



Training on Nuclear Magnetic Resonance and High Resolution Mass Spectrometry

INFORMATION DOCUMENT, INSTRUCTIONS AND REGISTRATION FORMS
FOR PARTICIPANTS NOT MEMBER OF THE CLEN

The European Commission's Joint Research Centre (JRC) and DG TAXUD will organise a training in nuclear magnetic resonance and high resolution mass spectrometry.

The training is organized in the frame of the programme Customs2020.

Venue:

- at the **Hotel Splendid, Via Sempione 12, 28831 Baveno (VB), Italy;**
- on **12, 13 and 14 November 2019;**
- starting at **09.00** on 12 November and ending no later than **17:00** on 14 November;
- in English;

Background and objectives:

Customs officials are the first ones coming in contact with new synthetic drugs when these arrive at the borders. Their role is of fundamental importance not only from an economic point of view, but also in the interest of public health and the protection and safety of EU citizens.

The advanced analytical techniques of nuclear magnetic resonance (NMR) and high resolution mass spectrometry (HR-MS) are required for the proper identification of new synthetic drugs and other products encountered on the illicit market (doping substances, diverted or adulterated medicines etc...).

The programme of the three days will focus on the interpretation of NMR and HR-MS data. The objective is also to strengthen the sharing of knowledge and best practices among the [Customs Laboratories European Network \(CLEN\)](#) and other networks such as the Drug Working Group of the [European Network of Forensic Science Institutes \(ENFSI\)](#) and the [General European Official Medicines Control Laboratories \(OMCL\) Network \(GEON\)](#).

CLEN Customs chemists are invited to join this training in the frame of the programme Customs2020.

The training will also be open to scientists from other organisations and networks interested in these analytical techniques.

General instructions for registration:

Could you please confirm your participation by filling in the attached registration form and returning it to Claude.GUILLOU@ec.europa.eu and CLEN-TAS@eurofins.com, copy to Nadia.Cancila@adm.gov.it by **18 October 2019** at the latest.

You also need to register for the meeting via the AGM platform, using the link in the notification you received by e-mail. Detailed information about the AGM tool is available at: <https://ec.europa.eu/tools/agm/en/node/1>. Your reimbursement will also be handled via the platform, therefore we kindly invite you to carefully read the information material made available.

Transportation from your point of arrival to the venue will be arranged on the basis of the information of the travel plans recorded by the participants. Please register your data and travel plan in the web-based "**JRC Events Registration System**" at <https://web.jrc.ec.europa.eu/remjrc/screen/meeting/2448/registration-form> selecting the meeting "CLEN Workshop: Training on NMR and HR-MS 12-14 November 2019". Please contact Mrs Rosemary THOMPSON (Rosemary.Thompson@ec.europa.eu) in case assistance is required.

For any other information, please contact Mr Claude Guillou, Claude.GUILLOU@ec.europa.eu .

- Annex I – draft agenda
- Annex II – practical information
- Annex III – registration form
- Annex IV – hotel booking form
- Annex V– Privacy statement

IMPORTANT NOTES:

Information about the main topics of interest for this training was collected through the EU Survey “Training on NMR and HR Mass Spectrometry, 12-14 November 2019”.

Several customs laboratories are already equipped with NMR or HR-MS. The training aims at strengthening the skills of Customs Chemists operating in these laboratories as well as encouraging the sharing of expertise.

However the training is not at all restricted to Customs Chemists having experience in these techniques. Newcomers to these analytical techniques are strongly encouraged to attend this training as they are becoming increasingly important, as well as more affordable (e.g. through the recent development and availability of low field benchtop NMR instruments), for applications of high interests for Customs controls.

The training is primarily about dissemination of knowledge and interpretation of analytical data rather than technical skills for operating analytical instrumentation.

It will enable Customs Chemists to perform the interpretation of NMR and HR-MS data on their samples, which may have been obtained in other laboratories (e.g. in a Customs laboratory from another EU Member State through the CLET action or in the JRC through the project CLEN2SAND).

An important objective is also to prepare Customs laboratories in possible future acquisition of new NMR and HR-MS instrumentation. Good knowledge in the possibilities and also the limitations of these techniques should help Customs chemists to take suitable decisions regarding technical requirements for such new equipment in their laboratories.

