

Protein Technology Group

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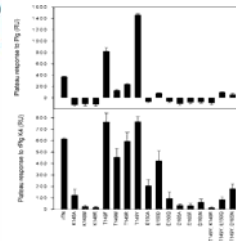
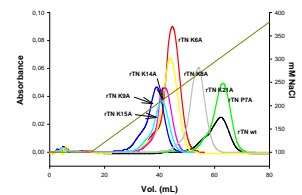
Introduction:

The Protein Technology Group is located at INCUBA Science Park and is comprised by one associate professor, one technician and a few project/master students. The group collaborates with other national and international research groups on providing protein solutions for biotech, molecular biology, and medical R&D.

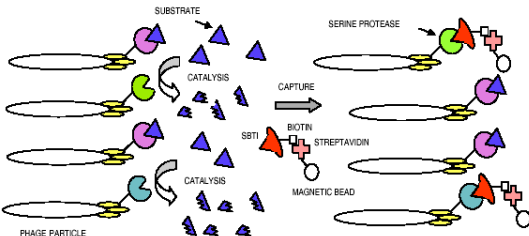
Group competences:

- Heterologous expression of recombinant proteins.
- Microbial expression (e.g. *Escherichia coli*, *Bacillus megaterium* and *Picchia pastoris*)
- Mammalian cell expression (adherent/non-adherent cells) – access to “wave bag” technology
- Rational protein engineering
 - Tag-technology
 - Fusion protein technology
 - Mutagenesis
 - Structure/Function analysis

Heterologous expression, Purification and analysis

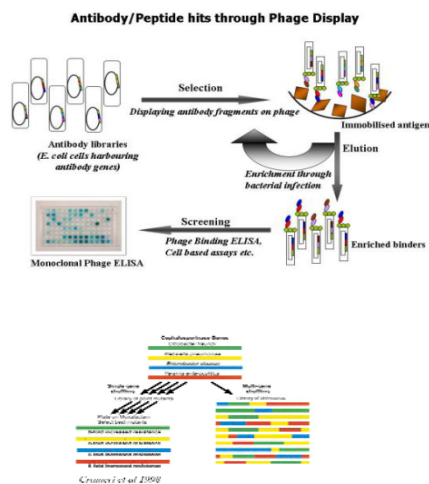


Selecting for new protease activity:



- “Stochastic” protein engineering – directed evolution strategies
 - Large ($>10^{10}$) grafted and linear phage peptide libraries
 - Error prone PCR based library tech
 - Enzyme shuffling tech
 - Selection/screening tech & experience

Phage display and gene shuffling:



Projects (ongoing, planned and ideas):

- ✓ Heterologous expression in *E.coli* of human lactadherin derivatives and human NP-C2 protein
- ✓ Fatty acid and wax ester production in *E. coli* by gene manipulations and metabolic modulation
- ✓ Heterologous expression of biosurfactants
- ✓ New metal dependent hydrolase activities based on large shuffled and error prone PCR libraries
- ✓ Modulation of signal transduction by peptides selected from large peptide libraries
- ✓ Structural analysis of recombinant proteins from the projects mentioned