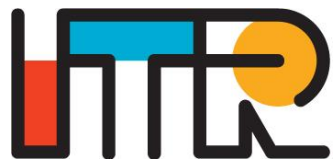


Unit for Multidisciplinary Research in Biomedicine



Mariana Monteiro, MD, PhD, Endocrinology, ICBAS/CHUP



LABORATORY FOR INTEGRATIVE AND TRANSLATIONAL RESEARCH IN POPULATION HEALTH



Henrique de Barros



Luisa Lobato, MD, PhD, Nephrology, CHUP



Centro Hospitalar
Universitário do Porto



Nuno Grande

UMIB
Unit for Multidisciplinary Research in Biomedicine

ITR
Laboratory for Integrative and Translational Research in Population Health



European Research Council
Established by the European Commission



UMIB: 1994; UMIB/ITR: 2021

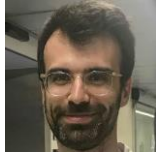
International publications	206
Organization of seminars and conferences	15
Advanced training (completed)	35
PhD	6
MSc	29
Patents	2
Clinical trials	41
Research projects	25
Awards	21
Number of researchers	180
Integrated PhD researchers	59
PhD students	20
Master students	13
Other collaborations	88

UMIB in numbers (2021)

UMIB International network



UMIB Groups



Cardiovascular Research (PI: Mário Santos, MD, PhD):
Heart failure and pulmonar hypertension
(mariossantos@icbas.up.pt)



Oncology Research (PI: António Araújo, MD, PhD):
Lung cancer: epidemiology, R&D markers
(antonio.araujo@chporto.min-saude.pt)



Immunology of Infection (PI: Paula Ferreira, DVM, PhD):
Immunology interactions in infectious diseases; R&D
flowcytometric diagnostic methods
(pferreir@icbas.up.pt)



Autoimmunity & Neurosciences (PI: Paulo Pinho e Costa, MD, PhD):
R&D biomarkers for autoimmune diseases, sleep disorders and epilepsy
(pcosta@icbas.up.pt)



Clinical & Experimental Human Genomics (PI: Paula Jorge, PhD):
Identification of novel diseases and new insights on rare diseases.
R&D diagnostic screening tests in inherited diseases.
(paulajorge.cgm@chporto.min-saude.pt)



Endocrine and metabolic research (PI: Mariana Monteiro, MD, PhD):
New surgical, physiology and endocrinology approaches in Obesity
(mpmonteiro@icbas.up.pt)



Nephrology, Dialysis and Transplantation (PI: Anabela Rodrigues, MD, PhD):
Organ transplantation, Paramyloidosis, Clinical trials
(anabelarodrigues.nefrologia@chporto.min-saude.pt)



BGR/Molecular and Cellular Medicine (PI: Mário Sousa, MD, PhD):
-Reproductive medicine: Big-data clinical analyses; gamete dimorphisms; gamete toxicology; oncofertility; sperm imprinting; sperm microRNA.
-Primary ciliary dyskinesia: R&D: variant discovery and functional mechanisms, biomarkers development. (msousa@icbas.up.pt)

Main Development activities

European reference centers:

- treatment of pulmonar vascular diseases
- kidney and pancreatic transplantation
- Paramyloidosis
- chromosome instability
- Cystic fibrosis
- hematologic diseases
- hereditary diseases of metabolism
- refractory epilepsy
- cochlear implants
- intervention neuroradiology
- oncology

Head of Clinical trials

Brain Portuguese bank

Gamete portuguese bank

Biomarker development:

Autoimmune diseases, neurologic diseases, Sleep disorders, epilepsy, lung cancer

New diagnostic tests:

inherited metabolic disorders, infectious diseases

New variants and related mechanisms in rare diseases:

neuromuscular diseases, Primary Ciliary Diskinesia, Kartagener syndrome, inherited metabolic disorders

