

# Laboratory equipment and shielded cells

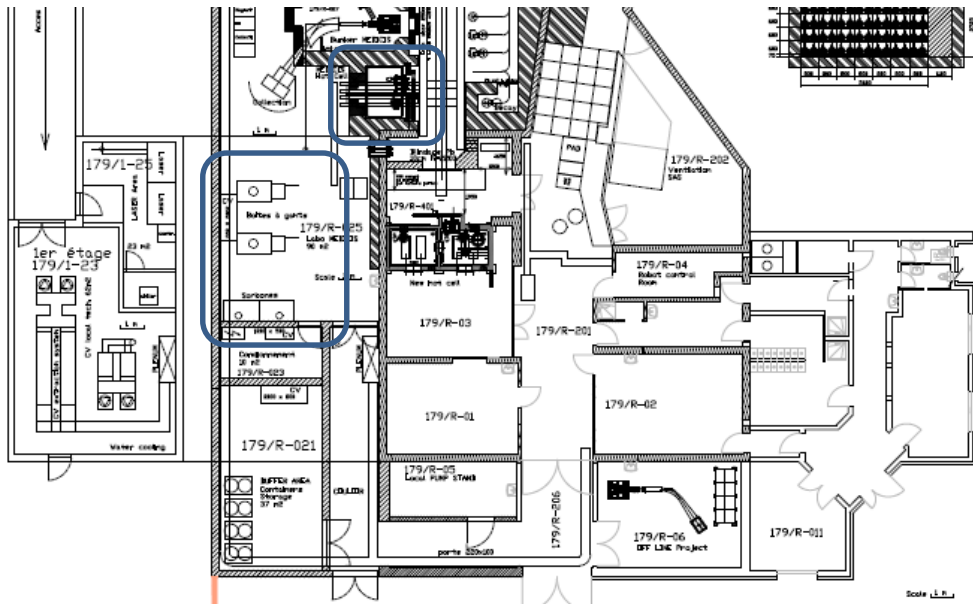
Thierry Stora

Feb 2016

# Laboratory equipment

This WP is included in the tasks of a fellow in

- 2 fume hoods
- 2 nuclear medicine hot cells
- 1 multipurpose hot cell, including target handling
- Lab benches



