



Laurea Triennale
(DEGREE COURSE – 3 YEARS)
in
Biotechnologie
Agro-Industriali

Facoltà di Scienze Matematiche Fisiche e Naturali
Università di Roma 'La Sapienza' - Sede di Latina
v.le Le Corbusier 381

BASIC KNOWLEDGE

- **MATEMATICS**
- **STATISTICS**
- **PHYSIC**
- **CHEMISTRY**
- **BIOLOGY**
- **GENETICS**
- **MICROBIOLOGY**
- **BOTANY**
- **ECOLOGY**

SPECIFIC KNOWLEDGE

- **BIOCHEMISTRY**
- **ANALYTICAL CHEMISTRY**
- **MOLECULAR BIOLOGY**
- **PLANT PHYSIOLOGY AND BIOTECHNOLOGY**
- **INDUSTRIAL MICROBIOLOGY**
- **INDUSTRIAL FERMENTATION PROCESSES**

INTERDISCIPLINARY KNOWLEDGE

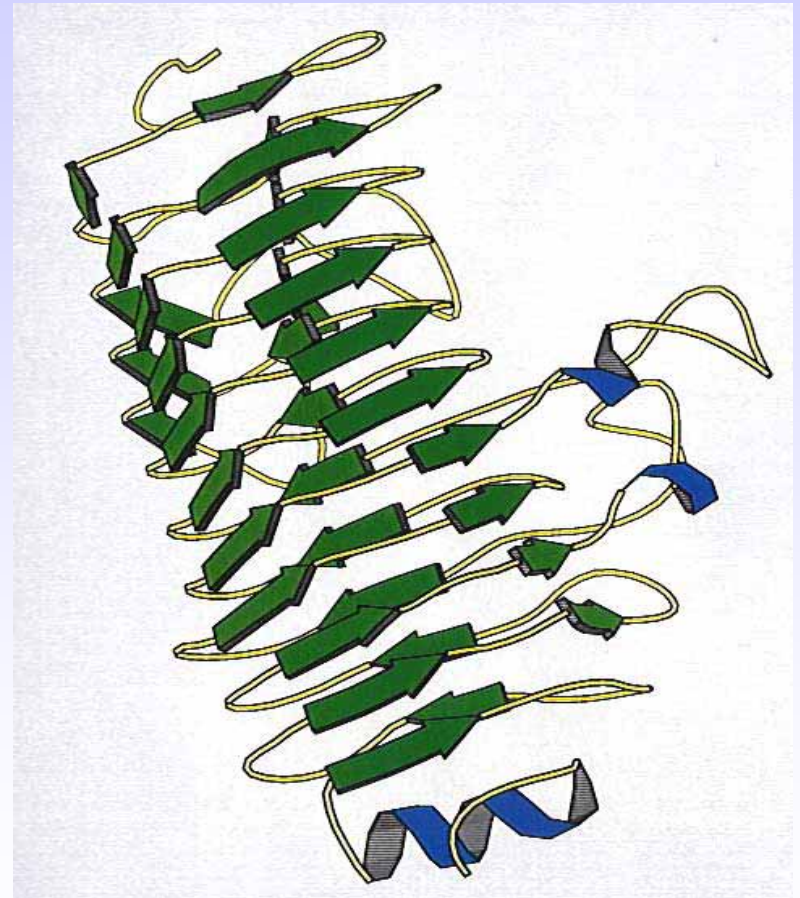
Bioethics

**Patenting and
European Normatives**

Economics

English language

Computing



SKILLS:

