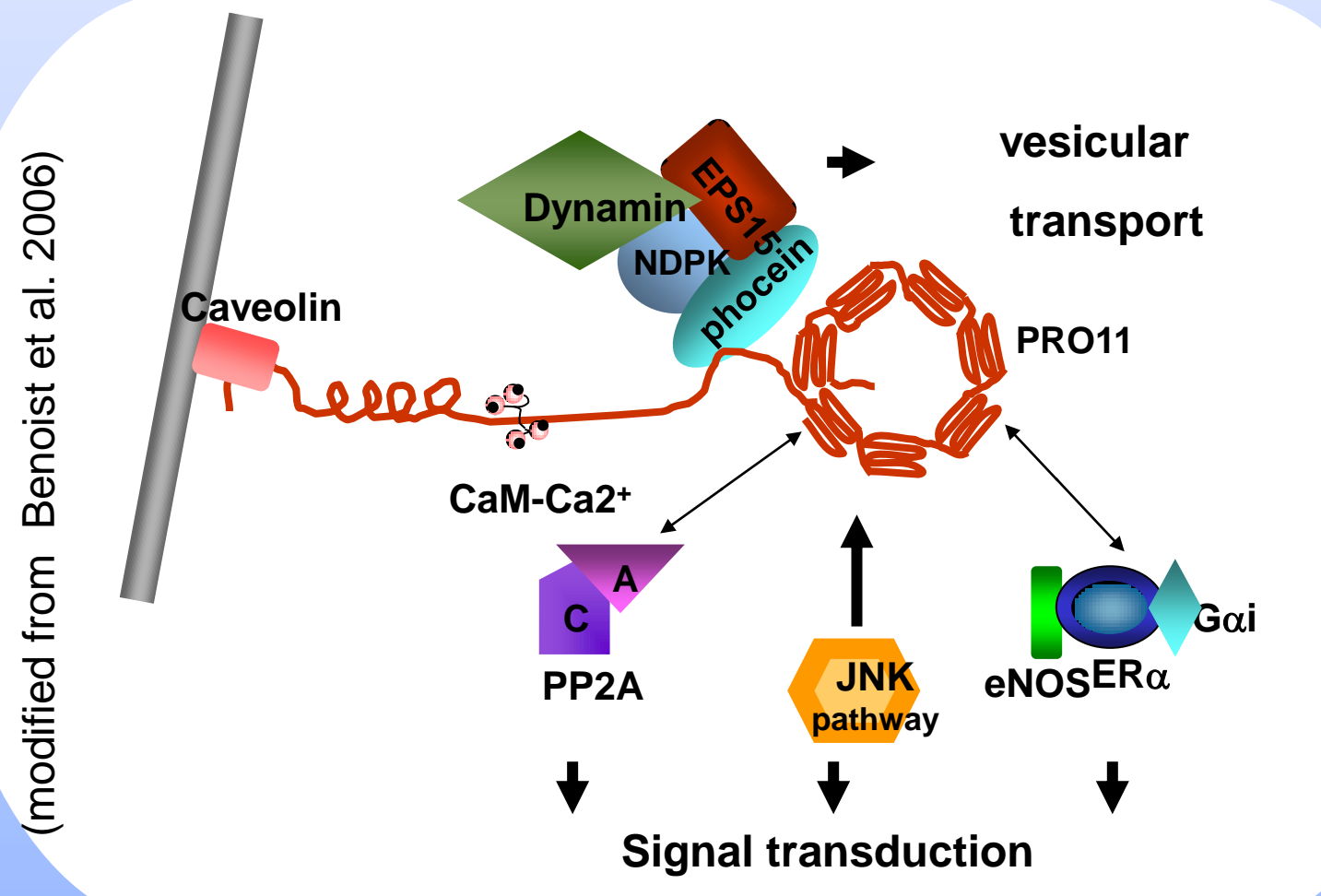
Genetics and Eukaryotic Microbiology

Department of

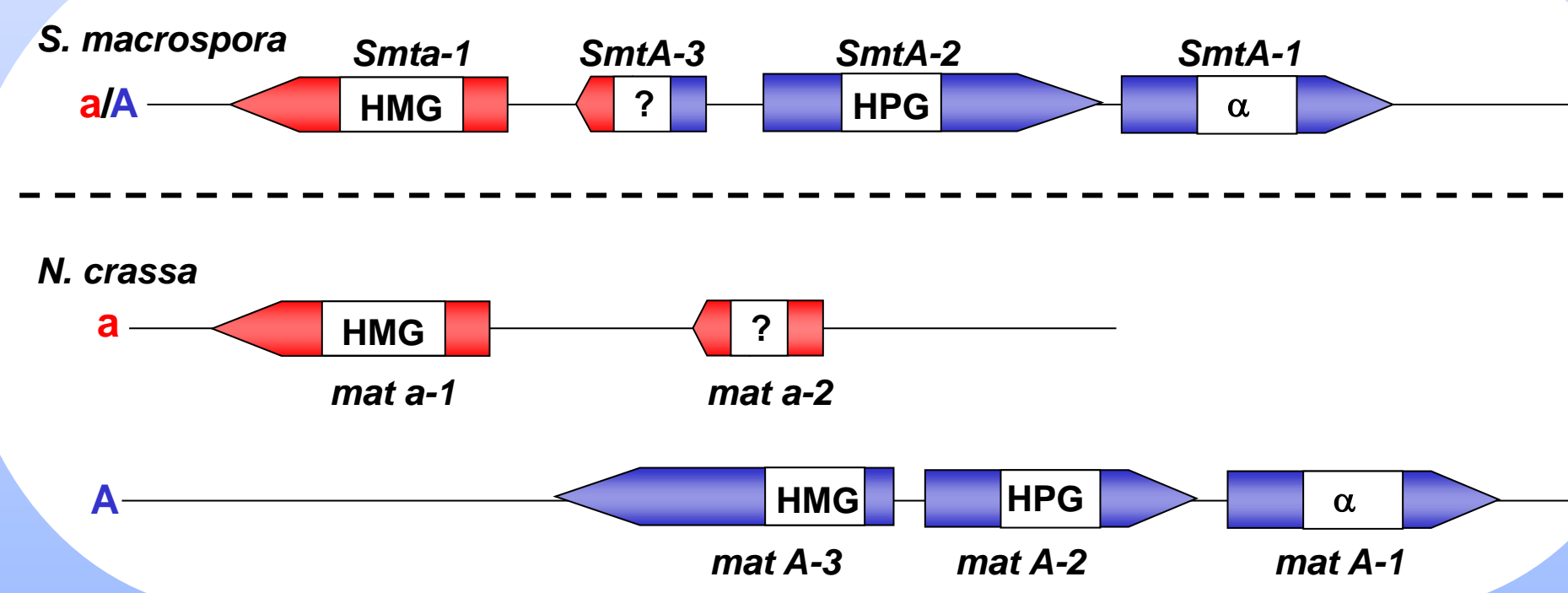
