Protein Expression and Purification Core Facility

Platforms

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Activity

The Protein Production and Purification Facility is a core service and resource to overcome the major bottleneck in recombinant protein expression and purification. Mainly we provide advice and active support for researchers scientific community in the use of the procaryotic and eukaryotic expression system for recombinant protein production.

The facility offers equipment and materials required for the expression of protein in bacterial, Yeast, insect (baculovirus) and mammalian cell. We can execute the complete cloning, expression, scale-up and purification process or specific tasks within the project.

We have optimized different expressions vectors in combination with various bacterial strains, yeast strain, insect strain and mammalian cell for specific expression of different types of proteins.
Mission

The Protein Expression Facility is a fee-for platform dedicated to providing technical assistance in the following areas:

- Advices and training
- Recombinant DNA engineering
- Recombinant protein expression in bacteria and yeast
- Recombinant protein expression via baculovirus expression systems (BVES)
- Recombinant protein expression in Mammalian cells
- Protein purification
- Polyclonals antibodies production
The Recombinant Protein Facility

- The facility offers equipment and materiels required for the expression of protein in bacterial, Yeast, insect (baculovirus) and mammalian cell. The facility have systems and tools to analyze and purify proteins.

Available:

- Bacteria strains
- Yeasts strains
- Insect cells / bacculo
- Mammalian cells
- Fermenter 2L
- Refrigerated cell disruption
- Spinner 1L
Services

The platform possesses expertise to produce and to purify any type of protein. For each project we used the following flowchart:

- Primer design and expression vector cloning
- Strains development
- Expression screening
- Production and purification

Other Services

- Preparation and distribution of recombinant expression vector
- New Vector development to provide state-of-the-art expression technologies
- Maintenance of frozen stocks of recombinant baculovirus
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- Protein purification technology development
- Development of recombinant protein and molecular biology enzymes catalogue

![Polyclonals and Monoclonals Antibodies production](image)

**Equipments**

- Fermenter for cell culture and protein production
- Chromatography system: for protein purification
- Cell Disruption: proteins extraction
- Insect cell culture for protein production
- Hybridoma system production
- Akta flux for sample concentration

**Network and collaboration**

P4EU: (Protein Production and Purification Partnership in Europe) network initiative
Collaboration with Recombinant Platform facility of Institut Pasteur

**Training**

The facility functions as a training centre for students and scientists in gene cloning and Recombinant protein production.

**Key publications**

**Year of publication 2016**

Catharina von Nicolai, Åsa Ehlén, Charlotte Martin, Xiaodong Zhang, Aura Carreira (2016 Sep 15) *A second DNA binding site in human BRCA2 promotes homologous recombination.* *Nature communications*: 12813 : [DOI: 10.1038/ncomms12813](http://dx.doi.org/10.1038/ncomms12813)

**Year of publication 2015**


**Year of publication 2014**

Laura Picas, Julien Viaud, Kristine Schauer, Stefano Vanni, Karim Hnia, Vincent Fraisier, Aurélien Roux, Patricia Bassereau, Frédérique Gaits-Iacovoni, Bernard Payrastre, Jocelyn Laporte, Jean-Baptiste Manneville, Bruno Goud (2014 Dec 9) *BIN1/M-Amphiphysin2 induces clustering of phosphoinositides to recruit its downstream partner dynamin* *Nature Communications*: 5 : [DOI: 10.1038/ncomms6647](http://dx.doi.org/10.1038/ncomms6647)

Xavier Lahaye, Takeshi Satoh, Matteo Gentili, Silvia Cerboni, Cécile Conrad, Ilse Hurbain, Ahmed El Marjou, Christine Lacabaratz, Jean-Daniel Lelièvre, Nicolas Manel (2013 Sep 6)

**The capsids of HIV-1 and HIV-2 determine immune detection of the viral cDNA by the innate sensor cGAS in dendritic cells.**


**An improved strategy for easy process monitoring and advanced purification of recombinant proteins.**