Microbial Biomass production

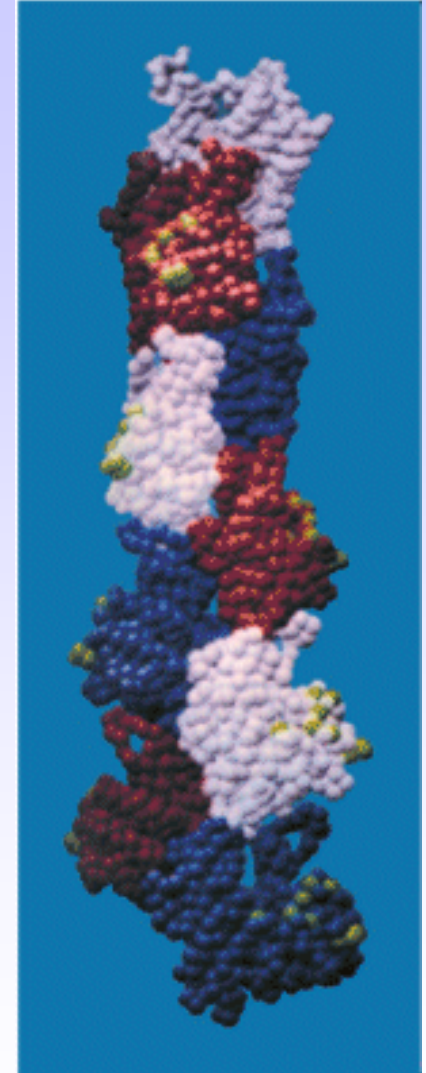
- fermenter

Plant growing

- Micropropagation
- Cell cultures

Genetic improvement of microorganisms and plants

- Classic genetics
- Recombinant DNA technology



LABS



LABS



VISIT OUR WEBSITE:

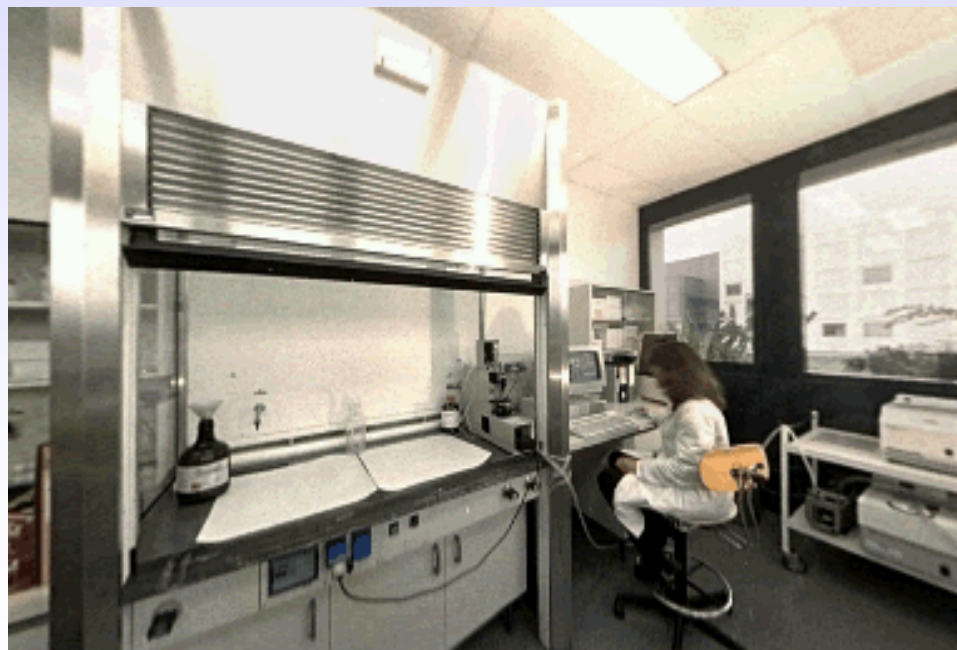
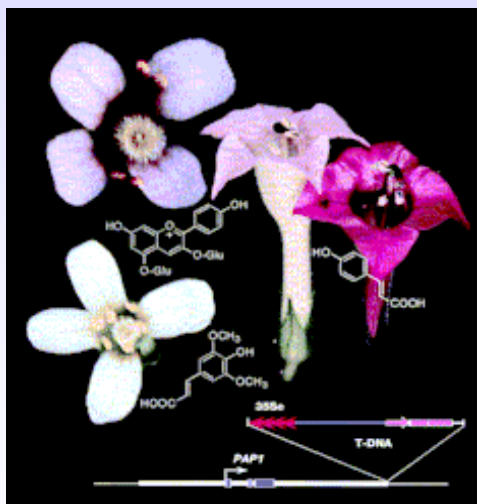
**[http://w3.uniroma1.it/
pololatina/biotec/laurea/clbai.htm](http://w3.uniroma1.it/pololatina/biotec/laurea/clbai.htm)**



