

# BIOLOGICAL MASS SPECTROMETRY (BMS) FACILITY,

## NUI GALWAY

Our main aims are to:

- Provide access to acquisition and analysis workstations.
- Maintain instruments and workstations to ensure quality and efficiency.
- Develop new technologies that will enhance the capabilities of the BMS Facility.
- Provide expertise in mass spectrometry sample preparation and data analysis.

Guided use of the instrumentation available on site is fundamental to the running and setup of the BMS Facility.

### ACCESS

- **BEGINNER OR INEXPERIENCED USER:** A user who requires direction in how to approach an MS based project and direct contact and full technical support with BMS Facility core staff member is required to complete any experiment.
- **EXPERIENCED USER:** A user who is able use the instrument but will require technical supervision.

### TRAINING

To minimise the risk of equipment damage and to strive towards high quality results all users must partake in training in the use of the equipment. Researchers interested in using the BMS Facility should contact the facility (Brendan Harhen or Edel Mullen ext 2479) and schedule a consultation and access.

Prior to any initial training a member of the core staff for the BMS Facility will advise the researcher on the experimental pipelines available to them.

### COST TO ACCESS THE BMS FACILITY

The cost for using the BMS Facility varies depending on several variables such as the type of compound, the complexity of the sample and the type of analysis to be performed. The cost per sample must cover gas cylinder rental, lipid HPLC columns, proteomics HPLC columns autosampler vials, trypsin, calibrant solution for tuning mass spectrometers, acetonitrile and bottled water, rotor seals, formic acid, ultragrade mechanical vacuum oil various silica tubing pieces/ferrulles, nitrogen line hydrocarbon traps and contribution towards service and maintenance.

1. **ESTABLISHED EXPERIMENTAL DESIGN: NOVICE USER:** The consultation provided by the BMS Facility encompasses protein purification and digestion by enzymes. This consultation will also cover the development of the proteomic, glycomic and metabolomics assays. Cost depends on the complexity of the sample and the duration of the gradient/run can cost €25-€50. Simple protein identification from band extraction begins at €25/sample.
2. **INTERACTIVE USER:** Proactive researchers moderately trained on the MS technology available will result in a lesser charge. Again complexity of the sample to be analysed is directly proportional to the charge. This partial service starts at €10/sample (duration of gradient and direct cost to the facility will result in an increase in charge).
3. **ESTABLISHED USER:** This user will only have to encounter prices for the consumables used. The price can range between €5-€50 (once again, duration and complexity of the sample to be analysed will directly impact on the amount of consumables used and therefore the overall cost of the service).

Protein profiling experiments normally include (and the relative price is composed of): 1) a sample fractionation/digestion step; 2) a mass spectrometry analysis step; 3) a bioinformatics analysis step to provide a list of validated protein identifications.

Other common workflows include intact protein mass determination, and relative quantitation of expression differences. More details can be found on the BMSF website: <http://ncbes.eurhost.net/equipment-list.aspx?cat=3>

Non-standard workflows, as well as particular training issues and special price arrangements in respect of these should be discussed and agreed upon with the Interim Director of the BMSF, Prof. Corrado Santocanale ([corrado.santocanale@nuigalway.ie](mailto:corrado.santocanale@nuigalway.ie)). Please note that multiplying coefficients of 1.0 for NUI Galway Fellows, 1.5 for collaborators, 2.0 for other (national and international) Academic users and 3.0 for Commercial Companies apply to the prices listed below. Prices do not include VAT and are subjected to periodical revision by the BMSF Steering Group.

## ACCESS PRIORITY

The BMS Facility will ensure local NUI Galway researchers will receive priority access to equipment.

## ACCESS WORKFLOW

Booking will be made through the consultation appointment with the BMS Facility scientists. The first consultation will cover the degree of training required by the researcher, the optimum sample preparation conditions for the type of samples to be analysed and the results to expect in return for the facility.

1. The consultation can be made on the NUI Galway BMS Facility website <http://ncbes.eurhost.net/equipment-list.aspx?cat=3>.
2. Consultations are limited to the hours of 11am-1pm daily.
3. Upon booking the consultation, a member of the BMS Facility will contact the new user and arrange the consultation.
4. A "preview" session is included and will be arranged for soon after the initial consultation.
5. From this point, the user may book sessions using the booking forms **in the facility**.
6. No user may sign up for equipment without prior permission from the facility scientists.

7. When demand is high, no user may book more than 2 days/week in any one week and no more than 2days/week for 3 consecutive weeks.
8. On booking the MS, cost centers are given from the research group upon which a charge will be applied due to usage. All PIs will be notified of the due charge before the account is accessed.

**SAMPLE SUBMISSIONS**

All samples must be submitted to the BMS Facility room by the applicant. There, the applicant will submit the samples to a member of the BMSF and will sign a sample submission form.

**DAMAGES**

All users are fully responsible for costs of repairing any drastic damage that the facility scientists cannot rectify or which are not covered by service contracts/warranties.

**GRIEVANCES**

Grievances related to instrument and facility access are to be reported to the facility director, and will be handled in accordance with the procedures of that BMS Facility.