Subject/Title	CLEN - Training on Nuclear Magnetic Resonance and High Resolution Mass Spectrometry
Date and duration	12, 13 and 14 November 2019 (3 days) Starting at 9.00 on 12/11 and ending no later than 17.00 on 14/11
City (Country Code)	Baveno (IT)
Address	Hotel Splendid, Via Sempione 12 28831 Baveno (VB), Italy

Background	<p>This training session is relevant to the Action 5 ‘Scientific Expertise’ of the Customs Laboratories European Network (CLEN) and to the CLEN Project Group on designer drugs and other illicit products (CPG/004). It was first suggested as a possible event to be coordinated by the JRC, during the two last (20th and 21st) CLEN Plenary Meetings held in February 2018 and on 13 February 2019 respectively. The proposed training session is considered as a tool for tackling the difficulties encountered by the European Customs Laboratories in identifying new synthetic drugs and, more broadly, various kinds of organic chemical substances (biocides, pharmaceuticals, etc...). Correct identification and classification would lead to collecting in a harmonized way the customs duties (duty free for real pharmaceuticals) and to implementing uniformly various EU policies such as consumer protection and the recent EU legislative frame on New Psychoactive Substances (Regulation (EU) 2017/2101 and Directive (EU) 2017/2103 of the EU Parliament and the Council in force as of 23 November 2018).</p>
Objectives and methodology	<p>The main objectives are:</p> <ul style="list-style-type: none"> ▪ To inform the Customs Laboratories on the available NMR and HR-MS related methods for the analyses of organic chemical substances, share knowledge and practices. ▪ To harmonise the sharing of analytical data and knowledge at European level for Customs purposes. <p>The activities will include:</p> <ul style="list-style-type: none"> ▪ Theoretical presentations on NMR and HR-MS equipment and techniques. ▪ Practical training in small groups on interpretation of NMR and HR-MS on real-case examples, with integration of data from both techniques. ▪ Demonstration of IT tools enabling electronic management, sharing of analytical data and helping interpretation of data from both techniques. <p>The training will not necessarily require the participants to have prior experience on NMR and HR-MS instruments. The objective will rather be to focus on interpretation of analytical data from these techniques allowing the participants to manage and integrate information from spectra that could be measured on their samples in another laboratory equipped with such instrumentation (e.g. another Customs lab, or in the JRC).</p>

Expected outcome	<ul style="list-style-type: none"> ▪ Overview of NMR and HR-MS analyses for Customs purposes, and knowledge of the strategy and tools supporting analyses and interpretation of spectra. ▪ Provision of guidance on NMR and HR-MS (recommendations on methods and protocols). ▪ Reinforced cooperation between Customs Laboratories for sharing electronic analytical data. ▪ Good practices for the identification and classification of chemical substances in particular in relation to illicit drugs, new designer drugs, drug precursors and more generally with respect to REACH. ▪ Demonstration of analytical methods and management of electronic analytical data.
Interpretation/ working language	<p>The training session working language will be English. No interpretation.</p>
Registration	<p>Please complete the attached Registration Form (Annex 3), providing details of the participant, and to send it as soon as possible, and by 18 October 2019 at the latest, to CLEN-TAS@eurofins.com, Claude.GUILLOU@ec.europa.eu, and copy to Nadia.Cancila@adm.gov.it</p>

ANNEX I

DRAFT AGENDA

CLLEN - TRAINING ON NUCLEAR MAGNETIC RESONANCE AND HIGH RESOLUTION MASS SPECTROMETRY

12, 13 and 14 November 2019

Baveno (VB), Italy

Monday 11 November 2019

16.30-18.00 Registration

Day One - 12 November 2019

08.30 – 9:00 Registration

09.00 Welcome and opening

Session I - Training lectures and exercises: introduction to basic NMR

- 09.15 – 10.45
- 1D NMR
 - 1H NMR
 - 13C NMR, APT

10.45 – 11.15 Coffee break and **posters** in exhibition area

Session II - Training lectures and exercises: introduction to 2D NMR

- 11.15 – 12.30
- COSY, TOCSY, HMBC, HSQC, etc.

