Training Courses 2025

HPLC | LC-MS | GC | SAMPLE PREP | OLIGOS | PEPTIDE | BIOCHROMATOGRAPHY | QC

UK

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Introduction to **HPLC**

Course no. SS0-9377

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Course summary:

Learn how to set up and run HPLC analysis with a full understanding of all the chromatography theory and method parameters, such as the column, the mobile phase, the instrumentation, and sample preparation.

A practical section reporting a detailed discussion about measurement, method and case study is also included.

This course is ideal for those who are new to HPLC.

Course outline:

Instrumentation:

- Full system, pump, injector
- Column and column heater
- Detectors overview

Theory:

- Chromatography theory
- Separation modes
- Columns and stationary phases
- Mobile phase

Practical Section:

- Measurements
- Methods
- Real case study

Practical skills acquired

This course will enable you to implement HPLC analytical methods by a detailed description of HPLC parameters. In addition you will be able to:

1. Understand what is meant by all the parameters in an HPLC analytical method.
2. Follow an HPLC analytical method to set up an HPLC system for analysis.
3. Run an HPLC analytical method and acquire chromatographic results.
4. Interpret chromatograms obtained from HPLC analysis.

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HPLC Method Development

Course no. SS0-9378

Course summary:

Learn how to select appropriate method conditions to obtain a set of method parameters which enables the desired separation for mixtures of analytes.

This course is ideal for those who have experience running HPLC methods and now want to learn how to develop new methods.

Course outline:

From Analyte to Column Choice:

- Analyte chemical properties
- Column dimension
- Stationary phase selectivities and interaction
- Special phases (High pH stable column, Polymeric and Polar-modified column)

From Mobile Phase to Gradient Slope:

- Choice of organic solvent to maximise selectivity
- Gradient slope
- Flow rate, temperature, connections, injection program and sample diluent
- Walk through case examples

Practical skills acquired

This course will enable you to take a strategic approach to method development with an understanding of the key chromatographic factors. In addition you will be able to:

1. Link the chemical properties of the analytes to the key chromatographic parameters to successfully develop an HPLC analytical method.
2. Select the best column dimension and stationary phase to fully resolve your mixture.
3. Select suitable scouting conditions to find a suitable column and mobile phase system.
4. Select and prepare a suitable sample or samples to be used for the method development.
5. Optimise the chromatographic conditions to result in the best possible separation.

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Troubleshoot **HPLC:** Identifying, Solving and Avoiding Problems

[3

Course no. SS0-9379

Course summary

Learn how to find solutions to problems encountered when running HPLC analysis by diagnosing symptoms and implementing appropriate preventative measures.

This course is ideal for those who have experience using HPLC and now want to develop their skills further.

Course outline:

Problem Solving Strategy:

- Leaks
- Variable retention times
- Quantitation and data quality
- Baseline
- System effects

General Chromatographic Problems:

- Assessing the symptoms
- Making the diagnosis
- Finding the appropriate solution
- System problem, preventive maintenance and column care

Peaks Problems:

- Fronting and tailing
- Peak split
- Negative and ghost peaks
- Real case study

Practical skills acquired

This course will enable you to go back to your lab with a full understanding of why problems may arise with your HPLC system and give you the skills and knowledge to both prevent and resolve those problems. In addition you will be able to:

1. Approach and follow the general steps on HPLC troubleshooting.
2. Troubleshoot general chromatographic problems, including pressure, leaks, variable retention times, quantitation, data quality and baseline issues.
3. Identify the most common peak issues and the possible causes.
4. Clean/regenerate the HPLC column.

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An Introduction to LC-MS

Course no. SS0-9360

Course summary:

This course is ideal for those experienced with HPLC who are looking to move to LC-MS.

