

**SERVICIOS GENERALES DE INVESTIGACIÓN**

**GENERAL RESEARCH SERVICES - OFFICIAL RATES 2017**

**COMMON PRICES**

Price in Euros Concept	2017		
	USE	OPI	EXT./PRIV
ISSUE ANALYSIS REPORT	160,00	200,00	240,00
SIGN SAMPLES, STORE, PROTOCOLS OF TRACEABILITY, ETC. FOR EVERY GROUP OF SAMPLES	70,00	85,00	100,00
HOUR OF TECHNICIAN FOR FORMATION	6,00	50,00	100,00
HOUR OF TECHNICIAN - OTHERS	20,00	50,00	100,00
HOUR OF DRAFT OF REPORT	20,00	70,00	140,00

**BIOLOGY SERVICE**

Price in Euros Concept	2017		
	USE	OPI	EXT./PRIV
FujiFilm FLA-5100 Fluorescent Image Analyser (price per 3 months)	100	150	180
FujiFilm FLA-5100 Fluorescent Image Analyser (price per hour)	10	15	20
Fujifilm CCD-Camera LAS-3000 (price per 3 months)	100	150	180
Fujifilm CCD-Camera LAS-3000 (price per hour)	10	15	20
IVIS Lumina II, Quantitative Fluorescent and Bioluminescent Imaging "In vivo" (price per 3 months)	75	113	150

### SERVICIOS GENERALES DE INVESTIGACIÓN

Amershan Imager 600 equipment (price per 3 months)	100	150	180
Epifluorescence Microscope (price per 3 months)	120	170	200
Epifluorescence Microscope (price per hour)	10	15	20
Imaging Flow Cytometry (price per 3 months) (1)	100	150	180
Imaging Flow Cytometry (price per hour)	18	27	36
Bio-Plex Workstation and Software	75	113	150
BioSorter, Flow Cytometry for large objects	A Convenir		
Conventional PCR	6	9	12
Real Time PCR Mastercycler (Eppendorf) (2)	9	14	18
Real Time PCR LightCycler 480 (Roche) (3)	10	15	20
Microplate Reader Synergy (BioTek) (price per 3 months)	75	113	150
Microplate Reader Synergy HTX (price per cinetics 24 h)	10	20	36
Microarray scanning GenePix 4100	A Convenir		
Rotor & Tubes for Preparative Ultracentrifuges Optima MAX - Beckman Coulter, 1 h	7,2	10,8	14,4
Rotor & Tubes for Preparative Ultracentrifuges Optima MAX - Beckman Coulter, 24 h	32	48	64
Automated equipment Precellys 24 (price per 3 months)	75	113	150
Automated liquid handler Freedom EVO 75 TECAN	84	126	150
Measured Fluorescent per sample	2	4	6
NanoDrop ND 1000 (price per sample)	0,4	0,6	0,8
Bioanalyzer: DNA Analysis (12 chip samples)	23,0	34,5	46
Bioanalyzer: RNA Analysis (12 chip samples)	24,8	37,2	49,6
Bioanalyzer: Protein Analysis (10 chip samples)	26,7	40,1	53,4
Bioanalyzer for use (price per 3 months)	75	113	150

### SERVICIOS GENERALES DE INVESTIGACIÓN

Micro-Osmometer (price per 3 months)	10	15	20
Next Generation Sequencing	A Convenir		
Rotor & bottles Centrífuge Allegra x-12, 1 hour.	4	6	8
Rotor & bottles Centrífuge Allegra x-12, 24 hours	9	14	18
Mini V/PCR (price per 3 months)	75	113	150
Tissuelyser II (price per 3 months)	75	113	150
Centrifuge refrigerated (sigma), one hora	3,6	5,4	7,2
Rotor & Tubes for Preparative Centrifuges Avanti J-26 XP - Beckman Coulter, 1 h	8	12	16
Rotor & Tubes for Preparative Centrifuges Avanti J-26 XP - Beckman Coulter (price per month)	25	37,5	50
Biolistic PDS-1000/He (Price per shot)	8	12	16
Robot SINGER for replicas of microorganisms	84	126	150
One sample of yeast	20	30	40
Yeast collection (Price per 3 months)	75	113	150
Yeast complete collection	A Convenir		
Lyophilization, freeze-drying samples (price 1 sample/hour)	0,25	0,38	0,5
Freezing at -20°C (price per drawer/week)	10	15	20
Freezing at -80°C (price per box/week)	1	1,5	2
Orbital Shaker MAXQ 5000 (price per 3 months)	75	113	150
Orbital Shaker MAXQ 4000 (price per 3 months)	75	113	150
Centrifugal Vacuum Concentrator (price per 3 months)	75	113	150
Liquid Nitrogen Storage - tanks (price per box/week) (4)	1,2	1,8	2,4
Liquid Nitrogen Storage - tanks (price per box/ 3 months)	78	117	156
Supply of liquid nitrogen (1 liter)	1,5	2,25	3

### SERVICIOS GENERALES DE INVESTIGACIÓN

Cold storage at 4 °C	A Convenir		
Molecular biology laboratory (price per month)	100	150	200
Cell culture laboratory, (price per month)	100	150	200
Olympus microscope	A Convenir		
Fluorescent lamp (price per 3 months)	10	15	20
CO2 Sensor/Controller	A Convenir		
Biology laboratory (price per month)	100	150	200
Biotechnology and Fermentation laboratory, (price per month)	100	150	200
Biosafety laboratory P2 (price per month)	100	150	200
24 Well Plate Miniature Bioreactor	A Convenir		
BioBundle Fermentation Systems 3 & 7 liters	A Convenir		
MMS Triple Lab System (price per 3 months)	75	113	150
Bioinformatics Unit	A Convenir		
Water obtained by reverse osmosis (Milli-RO)	0,1	0,1	0,84
Ultrapure water (Milli-Q) (price per 3 months)	0,1	0,1	2,64
Electrical autoclaves for sterilization (price per 3 months)	75	113	150
Memmert oven (price per 3 months)	75	113	150
Drying ovens (price per 3 months)	75	113	150
Mouse Genome Informatics	A Convenir		
Technician work/hour	20,1	50	100

- (1) New users are granted a number of hours for training, free of charge.
- (2) Consumables are not included. 96-well plate + film € 9.
- (3) Consumables are not included. 96-well plate + film 10 € and 384-well plate + film 12 €.
- (4) For more than 5 to 25 samples, only 6 euros / week will be charged

SERVICIOS GENERALES DE INVESTIGACIÓN

FUNCTIONAL CHARACTERIZATION SERVICE

Price in Euros Concept	2016		
	USE	OPI	EXT./PRIV
DSC- Day of use of the equipment	67,00	134,00	269,00
DSC- Day of use of the equipment (24 hours) with use of liquid nitrogen	87,00	174,00	348,00
DSC- Part time (in the technical schedule 8 hours)	35,00	70,00	140,00
DSC- Part time (in the technical schedule 8 hours) with use of liquid nitrogen	45,00	90,00	180,00
DSC- Hour of use	10,00	20,00	40,00
DSC- Pan	4,00	7,00	14,00
Physisorption- Day of use of the equipment	79,00	159,00	317,00
Physisorption- Day of use of a port	18,00	36,00	72,00
Physisorption- CO <sub>2</sub> Isotherms	25,00	45,00	Negotiable
Mastersizer- Hour of use of Mastersizer for particle size measurement in dry route	16,00	31,00	62,00
Mastersizer- Hour of use of Mastersizer for particle size measurement in wet route	15,00	30,00	60,00
Tubular oven- Hour of use in environment. Maximum temperatura = 1200°C	8,00	16,00	32,00

## SERVICIOS GENERALES DE INVESTIGACIÓN

Tubular oven- Hour of use in environment. Maximum temperatura = 1650°C	10,00	20,00	40,00
Vacuum oven- Hour of use in environment. Maximum temperatura = 2200°C	Negotiable		
Tubular oven- Part time (in the technical schedule 8 hours) in controlled atmosphere using gases. Maximum temperatura = 1200°C	50,00	100,00	200,00
Pycnometer- Hour of use of the pycnometer in calculation of density	11,00	17,00	33,00
Porosimeter- Hour of use of the mercury porosimeter	27,00	54,00	108,00
Chemisorption- Day of use of the equipment	79,00	158,00	316,00
Chemisorption- Part time (in the technical schedule 8 hours)	40,00	80,00	160,00
Chemisorption- Hour of use	10,00	20,00	40,00
Chemisorption- Sample holder tube	400,00	400,00	400,00
Scratch- Hour of use of the Scras in indentation and/or compression	12,00	24,00	47,00
SDT- Day of use of the equipment	75,00	151,00	302,00
SDT- Part time (in the technical schedule 8 hours)	38,00	76,00	152,00
SDT- Hour of use	10,00	20,00	40,00
Mass spectrometer - Hour of use	4,00	8,00	16,00
SDT- Platinum pan	133,00	200,00	267,00
SDT- Alumina pan 1	50,00	75,00	100,00
SDT- Alumina pan 2	12,00	17,00	23,00