12.30 – 14.00 Lunch

Session III - Training lectures and exercises

- 14.00 – 15.30
- Quantitative NMR
 - Isotopic NMR

15.30 – 16.30 Coffee break and **posters** in exhibition area

16.30 – 17.30 **Session IV - CLEN-ILIADe NMR methods**

Day Two - 13 November 2019

Session V - Training lectures and exercises

- 08.30 – 10.00
- Review of Day 1 : questions, precision exercises

10.00 – 10.45 Coffee break and **posters** in exhibition area

Session VI - Training lectures and exercises: HR-MS

- 10.45 – 12.15
- High Resolution Mass Spectroscopy
 - Basics on technology of modern HR-MS instruments (eg. Q-TOF, Orbitrap)
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12.15 – 13.30	Lunch
13.30 – 14.15	Poster session in exhibition area.
	Session VII - Training lectures and exercises: Techniques and interpretation of HR-MS
	<ul style="list-style-type: none"> ○ Positive and negative ionization
14.15 – 15.45	<ul style="list-style-type: none"> ○ LC-MS ○ Direct infusion ○ Isotopic pattern
15.45 – 16.15	Coffee break and posters in exhibition area
	Session VIII - Training lectures and exercises: examples of applications
16.15 – 17.30	<ul style="list-style-type: none"> ○ Analysis of peptides ○ Analysis of proteins
Day Three - 14 November 2019	
	Session IX - Training lectures and exercises: chemoinformatics tools
	<ul style="list-style-type: none"> ○ Chemidentifier: SMILES
08.45 – 10.00	<ul style="list-style-type: none"> ○ InChI, InChIKey ○ Online resources OPSIN, HRMS, NMR ○ Hands on and exercises
10.00 – 10.45	Coffee break and posters in exhibition area
10.45 – 12.00	Session X - Training lectures and exercises: examples of applications
12.00 – 13.30	Lunch
13.30 – 14.00	Poster session in exhibition area.
14.00 – 15.15	Session XI - CLEN-ILIADe HR-MS methods
15.15 – 15.45	Coffee break and posters in exhibition area
15.45 – 16.15	Final discussions
16.15 – 16.30	Conclusion of meeting
	Departure to airport/train station

NB: the participants are advised to **bring a portable PC with Wifi connection** to be used for exercises that will be proposed during the training sessions

ANNEX II

PRACTICAL INFORMATION

ACCOMMODATION

Hotel Splendid, Via Sempione 12, 28831 Baveno (VB), Italy

Single room: EUR 106.50 (incl. VAT, breakfast and city tax)

Double room: EUR 141.50 (incl. VAT, breakfast and city tax)

Each participant is requested to book his/her hotel room by sending the Hotel Booking Form (Annex E) directly to the hotel to laura@zaccherahotels.com by **18 October 2019**. Cancellation costs will not be borne by the host administration.

TRAVEL INFORMATION

Transportation from your point of arrival to the venue will be arranged on the basis of the information of the travel plans recorded by the participants. Please register your data and travel plan in the web-based "**JRC Events Registration System**" at <https://web.jrc.ec.europa.eu/remjrc/screen/meeting/2448/registration-form> selecting the meeting "CLEN Workshop: Training on NMR and HR-MS 12-14 November 2019".

The participants are advised to use flights arriving at **Milano Malpensa** airport which is the closest International airport to the venue of the training. An alternative can be arrival at Milan train stations. There is also the possibility to arrive by train at Stresa or Baveno train stations.

Please contact Mrs Rosemary THOMPSON (Rosemary.Thompson@ec.europa.eu) in case assistance is required.

MEALS

A **buffet lunch** will be served at the venue for the three days of the training session. The price is **EUR 28** and will be marked separately on the hotel invoice. The lunches are compulsory and will be charged to the participants regardless they take the meals or not.

SOCIAL DINNER

A social dinner will be proposed on the evening of 13 November.

Price: EUR 55

Participation is on a voluntary basis and has to be specified on the registration form (annex 3). Dress code: smart casual.

COORDINATION

Host coordination:

Mr Claude Guillou: Claude.GUILLOU@ec.europa.eu

Assisted by CLEN-TAS (Customs Laboratories European Network - Technical Assistance Secretariat): CLEN-TAS@eurofins.com

Central coordination:

European Commission

Directorate General Taxation and Customs Union

Workshop content:

Mr Hervé SCHEPERS

E-mail: Herve.Schepers@ec.europa.eu ;

C2020 Programme Management:

Ms Regina ARVAI-UNGER

E-mail: TAXUD-Customs2020@ec.europa.eu

ANNEX III

REGISTRATION FORM

**CLEN – Training on Nuclear Magnetic Resonance
and High Resolution Mass Spectrometry
12, 13 and 14 November 2019, Baveno (VB), Italy**

Please complete this form and send it by **18 October 2019** to CLEN-TAS@eurofins.com and Claude.GUILLOU@ec.europa.eu, copy to Nadia.Cancila@adm.gov.it

First name and SURNAME	
Organisation/Administration	
Job title	
Email address	
Mobile telephone number	
Date and time of arrival	
Arrival flight/train number	
Name of the airport/station	
Date and time of departure	
Departure flight/train number	
Name of the airport/station	
Will attend the social dinner	YES/NO
Hotel booked	YES/NO
Accompanied	YES/NO
Individual requirements	

ANNEX IV



HOTEL SPLENDID

Via Sempione, 12 – 28831 Baveno (VB) Italy

**ACCOMMODATION FORM
TRAINING JRC – CUSTOMS2020
November 12-14, 2019**

PLEASE RESERVE YOUR ROOM DIRECTLY WITH THE HOTEL BY OCTOBER 18, 2019

TO: HOTEL SPLENDID Conference Department

Tel: +39 0323 913992 Fax: +39 0323 913837 E-mail: laura@zaccherahotels.com

NAME:.....