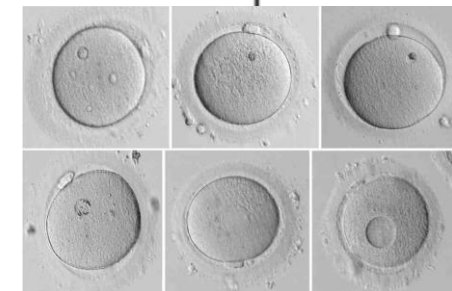
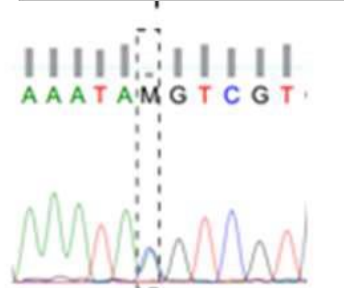
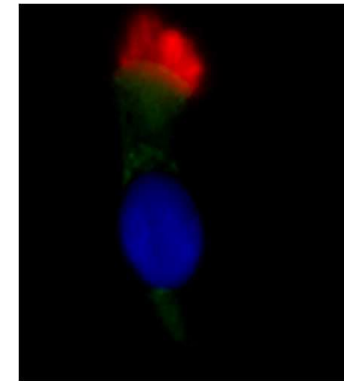
Preimplantation Genetic testing:

(PGT-A, PGT-SR, PGT-M)

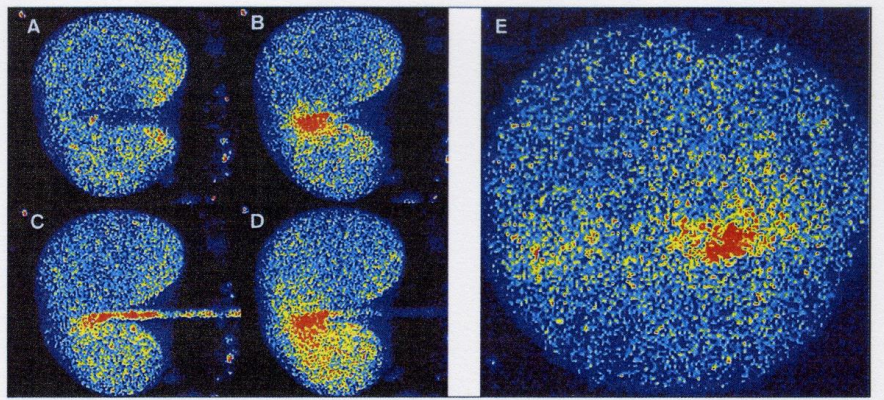
External diagnosis: Ciliary diseases

REFERENCE EUROPEAN NETWORKS:

- 1-Metabolic diseases - MetabERN
- 2-Child Transplantation - ERN TRANSPLANT – CHILD
- 3-Respiratory diseases - ERN-LUNG
- 4- Epilepsy – EpiCare
- 5-Solid adult cancer – ERN EURACAN
- 6-Hematologic diseases –EuroBloodNet
- 7-Rare kidney diseases – ERKNet
- 8-Rare immunodeficiency and autoimmune diseases – ERK-RITA
- 9-Rare infectious diseases -COVID-19
- 10-Rare neuromuscular diseases - ERN EURO-NMD
- 11-Rare and complex connective tissue and musculoskeletal diseases- ReCONNET