SERVICIOS GENERALES DE INVESTIGACIÓN

Tribometer- Hour of use of the Tribometer in wear test	18,00	35,00	71,00
Zetasizer- Hour of use of the equipment Zetasizer	12,00	19,00	39,00
Zetasizer with autotitrator - Hour of use	14,00	23,00	47,00
Viscometer SV/10	5,00	10,00	20,00
Zetasizer- Cells for measure of potential Z and size	16,00	31,00	62,00
Zetasizer- Pan	1,00	2,00	4,00
PPMS - Measurement of physical properties from 2 K	According to quotation		
Vertical Dilatometer (DIL) – Day of use of equipment	90,00	150,00	Negotiable
DIL - Part time (in the technical schedule 8 hours)	45,00	75,00	Negotiable
DIL - Hour of use of the equipment	15,00	30,00	Negotiable
DIL – Additional time use (Temperature>1600°C)	75,00	150,00	Negotiable
LFA - Part time (in the technical schedule 8 hours)	45,00	90,00	Negotiable
LFA - Hour of use of the equipment	20,00	40,00	Negotiable
LFA - Time sample preparation	25,00	50,00	Negotiable
LFA - Time sample preparation	30,00	60,00	Negotiable
THB - Part time (in the technical schedule 8 hours)	45,00	90,00	Negotiable
THB - Hour of use of the equipment	15,00	30,00	Negotiable
TMA - Part time (in the technical schedule 8 hours)	50,00	100,00	Negotiable
TMA - Hour of use of the equipment	30,00	60,00	Negotiable
Impedance spectroscopy - Part time (in the technical schedule 8 hours)	45,00	80,00	Negotiable
Impedance spectroscopy - Day of use	75,00	140,00	Negotiable

## SERVICIOS GENERALES DE INVESTIGACIÓN

Nano DSC - Nano differential scanning calorimeter - Hour of use	10,00	20,00	40,00
Nano DSC - Nano differential scanning calorimeter - Part time (in the technical schedule 8 hours)	35,00	70,00	140,00
TGA Discovery - TGA capable of high heating rates rates - Hour of use	10,00	18,00	Negotiable
TGA Discovery - TGA capable of high heating rates rates - Part time (in the technical schedule 8 hours)	35,00	60,00	Negotiable
TGA Discovery - TGA capable of high heating rates - Day of use	85,00	120,00	Negotiable
DSC up to 1600°C - Day of use - TGA/DSC measurements	75,00	151,00	302,00
DSC up to 1600°C - Part time (in the technical schedule 8 hours) - TGA/DSC measurements	38,00	76,00	152,00
DSC up to 1600°C - Hour of use- TGA/DSC measurements	10,00	20,00	40,00
DSC up to 1600°C - Measures of specific heat capacity at high temperatures	Negotiable		
Mechanical properties - Bending/tensile /compression tests - Hour of use	20,00	40,00	Negotiable
Capillary flow porometry	Negotiable		
Others	Negotiable		

### LIQUID NITROGEN SERVICE

Price in Euros	2017		
	USE	OPI	EXT./PRIV
Liquid nitrogen (tank of the Cryogenic´s Service-Chemistry) Liter	1.39	1.39	2.77
Liquid nitrogen (tank of CITIUS) Liter	0.92	0.92	1.85
Liquid nitrogen in ranger			
Liter	1.7		



SERVICIOS GENERALES DE INVESTIGACIÓN

Delivery	40		
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HR MASS SPECTROMETRY SERVICE

Price in Euros

Concept	USE	OPI	PRI
<b>RATES FOR SPECIFIC SERVICES</b>			
Mass Spectrum (EI,CI, ESI)	7	10	28
MALDI TOFTOF Mass Spectrum	10	20	40
Molecular Formulae Determination. Exact Mass (ESI,EI, CI)	10	20	40
Molecular Formulae Determination. Exact Mass (MALDI TOFTOF)	18	36	72
NIST library identification results GC-MS, up to 50 compounds	50	100	150
Structural Library Search	3	6	12
<b>RATES TIME *</b>			
1 hour GC-MSMS (TSQ8000)	18	25	45
1 hour HPLC-QTRAP	20	30	40
1 hour UHPLC-QExactive ( High Resolution)	25	35	50
1 hour UHPLC-Orbitrap Elite ( High Resolution)	25	35	50
1 hour nanoLC-QExactive ( High Resolution)	50	70	100
1 hour nanoLC-Orbitrap Elite ( High Resolution)	50	70	100
1 hour MALDI TOF TOF	25	35	50
1 hour nanoLC-Proteneiner	To agree		
1 hour UPLC-MSMS (Xevo)	20	30	50
1 hour APGC-MSMS (Xevo)	20	30	50
1 hour UPLC-DAD-FLUORESCENCE-IR	18	25	45
<b>Biotyper</b>			
Identification per sample	30	50	100
Identification per batch of samples	To agree		
<b>Stable Isotope Analysis -IRMS</b>			
Analysis of stable isotopes of carbon and nitrogen per sample	To agree		

## SERVICIOS GENERALES DE INVESTIGACIÓN

Analysis of stable isotopes of carbon, nitrogen and sulfur per sample	To agree		
Analysis of stable isotopes of nitrogen per sample	To agree		
Analysis of stable isotopes of carbon per sample	To agree		
Analysis of stable isotopes deuterium and oxygen in water per sample	To agree		
Others	To agree		
Sample preparation IRMS	To agree		
<b>Sample Treatment</b>			
Sample Silylation for GC	20	30	50
Solid Phase Extraction per sample	20	30	50
Microfiltration/sample	1.5	2	3
Ultrafreezer (per week and box)	1	1.5	2
Autoclaving	60	90	120
<b>Rent of small equipment for Sample treatment</b>			
Centrifuge/hour	3	6	9
Rotavapor/hour	3	6	9
Speed Vac miVac Genevac/hour	5	10	15
Freeze-drying (per sample)	0.2	0.3	0.4
Mixer Mill MM400	7.5	37.5	75
Memmert UN30 Stove	To agree		
Other	To agree		

\* Note: Subject to agreement, discounts could be applied according to number of hours of equipment use.

SERVICIOS GENERALES DE INVESTIGACIÓN

XPS/ESCA SERVICE

Prices in Euros\*

2017

<b>SPECTRA ADQUISICIÓN</b>			
<i>Standard X-Ray Source (Mg y Al)</i>			
<i>Survey spectra (elements &gt; 1%)</i>	<b>6,80</b>	<b>18,70</b>	<b>37,40</b>
<i>High resolution survey spectra</i>	<b>13,60</b>	<b>37,40</b>	<b>74,80</b>
<i>Regions (up to 4)</i>	<b>14,20</b>	<b>39,00</b>	<b>78,00</b>
<i>Additional region</i>	<b>3,40</b>	<b>9,40</b>	<b>18,80</b>
<i>X-Ray Monochromator (Al y Ag)**</i>			
<i>Survey spectra (elements &gt; 1%)</i>	<b>7,00</b>	<b>19,30</b>	<b>38,60</b>
<i>High resolution survey spectra</i>	<b>14,00</b>	<b>38,50</b>	<b>77,00</b>
<i>Regions (up to 4)</i>	<b>14,60</b>	<b>40,20</b>	<b>80,40</b>
<i>Additional region</i>	<b>3,50</b>	<b>9,60</b>	<b>19,20</b>
<b>HEAT TREATMENTS</b>			
<i>First hour</i>	<b>20,20</b>	<b>55,60</b>	<b>111,20</b>
<i>Additional hour</i>	<b>10,10</b>	<b>27,80</b>	<b>55,70</b>
<b>OTHER TREATMENTS</b>			
<i>Sputter cleaning of samples (by minute)</i>	<b>1,50</b>	<b>4,20</b>	<b>8,40</b>
<i>Sputtering with fine focus (by minute)</i>	<b>1,60</b>	<b>4,40</b>	<b>8,80</b>
<b>OTHER SERVICES</b>	<b>NEGOTIABLE</b>		

\* Prices exclude VAT. It will be applied under current regulations in each case.