# Typical isotopes/activities

- EDMS 1549022

Shielding calculation for a few specific radionuclides for MEDICIS

Radionuclides	half-life	Decay mode (%)	Radiation (Intensity)	Source activity	$\gamma$ -Dose rate ( $\mu\text{Sv/h}$ ) [tissue] at a distance of 1 m										
					Shield thickness (Pb)/Concrete/Fe										
					2 cm	5 cm	8cm	10 cm	15 cm						
Sc-44	3.97 h	$\epsilon$ : 100.00	$\beta^+$ : 632.0keV, 1473.5 keV(max) (94.7%), $\gamma$ : 511.0 keV (188.54 %), 1157.02(99.9%)	10 MBq	7.15E-01/ 2.52E+00/ 2.14E+00	1.13E-01/ 2.25E+00/ 8.86E-01	1.74E-02/ 1.88E+00/ 3.10E-01	4.86E-03/ 1.60E+00/ 1.50E-01	1.91E-04/ 9.95E-01/ 2.36E-02						
					100 MBq	7.15E+00/ 2.52E+01/ 2.14E+01	1.13E+00/ 2.25E+01/ 8.86E+00	1.74E-01/ 1.88E+01/ 3.10E+00	4.86E-02/ 1.60E+01/ 1.50E+00	1.91E-03/ 9.95E+00/ 2.36E-01					
						1 GBq	7.15E+01/ 2.52E+02/ 2.14E+02	1.13E+01/ 2.25E+02/ 8.86E+01	1.74E+00/ 1.88E+02/ 3.10E+01	4.86E-01/ 1.60E+02/ 1.50E+01	1.91E-02/ 9.95E+01/ 2.36E+00				
				10 GBq			7.15E+02/ 2.52E+03/ 2.14E+03	1.13E+02/ 2.25E+03/ 8.86E+02	1.74E+01/ 1.88E+03/ 3.10E+02	4.86E+00/ 1.60E+03/ 1.50E+02	1.91E-01/ 9.95E+02/ 2.36E+01				
					Sc-44m		58.61 h	IT : 98.80 $\epsilon$ : 1.20	$\gamma$ : 271.241(86.7%) $\gamma$ : 1001.83(1.20%), 1126.06(1.20%), 1157.002(1.20%)	10 MBq	1.59E-01/ 9.17E-01/ 6.84E-01	2.52E-02/ 8.48E-01/ 2.21E-01	3.82E-03/ 6.72E-01/ 7.02E-02	1.06E-03/ 5.49E-01/ 3.33E-02	4.07E-05/ 3.05E-01/ 5.21E-03
						100 MBq					1.59E+00/ 9.17E+00/ 6.84E+00	2.52E-01/ 8.48E+00/ 2.21E+00	3.82E-02/ 6.72E+00/ 7.02E-01	1.06E-02/ 5.49E+00/ 3.33E-01	4.07E-04/ 3.05E+00/ 5.21E-02
				1 GBq							1.59E+01/ 9.17E+01/ 6.84E+01	2.52E+00/ 8.48E+01/ 2.21E+01	3.82E-01/ 6.72E+01/ 7.02E+00	1.06E-01/ 5.49E+01/ 3.33E+00	4.07E-01/ 3.05E+01/ 5.21E-01
											10 GBq	1.59E+02/ 9.17E+02/ 6.84E+02	2.52E+01/ 8.48E+02/ 2.21E+02	3.82E+00/ 6.72E+02/ 7.02E+01	1.06E+00/ 5.49E+02/ 3.33E+01

# Fume hood

Example (EDH 5533937)



## 1- Sorbonne

Item	Ref.	Désignation	Unité	PU Public	Coeff	PUF	PUP	PUT	Qté	Total
ST		Sorbonne selon offre 410.03518-5284 Waldner - Poste 1		14 887,00	1,1500	17 120,05		17 120,05	1,00	17 120,05
26.22	HOCE	Visite initiale	h				46,57	46,57	1,00	46,57
26.22	HOCE	Mise en chantier	h				46,57	46,57	1,00	46,57
26.22	HOCE	Réception / mesures	h				46,57	46,57	2,00	93,14
									1,00	0,00
Non compris : toutes autres heures à effectuer sur site ou autre accompagnement de Waldner										

Provision for filters : 10kCHF

Provision for shielding : 10kCHF

**Total for 2 Fume hoods : 2x40kCHF = 80 kCHF ;**

Total Net

17 306,33 € HT

Mini Seminar on remaining work packages for MEDICIS



# Lab benches

## Paillasses de laboratoire

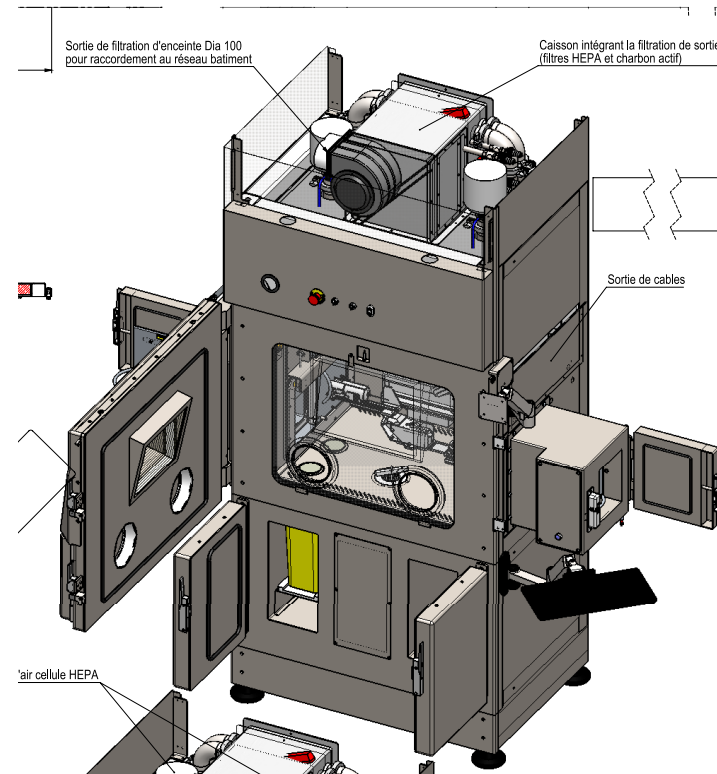
solutions simples,  
rapides et  
économiques  
pour implanter  
ou moderniser  
un laboratoire