Genetics of Eukaryotic Microorganisms



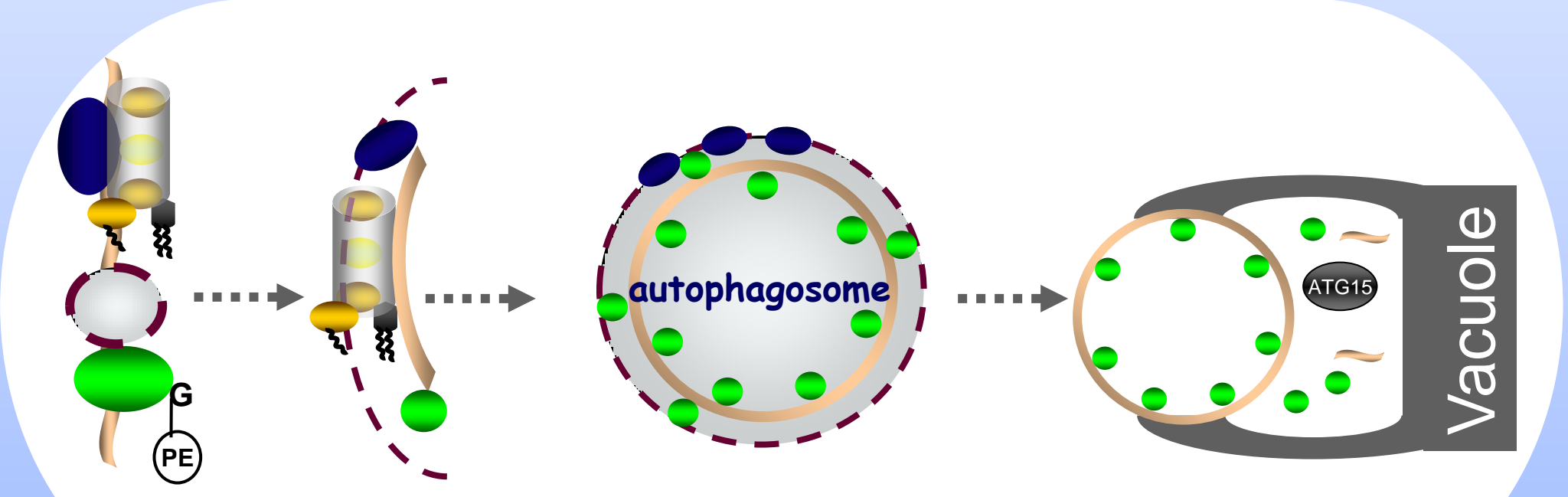
## Signal Transduction



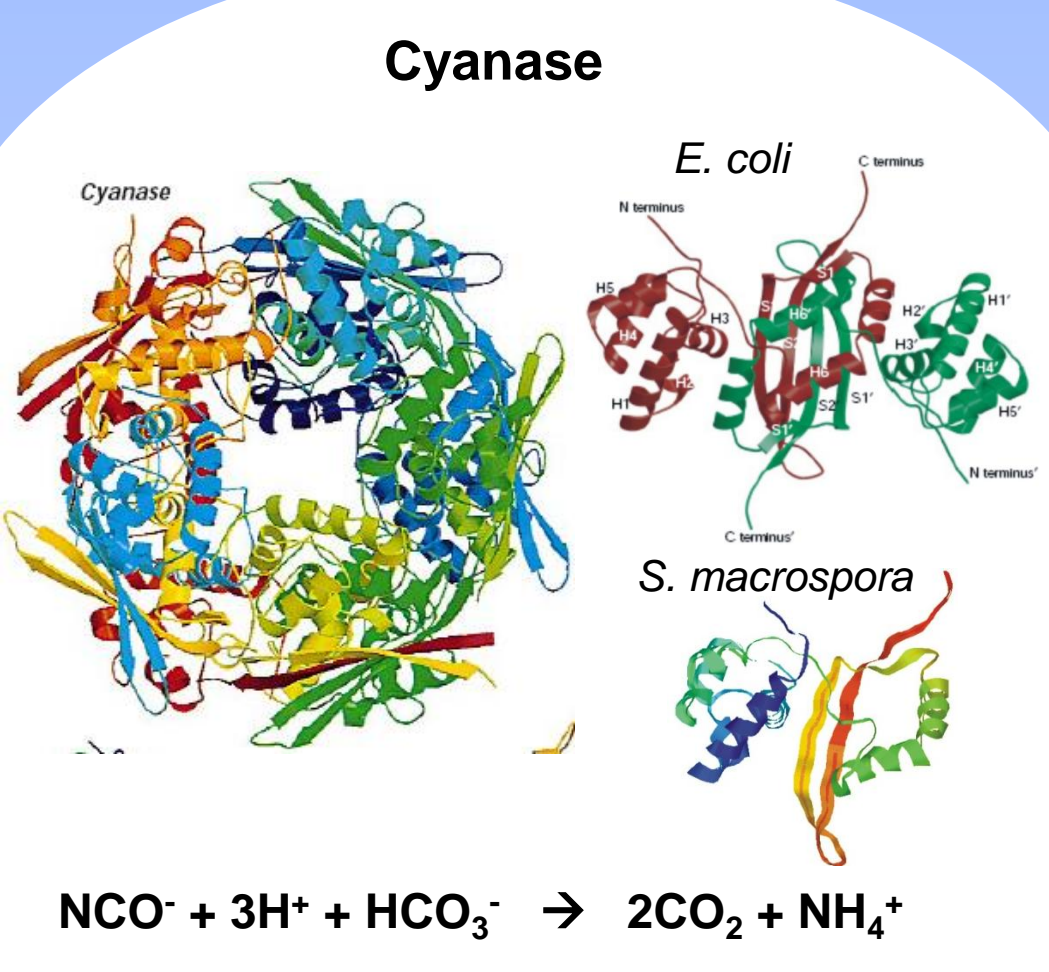
