Rules and procedures for the use of the equipment HIGH-END SINGLE QUADRUPOLE MASS SPECTROMETER COUPLED TO AN ULTRA-PERFORMANCE LIQUID CHROMATOGRAPH AND A UV/VIS DETECTOR (UPLC-UV-MS) acquired under the MUR Department of Excellence Project 2023–2027

ACADEMIC CONTACT
Prof. Tullia TEDESCHI tullia.tedeschi@unipr.it

TECHNICAL CONTACT
Dr Claudia FALAVIGNA claudia.falavigna@unipr.it

Approved by the Department of Excellence Steering Committee on 3 September 2026

Approved by the Council of the Department of Food and Drug on 9 September 2026

Description of the equipment

The UPLC-UV-MS system consists of an ultra-performance liquid chromatography system coupled to two detectors: a fixed-wavelength UV/Vis detector and a high-end single quadrupole mass spectrometer.

The equipment is used for analytical applications involving small and large molecules and enables qualitative and quantitative analysis of ionic or ionisable compounds and/or compounds that absorb at wavelengths in the UV/visible range.

Main modules comprising the equipment:

- H-CLASS UPLC system, comprising a solvent delivery system with low-pressure quaternary mixing and a maximum operating pressure of up to 15,000 psi; a temperature-controlled column compartment accommodating one column up to 150 mm in length; and a temperature-controlled autosampler with a Peltier system and flow-through needle (FTN) injection.

- TUV fixed-wavelength UV/Vis detector operating over the 190–700 nm range, equipped with an analytical flow cell with a volume <1 µL.

- SQ2 high-end single quadrupole mass spectrometer with a mass range extending beyond m/z 3000, equipped with a multimode source capable of operating in both ESI and APCI modes during the same analytical run; an integrated divert valve; and an integrated, software-controlled direct infusion system.

- MassLynx 4.2 software for instrument control and data processing; TargetLynx software module for quantitative data processing; MaxEnt deconvolution software extension for multiply charged compounds.

Authorised permanent staff and trainers

Surname	First name	Dept./Centre	Contact
Prandi	Barbara	Food and Drug	barbara.prandi@unipr.it
Falavigna*	Claudia	Food and Drug	claudia.falavigna@unipr.it

*Personnel who have completed the technical training and are authorised to carry out maintenance, calibration and parts replacement on the equipment components.

The list of authorised personnel is kept up to date and is available in Annex 2 to these Rules.

Access to and use of the equipment

1) Research groups in the ALIFAR Department with authorised users may access the equipment through their own staff, subject to prior booking on the dedicated Teams platform managed by the Technical Contact. Groups without a designated contact may contact the staff listed above. Access remains subject to booking on the Teams platform. Use of the equipment without a booking will result in a charge for a full working day, equivalent to eight hours. Only personnel who have completed the initial training (authorised personnel and trainers), or who have subsequently been trained by the trainers, may use the equipment.
2) Users from other University departments and external users may contact the Scientific Coordinator by completing the analysis request form (Annex 1).

Fees

Three user categories apply for the purpose of equipment usage fees:

1) ALIFAR Users: teaching and research staff of the University of Parma affiliated with the ALIFAR Department;
2) Internal Users: teaching and research staff of the University of Parma;
3) External Users: researchers and other staff from universities, research bodies and public and private institutions.

Type of analysis	**ALIFAR USER €/hour**	**INTERNAL USER €/hour**	**EXTERNAL USER €/sample***
LC-MS analysis	8	15	300 (ALIFAR031)
LC-UV-MS analysis	10	25	350
Data processing	-	10	120
Analytical method development	-	30	3,000 (ALIFAR038)

* For every five determinations commissioned, the sixth is performed free of charge OR data processing fees are waived.

ALIFAR users who contribute their own research funds towards annual preventive maintenance contracts and/or comprehensive insurance, or towards repair costs, will not be charged usage fees until the amount contributed has been offset.

Annex 1. UPLC/UV/MS SYSTEM – ANALYSIS REQUEST FORM

To be emailed to the authorised personnel

Applicant details

UNIVERSITY OF PARMA INTERNAL USER
Dept./Centre:
Applicant:
User:
E-mail:
Telephone:

EXTERNAL USER
Organisation name:
VAT no./Tax code
Address:
Applicant:
User:
E-mail:
Telephone:

Sample information and type of analysis

Number of samples to be analysed (including replicates and blanks)	*E.g. 120 samples, or 50 samples in replicate + 10 blanks in replicate.*
Sample type (briefly describe, specifying the matrix)	*E.g. tryptic protein digest / aqueous methanol extract of a plant matrix / etc.*
Matrix clean-up	☐ **YES** ☐ **NO** Clean-up technique used: e.g. microfiltration; SPE; IAC; etc.
Solvent or solvent mixture in the sample	*E.g. H2O/CH3CN mixture 1:1 (v/v) + 0.1% HCOOH*
Hazards	☐ **flammable** ☐ **irritant** ☐ **acute toxicity** ☐ **harmful** ☐ **corrosive** ☐ **oxidising** ☐ **carcinogenic/mutagenic** ☐ **hazardous to the environment**
Target analytes (names/class) and m/z range	*E.g. peptides with MW <1000 Da; leucine enkephalin (MW 555.62)*
Estimated analyte concentration (specify units)	*E.g. 100 ppb or 100 µg/kg*
Type of analysis requested	☐ **LC-MS analysis** ☐ **LC-UV-MS analysis** ☐ **Analytical method development**
Data processing	☐ **TargetLynx (quantitative analysis)** ☐ **MaxEnt (macromolecular deconvolution)**

Bookings may be cancelled up to the third working day before the requested date.

If the equipment is not used and the booking has not been cancelled in time, payment for the service is still required.

Date …….

Applicant's signature (research fund holder)

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Annex 2. List of personnel authorised to use the equipment

Authorised personnel and trainers			
Surname	**First name**	**Dept./Centre**	**Contact**
Prandi	Barbara	Food and Drug	barbara.prandi@unipr.it
Cutroneo*	Sara	Food and Drug	sara.cutroneo@unipr.it
Falavigna*	Claudia	Food and Drug	claudia.falavigna@unipr.it
Authorised users			
Surname	**First name**	**Dept./Centre**	**Contact**
Accardo	Francesca	Food and Drug	francesca.accardo@unipr.it
Fuso	Andrea	Food and Drug	andrea.fuso@unipr.it
Bugatti	Kelly	Food and Drug	kelly.bugatti@unipr.it

*Personnel who have completed the technical training and are authorised to carry out maintenance, calibration and parts replacement on the equipment components.