

# Fast Trak™ training and education

DEV2



## Downstream bioprocess development

Duration: 5 days

### Course description

This hands-on course covers advanced downstream processing design, optimization, and troubleshooting of chromatographic processes. The training is geared towards strategic thinking. The focus is on design and optimization of critical operating parameters involved in developing a scalable, economic, and robust chromatographic process. Related topics covered include process hygiene, column maintenance routines, and scale-up issues. You will develop a three-step chromatographic process. You will also optimize the process for purity, recovery, and productivity suitable for manufacturing scale.

- How strategic thinking, optimal choice, and development of chromatographic techniques secure a highly productive and economical process
- Key issues in process development
- Practicals: development of a scalable process for purification of  $\alpha$ -glucosidase from cell homogenate of *S. cerevisiae*

### Who should attend?

- R&D scientists and process development engineers with a basic knowledge of chromatographic techniques used in biopharmaceutical processes
- Scientists and engineers interested in deepening their knowledge about design, optimization, and troubleshooting of chromatographic processes

### After the course, you will be able to:

- Identify critical issues in designing a scalable chromatographic process
- Evaluate chromatographic resins and combinations of techniques suitable for industrial purification and scale-up
- Understand optimization strategies for maximizing process performance

### Topics covered

- Adsorption chromatography
- Design issues in downstream processing
- Method optimization
- Resin cleaning
- Scale-up with calculations
- Development of a scalable three-step purification process:
  - Optimization of selectivity/binding, elution, capture, intermediate, and polishing steps
  - Optimization of load dynamic breakthrough capacity
  - Scale-up and verification
  - Different elution strategies
  - Resin screening
  - Harvest culture

## 2022 pricing

Fast Trak™ Center	List Price	Product Code
USA, Marlborough	4428 USD	29031038
Sweden, Uppsala	3740 EUR	29030917
India, Bangalore	Contact us	29099330
Korea, Songdo*	3 150 000 KRW	29244578
China, Shanghai	21 776 CNY	29012010
Singapore	3303 SGD	29012139
Japan, Tokyo†	106 800 JPY	28904066

\* Abbreviated course, please ask your regional contact for information

† Abbreviated course, combined with DEV1

## General course information

Fast Trak™ Education is one means by which Cytiva provides application training in the various aspects of bioprocessing. The courses are designed to provide a learning experience for process development and manufacturing staff.

Fast Trak™ offers training courses on column packing, basic chromatography, optimization and scale-up for both pilot and production scales. We also offer courses on validation issues and chromatography theory. The courses are offered in a variety of formats to meet your unique learning needs, including lab-based courses, live virtual classes, self-paced e-learning courses, and custom courses that can be delivered at your premises.

### Cancellation policy

In case you need to cancel your registration, the following charges will apply:

- 30 to 21 days prior to course: 50% of course fee
- 20 to 8 days prior to course: 80% of course fee
- 7 days or less prior to course: 100% of course fee

If you are unable to attend after registered, you may send a colleague in your place or attend another course.

Cytiva reserves the right to modify course location, course material, substitute speakers, or to cancel the course. If the course is cancelled, registrants will be notified as soon as possible and will receive a full refund of paid fees. Cytiva will not be responsible for airfare penalties or other costs incurred due to a course cancellation.

### Course certificate

Upon completion of the course, each participant receives a course certificate in which course name and course date is stated.

### Course evaluation

At the end of each course, you will be asked to fill in a course evaluation form. We value your opinion of the course, the speakers, the material, and presentations and use this feedback to continuously improve the courses and their contents.

## **Travel and hotel costs**

Travel and hotel costs are not included in the course price.

## **Language**

Standard courses are held in English at Fast Trak™ Centers in USA, Sweden, India, Singapore and Korea, unless otherwise specified. In China, most courses are in Mandarin with occasional courses in English. The courses in Germany are held in German and English, and courses in Japan are held in Japanese. Customized courses can be presented in other languages. Please contact your local Fast Trak™ center for more information.

## **Lunches**

All lunches during course days are included in the course prices.

## **Material in binders**

Each course participant will receive the lectures and other relevant material in a binder.

## **Requirements for safety level S1 (L1) laboratories**

Every course participant who enters our laboratories for the practical sessions must comply with certain safety requirements. Please notice that open-toe shoes are not allowed in the lab. Obligatory protective clothing and safety devices will be provided.

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