\*\* The use of the monochromator involves adding two hours of technician for adjustments.

## SERVICIOS GENERALES DE INVESTIGACIÓN

### PHOTOGRAPHIC LABORATORY SERVICE

Price in Euros Concept	2017		
	USE	OPI	EXT./PRIV
Electronically download digital photography	4,4	9	32
Digitization of photographic collections	To agree		
Advice on conservation of photographic archives	To agree		
Time digitizing equipment use and conservation	To agree		
Other services	To agree		

### HERBARIUM SERVICE

Price in Euros Concept	USE	OPI	EXT./PRIV
<b>Material request and return to other Herbarium</b>			
<b>Small Package</b>			
National	4.02 €	8.03 €	16.06 €
Europe	24.97 €	49.95 €	99.9 €
International	38.76 €	77.51 €	155.03 €
<b>Medium Package</b>			
National	9.4 €	18.8 €	37.59 €
Europe	43.98 €	87.96 €	175.92 €
International	Based on destination		
<b>Big Package</b>			
National	13.69 €	27.39 €	54.77 €
Europe	107.09 €	214.17 €	428.34 €
International	Based on destination		
<b>Material Loans from SGI Herbarium *</b>			

## SERVICIOS GENERALES DE INVESTIGACIÓN

<b>Small Package</b>			
National	5.24 €	10.47 €	20.94 €
Europe	25.94 €	51.89 €	103.78 €
International	39.48 €	78.95 €	157.91 €
<b>Medium Package</b>			
National	11.12 €	22.24 €	44.47 €
Europe	45.45 €	90.9 €	181.8 €
International	Based on destination		
<b>Big Package</b>			
National	15.41 €	30.83 €	61.65 €
Europe	108.56 €	217.11 €	434.22 €
International	Based on destination		
<b>Material Loans from SGI Herbarium for exhibit **</b>			
<b>Small Package</b>			
National	5.24 €	10.47 €	20.94 €
Europe	25.94 €	51.89 €	103.78 €
International	39.48 €	78.95 €	157.91 €
<b>Medium Package</b>			
National	11.12 €	22.24 €	44.47 €
Europe	45.45 €	90.9 €	181.8 €
International	Based on destination		
<b>Big Package</b>			
National	15.41 €	30.83 €	61.65 €
Europe	108.56 €	217.11 €	434.22 €
International	Based on destination		
Rate for sent sheet	6.2 €	6.2 €	6.2 €
<b>Historical Herbarium Query</b>			
Rate for sheet	0.52 €	1.02 €	2.02 €
<b>General Herbarium Query</b>			
Rate for sheet	Free	Free	Free
<b>Specimens identification</b>			

**SERVICIOS GENERALES DE INVESTIGACIÓN**

Rate for identified specimens	Free	60 €	250 €
<b>Seed germination chamber</b>			
Daily use rate	0.7 €	1.4 €	2.5 €
<b>Plant DNA extraction</b>			
Rate for sample	8 €	10 €	14 €
<b>Use of laboratory of plant DNA extraction related to the DNA Bank ***</b>			
Monthly use rate	70 €	70 €	100 €
<b>Use of Spectrophotometer Nano</b>			
Rate for 10 samples	2.3 €	3.5 €	4.6 €
<b>Particle count equipment: counter, ultrasonic cleaner and vortex</b>			
Rate for sample	1.50 €	2.25 €	3 €
Technician/hour	20 €	50 €	100 €
<b>Use of microtome</b>			
Rate for sample	1.5 €	2 €	3 €
<b>Light microscope with camera and software for image acquisition</b>			
Rate for sample	1.5 €	2 €	3 €
<b>Stereo microscope with camera and software for image acquisition</b>			
Rate for sample	1.5 €	2 €	3 €
<b>Scholander pressure chamber</b>			
Hourly use rate	Based on destination		
<b>Osmometer</b>			
Hourly use rate	Based on destination		
<b>Equipment for vegetal stress measurement</b>			
Daily use rate	Based on destination		
<b>Inverted scanner for capturing digital images of specimens</b>			
Rate for scanning specimen	Based on destination		
<b>Fluorescent stereo microscope with camera and software for image acquisition</b>			
Hourly use rate	3 €	10 €	25 €
<b>Desktop Scanning Electron Microscope</b>			
Hourly use rate (technician required)	30 €	75 €	150 €
<b>Four-wheel-drive vehicle for collecting vegetal samples in the field</b>			

### SERVICIOS GENERALES DE INVESTIGACIÓN

Daily use rate	65 €	65 €	75 €
Rate for several days trips	Based on destination		

- \* Free for all herbarium with inter exchange agreement.
- \*\* Final rates are the sum of the package price plus loaned sheets.
- \*\*\* Rates based on destination within long terms.

#### GREENHOUSE SERVICE

Price in Euros Concept	2017		
	USE	OPI	EXT./PRIV
Growth of plants in the greenhouse*			
Small greenhouse bench (2,5 m2)	1,5	3	5
Standard greenhouse bench (4 m2)	2	4	7
Long greenhouse bench (4,5 m2)	2,3	4,6	8
Walk-in plant growth chamber*			
Shelf of 1,5 m2	2,7	3,5	5
Walk-in plant growth chamber with CO2 control	Under outline pricing proposal		
Phytotron*	2,2	4,4	8
Germinating chamber	1	1,5	3
Outdoor zone (m2)*	0,15	0,3	0,5
Use of laboratories, laminar flow chamber, etc.	Under outline pricing proposal		
Li-Cor 6400XT	20	40	70

Prices indicated as per day of use (VAT not included).

\*These prices include:

- Pots, Containers and Seedlings.

**SERVICIOS GENERALES DE INVESTIGACIÓN**

- Assignment of trays.
  - Substrate supply (peat, perlite, vermiculite, sand)
- Any other supply will be borne by the user.

**AGRICULTURAL RESEARCH SERVICE**

Prices in Euros. Concepto	2017		
	USE	OPI	EXT./PRIV
<b>Multi-elemental and isotopic analysis by ICP- MS <sup>a</sup></b>			
<b>Sample Preparation</b>			
Acid digestion. For every 10 samples or fraction	387,66	488,47	586,16
Filtration. For every 10 samples or fraction	163,80	204,75	245,70
Conditioning matrix (as TDS, pH, dilution and acidified). For every 10 samples or fraction	109,20	136,50	163,80
Sample preparation QCs EPA 200.8: PRB, LFB, MX and other QCs. Per experiment	54,60	68,25	81,90
Set of calibration standards (7 samples) and EPA 200.8 and related internal standards	98,28	122,85	147,42
Other calibration standards	negotiable		
Others works samples preparations.	negotiable		
<b>Training courses for users</b>			
	A convenir		
<b>Sample Measurement</b>			
<b>for every 10 readings or fraction</b>			
(Calibration samples or unknown samples, 30 min. of plasma)	38,22	47,78	57,32
For each experiment: additional time and plasma cleaning and decontamination protocols	54,60	68,24	81,90



## SERVICIOS GENERALES DE INVESTIGACIÓN

Using software for users Plasmalab training course (PC SIA). Per day booking	negotiable		
Study to special cases	negotiable		
Note: The use of different equipment configurations (standard, XI , PlasmaScreen...) will treat different experiment			
Other services ICP- MS	A convenir		
<b>Unit food quality</b>			
Working hours in wet	negotiable		
<b>Airtime rates Teams</b>			
Quarter hour or fraction (wet)		A convenir	
Time use NIR equipment	5,46	8,36	16,38
Quarter hour or fraction NIR equipment	0,98	1,97	4,02
NIR spectrum	0,56	0,81	2,65
More features of this unit	negotiable		
<b>Biotechnology Unit</b>			
Using quantitative PCR, per hour or fraction	negotiable		
Storage of samples at -80°C chest	negotiable		
<b>Gas Chromatograph</b>			
Extraction and measurement of fatty acids by chromatography think	22	23	25
Extraction and measurement of fatty acids by chromatography in meat/fat	22	23	25
Extraction and measurement of fatty acids by chromatography milk / dairy cromatografía en leche/derivados	22	23	25
Other services not listed in this unit	negotiable		