<http://www.labomoderne.com/guide.Mobilier.html?gclid=CJCW14mIossCFesV0wod0wwLww>

Catalogue options : **total 10kCHF**

# Nuclear Medicine Hot Cell



**Price pre-inquiry : 110-165kCHF**

**Start-up with a single Nuclear Medicine Hot Cell**



# Radiochemistry automats

In-kind from N'tal Physical Laboratory (NPL, UK)



# Multipurpose Hot Cell

- Expected delay: funding requested to FABIS (Spanish Andalusia Foundation)

## Formulario de Candidatura

### 1.1 Identificación

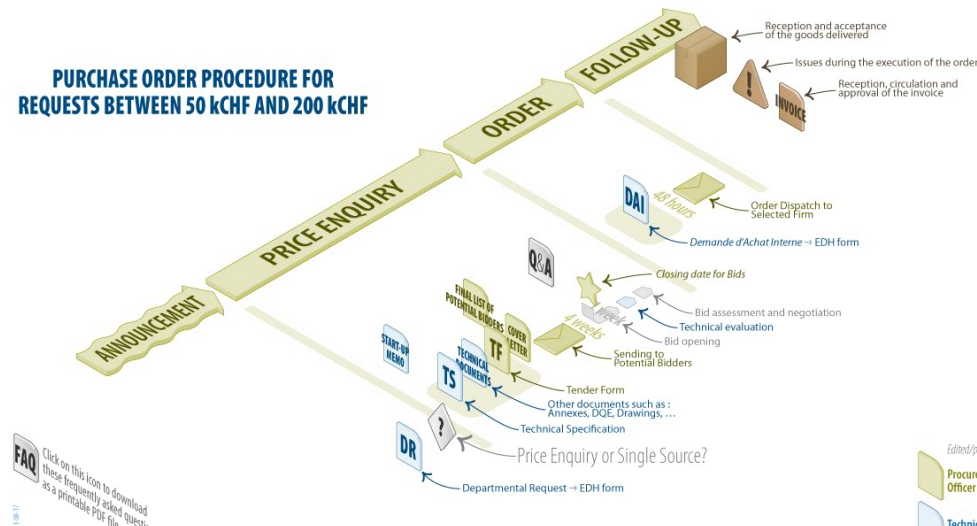
<b>Programa operativo</b>	EP - INTERREG V A España Portugal (POCTEP)
<b>Convocatoria</b>	1
<b>Identificador</b>	878
<b>Título</b>	Teragnosis con Isótopos Radiactivos CERN-Medicis en Humanos y Animales.
<b>Email de contacto para notificaciones</b>	jose.sanchez.sspa@juntadeandalucia.es
<b>Teléfono de contacto para notificaciones</b>	0034671562974



# Summary

- Manpower : OK
- Budget : 255kCHF (+ 180kCHF provisioned for 2018)
- Extra budget of 500kCHF requested by Spanish collaboration
- Planning :
  - Finalizing specification : July 2016
  - Price inquiry and Bids : October 2016
  - Purchase and delivery : March 2017

Procurement & Industrial Services  
 MEF-QOP Section



Edited/pt  
 Procure  
 Officer  
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