Course outline:

Part I. Introduction to Mass Spectrometry:

This module will introduce and develop new practitioners by delivering an understanding of basic mechanisms associated with LC-MS. As well as discussing mass spectrometry fundamentals, the material will then go on to examine the most commonly applied LC-MS techniques and the principles behind them:

- Mass spectrometry definition
  - Overview of the key definition in mass spectrometry; mass accuracy and resolution, nominal versus accurate mass and isotopic pattern identification
- Atmospheric pressure ionisation theory
  - Desolvation
  - Electrospray Ionisation (ESI)
  - Atmospheric Chemical Ionisation (APCI)
- Mass analyser: benefits, limitations and general usage
  - Quadrupole
  - Ion trap
  - Time of flight
  - Orbitrap
- Mass spectrometry workflow
  - Acquisition procedures
  - Qualitative and quantitative approach
  - Case studies

Part II. Liquid Chromatography for Mass Spectrometry:

- What is the role of the LC column in LC-MS?
- Why is it even necessary?
- Basics of LC theory
- Review of the different LC media/support particles
- Mobile phases and buffer choice for LC-MS
- Common contaminants with MS

Practical skills acquired

Attendees will learn the basics of LC-MS allowing them to select suitable columns and mobile phases for screening. They will learn about quadrupoles and time of flight mass analysers together with how to understand the data output.

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The Gas Chromatographers' Training Seminar

Course no. SS0-7292

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Course summary:

This course is ideal for both scientists new to gas chromatography and chromatographers with experience of running GC methods but looking to develop new methods.

Course outline:

Part I: Fundamentals, Columns Selectivity and Injection Techniques

- GC concepts and fundamentals - retention time, efficiency, capacity factor, selectivity and how this influences resolution
- GC / phase selection - how to improve your analytical method by choosing the correct selectivity, including examples and case studies
- Inlets, detectors and injection types
- How to choose the correct accessories for a GC method: liners, septa, ferrule

Part II: Troubleshooting and Method Development

- Troubleshooting - going through procedure, examples and case studies
- Method development and optimisation, how to start a method and how to optimise an existing one, with examples and case studies

Practical skills acquired

This course will enable you to implement GC analytical methods by transferring the parameters from the method to your GC or GC-MS system. In addition you will be able to:

1. Understand what is meant by all the parameters in an GC analytical method.
2. Optimise a GC or GC-MS analytical method, choosing the right column phase and dimensions and the right accessories.
3. Interpret chromatograms obtained from GC analysis and fix most common issues (basic troubleshooting).
4. Understand the basics of GC method development and optimisation.

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Sample Preparation Seminar

Course no. SS0-9233

Course summary:

In this seminar, we will introduce the goals and benefits of solid-phase extraction and show participants how to quickly and efficiently develop an SPE method. Several case studies with different analytes and matrixes will illustrate what you have learned in the theory parts, including practical optimisation tips.

Course outline:

Basics of SPE (Solid Phase Extraction)

- Comparison with liquid-liquid extraction
- Goals and SPE modalities
- The SPE method in practice

Method Development in SPE

- Selection of the retention mechanism
- Method optimisation, choice of suitable parameters
- Sorbent selectivity
- Introduction of modified polymer sorbents

Troubleshooting Tips

- Reasons for low recovery rates
- Procedures if cleanup is insufficient

Practical skills acquired

This course will enable you to:

1. Choose the right retention mechanism depending on your analytes.
2. Select the best sorbent and format.
3. Optimise your SPE methods.
4. Find a solution if problems occur.

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An Introduction to **Peptide Mapping**

Course no. SS0-9268

Course summary:

In this course we will discuss sample preparation and good practices that can impact the quality of your result from peptide mapping depending on your lab's analytical scope. The course will explore and present specific examples in sample preparation and chromatography.

Course outline:

Part 1: Peptide Overview

- Digestion of proteins
- Chromatographic selectivity
- Method development for peptide analysis

Part 2: Peptide Overview cont.

