

Call 2016

Platform for the Hypoxic Analysis of Cell Behaviour (Hyp-ACB)

Main Applicant **Francesca Cutruzzolà**
(Dept. Biochemical Sciences-DSB)

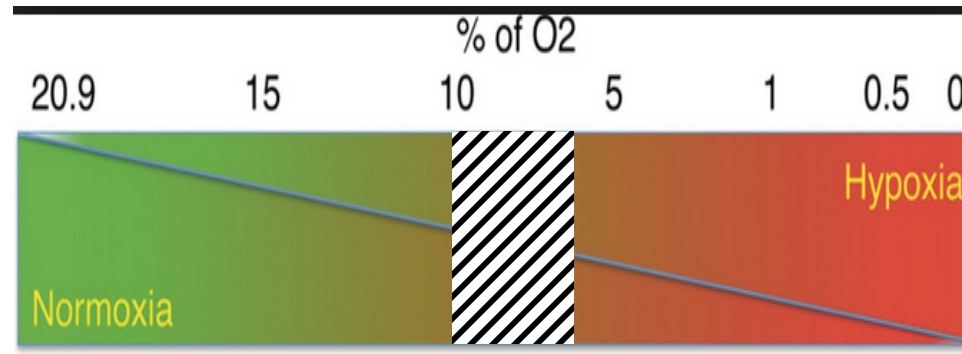
Co-Applicants **Andrea Bellelli (DSB), Rita Mancini**
(Dept. Clinical and Molecular Medicine, DMCM)



SAPIENZA
UNIVERSITÀ DI ROMA

**«Presentazione alla
Comunità Sapienza delle Grandi
Attrezzature di Ateneo»**
13 maggio 2019, Aula Magna del Rettorato

Cell behaviour depends on environmental oxygen

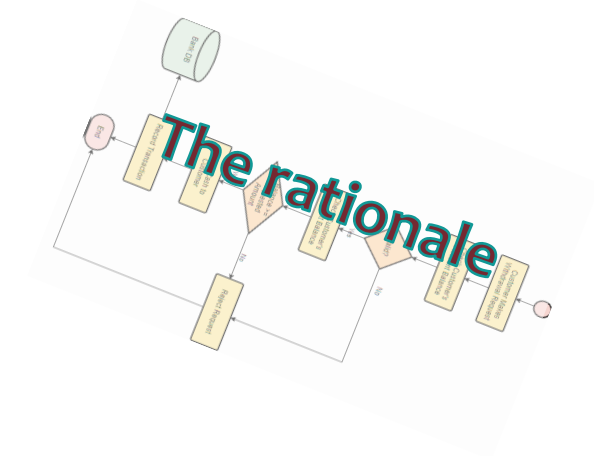


Re-shaping
CELLULAR METABOLISM
and
GENE EXPRESSION



Oncology
Immunity and inflammation
Neurobiology
Regenerative medicine
Host-Pathogen interaction

Drug discovery
Toxicology
Environmental biology



Gene expression

Oxygen Consumption rate
Glycolytic activity
ATP production
Carbon source
(glucose, glutamine, fatty acids)

hif, idh, shmt, myc.....
Specific Gene Set
(SGS) Custom-made

NUMBERS AND FACTS

THE APPLICATION

Supporting Staff Members:
52 members

8 Departments Involved:

*Scienze Biochimiche
Biologia e biotecnologie Darwin
Medicina clinica e molecolare
Medicina molecolare
Scienze e biotecnologie medico-
chirurgiche
Medicina Sperimentale
Biologia Ambientale
Fisiologia e farmacologia*

THE LAB

- 35 m² dedicated renovated lab
- Department of Biochemical Sciences (main campus) building CU027, rooms S32/S33 (ground floor).