## Mating-type Genes



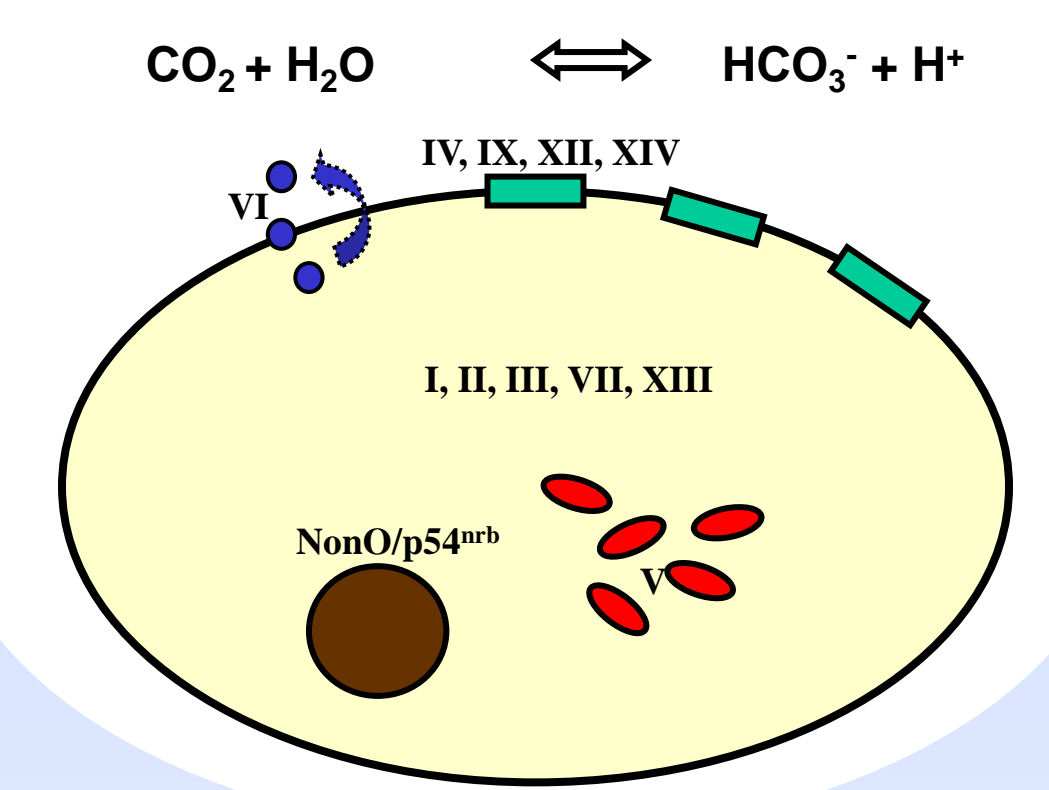
## Autophagy



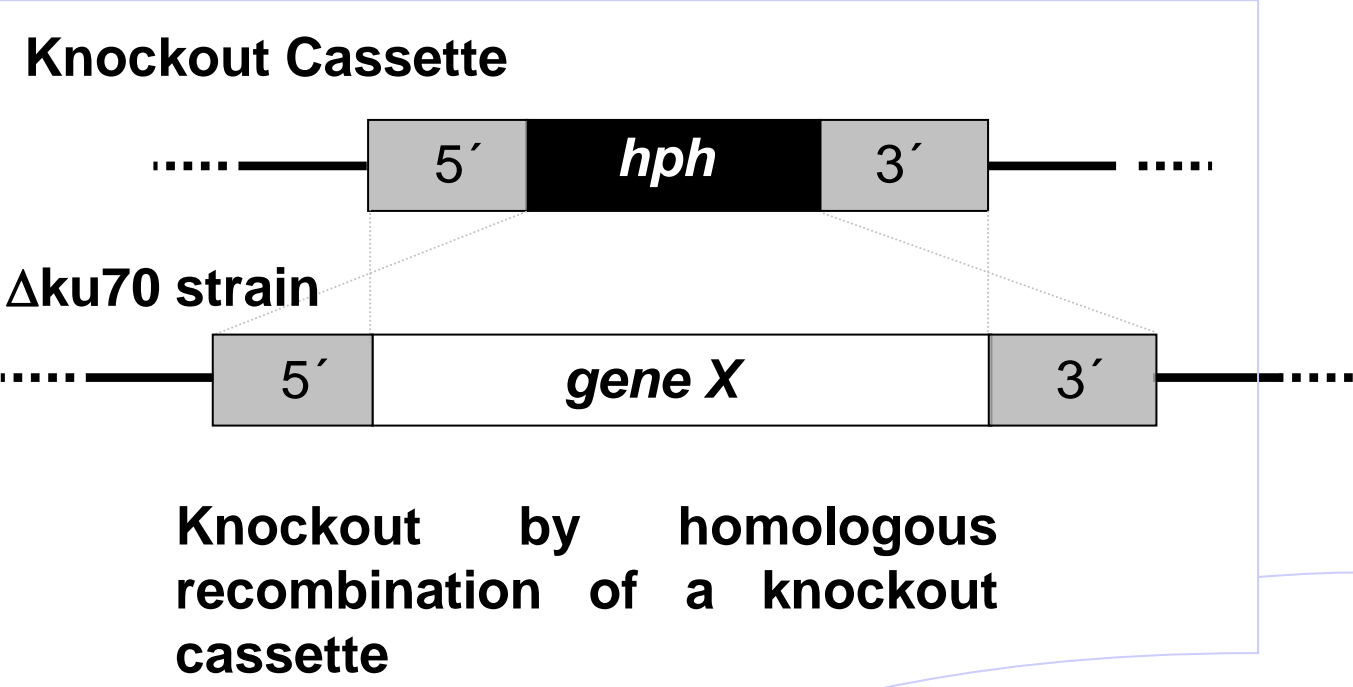