## SERVICIOS GENERALES DE INVESTIGACIÓN

<b>HPLC Chromatograph</b>			
Measurement of organic acids in plants, roots	8,00	10,00	12,00
Other services not listed in this unit	negotiable		
<b>IR</b>			
Registration IR-FTR solid samples	6,00	8,00	10,00
Other Uses	negotiable		
Measurement of antioxidant FRAP method	8,00	10,00	12,00
<b>CNS elemental analyzer macrosamples <sup>b</sup></b>			
Solid samples	11,40	13,68	17,10
Liquidsamples	17,10	20,52	25,65
Other services not listed in this unit	negotiable		
<b>Fitotrón <sup>c</sup></b>			
Per m2 per day	0,25	0,40	negotiable
By cultivating table day	1,00	1,80	negotiable
Full day module	8,00	15,00	negotiable
Full module and month	200,00	360,00	negotiable
For complete module year	2000,00	3600,00	negotiable
Photoperiod	0,20	0,20	negotiable
Forzed	0,20	0,20	negotiable
Tables rooting	0,20	0,20	negotiable
Increased by application of heating	0,12	0,12	negotiable
Others	negotiable		
<b>Determinations in soil</b>			
Drying, grinding and sieving	7,00	8,40	10,50

SERVICIOS GENERALES DE INVESTIGACIÓN

Texture (hydrometer)	14,10	16,92	21,15
Texture (of sieves)	negotiable		
pH	4,20	5,04	6,30
Electrical conductivity	4,20	5,04	6,30
Total carbonates (Bernard)	4,20	5,04	6,30
Active limestone	7,10	8,52	10,65
Oxidizable organic matter	7,10	8,52	10,65
Organic matter on ignition	4,20	5,04	6,30
Total N (autoanalyzer)	10,00	12,00	15,00
N, C , Total S (autoanalyzer)	11,40	13,68	17,10
P (Olsen) (extraction and colorimetry)	8,50	10,20	12,75
Extraction of cations with ammonium acetate	7,30	8,76	10,95
Exchangeable Ca (meq/100 g) (AA)	1,90	2,28	2,85
Mg exchange (meq/100 g) (AA)	1,90	2,28	2,85
Rate K ( meq/100 g) (AA)	1,90	2,28	2,85
Na exchange (meq/100 g ) (AA )	1,90	2,28	2,85
Exchange cations (Ca, Mg, Na, K) (meq/100 g)	7,60	9,12	11,40
Al (colorimetry)	7,30	8,76	10,95
Removing CIC	7,50	9,00	11,25
Determination CIC	4,40	5,28	6,60
Removal of trace	7,50	9,00	11,25
Mn (AA)	1,90	2,28	2,85
Fe (AA)	1,90	2,28	2,85
Cu (AA)	1,90	2,28	2,85

### SERVICIOS GENERALES DE INVESTIGACIÓN

Zn (AA)	1,90	2,28	2,85
Determination of (Fe/ Cu/ Mn/ Zn)	7,60	9,12	11,40
Preparation of patterns in different matrices	negotiable		
Boron removal	negotiable		
Boro (colorimetry)	negotiable		
NH <sub>4</sub> <sup>+</sup> (extraction y colorimetry)	8,50	10,20	12,75
NO <sub>3</sub> <sup>-</sup> (extraction and reflectometry)	7,10	8,52	10,65
Moisture determination	4,20	5,04	6,30
<b>Cost analysis hydrometer texture and CNS</b>			
Cost analysis of soil full 15% discount	121,14	145,37	181,71
Cost analysis > 8 samples(for sample) 55 % total cost	62,9928	79,9524	99,9405
Cost analysis > 20 samples(for sample) 45 % total cost	52,0902	65,4156	81,7695
The proportion discounts number of samples is maintained for individual determinations			
Analysis soil fertility recommendations (nitrate, P, Ca, Mg,K,Na, micros),	30	36	45
CIC analysis without enable Limestone, total N, nitrate and ammonium	86	103,2	129
Reduction> 8 samples 60%	52	62,4	78
Reduction> 20 samples 50%	43	51,6	64,5
<b>Determinations in saturated soil paste</b>			
Getting saturated paste (preparation and extract)	10,00	12,00	15,00
NO <sub>3</sub> <sup>-</sup> (mg/L)	5,00	6,00	7,50

### SERVICIOS GENERALES DE INVESTIGACIÓN

PO <sub>4</sub> <sup>3-</sup> (mg/L)	4,30	5,16	6,45
SO <sub>4</sub> <sup>2-</sup> (mg/L)	4,30	5,16	6,45
Cl <sup>-</sup> (mg/L)	5,00	6,00	7,50
CO <sub>3</sub> <sup>2-</sup> / HCO <sub>3</sub> <sup>-</sup> (mg/L)	5	6	7,5
Major anions in the saturation extract (nitrates, sulfates, phosphates, chlorides, bicarbonates, carbonates)	23,6	28,32	35,4
Ca (mg/L)	1,9	2,28	2,85
Mg (mg/L)	1,9	2,28	2,85
K (mg/L)	1,9	2,28	2,85
Na (mg/L)	1,9	2,28	2,85
Major cations in the saturation extract (Ca, Mg, Na, K)	7,6	9,12	11,4
Comprehensive analyzes in saturated paste	37,2	44,64	55,8
Cost analysis 10 to 20 samples (for sample) 70% total cost	26,04	31,248	39,06
Cost analysis > 20 samples (for sample) 60 % total cost	22,32	26,784	33,48
The proportion discounts number of samples is maintained for individual determinations			
<b>Foliar Analysis</b>			
Drying and milling	4,20	5,04	6,30
Microwave digestion (acid quality Suprapur)	34,00	40,80	51,00
Microwave digestion (acid quality PA)	19,00	22,80	28,50
Calcination in muffle furnace	4,20	5,04	6,30
Digestion with acid ash quality Suprapur	19,00	22,80	28,50
Total N (autoanalyzer)	10,00	12,00	15,00
Total N and S (autoanalyzer)	11,40	13,68	17,10

### SERVICIOS GENERALES DE INVESTIGACIÓN

P (colorimetry)	4,20	5,04	6,30
B (colorimetry)	4,20	5,04	6,30
Ca (AA)	1,90	2,28	2,85
Mg (AA)	1,90	2,28	2,85
Na (AA)	1,90	2,28	2,85
K (AA)	1,90	2,28	2,85
Determination of macronutrients (Ca, Mg, Na, K)	7,60	9,12	11,40
Fe (AA)	1,90	2,28	2,85
Cu (AA)	1,90	2,28	2,85
Mn (AA)	1,90	2,28	2,85
Zn (AA)	1,90	2,28	2,85
Determination of macronutrients (Fe, Cu, Mn, Zn)	7,60	9,12	11,40
Co (AA)	1,90	2,28	2,85
Ni (AA)	1,90	2,28	2,85
Full Cost foliar analysis calcination	60,00	72,00	90,00
10-20 Cost	36,50	43,80	54,75
Cost > 20	33,50	40,20	50,25

#### Analysis of organic growing media and soil improvers

Drying	4,20	5,04	6,30
Calcination in muffle furnace	4,20	5,04	6,30
Digestion with acid ash quality Suprapur	19,00	22,80	28,50
Filtered by 0.22 or 0.45 µm	5,00	6,00	7,50

### SERVICIOS GENERALES DE INVESTIGACIÓN

Determination of total macronutrients (AA)	7,60	9,12	11,40
Determination of total micronutrients (AA)	7,60	9,12	11,40
Determination of Total P	4,20	5,04	6,30
Removing ammonium acetate macronutrients (Ca, Mg, Na, K)	7,30	8,76	10,95
Determination of soluble macronutrients ammonium acetate (Ca, Mg, Na, K)	7,6	9,12	11,4
Removing CaCl <sub>2</sub> /DTPA micronutrients (Fe, Cu, Mn, Zn)	7,50	9,00	11,25
Determination of soluble micronutrients in CaCl <sub>2</sub> /DTPA (Fe, Cu, Mn, Zn)	7,6	9,12	11,4
C, N and S Total (autoanalyzer)	11,40	13,68	17,10
Total N (autoanalyzer)	10,00	12,00	15,00
NH <sub>4</sub> <sup>+</sup> (colorimetry)	4,30	5,16	6,45
NO <sub>3</sub> <sup>-</sup> (extraction and reflectometry)	7,10	8,52	10,65
Moisture determination	4,20	5,04	6,30
Determination of ash	4,20	5,04	6,30
pH	4,20	5,04	6,30
	4,20	5,04	6,30
Full cost analysis ( 10% discount)	105,00	126,00	157,50
10-20 samples cost	73,50	88,20	110,25
cost > 20	63,00	75,60	94,50
<b>Water analysis</b>			
Microwave digestion (acid quality Suprapur)	34,00	40,80	51,00

