

Assay development in high throughput screening - 2 ECTS

The course gives a practical basis for assay development in high throughput screening. The course is given as complement to the theoretical on-line course "Introduction to high throughput screening". Passed examination of the theoretical course is a prerequisite for taking the practical.

Venue: Laboratories for Chemical Biology Umeå (LCBU), Umeå University, Umeå

Date: February 5-9, 2018

Register before: 2018-01-21

Responsible department: Department of Chemistry, Umeå University

Level: Advanced.

Content

The course gives a practical basis for assay development in high throughput screening and is given as a practical complement to the course "Introduction to high throughput screening". High throughput screening (HTS) is a technique used to identify biologically active small organic molecules through screening of compound libraries with the help of robust test systems and advanced instrumentation. The course includes several aspects of assay development applicable to both target-based and cell-based assays, however, the focus will be on cell-based assays. The assay carried out in the course includes cell culturing and bacterial infection, thus experience in cell culturing and good microbial lab practice is required. Parameters of importance for optimization of a cell based assay will be tested empirically in the laboratory and their significance calculated using Z' . During the course a small-scale screen will be executed. The students will thereby be given knowledge about the importance of good screening logistics and gain insight into the amount of data generated and handling thereof. During the course the students will be introduced to instrumentation commonly used in high throughput screening such as liquid handling instrumentation, plate readers and high content screening microscope.

Expected study results

After completion of the course students shall be able to:

- ✓ understand the important parts of optimization of a cell-based assay
- ✓ calculate Z' during assay development
- ✓ understand the importance of good screening logistics
- ✓ understand the amount of data generated and handling thereof
- ✓ understand the importance of secondary screens

The students will obtain hands on experience on instrumentation commonly used in HTS.

Prerequisites:

- ✓ Passed exam of the theoretical course "Introduction to high throughput screening" (2 ECTS)
- ✓ Practical experience in cell culturing and good microbial practice
- ✓ Bachelor degree (120 ECTS) in chemistry, molecular biology, pharmacology or equivalent.
- ✓ English knowledge corresponding to the Swedish upper secondary education English B.

Course format:

The course will be given during one week at Laboratories for Chemical Biology Umeå (LCBU), Umeå Universitet, Umeå, Sweden. The course is practical with explanatory lectures. Everyone should bring their own laptop and laboratory coat.

Examination:

The course will end with a mandatory oral presentation.

Registration: Before 2018-01-21

Send an e-mail to [Stina Berglund](mailto:stina.berglund@umu.se) to register for the course.

The number of participants will be limited and you will be asked to submit a letter with a motivation for taking this course after registering.

Contact:

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