

M-Scan



Advanced Biopolymer Mass Spectrometry: Protein, Carbohydrate & Oligonucleotide Sequencing

A Two Day M-Scan Training Course MS03

M-Scan offer training courses which cater for the rapid growth and interest in mass spectrometry for investigation of a wide range of problems in chemistry, biochemistry, pharmacology, forensic and environmental analysis. The course "Advanced Biopolymer Mass Spectrometry: Protein, Carbohydrate & Oligonucleotide Sequencing" is designed for scientists who have experience of mass spectroscopy, or have attended the M-Scan Course: "An Introduction to Mass Spectrometry".

Course content

The technical content of the Course will deal firstly with an understanding of the different types of ionisation method and mass spectrometer best suited to the study of Biopolymer sequencing, and this includes an explanation of the concept of collision induced dissociation tandem MS/MS analysis. There is then a detailed discussion of how sequence data can be derived for the different classes of Biopolymer, peptides carbohydrates and oligonucleotides, including an explanation of chemical fragmentation mechanisms and how these can be interpreted to derive sequence. In the special cases of oligonucleotide and carbohydrate analysis, the benefits of combined enzymatic-MS approaches in the former, and chemical derivative analysis in the latter are discussed in detail. Additionally in the carbohydrate area, once sequence has been derived, methods for the assignment of sugar identity and linkage are described.

In addition to the formal lectures by experts in the field, the M-Scan Course is characterised by plenty of worked examples and tutorial problem classes, together with practical demonstrations of some of the most important techniques covered on the Course. The mass spectrometer used in the practical session will be a state-of-the-art **Q-TOF (quadrupole orthogonal acceleration time of flight) instrument**.

Course Notes and Language

Course notes will be provided which are a summary of the material presented plus other background information such as key references to enable the students to expand on matters of interest after the Course. These materials and all presentations will be in English.

Who should attend?

This course is designed for scientists who have experience of mass spectrometry and who wish to take advantage of MS/MS mass spectrometry for investigations involving protein, carbohydrate and oligonucleotide sequencing, either using in-house facilities or the services of a contract laboratory such as M-Scan. It will enable them to design experiments, choose appropriate techniques and interpret complex data.

Format/Programme

The programme will consist of lectures, discussion sessions, problem classes and practical demonstrations. The course will be limited to approximately 10 participants to ensure a good level of interaction. The programme for day 1 will be from 10.00 am to 6.00 pm with a course dinner in the evening. Day 2 will start at 9.00 am and finish at 4.00 pm to allow for convenient travel arrangements.

Course Directors

Staff at M-Scan are Mass Spectrometry Consultants and Analysts and have considerable experience of course design and delivery in Industry and Higher Education. Areas of special expertise in mass spectrometry include: protein, carbohydrate and oligonucleotide sequencing; proteomics/post-translational analysis; pharmacokinetics, determination of hydrocarbons and detergents in the environment; forensic science; and instrument design.

Two senior instructors, **Prof. Howard R. Morris** and **Dr. Andrew J. Reason**, will present the course with support from others in the company. Howard Morris has had an active research career of over 40 years in mass spectrometry, including aspects of instrumentation development and application to some of the most demanding structure-elucidation problems in chemistry and biology. He has published over 400 peer-reviewed papers in the research literature, in addition to book chapters and reviews. Andrew Reason has over 20 years experience in the field of mass spectrometry, initially in academic research and more recently heading-up the analysis and consulting activities of M-Scan Ltd.

Registration and Payment

Fee: £1500 Euros including teaching materials, lunches, Course Dinner, refreshments and transportation to and from local hotels. A 20% reduction is available for students and full-time staff on the payroll of academic institutions: fee of 1200 Euros excl. VAT (requires written confirmation of current status from Head of Department). Acceptance on the course is at the sole discretion of the Course Organiser and full payment must be received before a place can be guaranteed. Those wishing to register are asked to do so 5 weeks before the course starts.

Acknowledgement of Registration

Confirmation of registration and a VAT receipt will be sent to all participants. Attendance instructions will be sent prior to the course. If you have not received your acknowledgement seven days before the start of the course, please contact the Course Organiser, as below.

Cancellation and Substitution

Refunds will be made with a charge of 10% for cancellations made in writing at least 21 days prior to the start of the course. No refunds will be made after that date. In case of cancellation by M-Scan, a full refund will be available. If you are unable to attend, someone from the same organisation may take your place on the course, subject to notification and the approval of the Course Organiser at least 3 days in advance.