### SERVICIOS GENERALES DE INVESTIGACIÓN

Filtered through 0.22 or 0.45 micras	5,00	6,00	7,50
pH	4,20	5,04	6,30
Electrical conductivity	4,20	5,04	6,30
C, N and S Total (autoanalyzer)	11,40	13,68	17,10
B (colorimetry)	4,20	5,04	6,30
Ca (AA)	1,90	2,28	2,85
Mg (AA)	1,90	2,28	2,85
Na (AA)	1,90	2,28	2,85
K (AA)	1,90	2,28	2,85
Controlling determination of cations(Ca, Mg, Na, K)	7,60	9,12	11,40
Fe (AA)	1,90	2,28	2,85
Cu (AA)	1,90	2,28	2,85
Mn (AA)	1,90	2,28	2,85
Zn (AA)	1,90	2,28	2,85
Determination of Fe, Cu, Mn and Zn	7,60	9,12	11,40
Co (AA)	1,90	2,28	2,85
Ni (AA)	1,90	2,28	2,85
NH <sub>4</sub> <sup>+</sup> (colorimetry)	4,30	5,16	6,45
NO <sub>3</sub> <sup>-</sup> (colorimetry)	5,00	6,00	7,50
PO <sub>4</sub> <sup>3-</sup> (colorimetry)	4,20	5,04	6,30
SO <sub>4</sub> <sup>2-</sup> (turbidimetry)	4,30	5,16	6,45
Cl <sup>-</sup> (volumetric)	5,00	6,00	7,50
CO <sub>3</sub> <sup>2-</sup> / HCO <sub>3</sub> <sup>-</sup> (volumetric)	5,00	6,00	7,50
Majority determining anions (nitrates, sulfates,	23,5	28,2	35,25



**SERVICIOS GENERALES DE INVESTIGACIÓN**

phosphates, chlorides, carbonates and bicarbonates)			
Total Cost	109,80	131,76	164,70
Total Cost undigested	75,80	90,96	113,70
Cost without digestion without CNS	64,40	77,28	96,60
Discounts apply for similar showing the soil and foliar			
<b>Enzymatic analysis</b>			
<b>soil enzymatic activities</b>			
<b>Determinations soil enzymatic activities</b>			
beta-glucosidase	25,00	30,00	37,50
phosphatasas(acid and alkaline)	25,00	30,00	37,50
urease	25,00	30,00	37,50
arylsulfatase	25,00	30,00	37,50
deshydrogenase	35,00	42,00	52,50
Value 5 determinations per sample 10% discount			
<b>Determinations plant enzymatic activities</b>			
catalase	15,00	18,00	22,50
peroxidase	15,00	18,00	22,50
<b>Otrer services</b>			
	Negotiable		
<b>Image Analyzer</b>			
Use per day	20	24	29
Other services			

### SERVICIOS GENERALES DE INVESTIGACIÓN

Fiber extraction	Negotiable		
Fat Extraction	Negotiable		
Grinding prefetch	Negotiable		
<b>Colorimetry</b>			
Samples analysis	1,9	2,85	4,75
Otrers services	Negotiable		

- Rates valid for implemented methods (EPA 200.8 and related). Refer to other methods.
- The rates include sample preparation. Discounts negotiable for monoelemental analysis or for large sample volumes.
- Fees for booking space phytotron rooms. Not include specific treatments. See discounts for special conditions.

### MICROANALYSIS SERVICE

Price in Euros Concept	2017		
	USE	OPI	EXT./PRIV
1 element by elemental analysis (C, H, N)	11,00	13,75	27,50
1 element by elemental analysis ( S )	14,40	18,00	36,00
Three elements by elementary analysis (C , H , N)	12,00	15,00	30,00
Elemental analysis ( C , H , N , S )	18,50	23,13	46,26
Increase in liquid samples by elemental analyzer	1,33	1,66	3,32
Profile and range studies for ICP (per sample) Obligatory for measurement of ICP	1,03	1,29	2,58
1 element analysis ICP	11,90	14,87	29,74
Analysis of 2 to 5 elements by ICP	15,47	19,33	38,66
Analysis of 6-10 elements by ICP	19,03	23,79	47,59

### SERVICIOS GENERALES DE INVESTIGACIÓN

Increase per item from 10 items	1,03	1,29	2,58
Sample Preparation	14,87	18,59	37,18
Water analysis (* ) spectrophotometer	of 9,70 to 19,40	of 12,13 to 28,88	of 24,26 to 57,76
Determination of BOD	13,09	16,36	32,72
Water pH or conductivity determination	2,75	3,44	6,88
Soil pH or conductivity determination	8,33	10,41	20,82
Carbonates determination by calcimetry	9,52	11,90	23,79
Moisture determination	3,00	3,75	7,50
Fluoride , Chloride , Ammonium (selective electrode)	15,47	19,33	38,66
Analysis 1 element in oil by ICP	19,03	23,79	47,59
Analysis of 2 to 5 elements in oil by ICP	22,84	28,55	57,10
Analysis of 6 to 15 elements in oil by ICP	26,65	33,31	66,62
Analysis of more than 15 elements in oil by ICP	30,46	38,07	76,14
Ash Determination	10,30	12,88	25,75
Volatile Determination	8,24	10,30	20,60
Ultrasonic nebulizer in element analysis in ICP use	2,06	2,58	5,15
Hydride generator use in element analysis in ICP	4,12	5,15	10,30
Ground	7,50	37,50	75,00
Grading	2,06	2,58	5,15
Filtered	3,09	3,86	7,73
Drying	3,00	3,75	7,50
Sample Dilution	1,03	1,29	2,58
Acid microwave digestion quality Suprapur	18,54	23,18	46,35
Determination of Chromium VI in water	20,60	25,75	51,50

### SERVICIOS GENERALES DE INVESTIGACIÓN

Determination of Chromium VI in soils	41,20	51,50	103,00
1 hour by capillary electrophoresis*	7,14	8,92	17,84
1 Hour GC -MS*	21,41	26,77	53,53
1 Hour GC -MS-MS*	26,17	32,72	65,43
1 Hour bidimensional GC -MS-MS*	30,93	38,66	77,33
Litre of water for HPLC*	3,09	3,86	7,73
1 Hour HPLC-MS-MS*	26,17	32,72	65,43
1 Hour Ion-exchange Chromatography*	18,00	22,50	45,00
1 Hour HPLC (DAD,UV, RI, LS and Fluorescence detector)*	18,00	22,50	45,00
1 Hour Q-TOF*	28,00	35,00	70,00
Analysis of chlorine or bromine by ICP (1-5 samples)**	28,00	35,00	70,00
Analysis of chlorine or bromine by ICP (more than 5 samples)**	23,00	28,75	57,50
New chromatography method (per item)*	Negotiable	Negotiable	Negotiable
1 Hour centrifugue*	3,00	3,75	7,50
1 Hour oximeter	2,50	3,13	6,25
1 Hour rotary evaporator	3,00	3,75	7,50
1 Hour autoclave	3,00	3,75	7,50
Determination of Mercury in Mercury Analyzer	11,90	14,87	29,74
1 Hour UV Spectrophotometer	8,00	10,00	20,00
Determination of amino acids in physiological samples	60,00	75,00	150,00
Determination of amino acids in non-physiological samples	45,00	56,25	112,50
1 Hour vacuum concentrator*	5,15	6,44	12,88
1 Hour loan of portable and fixed equipment for the study of Heritage**	Negotiable	Negotiable	Negotiable
Others	Negotiable	Negotiable	Negotiable

**SERVICIOS GENERALES DE INVESTIGACIÓN**

\* Possibility of discount according to number of items

(\*\*) UV/VIS/NIR/SWIR spectrophotometer, portable microscope with stand, raman spectrometer, portable hyperspectral camera, FT/IR microscope coupled to FT/IR spectrophotometer