THE PERSONNEL

Prof. Francesca Cutruzzolà

(Full Professor - Managing Director and Scientific Officer)

Prof. Serena Rinaldo

(Associate Professor - Data analysis Manager)

Dr. Alessio Paone

(RTD-A – Cell biologist)

Dr. Giovanna Boumis

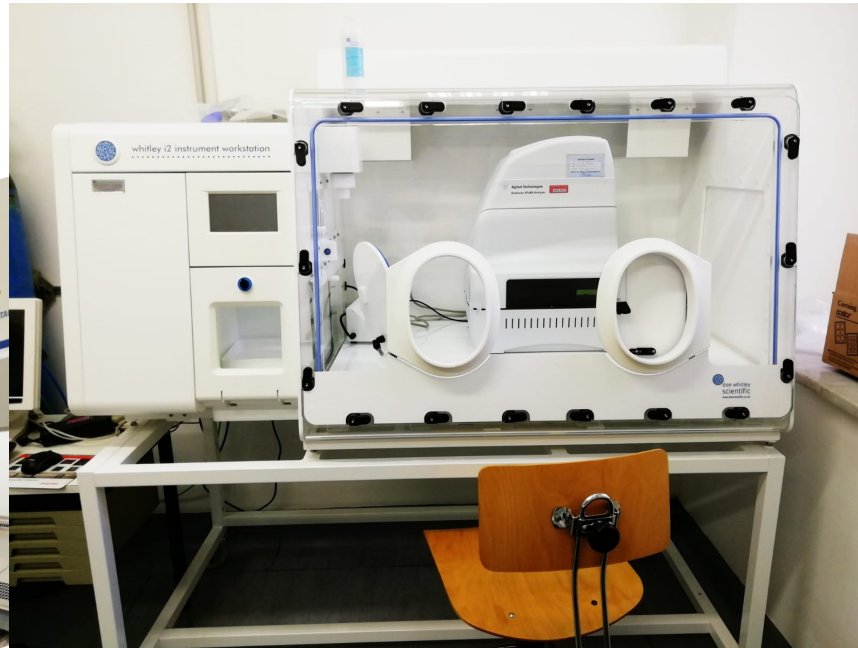
(Technician – technical support)

THE PLATFORM (active september 2018)