## Bicarbonate Metabolism



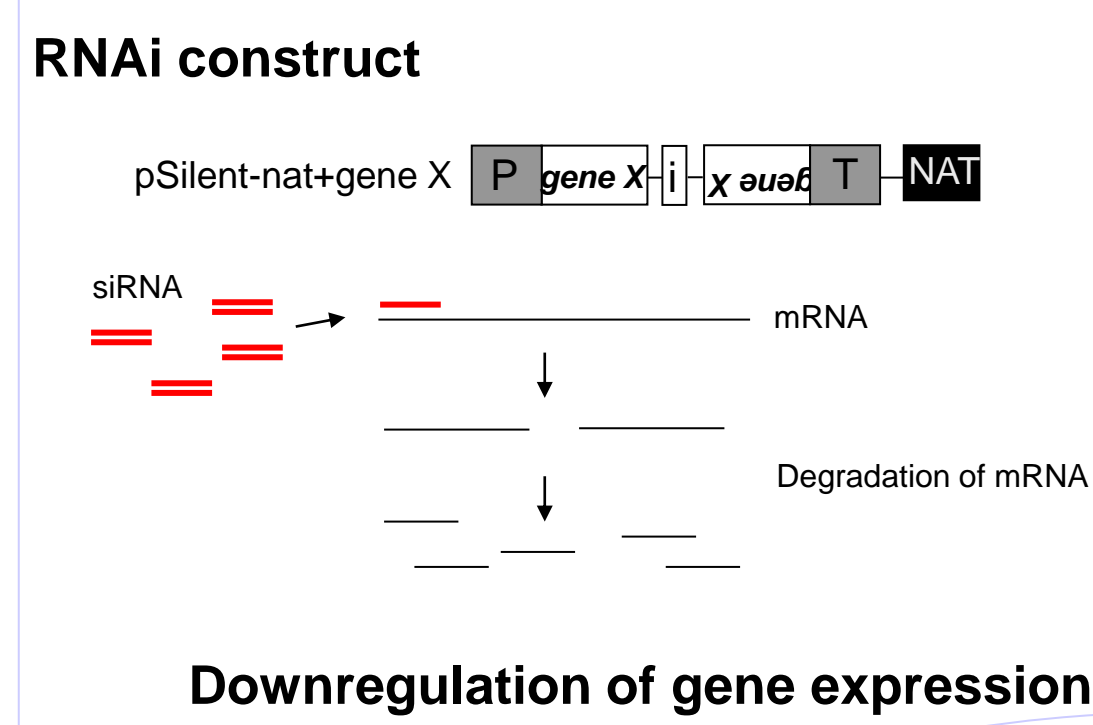
## Carbonic Anhydrases



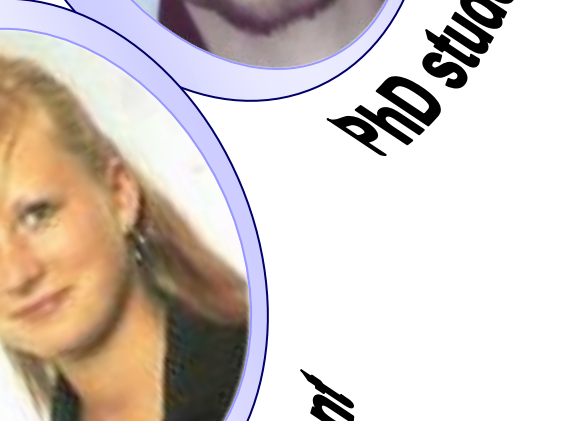
## Gene-“Knockouts”