JOB OPPORTUNITIES FOR OUR GRADUATES



Industries:
AGRICULTURE
PLANTS/FLOWERS NURSERY
FOOD
PHARMACEUTICS



PUBLIC AND PRIVATE
RESEARCH INSTITUTIONS

EXPERIMENTAL THESIS CARRIED OUT IN INDUSTRIES IN THE AREA OF LATINA

| NOME | COMUNE |
|---|-------------------------|
| MENARINI BIOTECH s.r.l. | POMEZIA |
| PLADA SUD s.r.l. | BORGO GRAPPA (LT) |
| BRISTOL - MYERS SQUIBB S.p.A. | SERMONETA (LT) |
| PASQUALE PETTINICCHIO S.p.A. | SERMONETA (LT) |
| ABBOTT S.p.A. | CAMPOVERDE(LT) |
| WYETH LEDERLE S.p.A. | APRILIA (LT) |
| RECORDATI INDUSTRIA CHIMICA FAMACEUTICA S.p.A. | CAMPOVERDE(LT) |
| SAGIT S.p.A. | CISTERNA DI LATINA (LT) |
| BIOPROGRESS S.p.A. | ANAGNI (FR) |
| SEMINIS ITALIA s.r.l. | BORGO SABOTINO (LT) |
| BIOSINT | SERMONETA (LT) |
| PLASMON | LATINA |
| ACS DOBFAR S.p.A. | ANAGNI (FR) |
| JANSSEN - CILAG S.p.A. | BORGO SAN MICHELE (LT) |
| PFIZER ITALIANA S.p.A. | LATINA |
| BIOGEN s.r.l. | ROMA |
| BIOTEC s.r.l. | ROMA |
| I.R.B.M. | POMEZIA |
| TECNOBIOMEDICA S.p.A. | POMEZIA |
| SIGMA - TAU S.p.A. | POMEZIA |

SOME EXAMPLES OF EXPERIMENTAL THESIS OF OUR GRADUATES



**QUALITY
CONTROL**

BIOREACTORS



PLANT CULTIVATION AND PROPAGATION

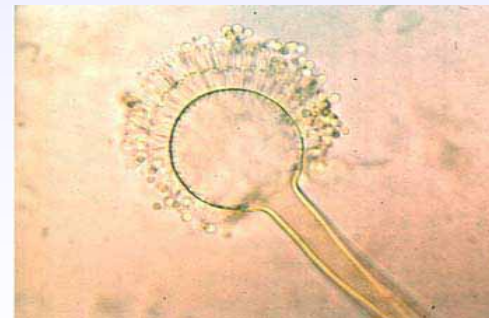
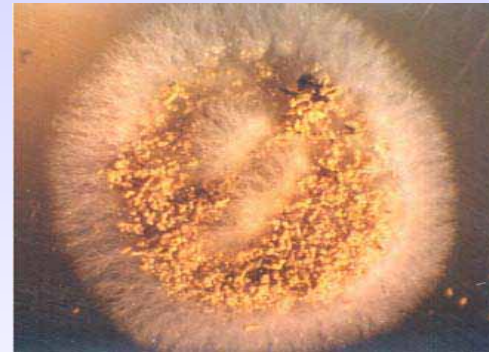