**UNIQUE IN
ITALY**



Cell Biology



**Seahorse analyser
Dedicated Hypoxic chamber**



Molecular Biology

METABOLIC EXPERIMENT FLOWCHART

Exp-1

Question



METABOLIC EXPERIMENT FLOWCHART

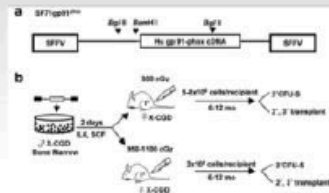
Exp-1

Question



Exp-2

Experimental design



SELECTION of methodology

EXPERIMENTAL design

METABOLIC EXPERIMENT FLOWCHART

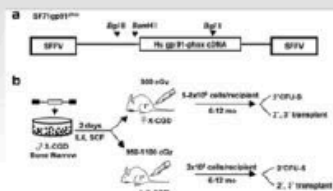
Exp-1

Question



Exp-2

Experimental design



Exp-3

Experiment



SELECTION of
methodology

EXPERIMENTAL design

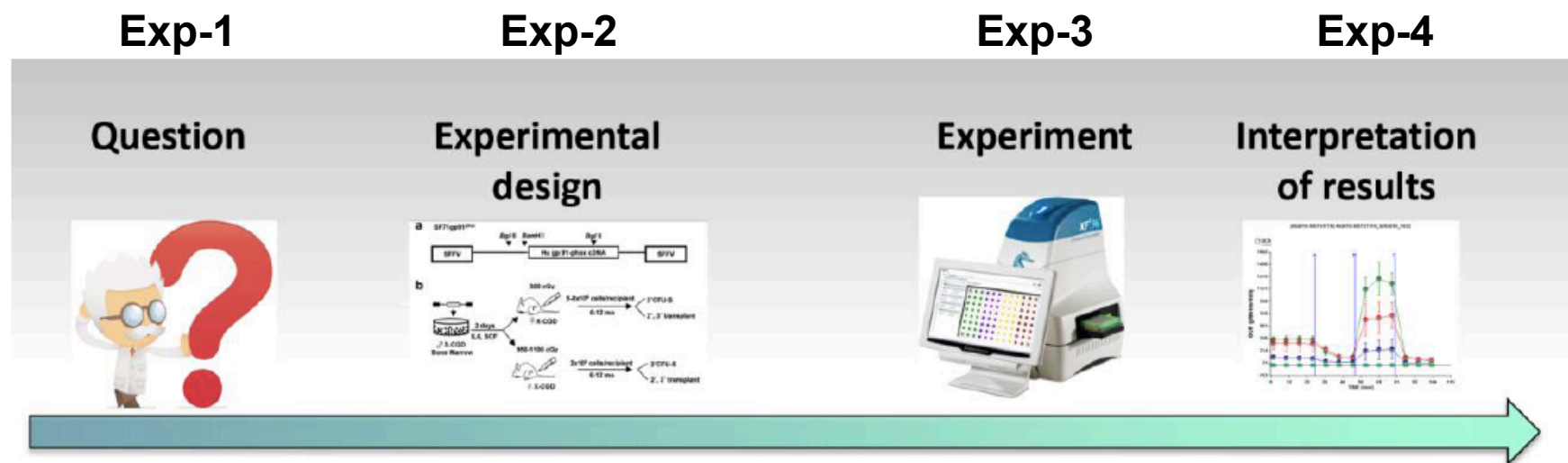
ACCESS to the Equipment

ASSISTANCE with operation

SUPPLY reagents and
materials

METHOD DEVELOPMENT

METABOLIC EXPERIMENT FLOWCHART



SELECTION of
methodology

EXPERIMENTAL design

ACCESS to the Equipment

ASSISTANCE with operation

SUPPLY reagents and
materials

DATA storage

METHOD DEVELOPMENT

REPORTS



Report n° 19 Final report ☐

Temporary report ☒ Date: / /2019

Research Group: _____
Project: GIOVANNA BOUMIS
Internal Technical Support: ALESSIO PAONE
Cell Biology

EXPERIMENTAL SCHEDULE						
Date	Cell line	Cell dilution	Oligomycin (μM)	FCCP (μM)	N° of plate	S/N

COMMENT

ATTACHMENTS:

HypACB
Per: Prof. Francesca Cutruzzola
Signature of Prof. Francesca Cutruzzola
Managing Director and Scientific Officer

Prof. Serena Rinaldo
Data analysis Manager

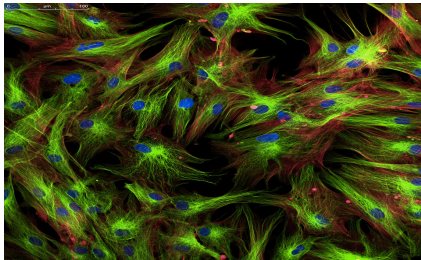
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Via delle Messiaghe, 157 - 00185 Roma
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TECHNICAL REPORT

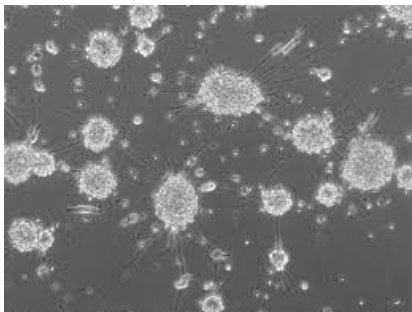


DETAILED SCIENTIFIC REPORT

Biological samples: examples from ongoing experiments



Normal eukaryotic cells
(Fibroblasts, prostate cells
microglia)



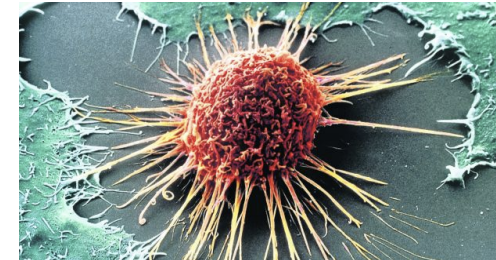
Neurospheres
(*neural stem cells*)