**MICROSCOPY SERVICE**

Prices in Euros. Concept	2017		
	USE	OPI	EXT./PRIV
<b>MICROSCOPES (AUTONOMOUS USE)</b>	<b>(Prices per hour)</b>		
AFM/STM microscope PicoPlus 2500	10	25	50
Scanning electron microscope Philips XL30	9	23	45
Scanning electron microscope Jeol 6460LV	9	23	45
Environmental scanning electron microscope Zeiss Evo	11	28	55
High resolution scanning electron microscope Fei Teneo	15	37	75
High resolution scanning electron microscope Hitachi S5200	11	28	55
High resolution transmission electron microscope Fei Talos	18	45	90
Transmission electron microscope Philips CM200	12	30	60
Transmission electron microscope Zeiss Libra 120	12	30	60
Confocal microscope Leica TCS-SP2	6	15	30
Confocal microscope Zeiss LSM 7 DUO	10	25	50

### SERVICIOS GENERALES DE INVESTIGACIÓN

Confocal-interferometric microscope Sensofar S Neox	10	25	50
Optical epifluorescence microscope Zeiss Apotome	4	10	20
Optical petrographic-metallographic microscope Nikon LV	3	8	15
Optical microscope Olympus BX61	3	8	15

<b>MICROSCOPES (ASSISTED BY A TECHNICIAN)</b>	<b>(Prices per hour)</b>		
AFM/STM microscope PicoPlus 2500	30	75	150
Dual Beam FIB/SEM microscope Zeiss Auriga			
- Mode: Program	25	62	125
- Mode: SEM	45	112	225
- Mode: SEM + FIB	55	137	275
Scanning electron microscope Philips XL30	29	75	150
Scanning electron microscope Jeol 6460LV	29	75	150
Environmental scanning electron microscope Zeiss Evo	31	78	155
High resolution scanning electron microscope Fei Teneo	35	87	175
High resolution scanning electron microscope Hitachi S5200	31	78	155
High resolution transmission electron microscope Fei Talos	38	95	190

## SERVICIOS GENERALES DE INVESTIGACIÓN

Transmission electron microscope Philips CM200	32	80	160
Transmission electron microscope Zeiss Libra 120	32	80	160
Confocal microscope Leica TCS-SP2	26	65	130
Confocal microscope Zeiss LSM 7 DUO	30	75	150
Confocal-interferometric microscope Sensofar S Neox	30	75	150
Optical epifluorescence microscope Zeiss Apotome	24	60	120
Optical petrographic-metallographic microscope Nikon LV	23	58	115
Optical microscope Olympus BX61	23	58	115

<b>SAMPLE PREPARATION (MATERIALS)</b>				
Sample thinner electrolyte Tenupol 5 (1 hour)	(electrolytes not included)	3	8	15
Conventional ion-thinning (1 hour)		3	8	15
Ion thinner (1 hour)	(PIPS, Fischione 1050 y 1060)	5	10	25
Disk cutters, grinders and drills (1 hour)	(Displam, Isomet, Leica TXP y Petrothink)	5	10	25
Dimpler (1 hour)	(Gatan and Fischione)	5	10	25
Inclusion in resin (1 sample)		1	3	5
Coating: gold, carbon and other (1 cycle)		8	20	40

### SERVICIOS GENERALES DE INVESTIGACIÓN

Preparation of metallographic samples (6 samples) polishing until 1 $\mu\text{m}$	(cutting, embedding in resin and	30	75	150
Preparation of sample suspension TEM (1 sample)		5	13	25
Preparation of TEM samples (1 sample) thinning)	(cutting, grinding, dimpling, ion-	35	88	175
Preparation of TEM samples by FIB-SEM (1 sample)		150	300	500
Preparation of TEM samples, other preparations		Price to agree	Price to agree	Price to agree
Preparation of a sample, metallizing (1 sample)		15	38	75
Polishing (1 hour) Vibromet)	(Ecomet 250, Lavopol y	5	10	25
Spin Coater Laurell WS-400BZ (1 hour)		5	10	25

<b>SAMPLE PREPARATION (LIFE SCIENCE)</b>				
Toulidin blue counterstaining. (1 Slide)		1,5	4	8
Counterstaining (simple), U o Pb (1 grid, ultrathin)		3	8	15
Counterstaining (double), U and Pb (1 grid, ultrathin)		6	15	30
Semithin section cutting. Room temperature. Diamond.	(1 Slide)	6	15	30
Semithin section cutting. Room temperature. Glass knife.	(1 Slide)	4	10	20



### SERVICIOS GENERALES DE INVESTIGACIÓN

Semithin section cutting. Room temperature. Glass knife. With toulidin blue counterstaining. (1 Slide)	5,5	14	28
Semithin section cutting. Room temperature. Glass knife. With orientation (1 Slide)	7	17,5	35
Ultrathin section cutting. Room temperature. Diamond. (1 grid)	9	22,5	45
Ultrathin section cutting. Room temperature. Glass. (1 grid)	6	15	30
Ultrathin section cutting. Room temperature. Glass. With orientation (1 grid)	9	22,5	45
Criostate Leica CM1950 (1 hour)	3	7,5	15
Glass knife, 6mm (2 units)	1,5	3,75	7,5
Dehydration alcohol/acetone (1 sample)	10	25	50
Critical point drier Leica CPD 300 (1 hour)	3	8	15
Osmium vapor fixation (1 sample)	5	13	25
Inclusion at room temperature. (1 sample) (infiltration, polymerization)	11	25	50
Inclusion at room temperature. (1 sample) (dehydration, infiltration, polymerization)	21	48	96
Inclusion at room temperature. (1 sample) Infiltration, polymerization (fixation, dehydration, polymerization)	32	70	140
High Vacuum Coater ACE600. Carbon coating. (1 cycle)	6	15	30

### SERVICIOS GENERALES DE INVESTIGACIÓN

High Vacuum Coater ACE600. Gold coating. (1 cycle)	8	20	40
Microtome Leica RM2165 (1 hour)	1,5	3,75	7,5
Trimer Leica EM TRIM2 (1 hour)	0,5	1,25	3
Critical point. (1 sample) (drying)	14	35	70
Critical point. (1 sample) (dehydration, drying)	24	60	120
Critical point. (1 sample) (fixation, dehydration, drying)	35	87	174
Collodion grid (1 unit)	3	7,5	15
Cryo chamber FC7 with dewar LN2 35 liters	50	125	250
Ultramicrotome Leica UC7 (1 hour)	3	8	15
Ultramicrotome Leica UC7 II (1 hour)	3	8	15

<b>SAMPLE PREPARATION CONSUMABLES</b>			
Glass rod	15	15	15
Mica sheet (1 unit)	32	32	32
Glass knife storage (Box capacity 11 units)	27	27	27
SEM Teneo / XL30 holders (Box + 8 pins)	5	5	5
SEM Jeol holders (10 pins)	10	10	10

### SERVICIOS GENERALES DE INVESTIGACIÓN

TEM grids storage (Box capacity 50 samples)	10	10	10
TEM grids storage (Box capacity 100 samples)	20	20	20
AFM/STM standard probe	25	25	25
AFM/STM special probe	Price to agree	Price to agree	Price to agree
Grids with B type coal (1 unit)	3	3	3
Grids without support, Cu or Ni (10 units)	4	4	4
Grids, other types	Price to agree	Price to agree	Price to agree

OTHER ITEMS AND SERVICES			
Others	Price to agree	Price to agree	Price to agree
Training (cost of the technician per hour)	6	50	100
Nightly rate confocal Zeiss LSM 7 DUO (from 21:00 to 9:00)	48	120	240
Nightly rate Optical Zeiss Apotome (from 21:00 to 9:00)	20	50	100

**SERVICIOS GENERALES DE INVESTIGACIÓN**

**RADIOISOTOPES SERVICE**

Concepto	Prices in euros		
	USE	OPI	EXT
<b>I. Per analysis, including sample preparation.</b>			
Total alpha-beta activity	33	60	90
Tritium (LSC)	71	120	170
C-14 (LSC)	71	120	170
Sr-90 (Cerenkov)	113	180	260
Ra-226 (LSC)	71	120	170
Pb-210 (LSC)	71	120	170
U isotopes (alpha spectrometry)	116	190	274
Th isotopes (alpha spectrometry)	116	190	274
Po-210 (alpha spectrometry)	95	153	237
Uranium and thorium isotopes	171	260	396
Gamma spectrometry	60	98	158
Luminiscence dating (OSL)	450	500	520
In situ radon monitoring (per day)	20	30	43
Radon (canister technique)	65	65	65
$\delta^{18}\text{O}/\delta^2\text{H}$ in low salinity water (CRDS)	5	7,5	12,1
$\delta^{18}\text{O}/\delta^2\text{H}$ in moderate-high salinity water (CRDS)	6	9	14,52

