BIO-671 **Practical - Meylan Lab**

Meylan Etienne

| Cursus | Sem. | Type |
|---|---|---|
| Molecular Life Sciences | | Obl. |

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|---|---|
| Language of teaching | English |
| Credits | 1 |
| Session | |
| Exam | Oral |
| Workload | 30h |
| **Hours** | **24** |
| Courses | 3 |
| Exercises | 3 |
| TP | 18 |
| **Number of positions** | **4** |

## Frequency

Every year

## Remark

3-day Block course, every year in January. To register, contact EDMS Administration

## Summary

To comprehend the function of several signaling pathways during lung tumor development, to become familiar with some techniques to detect and manipulate pathway activities, to make a critical analysis of primary research papers in the field of lung tumor biology, to learn about the recent developme

## Content

The objectives are:
1- To comprehend the function of several signaling pathways during lung tumor development.
2- To become familiar with some techniques to detect and manipulate pathway activities.
3- To make a critical analysis of primary research papers in the field of lung tumor biology.
4- To learn about the recent developments and uses of genetically-engineered mouse models of lung cancer.
5- To perform analyses of lung tumor volumes from micro-computed tomography.
Theoretical part:
- Lecture and discussion on a selection of signaling pathways that contribute to the progression of lung cancer.
- Discussion and critical analysis of primary research publications.

Practical:
- Preparation of human lung tumor cell lines, transient transfection to modulate a selected pathway. Cell harvesting, followed by pathway activity measurement using real-time PCR, luciferase assay or Western blotting.
- Site-directed mutagenesis to create mutant cDNA.
- Lung tumor growth monitoring by micro-computed tomography.
- Immunohistochemistry from lung tumor sections.

## Keywords

Lung cancer, mouse models of cancer, signaling pathways.

## Learning Prerequisites

### Recommended courses

None

## Resources

### Websites

- http://meylan-lab.epfl.ch/