DRUGS

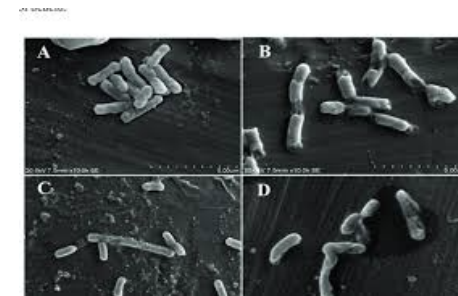
TRANSFECTIONS

DIFFERENTIATION

STIMULATION WITH
COMPOUNDS

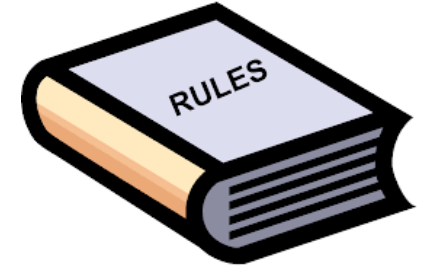


Cancer cell lines
(Leukemias, Lung adenocarcinoma,
Prostate and Cervical cancer..)

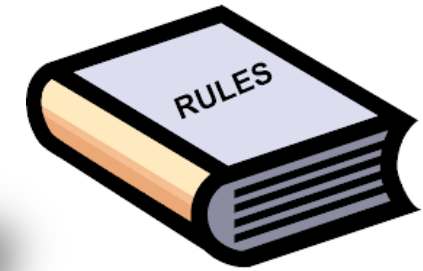


Bacteria

USER POLICIES AND GUIDELINES



- **STEP 1 : Access is requested** by e-mail to the Managing director or a delegate (see contacts).
Experimental background, number of samples to be assayed....
- **STEP 2 : Evaluation of the request** by the HypACB team. *Criteria:*
Feasibility of the experiment and type of access required.
Scheduled priority:
 - Level 1: Internal academic users.
 - Level 2: External academic users.
 - Level 3: External non-academic investigators.
- **STEP 3 : Experiment is run** by the platform personnel.
The **results** of the experiments **will be provided** with all experimental details [...]. Raw data will be stored as a copy for 5 years, according to international rules for scientific correctness. **Data analysis** can be performed by the end-users or by the HypACB team based on specific agreement.



- **STEP 1:** Access is requested
Experimental background

- **STEP 2:** Evaluation of the
Feasibility of the
Scheduled priority

Level

Level

Level

- **STEP 3:** Experimental

channel.

Acknowledgement

Investigators are requested to provide (Grant Number) in

Names of individual

intellectual input of

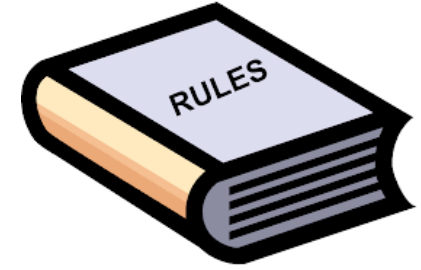
and Sapienza Financial Contribution by platform.

agreed or if they provided any

REFERENCES

Università degli Studi di Roma "La Sapienza"
Piazzale Aldo Moro, 5 - 00185 Roma
Tel: (+39) 06 4400621 T (+39) 06 452110
M3antoma.s@uniroma3.it (+39) 06 452110
E-mail: alpacibio@uniroma3.it

USER POLICIES AND GUIDELINES



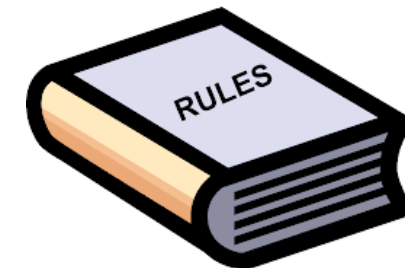
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 - Level 3: External non-academic investigators.
- **STEP 3 : Type of access is agreed and Experiment is run.**

Acknowledgements

Investigators are required to acknowledge the Hyp-ACB platform (and **Sapienza Financial Contribution by Grant Number**) in any publication that results from the use of the platform.