- PTM identification
- Sample preparation using MagBeads
- Analytical vs. nano flow

Part 3: Case Studies

- Signature peptides using MagBeads

Part 4: Good Laboratory Practices

Practical skills acquired

This course will enable you to find solutions to your peptide mapping challenges. In addition, you will be able to:

1. Drive a chromatographic optimisation for peptide mapping, including investigating differences in method parameters, designing effective gradient programs, column selection, selecting the best particle/phase selection, among others.
2. Recognise the most suitable acid modifier depending on the context of the analytical method.
3. Choose the correct chromatography conditions and selectivity to achieve the best peak capacity and largest number of peptide/protein identifications.

8]

Oligonucleotide Purification and Analysis: Method Development and Troubleshooting Strategies

Course no. SS0-9373

Course summary:

In this seminar we will discuss current chromatographic techniques being used as well as some of the challenges people have encountered with their oligonucleotide LC and LC-MS separations.

Course outline:

Part 1: Oligonucleotides

- A primer
- Analytical challenges

Part 2: Applications

- Mobile phases
- Column phases
- Sample preparation

Part 3: Method Development

- Flow rate
- Temperature
- Column selection

Part 4: Good Laboratory Practice

Practical skills acquired

As many organisations pivot towards developing oligonucleotide therapeutics, there is a widespread lack of knowledge in how to develop and optimise the various purification and analysis methods used to look at oligonucleotide therapeutics.

This course will provide you with the following practical knowledge:

1. Apply chromatography to oligo workflows.
2. Fundamentals of LC and SPE for oligos.
3. Mobile phase and column selection.
4. Oligo applications and method optimisation.

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An Introduction to **Biochromatography**

Course no. SS0-9380

Course summary:

In this basic seminar we provide a comprehensive overview of typical workflows and methods for the characterisation of proteins and peptides. We give valuable tips for sample preparation and discuss the most important optimisation parameters for chromatographic separations using size exclusion, ion exchange, reversed phase or HILIC chromatography.

Course outline

- Basics about peptides, proteins and antibodies
- Aggregate and fragment analysis of mAbs and other biologics using size exclusion chromatography
- Characterisation of antibody charge variants by ion exchange chromatography and optimisation of salt and pH gradients
- Use of widepore core-shell particles for the RP analysis of intact biologics and their subunits
- Improvement of resolution and peak shape in peptide mapping and peptide quantification
- Enzymatic digestion and reduction of proteins
- Sample preparation using magnetic beads
- Separation of released and labelled glycans using HILIC chromatography

Practical skills acquired

With the background knowledge gained, you should be able to develop and optimise a method for biologics faster and in a more targeted manner in the future by:

1. Minimising undesirable secondary interactions, problematic carryover and recovery problems through the use of biocompatible hardware components.
2. Expanding the experimental design space for different separation techniques and optimising key method parameters for both UV and MS detection.
3. Using the latest column technologies to adjust selectivity according to your separation goal.

10] Optimisation of **Pharmacopoeia Methods** in QC

Course no. SS0-9374

Course summary:

Validated methods ensure the quality of your analytical results, but often prevent the use of innovative column technologies. In this seminar, we will show you how to optimise QC methods within the scope of the allowed adjustments according to the European and US Pharmacopeia. We pay special attention to the conditions under which this is possible without a complete revalidation of the method.

Course outline:

- What should be considered when optimising validated methods
- Criteria for the system suitability test
- Selection of the right column for a monographic method
- Allowed adjustments of chromatographic conditions
- The new harmonisation between Ph. Eur. and USP
- Regulations for isocratic and gradient elution in HPLC
- Method optimisation through variation of particle size, particle morphology, column length, and flow rate
- Use of new column technologies for pharmacopeia methods
- Influence of the mobile phase on method robustness
- Various case studies to clarify and deepen the content
- Optimisation exercises and troubleshooting
- Special regulations for GC methods

Practical skills acquired

This course will enable you to use the allowed adjustments of pharmacopeias to:

1. Increase chromatographic efficiency and reduce runtimes.
2. Increase laboratory productivity and reduce costs.
3. Improve the quality of analytical results.
4. Fulfill the SST criteria more easily.
5. Troubleshoot non-robust QC methods.

