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Document Abstract

This deliverable is the final report of Short Course 6, an event organized and held within WP2 – NA-Training, education and networking activities.

The objective of WP2 is to promote education in the field of FT-ICR MS, sharing newly developed state-of-the-art procedures for experiments and data analysis and training qualified and highly skilled FT-ICR specialists. In addition, Short Course will include a number of social events creating a fruitful platform for beginning international collaborations.

This deliverable explains content and outcome of Short Course 6 (SC6) performed in the framework of the EU_FT-ICR_MS project.



Table of Contents

1. Introduction.....	5
2. Final report of SC6.....	6



1. Introduction

Short Course 6, entitled « Mapping post-translational modifications through FT-ICR », was originally planned to be held at the Faculdade de Ciências -Universidade de Lisboa, Lisbon (Portugal) on 11-13 March 2020 (M27). Due to COVID19 pandemic restrictions, SC6 has been postponed to M45 (Sept 2021) and then to M46 (17-20 Oct 2021) due to COVID19 pandemic restrictions.

The first and second announcement flyers are presented below in Figures 1 and 2, respectively:

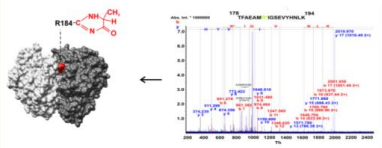
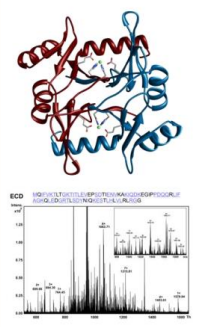


<p>EU FT-ICR MS 6th Short Course</p> <p><i>Mapping post-translational modifications through FT-ICR</i></p>	<p>Course overview</p> <p>This course will cover the analysis and mapping of protein post-translational modifications using FT-ICR mass spectrometry</p>  <p>Specific topics include:</p> <ul style="list-style-type: none"> Sample preparation Ionization Top-down MS Fragmentation methods Sequence analysis 	<p>Tutorial lectures Instrument demos Hands-on exercises Computational data analysis</p> <p>Faculty</p> <p>Carlos CORDEIRO Peter O'CONNOR Petr NOVAK Roman ZUBAREV</p> 
<p>Where and when</p> <p>LISBOA, 11 -13 March 2020</p> <p>Faculdade de Ciências Universidade de Lisboa, Portugal ciencias.ulisboa.pt</p>  <p>Contacts: Carlos Cordeiro cacordeiro@fc.ul.pt Marta Sousa Silva mfsilva@fc.ul.pt</p>	<p>NO PARTICIPATION FEE! Travel, accommodation, meals and social program included</p> <p>Up to 10 applicants will be selected by the Scientific Committee</p>	<p>Application: www.eu-fticr-ms.eu</p> <p>DEADLINE FOR APPLICATIONS: January 20th 2020</p>  <p>This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731077</p>


Figure 1. First flyer of SC6.



EU FT-ICR MS
6th Short Course

Mapping post-translational modifications through FT-ICR

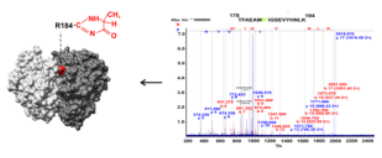
Where and when
LISBOA, 17 -20 October 2021
Faculdade de Ciências
Universidade de Lisboa, Portugal
ciencias.ulisboa.pt



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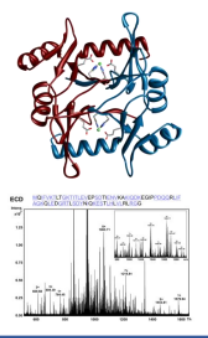
Course overview

This course will cover the analysis and mapping of protein post-translational modifications using FT-ICR mass spectrometry



Specific topics include:
Sample preparation
Ionization
Top-down MS
Fragmentation methods
Sequence analysis


Tutorial lectures
Instrument demos
Hands-on exercises
Computational data analysis



Faculty
Carlos CORDEIRO
Peter O'CONNOR
Petr NOVAK
Roman ZUBAREV

Application: www.eu-fticr-ms.eu

DEADLINE FOR APPLICATIONS:
October 4th 2021



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Figure 2. Second flyer of SC6.

2. Final report of SC6

SC6 was organized and held at Faculdade de Ciências, Universidade de Lisboa (FC-LISB), Lisboa (Portugal) on from 8 to 20 of October 2021 (M46). This course was focused on the analysis of post-translational modifications through FT-ICR, covering fundamentals of protein analysis by FT-ICR, sample preparation, ionization and fragmentation methods, PTM analysis and mapping. The sessions included tutorial lectures (in the morning), instrument demos, hands-on exercises, computer lab, and data analysis and interpretation using different software packages (in the afternoon), (Figure 3).

Tutorial lectures were held by Carlos Cordeiro (FCUL - Universidade de Lisboa), Petr Novak (Institute of Microbiology, BioCeV, Prague), Peter O'Connor (University of Warwick), Roman Zubarev (Karolinska Institutet, Stockholm), and the invited lecturer (remotely) Christopher Wootton (Bruker Daltonics). Instrument demos and hands-on exercises were done by Carlos Cordeiro



(Universidade de Lisboa) and Petr Novak (Institute of Microbiology, BioCeV, Prague), co-assisted by Marta Sousa Silva and Rodrigo Osawa, both from FCUL - Universidade de Lisboa.

	Monday 18 th October	Tuesday 19 th October	Wednesday 20 th October
09:30	Registration and presentation	2DMS	Beyond the limits of FT-ICR
10:00	FT-ICR: An introduction		
11:00	Morning Break	Morning Break	Morning Break
11:15	Sample preparation for protein MS	Protein mapping	The colours of extreme resolution MS
13:00	Lunch	Lunch	Farewell
14:00	Lab practice	Lab practice	
15:00			
16:00	Afternoon Break	Afternoon Break	
16:15	Lab practice	Data Analysis	
17:30	City Museum guided tour		
18:30	Welcome cocktail		

Figure 3. SC6 schedule.

Due to the COVID-19 pandemic, this course was organized in a combined mode of presential and remote access, being the presence limited to 12 students. Students that had been previously accepted in the course to take place in 2020 were contacted and were given priority in the new registration process. Theoretical tutorial lectures were accessible to all students (in the morning) and hand-on MS analysis only delivered presential (in the afternoon).

The course had 12 on-site participants (with a M/F ratio of 6/6) and 10 remote attendees (M/F ratio of 5/5), all of them with experience in mass-spectrometry and some with experience in FT-ICR-MS. Participants (presential and remote) came from 8 different European countries: Belgium, Czech Republic, Italy, Poland, Portugal, France, UK and Romania. Concerning their position, 32% of the participants were University Researchers or Professors (with PhD degree), 16% were Post-doc Researchers, 16% were Researchers (with MSc degree), 21% PhD students and 16% MSc students.

All participants expressed their satisfaction and considered the event useful for their future.

The lectures and hands on presentations were made available for public download on the open project website <https://www.eu-fticr-ms.eu/>.