Names of individuals from platform will be included, if previously agreed or if they provided any intellectual input or additional effort.

USER POLICIES AND GUIDELINES



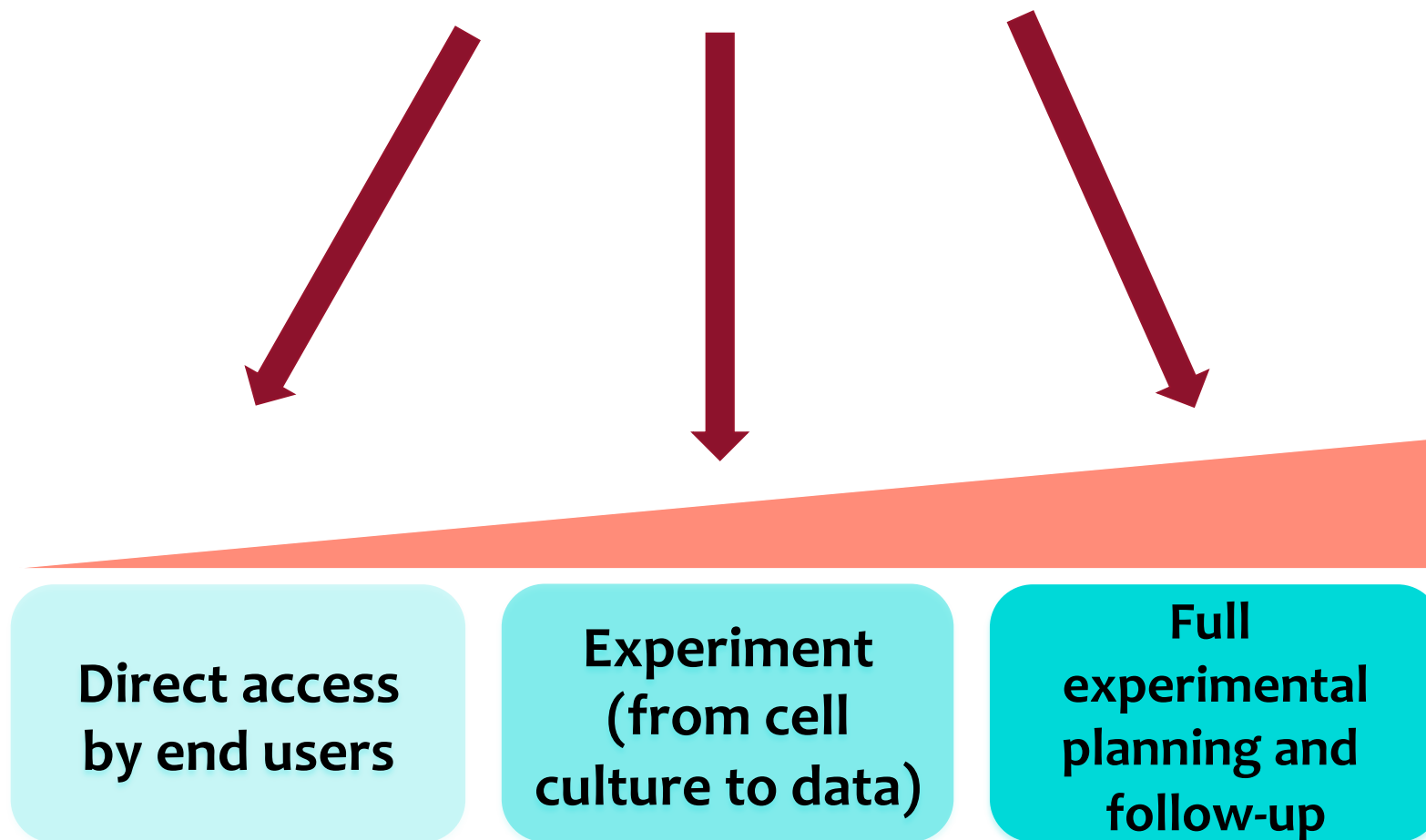
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Experimental background, number of samples to be assayed.....
- **STEP 2 :** Evaluation of the request by the HypACB team. *Criteria:*
Feasibility of the experiment .
Scheduled priority:
 - Level 1: Internal academic users.
 - Level 2: External academic users.
 - Level 3: External non-academic investigators.
- **STEP 3 :** Type of access is agreed and **Experiment is run. Results** are provided and stored.