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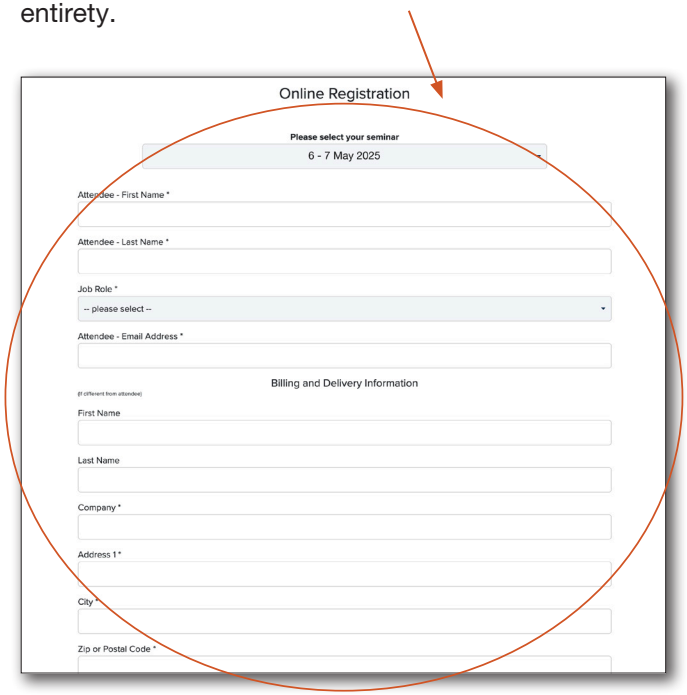
To Register

Our annual schedule of training courses is available online.

To sign up please visit **www.phenomenex.com/seminarsen** where you will find the dates of all our 2025 courses.

Once you click on the link to register onto a specific course, you will be directed to a page with more information and a form below, which you will need to fill out to register.

By clicking on “Register here” you will access the page relating to the course of interest. Please fill in the online form in its entirety.



Following your online registration you will be contacted by your technical sales consultant to finalise the registration. You will receive an email containing the link to participate in the course, as well as the link to download the presentation.

Information for Signing up to the Training Courses 2025

Part No.	Training Course Name	Date(s)	Location
SS0-9377	Introduction to HPLC	6-7 May 2025 or 29-30 September 2025	Online
SS0-9378	HPLC Method Development	22-23 May 2025 or 15-16 October 2025	Online
SS0-9379	Troubleshoot HPLC: Identifying, Solving and Avoiding Problems	1-2 July 2025 or 18-19 November 2025	Online
SS0-9360	An Introduction to LC-MS	18-19 June 2025 or 27-28 October 2025	Online
SS0-7292	The Gas Chromatographers' Training Seminar	24-25 November 2025	Online
SS0-9233	Sample Preparation Seminar	2-3 December 2025	Online
SS0-9268	An Introduction to Peptide Mapping	On-demand	Online
SS0-9373	Oligonucleotide Purification and Analysis: Method Development and Troubleshooting Strategies	On-demand	Online
SS0-9380	An Introduction to Biochromatography	On-demand	Online
SS0-9374	Optimisation of Pharmacopeia Methods in QC	15-16 September 2025	Online

Please note: the seminars take place in two half days (2 sessions of 4 hours each).

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Our Presenters

Lucia Geis Asteggiante, Ph.D.

Lucia is a Senior Technical Specialist who has recently joined Phenomenex's Global Technical Team. She has a broad experience in the field of Analytical Chemistry with a particular focus on LC chromatography coupled with mass spectrometry. Lucia comes from a strong academic and regulatory background with experiences ranging from method development and analysis of small molecules to large protein complexes. She gained her Ph.D. at the University of Maryland - College Park, USA and did her post-doctoral work at the University of Oxford, UK. During her time as a researcher, she has authored/co-authored 23 scientific publications and 2 book chapters.

