

# Fast Trak™ training and education

DEV2



## 바이오의약품 정제공정 개발을 위한 심화 과정

기간: 4일

### 코스 소개

Fast Trak DEV2 코스에서는 크로마토그래피 공정의 설계, 최적화 및 공정개발 중 발생하는 문제에 대한 해결방법의 학습과 논의가 진행되며, 또한 공정 개발에 필수적인 주요공정변수의 최적화를 이해하고 어떻게 높은 생산성, 경제성을 확보해 스케일업 가능한 공정을 디자인하는지에 중점을 둡니다. 실습을 통해 *S. Cerevisiae*의 배양액으로부터  $\alpha$ -Glucosidase의 정제를 진행하며, 목표에 적합한 수율 및 순도 달성을 위해 3단계 크로마토그래피 공정을 디자인하고 최적화 합니다. 또한 공정의 위생관리와 컬럼의 유지 보수 방법에 대해서도 배우실 수 있습니다.

- 정제 공정 설계, 최적화 및 문제 해결 방법의 학습을 통한 공정개발역량강화
- 크로마토그래피 공정 개발을 하고자 하는 고객을 위해 현업에 적용가능한 보다 깊이 있는 이론과 실습 제공

### 코스 일정

- 날짜: 2023년 03월 21일 - 24일 / 2024년 11월 19 - 22일
- 장소: Cytiva APAC Fast Trak 센터
- 주소: 인천광역시 연수구 송도미래로 9 BRC 2동 2층
- 식사: 점심식사 제공

### 수강 대상

- 정제 공정 개발에 대한 기본 지식을 갖추고자 하는 인력
- 크로마토그래피 공정의 설계, 최적화 및 문제 해결에 대한 지식을 심화하려는 연구원 및 엔지니어

### 등록 방법

APAC Fast Trak 웹사이트([bit.ly/fasttrak-kor](https://bit.ly/fasttrak-kor))를 통해 직접등록 또는 Cytiva 카카오톡채널을 통해 연락주시기 바랍니다.

### 코스 금액 (2024년 기준)

Fast Trak Center	List Price	Product Code
Korea, Songdo	4,753,000 (KRW)	29244578

### 강의 내용

- 전략적 사고를 통한 스케일업 가능한 최적의 크로마토그래피 공정 설계
- 크로마토그래피 공정 개발의 주요공정변수 이해 및 스케일업 이슈 해결
- 크로마토그래피 공정 중 위생관리 및 컬럼 유지 보수 방법에 대한 전반적 이해



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## Downstream bioprocess development

Duration: 4 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

## 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.

There are hands-on training courses on column packing, basic chromatography, optimization and scale-up for both pilot and production scales. Courses on validation issues and chromatography theory are also given. The courses are run at our regional Fast Trak centers or customized 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, Turkey, 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 courses in Japan are held in Japanese. Customized courses can be presented in other languages. Please contact the 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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