Acknowledgements

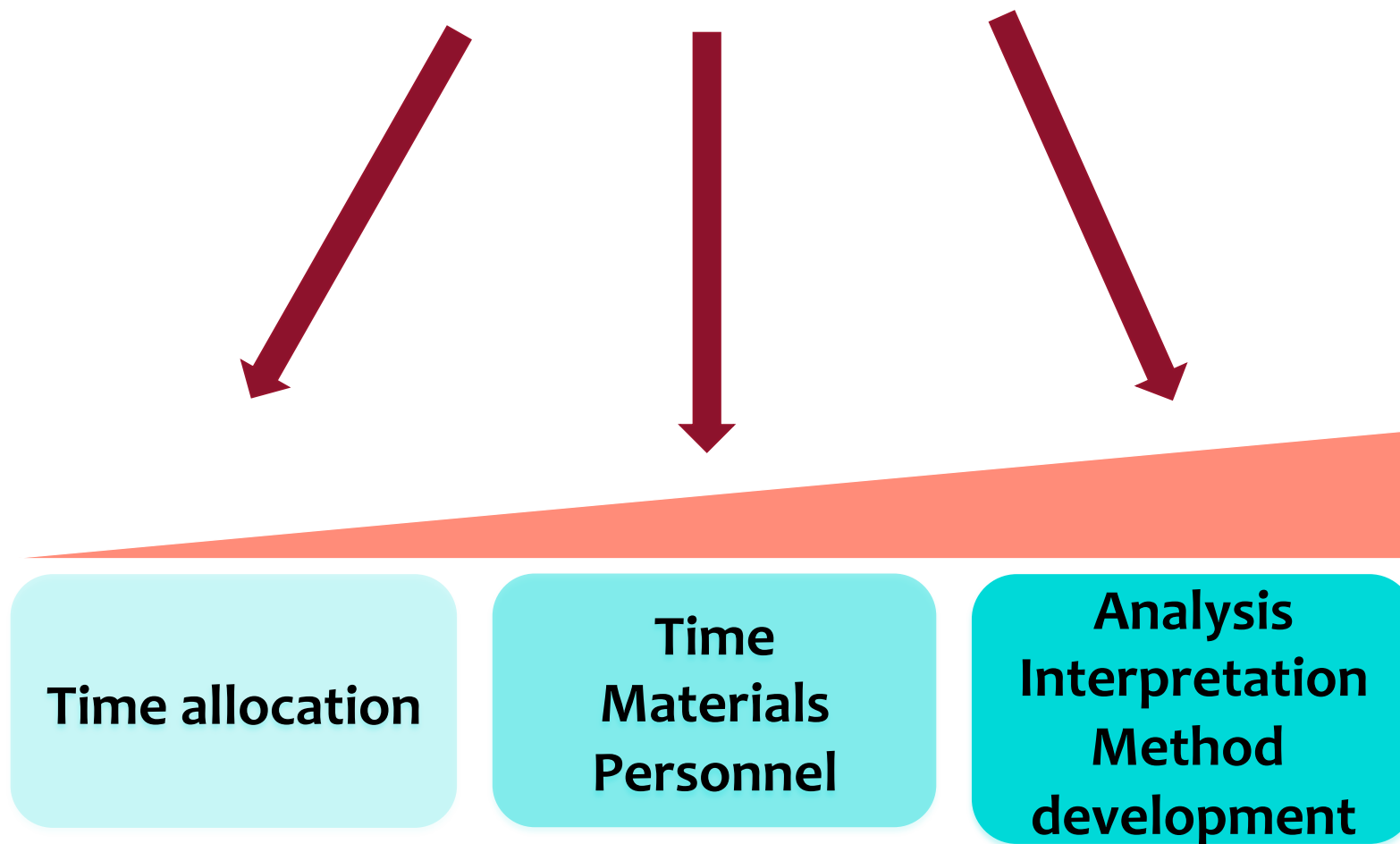
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TYPE OF ACCESS