FOOD SAFETY CONTROL

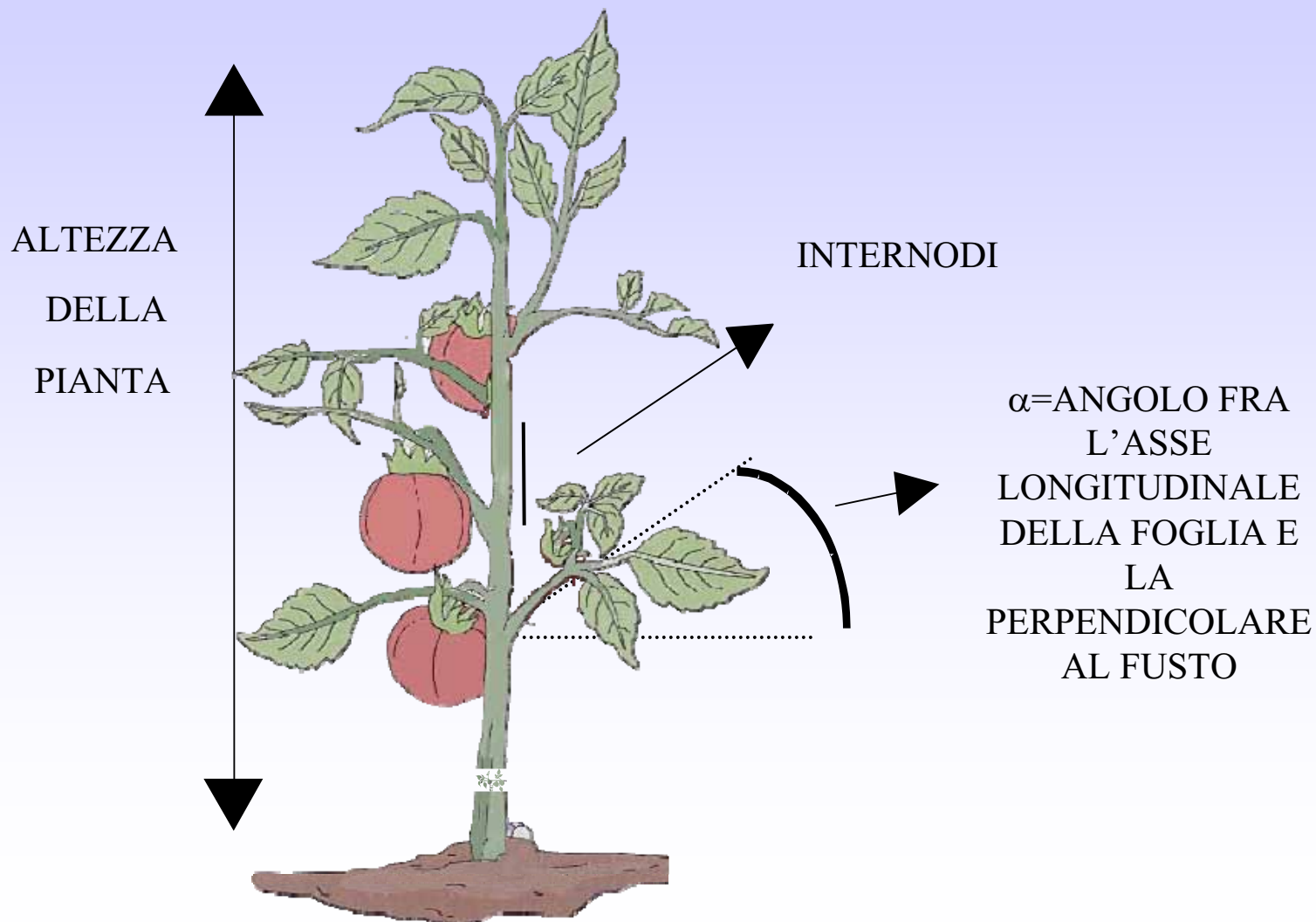
Penicillium verrucosum:



Aspergillus ochraceus :



IMPROVEMENT OF PLANT AGRONOMIC TRAITS



NEW VARIETIES OF *Chrysanthemum morifolium* OBTAINED BY MUTAGENESIS



Wild type



New variety

NEW COLOURS AND SHAPES

BEST ADAPTATION TO ENVIRONMENTAL CONDITIONS



Kalanchoe thyrsiflora



NEW VARIANTS

WILD TYPE



Laurea Specialistica
(SPECIALISED DEGREE COURSE – 2 YEARS)

in

*Biotechnologie
Industriali e
Agro-Alimentari*

**Facoltà di Scienze Matematiche Fisiche e Naturali
Università di Roma 'La Sapienza' - Sede di Latina
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SPECIFIC KNOWLEDGE

- **GENOMICS**
- **PROTEOMICS**
- **PLANT BREEDING**
- **PLANT PATHOLOGY**
- **FOOD QUALITY**
- **FOOD TRANSFORMATION**
- **MICROBIAL BIOTECHNOLOGY**
- **ENVIRONMENTAL BIOTECHNOLOGY**

