Disseminating Alternative Methods in Brazil and South America: Education and Training for Animal Replacement in Science

Laboratory of Education and Research in Pharmacology and Cellular Toxicology, LPCT Team

Dr. Marize Campos Valadares
marizeufg@gmail.com
@marize.campos.valadares
Pharmaceutical industry clusters: 25 Industries. Teuto/Pfizer of Brazil, biggest in South America

Agrochemical cluster: pesticides
UNIVERSIDADE FEDERAL DE GOIÁS
23,000 students
150 undergraduate courses
85 Master and Doctorate Programs

Goiânia (1.3 million)
Capital of Goiás State (6.5 million)
“ALTERNATIVE METHODS” “INNOVATIVE METHODS”
for
PHARMACEUTICAL INNOVATION

UNIVERSIDADE FEDERAL DE GOIÁS-UFG
School of Pharmacy

Brazilian Network for Alternative Methods

IN VITRO METHODS FOR PHARMACEUTICAL PRODUCTS:
Efficacy/Safety
The current paradigm is ingrained in students and we believe that education/training for 21st Century Science is the basis for a shift in thinking beyond animal models. I have, therefore, been introducing new in vitro scientific concepts to undergraduate and graduate students of innovation in Pharmaceutical Sciences. Professionals, scientists and regulators from Brazil and other South American countries have also been trained in non-animal methods by our team.
BRAZILIAN CONTEXT

National Council for the Control of Animal Experimentation - CONCEA

NORMATIVE RESOLUTION nº18/2014
Recommend 17 alternative methods to animal experimentation

NORMATIVE RESOLUTION nº 31/2016
Recommend 07 alternative methods to animal experimentation

BRAZILIAN HEALTH REGULATORY AGENCY (ANVISA)
Collegiate Board of Directors Resolution (RDC) no. 35/2015:
recognize the methods approved by CONCEA

TRAINING

DEADLINE 2019
EDUCATION

UNDERGRADUATION:
- Courses to Pharmacy and Biomedicine students: “Introduction to Toxicology” and “Applied Toxicology”.
- UFG Toxicology League: “Toxicology in the 21st Century”.

GRADUATION: (MSc and PhD students of Life Sciences):
- Multidisciplinary Master and Doctorate Programs: Pharmaceutical Sciences, Health Sciences, and Pharmaceutical Innovation (network Program involving 4 North Brazilian States).
- Courses: “Alternative Methods to Animal Experimentation”, “Toxicology for the 21st Century: an alternative to animal testing”, “Special topic in alternative methods”.

- Flow Cytometry applied to Toxicology In Vitro;
- Skin Sensitization
- Epigenetic and Toxicology
- “I ABCF – UNIVALI Workshop”, Itajai

REGIONAL PLATFORM OF ALTERNATIVE METHODS OF MERCOSUL (PREMASUL): 3 editions: Lectures and Training in Brazil and Uruguay
OECD 442C, OECD 442D, OECD 442D, OECD 442E, GARD
In Chemico Skin Sensitization: Direct Peptide Reactivity Assay (DPRA) – OECD 442C

Harmonization of the International regulatory requirement

Optimizing of the in vitro tests implementation:
Series of training videos in Skin Sensitization: English, Portuguese, Korean and Mandarin

First video training: DPRA
SERIES OF SKIN SENSITIZATION TRAINING VIDEOS

FIRST VIDEO: Direct Peptide Reactivity Assay (DPRA) – OECD 442C
On the last 18 months, a total of 140 participants from different categories of industry and academia were trained in animal-free testing practices.

During the past 18 months, over 170 undergraduates and more than 45 MSc/PhD students were introduced to new paradigms in Toxicology for a new Science.

Over the same period, I have supervised 4 scientific initiation undergraduates, 4 MSc and 5 PhD students and 2 post-doc fellows, yielding a total of almost 100 multidisciplinary human resources supervised since the 2004 foundation of our Laboratory.
BRAZILIAN SCENARIUM

“BRAZIL’S SAD CHOICES”

Political turmoil x Economy

BRAZILIAN SCIENCE FUNDING SQUEEZE

Fluctuations in spending by the Ministry of Science, Technology, Innovation and Communications (MCTIC) are creating a climate of uncertainty for the research community.

Funding: Austerity bites deeply

Anna Petherick

Nature 548, 249–251 (10 August 2017) | doi:10.1038/nj7666-249a

Institutions in Argentina and Brazil are struggling to maintain their funding and talent.

RESEARCHING IN BRAZIL:
- Expensive
- Takes more time
- Customs issues: difficult to buy cell lines, tissues, reagents ...
- Science communication about our work in Innovative Methods in Brazil and South America;
- Workshops and training: lung toxicity;...
- Training videos

Disseminating knowledge in animal-free practices!
Obrigada!!!!!!!