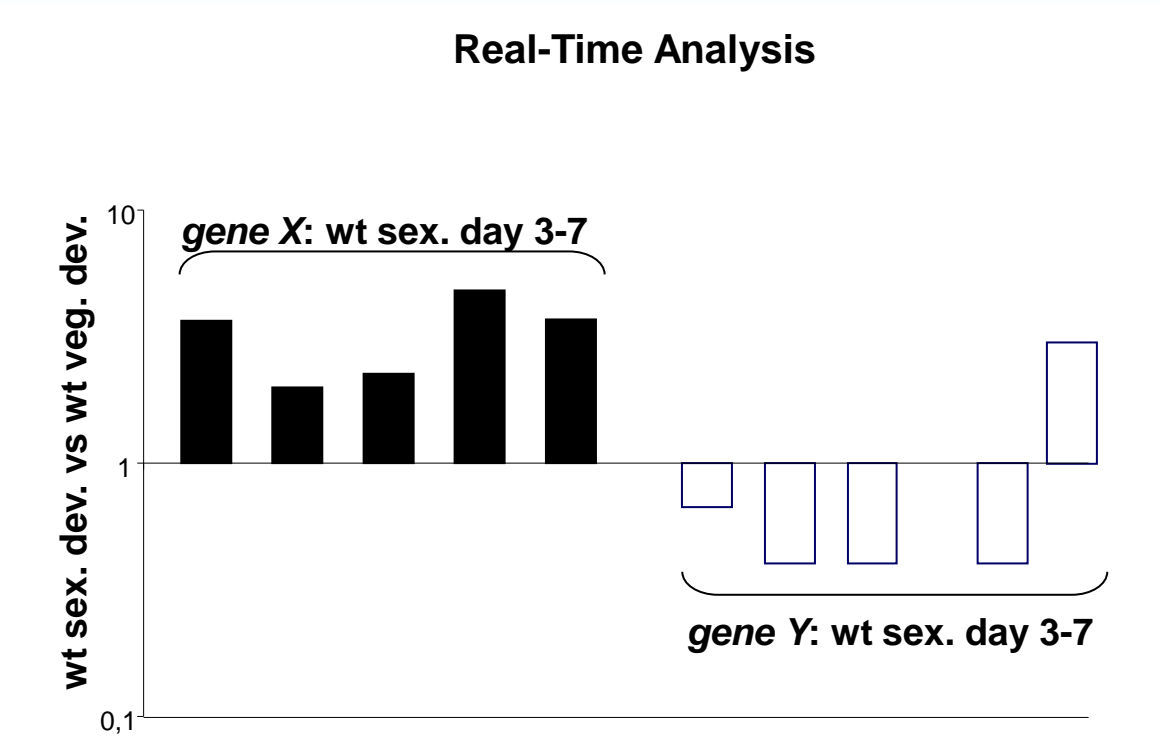
## RNAi



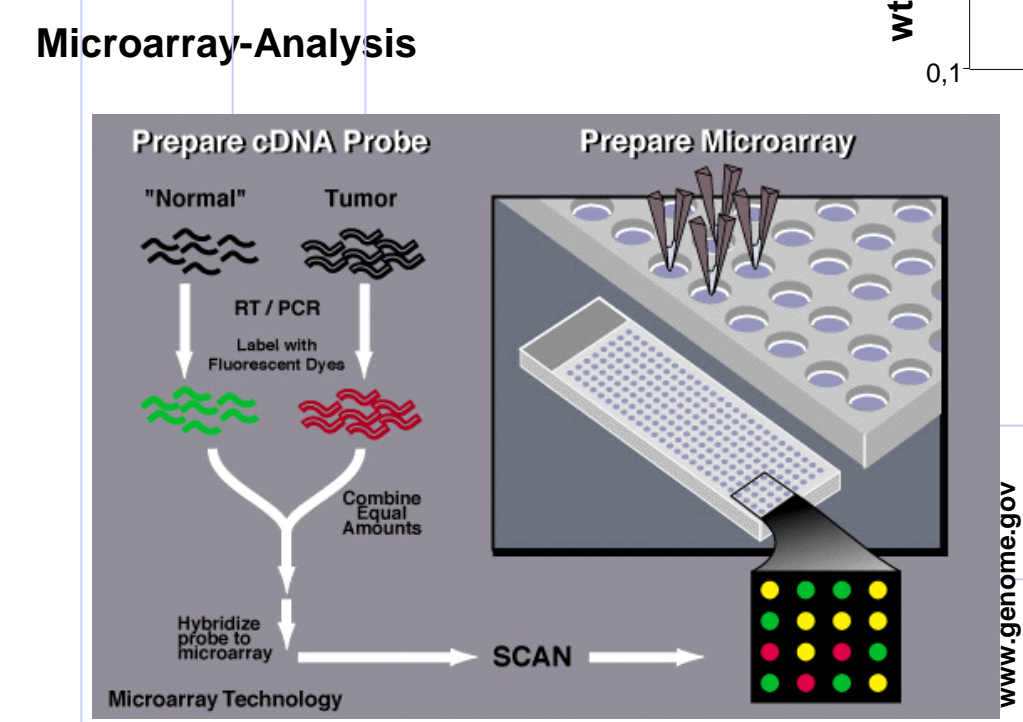
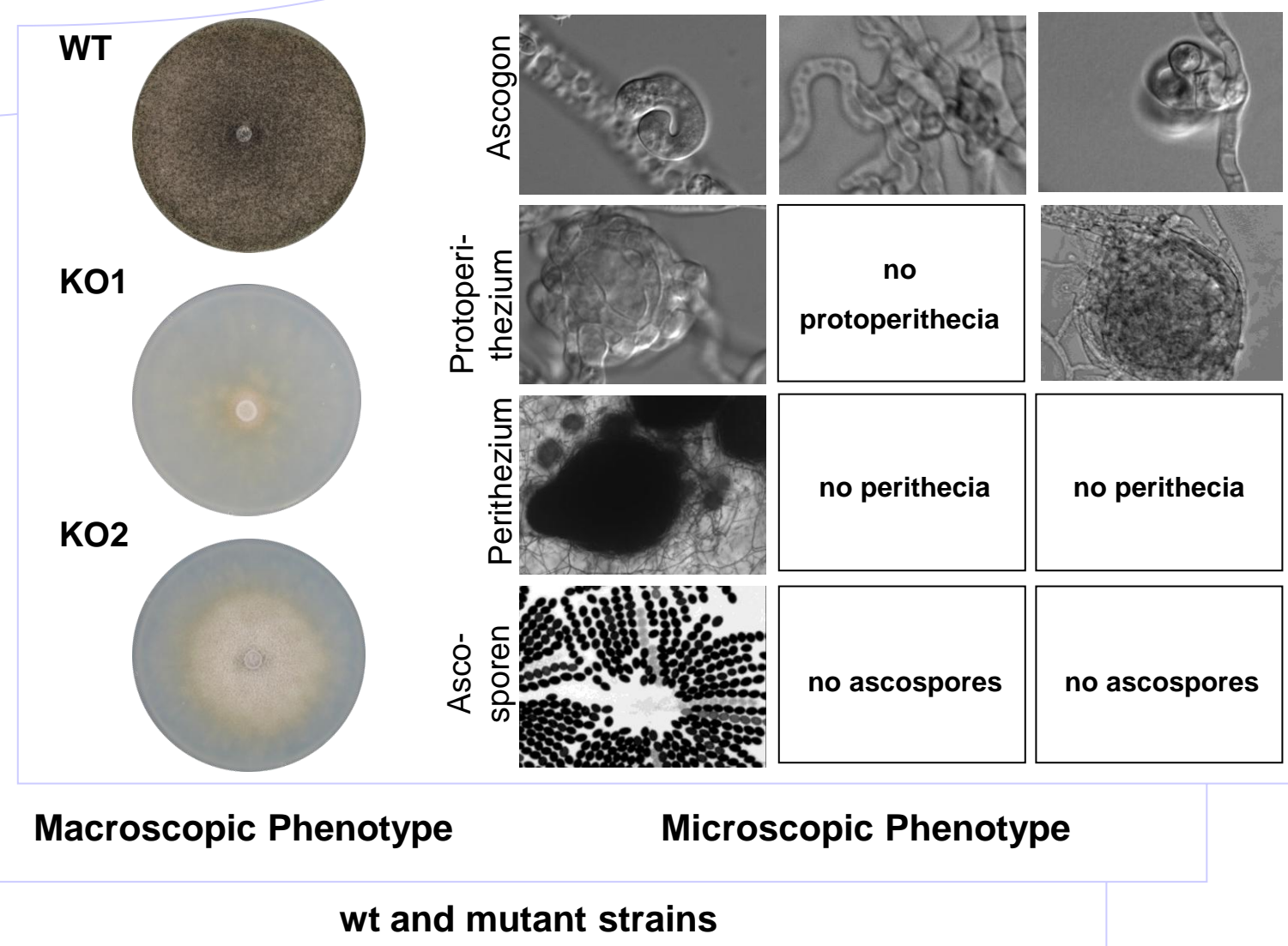
Prof. Dr. Stefanie Pöggeler - Head -