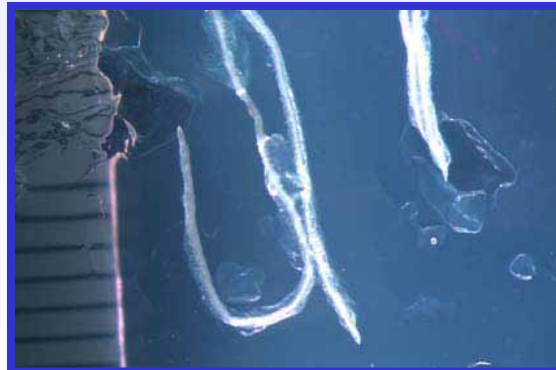
NICOTIANA TABACUM RESISTANT TO CADMIUM



WILD TYPE -/+ Cd



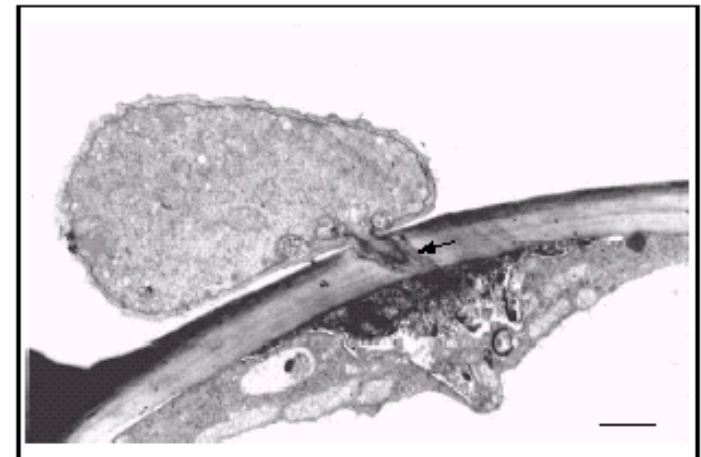
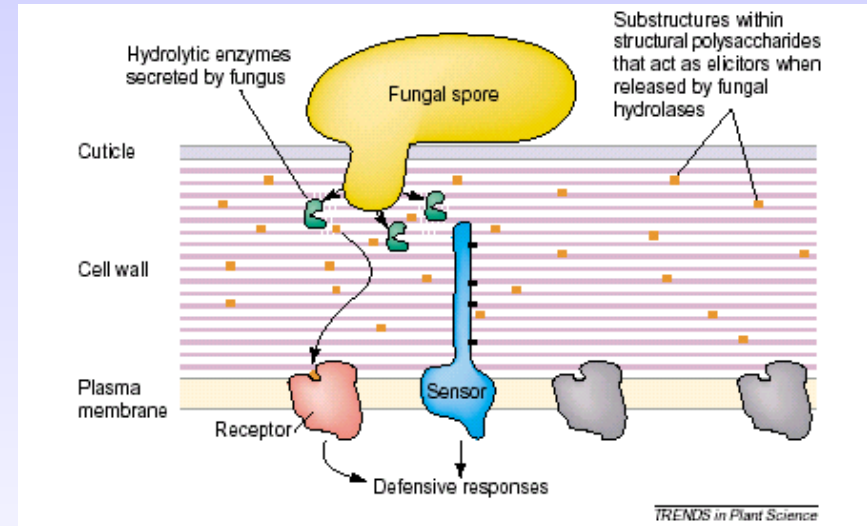
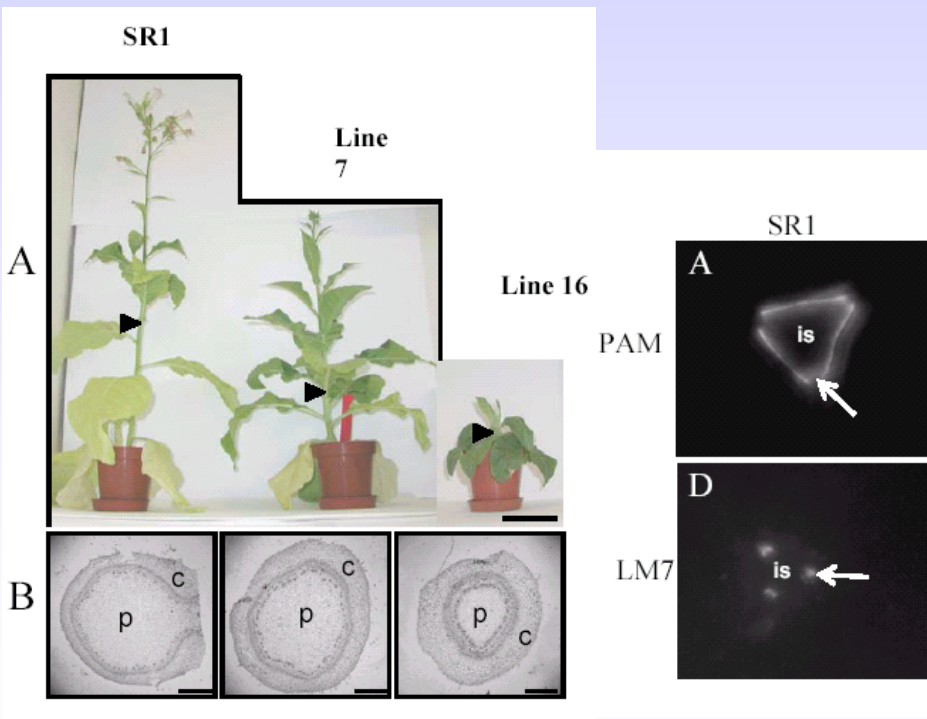
SHOOTS