Duilio Romanello

Duilio has been working with Phenomenex since 2008. Since 2010 he has been Product Specialist for the GC and SPE lines and then Account Manager for the South of Italy. Since November 2023 he has covered the role of Senior Technical Specialist. He has acquired experience in the Food and Environmental sectors by collaborating with important companies in the industry and providing technical support for the development of method optimisation, guidance on applications and troubleshooting, assistance in choosing columns for HPLC, gas chromatography (GC), SFC and SPE.

Genevieve Hodson

Genevieve graduated from the University of Texas with a BS in Chemistry located in her hometown of Austin Texas. She spent 2 years of her undergraduate degree performing research in an organic chemistry lab synthesising intermediates. Out of school she spent 4 years as an Analytical Chemist in the QC and R&D Department of Cerilliant (a Sigma Millipore Company). There she worked with many analytical instruments but became an expert at LC by performing purity analysis, customer specific methods, validations, QC testing and stability studies on a wide range of small molecules including pharmaceuticals, pesticides, explosives and illegal substances. From there she moved to Los Angeles California where she worked at Johnson and Johnson and then a small dietary supplement company. After Genevieve spent a year living abroad in Israel raising her first son, she moved back to LA where she got hired as a Technical Specialist at Phenomenex. At Phenomenex she enjoys continuing to learn about chromatography every day through helping customers with all their chromatography needs!

Our Presenters

Namrata Saxena

Namrata is the Technical Manager for the Asia-Pacific region in Phenomenex and is based in Sydney, Australia. As a member of the global technical team, she is responsible for assisting external customers as well as internal marketing and sales teams of Phenomenex for multifarious technical queries. She specifically supports the company's bio-products portfolio through external and internal seminars/ webinars, training and also contribute to biologics related technical content creation.

Before joining Phenomenex she worked as a Product Specialist and spent several years in stationary phase chemistry, column manufacturing and method development groups in a German company Bischoff Chromatography GmbH.

Namrata has a post graduate degree with specialising in Analytical Chemistry. Her competence and focus lies in biotherapeutics characterisation through liquid chromatography, antibodies and oligonucleotide chemistry, gene therapy and new bio-therapeutic modalities.

Grace Guo

Grace Guo graduated from the Johns Hopkins University with a Master's degree in Material Science and Engineering. She joined the Phenomenex Technical Team in 2017 providing technical support globally. With more than 9 years of experience in SPE, HPLC and GC, she has delivered 80+ seminars and webinars globally covering the food and environmental, clinical, pharma and biopharma industries.

Bernd Thierfelder, Ph.D.

Dr. Bernd Thierfelder received his doctorate from Saarland University in the field of pharmaceutical chemistry and completed his thesis in 2001. In the same year, he joined Phenomenex as a technical customer consultant and two years later took up the position of product specialist for Phenomenex sample preparation and LC products. Since then, he has been in charge of the ever-expanding product portfolio, which includes solid phase extraction, QuEChERS, HPLC columns etc. Particularly, in the field of solid phase extraction and LC, he has presented several seminars on the fundamentals and method development in recent years, as well as providing theoretical and practical application support for users of these analytical techniques.

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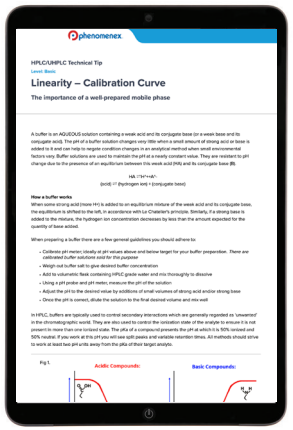