ADDRESS:.....

CITY:.....ZIP CODE.....

Phone:.....Fax:.....

E-MAIL :

ARRIVAL.....DEPARTURE.....

- Double in single use € 95,-- + VAT 10% per day
- Double / Twin 2 people € 125,-- + VAT 10% per day
- € 19,--+ VAT 10% per room per day – supplement for lake / pool view
€ 2.00 per person per night – local government tax
DAILY RATES WITH BUFFET BREAKFAST INCLUDED
(PLEASE TICK THE REQUESTED ROOM – AVAILABILITY AS FIRST COME)

Cancellation policy:

Up to October 18,2019 : No cancellation charges applied
From October 19,2019 : 50% cancellation charges
From November 1, 2019: 100% cancellation charges
Your credit card will be not used till your arrival day
Early departure, late arrival or NO SHOW will be charged as per reservation dates

RESERVATION WILL NOT BE ACCEPTED WITHOUT CREDIT CARD INFORMATION

CREDIT CARD :

N° **Expiry**

DATE.....

SIGNATURE.....

Hotel address for the meeting (not for reservation)

HOTEL SPLENDID
Via Sempione, 12
I – 28831 Baveno (VB) Italy
Tel +39 0323 924127 (not for reservation)
Fax +39 0323 922200 (not for reservation)

<p>HOTEL STAMP</p> <p>for acceptance</p>
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ANNEX V

PRIVACY STATEMENT

Description: Personal data related to this invitation will be processed in accordance with Regulation (EU) 2018/1725 of the European Parliament and of the Council on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC.

Purpose: The purpose of the processing of personal data is: management of the meeting, including management of lists and mailings-lists for contacts, invitations, participants, reports, distribution of reports, feedback on reports, meeting follow-up, follow-up meetings, follow-up actions, photographs/pictures, presentations, live web-streaming and/or audio and video-recording of speakers and participants, news and publications.

Personal data collected and further processed are:

- data necessary for the organisation and management of the meeting, such as gender (needed for the right title), name and surname, profession, postal and e-mail addresses, phone number etc.
- identity or passport n^o, date of birth (for access control purpose by security guards to the Commission's premises – see DPO-508)
- information about the form of transport used and hotel, banking information (for purpose of reimbursement of travel expenses/allowances – see DPO-372)
- pictures, presentations, live web-streaming and/or audio and video recording of speakers and participants, (an opt-out is provided for to participants who prefer their images are not recorded when resources are available).
- if you are invited as a member/observer of a Commission Expert Group, some of your personal data (see DPO-2194) will be made publicly available in the [Commission's Register of Expert Groups](#) for as long as the membership upholds and/or until removal from the public site is requested, in view of the transparency policy of the European Institutions and the need to inform the public of the identity and qualifications of the experts advising the Institution.

Controller: DG TAXUD UNIT A4 in charge of the organisation of this meeting.

Recipients: The access to all personal data as well as all information collected in the context of this meeting, and the organisation thereof, is only granted through UserID/Password to a defined population of users, without prejudice to a possible transmission to the bodies in charge of a monitoring or inspection task in accordance with Community legislation. These users typically are: the chairperson and the secretary of the meeting, both supported by a team in the operational services inside the DG.

Pictures, presentations, live web-streaming and/or audio and video recording of speakers, participants and organisers might be made available freely on the internet in the framework of European Commission activities.

Data retention: Your personal data will be part of a list of contact details shared internally amongst the Commission services for the purpose of contacting data subjects in the future in the context of the Commission's activities. If you do not agree with this, please contact the Controller by using the Contact Information mentioned in the invitation letter and by explicitly specifying your request.

In the case of events organised through the services of DG Interpretation, audio and video recordings, as well as the descriptive information displayed, will be kept as long as follow-up actions to the meeting are necessary with regard to the purpose(s) of the processing of personal data as well as for the meeting and its related management.

Contact: Please use the contact information mentioned in the invitation letter.

Recourse: General questions can be addressed to the [Commission Data Protection Officer](#). Complaints, in case of conflict, can be addressed to the [European Data Protection Supervisor](#)