ROOTS

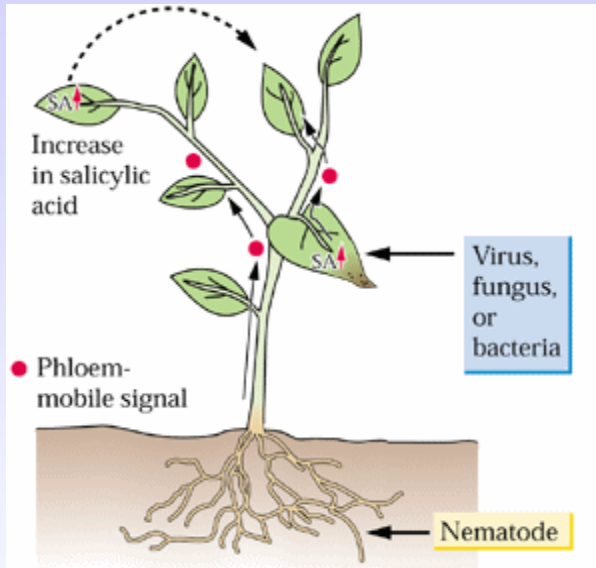
***GENETICALLY
ENGINEERED PLANTS
OVEREXPRESSING
PHYTOCHELATINS***

THE ROLE OF PLANT CELL WALL IN PLANT GROWTH AND IN THE INTERACTION WITH PATHOGENS

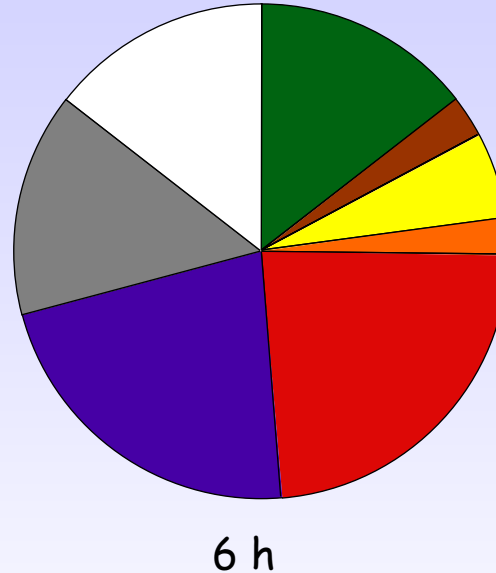


DEFENSE RESPONSES IN PLANTS

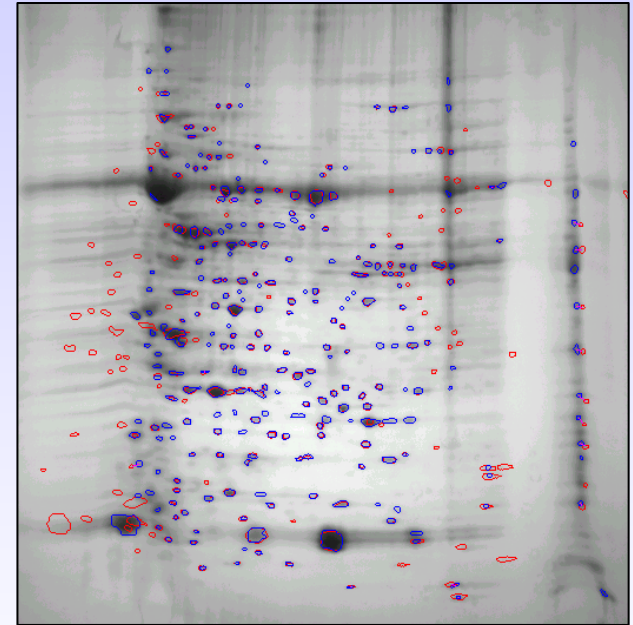
Stress



Genomics



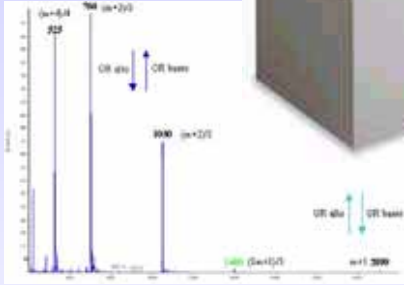
Proteomics



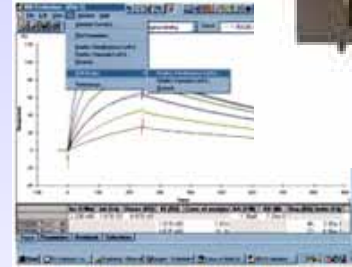
- Metabolism and transport
- Cell wall organization
- Cell biogenesis, trafficking, protein stability, cell cycle
- Signal transduction

- Transcription
- Defense, stress, redox status
- Secondary metabolism, hormone metabolism
- Other
- Unknown

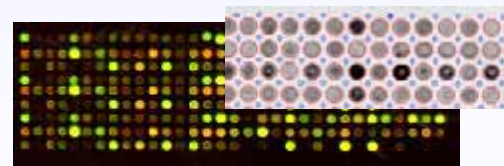
Facilities at the University of Rome “La Sapienza”