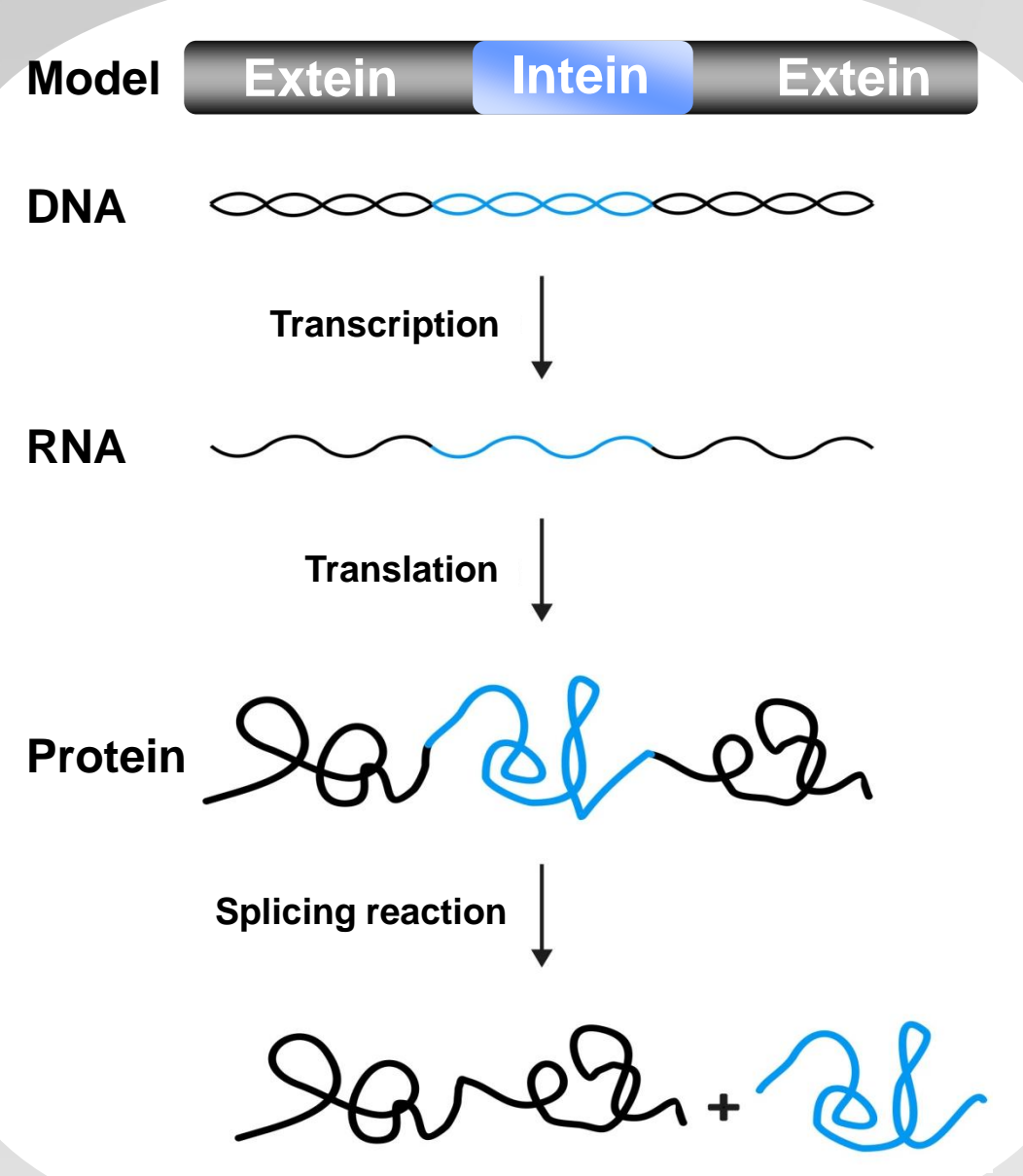
## Gene Expression



## Phenotypic Analysis

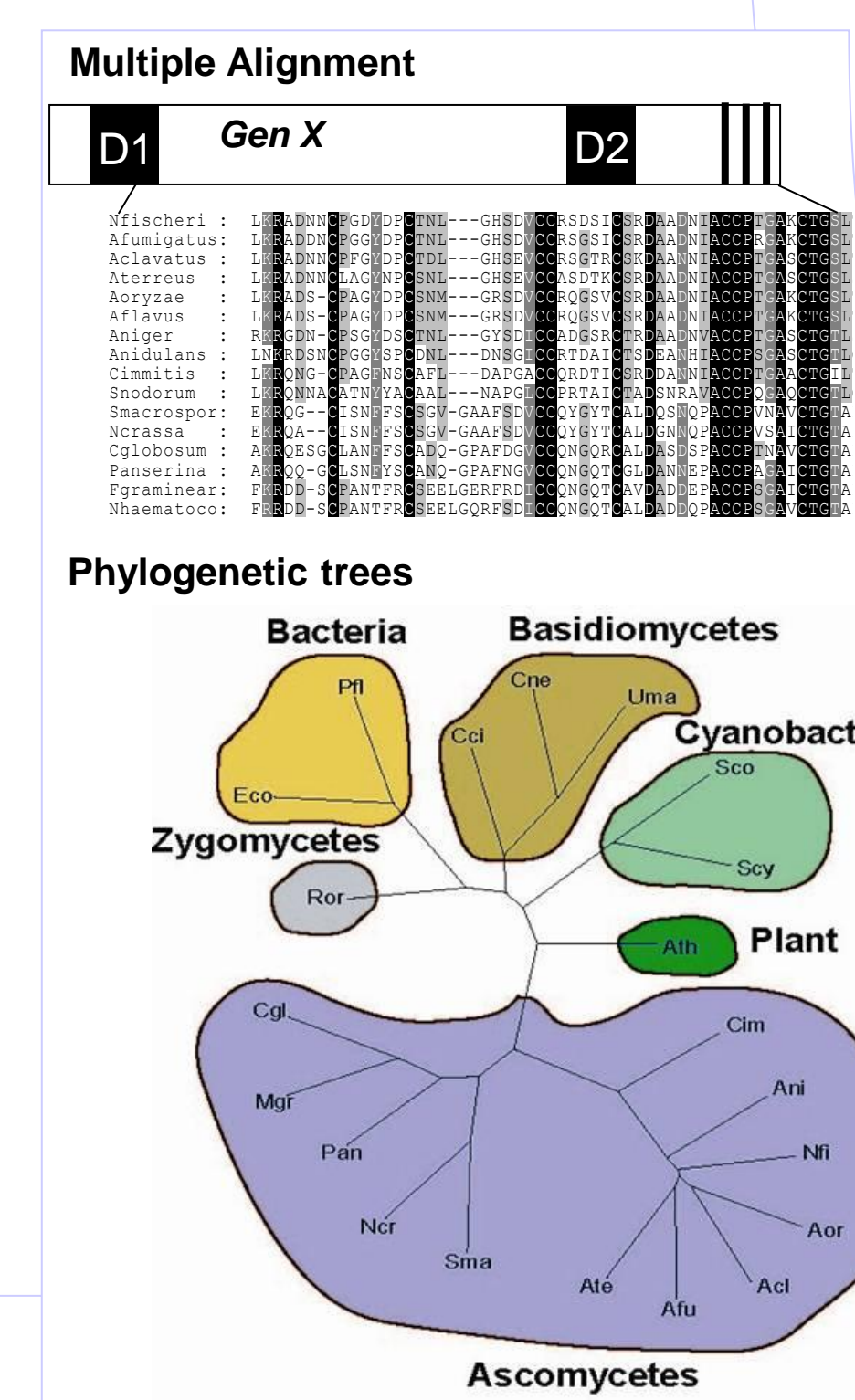