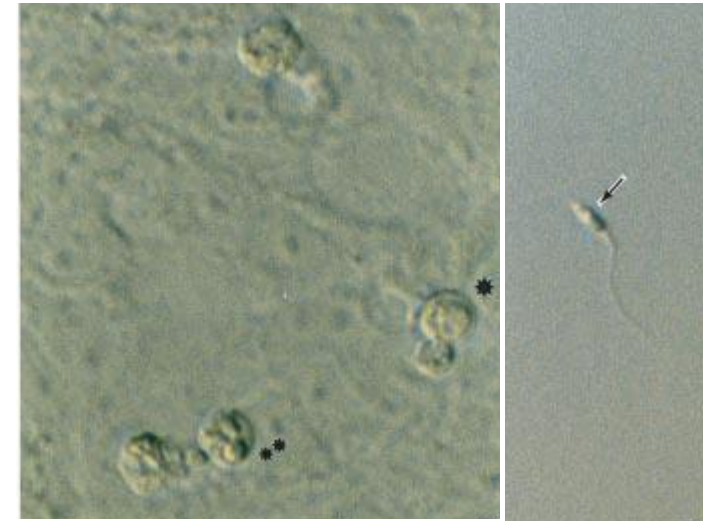


Major Breakthroughs



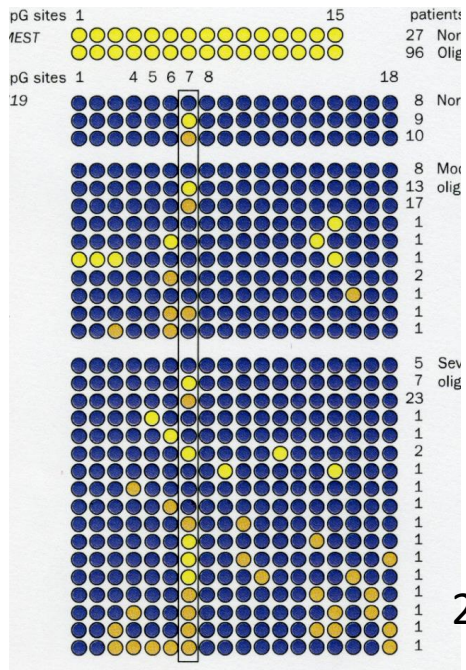
Tesarik J, Sousa M. Key elements of a highly efficient intracytoplasmic sperm injection technique: Ca²⁺ fluxes and oocyte cytoplasmic dislocation. **Fertil Steril.** 1995;64:770-6.

1995



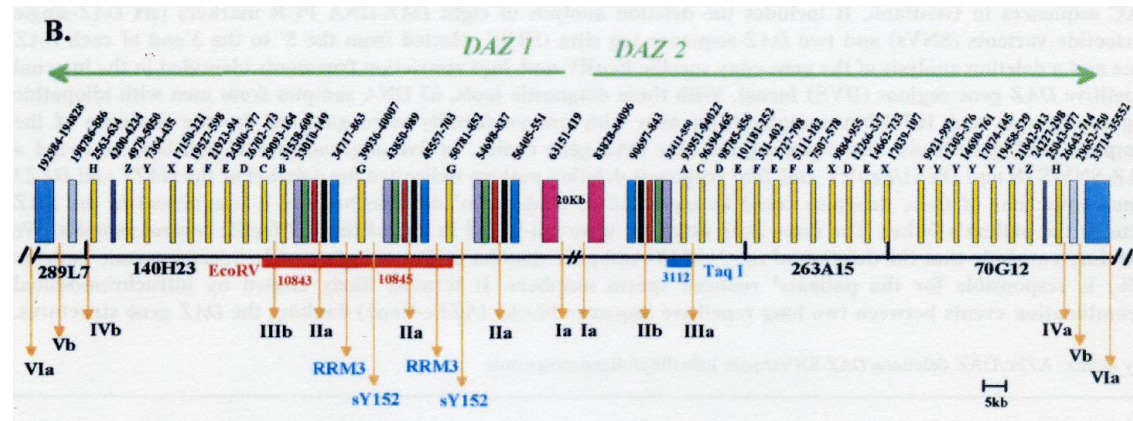
Nieves Cremades I N, ...Sousa M. , In-vitro maturation of round spermatids using co-culture on Vero cells. **Hum Reprod.** 1999;14:1287-93

1999



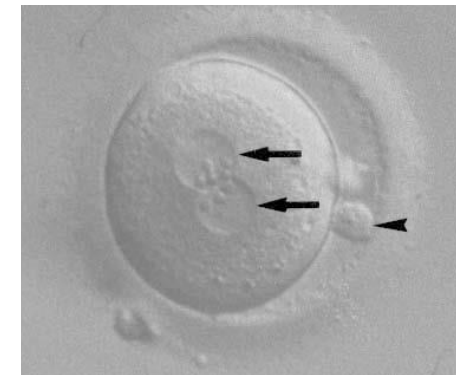
2004

Marques CJ, et al. Genomic imprinting in disruptive spermatogenesis. **Lancet.** 2004;363:1700-02



Fernandes S, ...Vogt PH. High frequency of DAZ1/DAZ2 gene deletions in patients with severe oligozoospermia. **Mol Hum Reprod.** 2002;8:286-98.

2002



Tesarik J, et al. Fertilizable oocytes reconstructed from patient's somatic cell nuclei and donor ooplasm. **Reprod BioMed Online.** 2001;2:160-4

2001