MALDI-ToF Mass Spectrometry

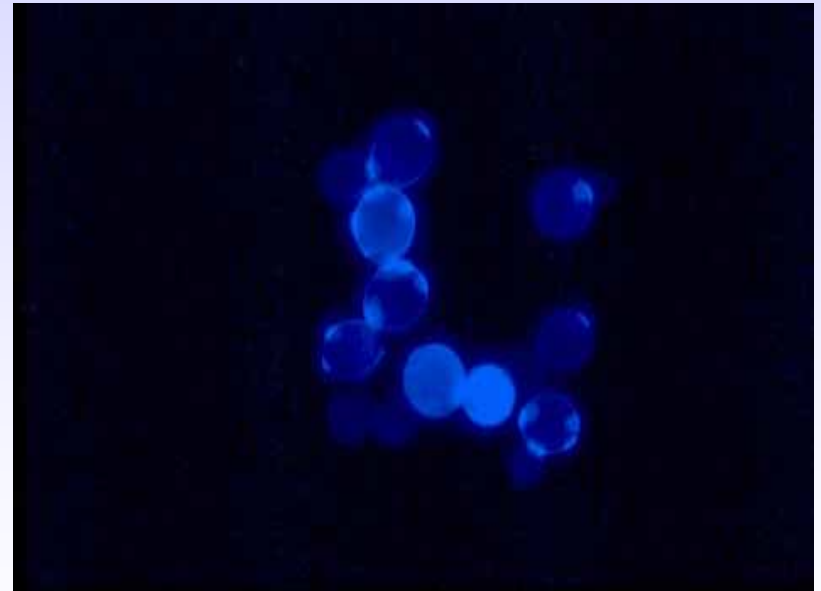


BiaCore X Biosensor



DNA arrays

MICROBIAL BIOTECHNOLOGY

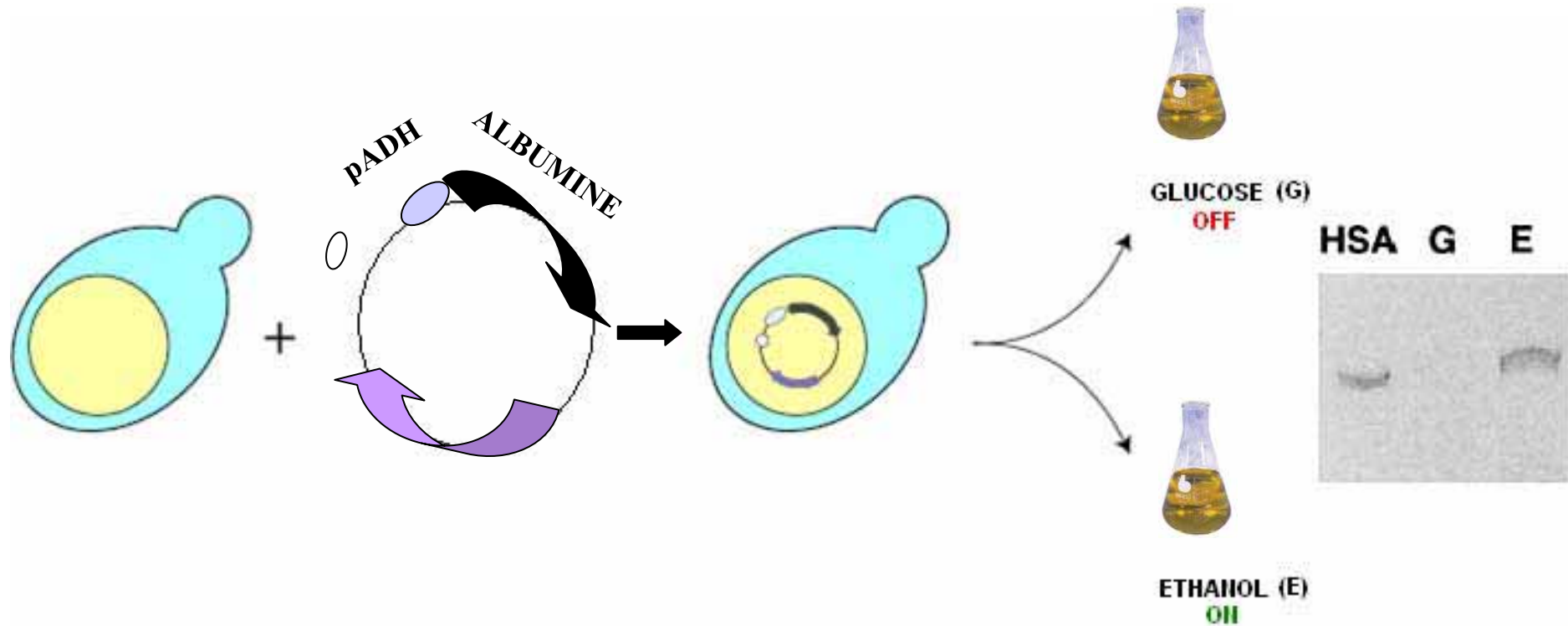


***S. CEREVISIAE* YEAST CELLS**

YEAST PROPERTIES

- Safe for humans, animals and environment
- Growth on simple substrates
- Anaerobic and aerobic metabolism
- Traditional use in food production
(wine, beer, bread, source of vitamins etc.)