## Protein Splicing Inteins

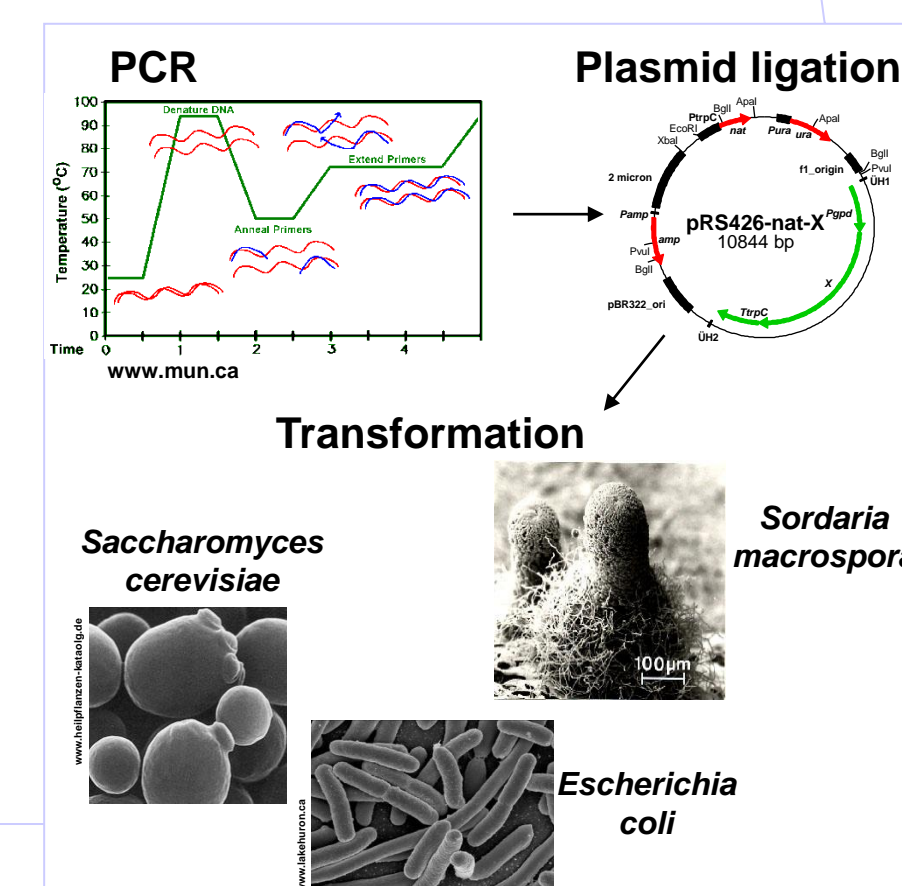


Penicillium spec.