**SERVICIOS GENERALES DE INVESTIGACIÓN**

**II. Per additional sample preparation (solid samples in the case of Analyses type-I excepting gamma spectrometry and ICP-MS).**

Open vessel digestion	10	10	25
Microwave digestion using PA grade reagents	14	14	30
Microwave digestion using bidestillate grade reagents	16,00	17,00	45,00
Filtering (see explanatory note for ICP-MS analyses)	1,50	1,50	1,50
Dilution into 1% HNO <sub>3</sub> (see explanatory note for ICP-MS analyses)	1,5	2	3

**III. Use of the detectors (Per sample and day of counting)**

Gas proportional detector	33	33	70
Alpha spectrometry	10	10	25
LSC (< 1/2 hour per sample)	1	1,25	2,5
Technician assistance (per hour)	10	10	20
Use of the clean room	Upon agreement with the customer		

Explanatory note for ICP-MS analyses:

The analysis by ICP-MS requires several steps, which are charged separately (excepting case of LASER ablation). The more steps are previously done by the user, the cheaper and faster the analysis is. These steps are: 1) Microwave acid digestion (solid samples, gels, biological matrices, etc.), 2) filtration, 3) dilution into 1% HNO<sub>3</sub> until TDS < 1000 ppm, 4) semiquantitative analysis (minimum once per every five samples, unless the user indicates the analyte concentration range and the potential internal standards). The cost of steps 1-4, if required, are not included in the price per sample below indicated. PLEASE READ THE FOOTNOTE TO THE TABLE.

**SERVICIOS GENERALES DE INVESTIGACIÓN**

<b>IV. Semiquantitative analysis (mandatory before quantitative analyses in at least one of every five samples, unless the range of concentration of the target analyte is provided by the user)</b>	22	22	41
<b>V. Quantitative analysis in liquid samples according to U.S.E.P.A. 200.8 method. The cost depends on the required elements and their number, etc; orientative prices per sample are provided.</b>			
15 elements, 20 samples of water , He-mode.	21,00	22,00	42,00
<b>VI. Quantitative analysis in liquid samples, no Quality Checks (See footnotes 1 and 2).</b>			
15 elements, 20 samples of water , He-mode.	15,5	17	32
<b>VII. Isotope ratios by ICP-MS</b>			
Stable lead isotopes with no pre-concentration	20	26	43
Stable lead isotopes with pre-concentration	85	92	136
Uranium isotopes	116	190	274
Thorium isotopes.	116	190	274
Uranium and thorium isotopes	171	260	396
<b>VIII. LASER ablation ICP-MS analysis in silicate matrix glass samples (from 02/2015). For other kinds of glass: just semiquantitative analyses.</b>			
Per sample	15	16	32
<b>IX. Additional services</b>			
<sup>210</sup> Pb dating	70	70	150
In-situ gamma spectrometry.	110	110	220

(1) The fares depend upon the number and nature of the analytes and the number of samples. Analyses of Hg, I, Ag, Ba, B (and Fe and Ca when the expected concentrations are above the trace/ultratrace level) are processed and charged separately.

## SERVICIOS GENERALES DE INVESTIGACIÓN

(2) Liquids are diluted on a m/m basis. No quality controls are established for matrix effects or spectroscopic interferences. When this fare is chosen, **the user assumes the possibility** that results could be biased as a consequence of these effects.

### X-RAYS SERVICE

CONCEPT AND € PRICES	US	OPI	EXT
<b>CHEMICAL ANALYSIS BY XRF (AXIOS)</b>			
XRF major measurement per sample	10,00	37,00	72,00
XRF trace measurement per sample	13,75	43,25	84,50
XRF trace and major measurement in boric acid pressed powder of 10 mm diameter by sample (with preparation)	14,25	45,75	89,50
XRF trace and major measurement in boric acid pressed powder of 10 mm diameter by sample (without preparation)	5,25	26,25	52,50
XRF general semiquantitative analysis per sample ( $\varnothing > 25$ mm)	2,50	12,50	25,00
XRF general semiquantitative analysis per sample ( $\varnothing = 20$ mm)	3,80	19,00	38,00
XRF general semiquantitative analysis per sample ( $\varnothing = 10$ mm)	4,20	21,00	42,00
XRF general semiquantitative analysis per sample ( $\varnothing = 6$ mm)	4,75	23,75	47,50
XRF analysis of maximum intensity peak of a particular element	2,00	10,00	20,00
<b>X-RAY MICROFLUORESCENCE</b>			
X-ray microfluorescence hour of reserve by user	10,00	50,00	100,00
X-ray microfluorescence hour of measurement by technician	20,00	100,00	To agree
X-ray microfluorescence hour of reserve by user to study layers	10,00	50,00	100,00
X-ray microfluorescence hour of measurement by technician to study layers	20,00	100,00	To agree
Hour of interpretation of $\mu$ XRF	20,00	100,00	200,00
<b>X-RAY DIFFRACTION (POWDER METHOD, STUDY OF SURFACES AND LAYERS)</b>			
Hour of use of diffractometer with sample interchanger (D8I-90) and Lynxeye detector	55,00	275,00	To agree
Hour of use of diffractometer with sample interchanger for transmission study (D8I-90) and Lynxeye detector	55,00	275,00	To agree
Hour of use of diffractometer with sample interchanger (D8I-90) and	5,50	27,50	To agree

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scintillation detector			
Hour of use of diffractometer with sample interchanger for transmission study (D8I-90)	5,50	27,50	To agree
Hour of use of diffractometer with treatment chambers (D8C)	10,00	50,00	To agree
Hour of use of diffractometer with treatment chambers (DISCOVER II)	10,00	50,00	To agree
Hour or fraction of diffractogram interpretation (cualitativa/cuantitativa)	20,00	100,00	To agree
Microdiffraction measurement hour of use (DISCOVER)	20,00	100,00	To agree
In capillary study hour of use (DISCOVER)	20,00	100,00	To agree
Reflectometry measurement hour of use (DISCOVER)	20,00	100,00	To agree
Texture measurement hour of use (DISCOVER)	20,00	100,00	To agree
Residual stress measurement hour of use (DISCOVER)	20,00	100,00	To agree
Hour of DISCOVER measurements interpretation	20,00	100,00	To agree
Other kinds of measurements and/or work	To agree		
<b>X-RAY DIFFRACTION (SINGLE CRYSTAL)</b>			
Preliminary study (unit price)	1,50	7,50	15,00
Full day of use data collection for structural resolution (a)	100,00	To agree	To agree
Data acquisition hour of use for structural resolution	10,00	50,00	100,00
N2 for low temperature measurement (per hour)	1,00	1,00	1,00
N2 for low temperature measurement (per day)	20,00	20,00	20,00
Resolution of structures (unit price)	To agree		
Using databases	To agree		
Other kinds of measurements and/or work	To agree		
<b>TXRF</b>			
TXRF qualitative analysis with Mo tube (200 s) (b)	5,00	25,00	50,00
TXRF qualitative analysis with W tube (800 s) (b)	10,00	50,00	100,00
TXRF quantitative analysis with Mo tube (b)(c)	25,00	125,00	250,00
TXRF quantitative analysis with W tube (b)(c)	50,00	250,00	500,00
Hour of TXRF analysis with Mo tube (b)	90,00	450,00	900,00
Hour of TXRF analysis with W tube (b)	45,00	225,00	450,00



## SERVICIOS GENERALES DE INVESTIGACIÓN

Analysis as required by TXRF	To agree		
<b>COMPUTERIZED TOMOGRAPHY</b>			
2D image acquisition	10,00	50,00	To agree
2D image acquisition by technician	20,00	100,00	To agree
3D image acquisition	10,00	50,00	To agree
3D image acquisition by technician	20,00	100,00	To agree
Image analysis	10,00	50,00	To agree
Image analysis by technician	20,00	100,00	To agree
<b>TREATMENT OF SAMPLES</b>			
Grinding	7,50	37,50	75,00
XRF pressed powders preparation	9,00	19,50	37,00
XRF beads preparation	8,00	27,00	52,00
Samples preparation (to press)	0,75	3,75	7,50
XRD samples preparation (oriented aggregate)	20,00	50,00	100,00
Extraction of the fraction less than two microns in clays	To agree		
XRD samples preparation (capillaries)	2,10	10,50	21,00
Microdiffraction samples preparation	2,10	10,50	21,00
TXRF samples preparation	To agree		
<b>MATERIAL</b>			
Capillaries for XRD (unit price)	7,00	7,00	7,00
Single crystal Micromount of 100 µm, 50 µm and 20 µm (unit price)	20,00	20,00	20,00
Magnetic base for Micromount (unit price)	50,00	50,00	50,00

### University of Sevilla (US), Research Public Organism (RPO) and Private entity (PRI)

- (a) Depending on the availability of the laboratory.  
 (b) Prices do not include sample preparation (digestion, leaching, etc.), except the addition of the standard.  
 (c) It includes quantitative analysis, 1 or 2 dilutions, adding 1 or 2 internal standards and measures two replicas.