- New uses in biotech production
(vaccines, hormones, nutrients, enzymes etc.)

PRODUCTION OF HUMAN SERUM ALBUMINE (HSA) IN YEAST CELLS

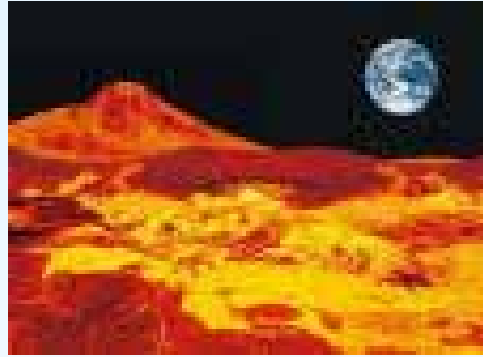
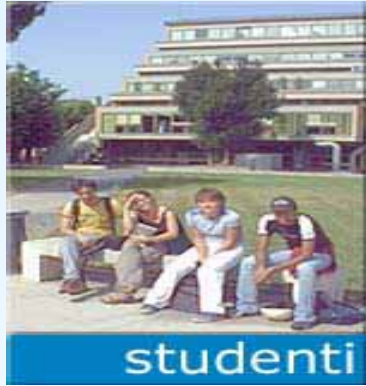


CO-PATENTED BY “La Sapienza” and Rhone Poulenc-France

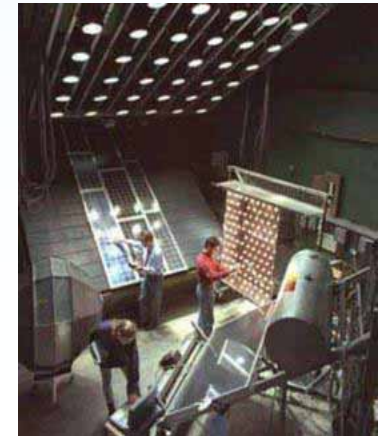
UNIVERSITY

THE GOAL !!

INDUSTRY



RED PLANET ...



... RED WINE !!