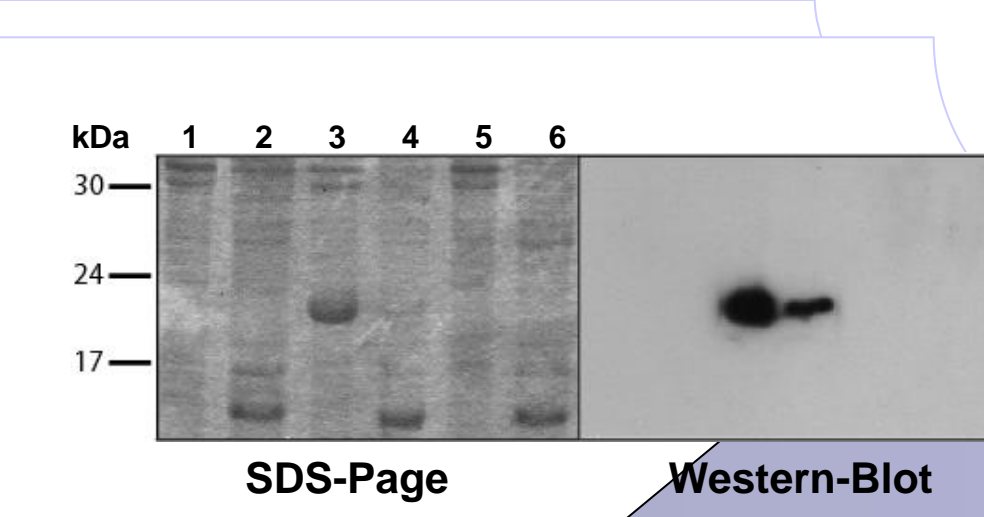
## Bioinformatics



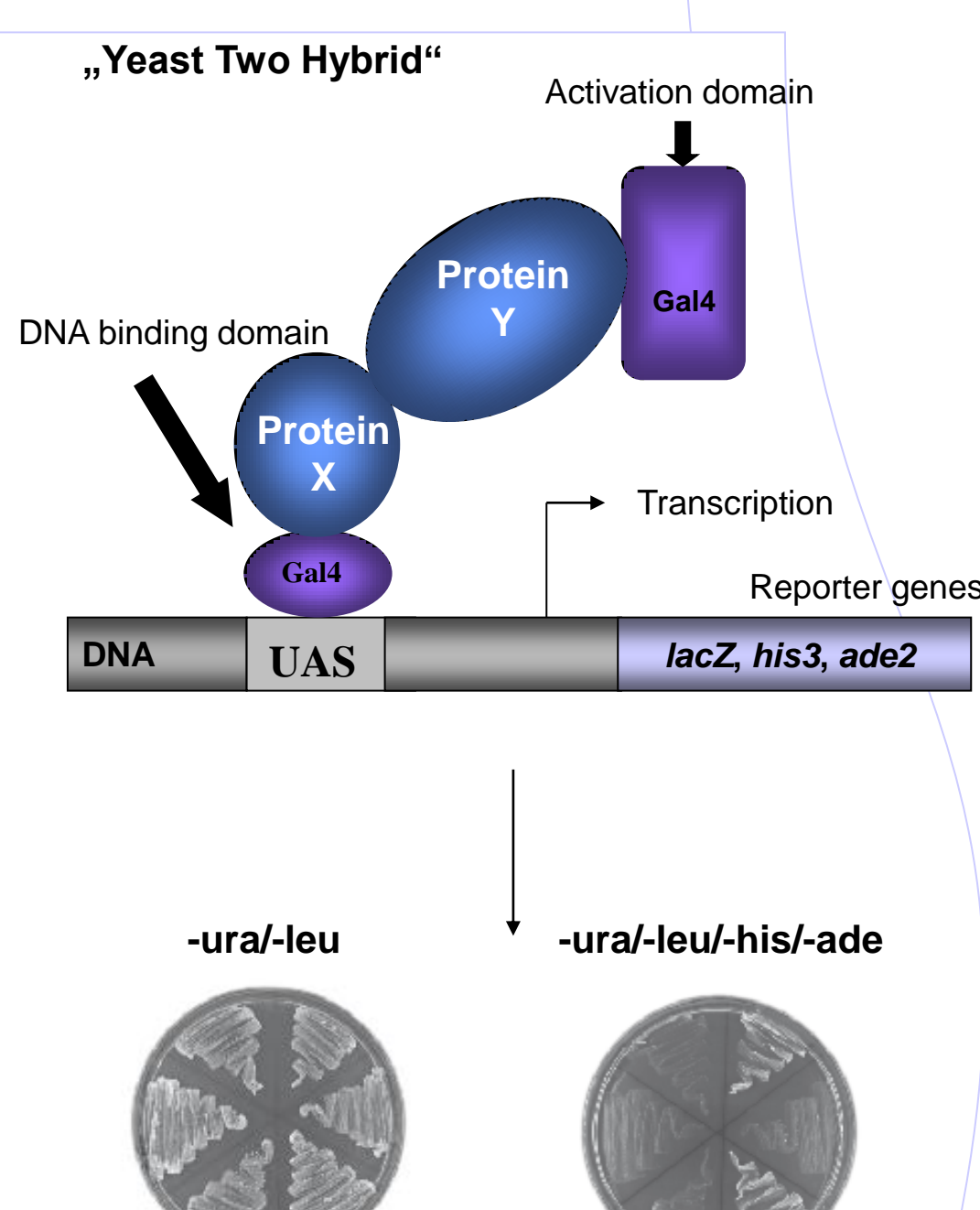
## Cloning and Transformation



## Protein Expression



## Protein-Protein Interaction



## Fluorescence Microscopy