### NMR SERVICE

## SERVICIOS GENERALES DE INVESTIGACIÓN

Concept	USE	PRI <sup>1</sup>	EXT / PRIV
<b>1. NMR experiments in a 300 MHz spectrometer</b> (performed by NMR facility's staff) (b)			
<sup>1</sup> H (c)	1.8	3.6	11.2
<sup>13</sup> C (d)	5	10	32
COSY (e)	3.5	7	28
HSQC (f)	5	10	36.8
Set of standard NMR experiments (g)	14	28	96
<sup>13</sup> C overnight (h)	15	30	96
<b>2. Open-access 300 MHz spectrometer</b> (only for USE users)			
1/4 h as self-service use	1.5		
1/2 h as self-service use	2.5		
1 h as self-service use	4		
<b>3. Other services</b>			
NMR experiments at different temperature from room temperature will have an increment in the price according to the overall operational time spent on the sample (i)			
Solvent (0.6 ml) (j)	2	2	2
HPLC-SPE-NMR	To be agreed	To be agreed	To be agreed
<b>3. Time rates</b> (k)			
1 h in a 300 MHz spectrometer	5	10	32
1 h in the 500 MHz spectrometer	7.5	15	48
1 h in the 500 MHz spectrometer with cryoprobe	10	20	60
1 h in the 600 MHz WB spectrometer (30 minutes minimum)	16	32	80
1 h in the 700 MHz spectrometer (30 minutes minimum)	20	40	100
Liquid sample preparation	3	6	13.6
HR MAS sample preparation	15	30	60
Solid sample preparation	10	20	40
Process and plot spectra (1 hour)	20	40	60

(a) Ask for applicable discounts proportional to the total time/services usage. Prices to be agreed when NMR experiments include other nuclei than <sup>1</sup>H and <sup>13</sup>C.

(b) Experiments in other spectrometers:

- For the 500 MHz: price = (300 MHz price) x 1.5
- For the 500 MHz with cryoprobe: price = (300 MHz price) x 2

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- For the 700 MHz with cryoprobe: price = (300 MHz price) x 4
- (c) Up to 10 minutes.
- (d) Up to 1 hour. Unless specified, all the experiments will be launched for 1 hour.
- (e) Up to 30 minutes.
- (f) Up to 1 hour.
- (g) Includes: <sup>1</sup>H, COSY, HSQC and <sup>13</sup>C. The included <sup>13</sup>C experiment will last up to 1 hour.
- (h) Up to 8 hours.
- (i) Increment = (usage time) x (1 hour rate).
- (j) Valid price for usual solvents: CDCl<sub>3</sub>, DMSO-*d*<sub>6</sub>, D<sub>2</sub>O, acetone-*d*<sub>6</sub>, etc. Ask for any other solvent.
- (k) For samples requiring longer experimental times, the final price will be calculated as follows:
  - First eight hours period = (1 hour price) x 5
  - 2<sup>nd</sup> eight hours period or fraction = (1 hour price) x 4
  - 3<sup>rd</sup> eight hours period or fraction = (1 hour price) x 3
  - 4<sup>th</sup> eight hours period and following = (1 hour price) x 3
 Any additional setup will be included in the usage time.

### ANIMAL RESEARCH SERVICE

Prices in Euros.	2017		
	USE	OPI	EXT./PRIV
<b>Animals*</b>			
<b>Wistar rats:</b>			
< 3 weeks	2,1	2,7	7
3 weeks	2,7	3,3	8
4 weeks	3,2	3,5	8,5
5 weeks	3,4	4	9,5
6 weeks	3,6	4,4	10
7 weeks	4	4,8	10,5
8 weeks	4,4	5,4	12

### SERVICIOS GENERALES DE INVESTIGACIÓN

9 weeks	5	6	14
10 weeks	5,8	7	16
11 weeks	6,2	7,5	18
12 weeks	7	8	21
Pregnant	17	22	45
Timed mated	20	25	51
Lactating	25	30	60
<b>Aged Wistar rats</b>			
3 months	7	8	21
3 to 12 months	+2,2€/month	+ 2,2€/month	+ 2,2€/month
12 months onwards	+3,3€/month	+3,3€/month	+3,3€/month
<b>Outbred mice</b>			
< 3 weeks	2,5	3,5	9
3 weeks	3	4,5	11
additional weeks	+ 0,25€/month	+0,25€/month	+0,25€/month
<b>Inbred mice</b>			
< 3 weeks	2,5	3,5	9
3 weeks	3	4,5	11
additional weeks	+0,25€/week	+0,25€/week	+0,25€/week
3 months onwards	+ 1,2€/month	+ 1,2€/month	+1,2€/month
Pregnant	8	9,5	25
Timed mated	12	14	35
Lactating	14	16	40
* Specific sex required	12,00%	12,00%	12,00%

### SERVICIOS GENERALES DE INVESTIGACIÓN

* picked up on site	-12,00%		
Shipping cage (big)	8	10	10
Shipping cage (small)	4	5	5
Shipping cost	6% of total cost	Courier	
Mouse oocytes (FVB or undefined strain)	1	1,2	1,5
Mouse embryos (zygotes, confirmed by the presence of two pronuclei)	1,8	2	2,4
Mouse embryos (from two cells to blasts)	2,2	2,5	3
<b>Laboratory animal Maintenance</b>			
Rat per week	2,5	3	10
Transgenic mice generated in the Unit per week, or their breeding with imported mouse lines. Need individual identification	0,4	0,5	2
Transgenic mice generated in the Unit per week, or their breeding with imported mouse lines. Without individual identification	0,3	0,4	1,8
Imported transgenic mice per week (need individual identification)	0,7	1,2	4
Imported transgenic mice per week (without individual identification)	0,6	1	3
Rabbit per week	11	14	30
<b>Production of polyclonal antibodies in laboratory rabbits</b>			

**SERVICIOS GENERALES DE INVESTIGACIÓN**

Rabbit per week Performed according to standard immunization protocols and adjuvants. Custom protocols. The price of rabbits is not included. Extra extraction / immunization: € 6.00	11	14	30
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<b>Generation of transgenic mice</b>	
Pronuclear microinjection of mouse embryos ES cell injection into blastocysts Development of homozygous lines Double / triple transgenic	Price varies widely depending on the particular needs. Consult

<b>Fenotyping of Laboratory mice</b> (see below for parameters studied) Performed according to standard protocols and times. For other needs, please consult. Presentation of results in Excel sheets. Preliminary statistical study of results. Consult Animals must be in the CEA. For other cases, please consult.			
<b>Price per hour of study</b>			
SHIRPA	15	20	50
Open Field. Activity Test	15	20	50
Vertical pole	15	20	50
Basket cage	15	20	50
Tail suspension	15	20	50
Elevated plus maze	15	20	50
0-maze	15	20	50
Object recognition	15	20	50
Treadmill	15	20	50
Active avoidance	15	20	50

## SERVICIOS GENERALES DE INVESTIGACIÓN

Passive avoidance	15	20	50
<b>Price per animal studied</b>			
Rotarod	5	8	20
Wire hang test	3	5	18
Gait analysis	20	25	60

### Fenotyping assays available

	Available techniques	Parameter studied
<b>Sensory function and motor</b>	SHIRPA	Sensorimotor General Test
	Rotarod	Motor function, balance and coordination
	Open Field. Activity test	Motor activity in the new environment, anxiety
	Wire hang test	Neuromuscular function
	Vertical pole	Neuromuscular function
	Basket cage	Neuromuscular function
	Olfactory test	Olfactory sensory function
	Tail suspension	Depression
	<b>Sensory function and motor</b>	Grip Strength
<b>Socialization</b>	Social box interaction	Social interaction
<b>Learning and memory</b>	Elevated plus maze	Anxiety
	0- Maze	Anxiety, spatial learning
	Object recognition (memory)	Spatial recognition and memory