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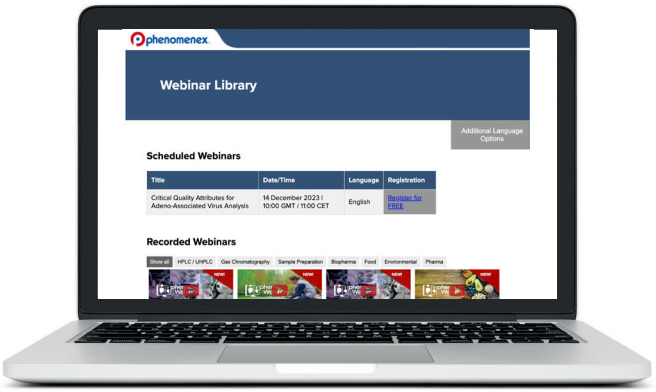
- Gas Chromatography
- Sample Preparation

Webinars



Receive notification of the latest technical and technique based webinars. Topics will cover a wide range of subjects, including:

- HPLC
- UHPLC
- Gas Chromatography
- Preparative Chromatography
- Chiral LC

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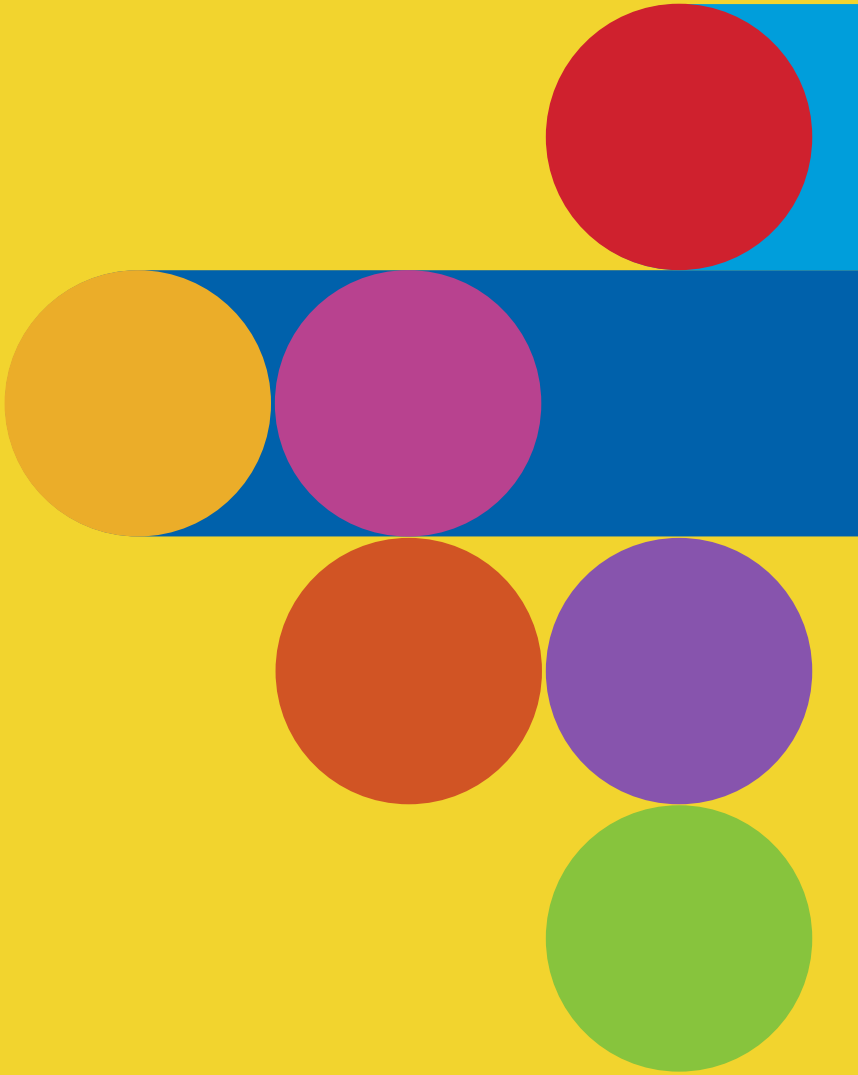

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