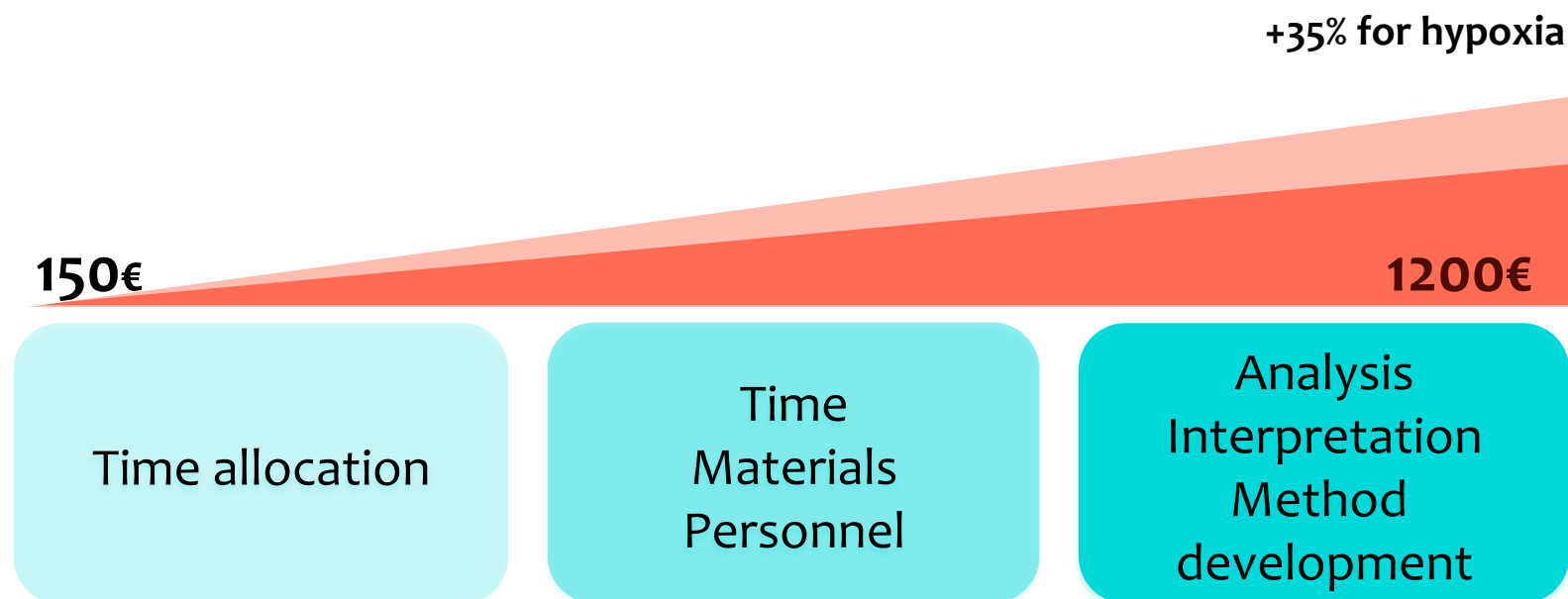


TYPE OF ACCESS



TYPE OF ACCESS: Service only

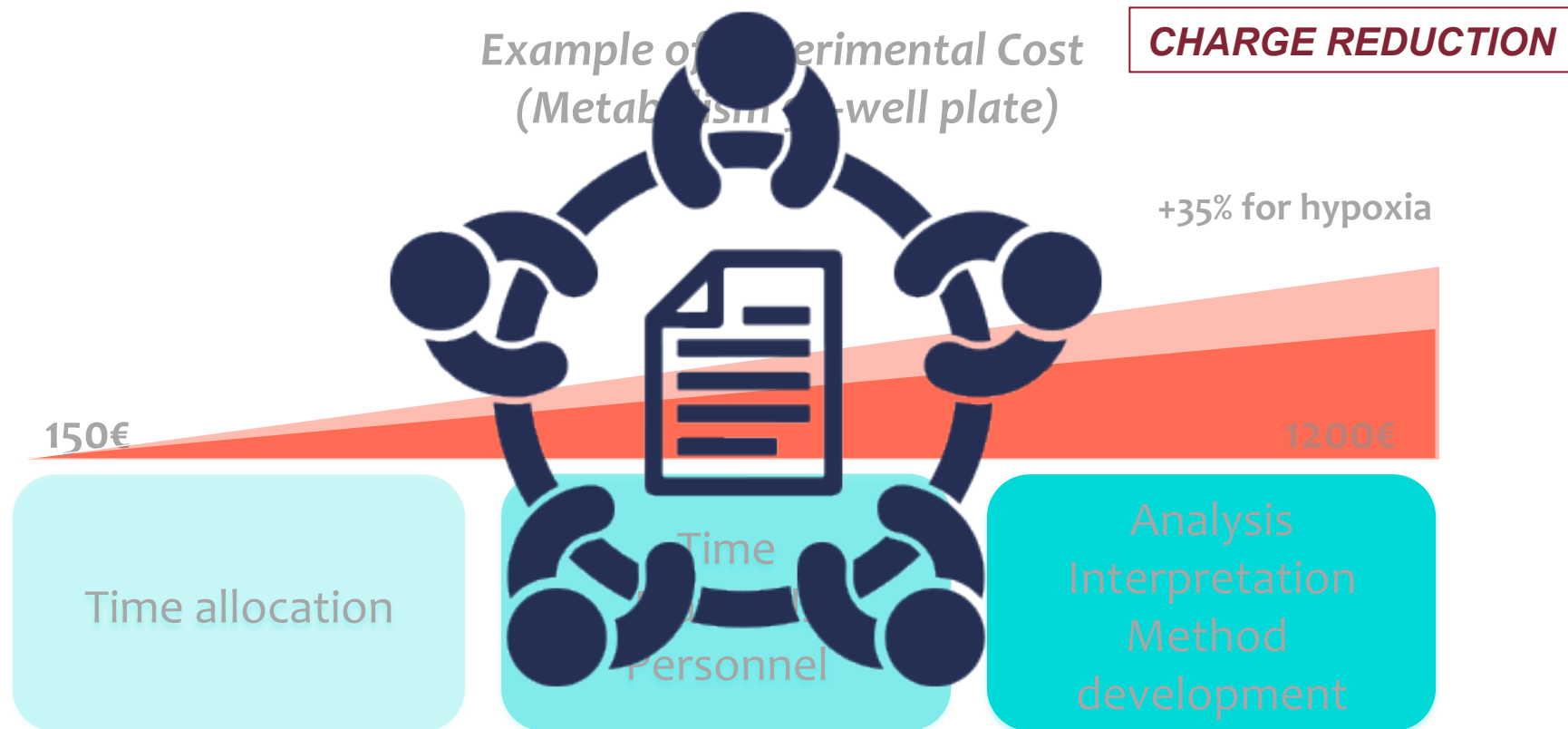
Example of Experimental Costs (Metabolism 96-well plate)



OFFICIAL PRICE LIST 2019 UNDER APPROVAL

FOR SAPIENZA USERS: COST REDUCTION IS PLANNED (APPROX. 30-50%)

TYPE OF ACCESS: Collaboration



OFFICIAL PRICE LIST UNDER APPROVAL

TYPE OF ACCESS: Training



Access only

**Experiment
and access**

Full

NEW REQUESTS WELCOME!



TEMPORARY WEBSITE
www.macinmec/hypacb-facility/



CONTACTS

- Managing director: prof. Francesca Cutruzzolà
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Platform Staff

Data Manager: Prof. Serena Rinaldo

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Cell Biology: Dr. Alessio Paone

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Technical staff: Dr. Giovanna Boumis

giovanna.boumis@uniroma1.it