

# CRO

## CATALOGUE OF SERVICES

JESÚS USÓN MINIMALY INVASIVE SURGERY CENTRE



Centro de Cirugía de Mínima Invasión  
Minimally Invasive Surgery Centre  
Jesús Usón



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# CRO

# CCMIJU

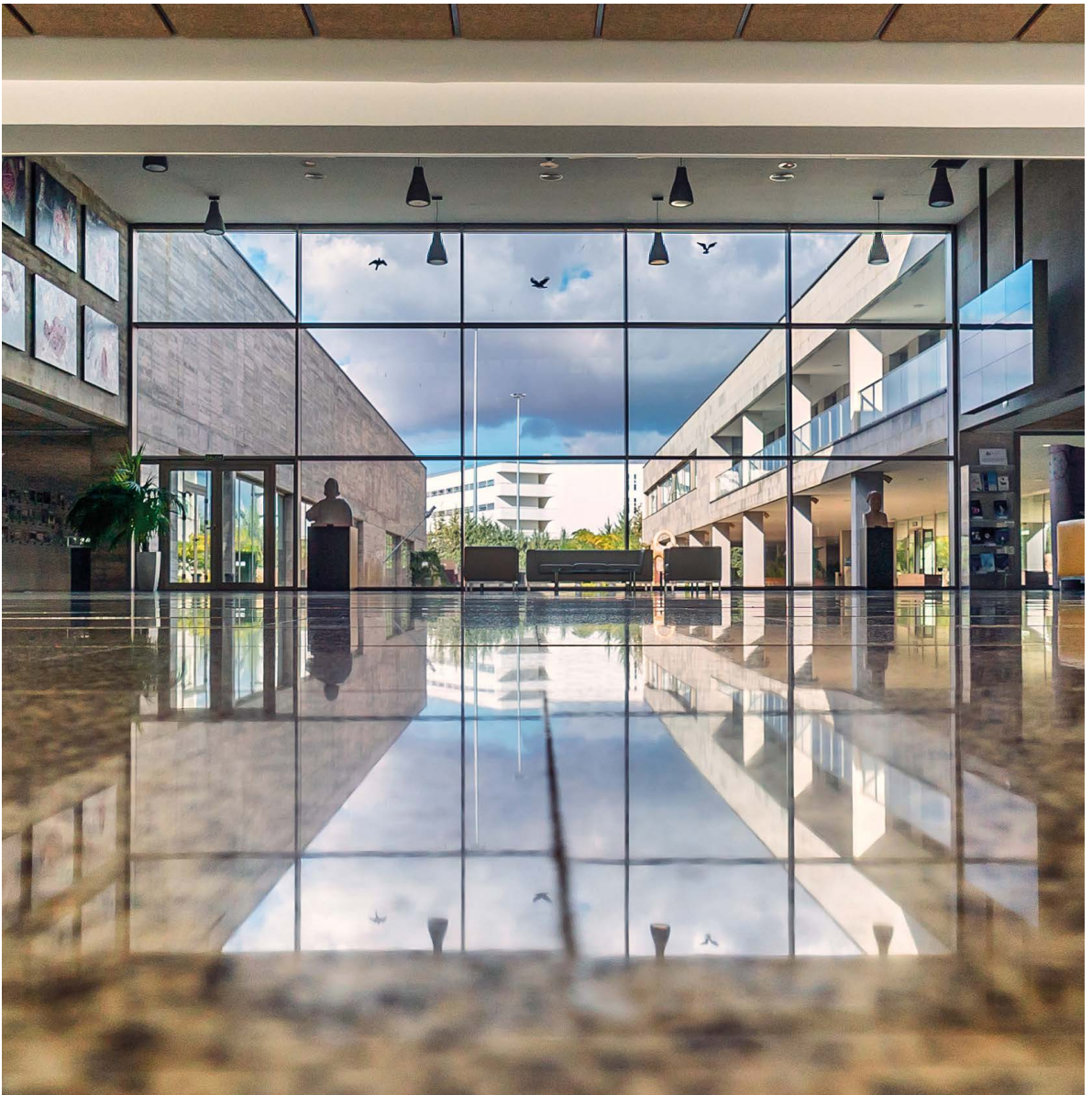
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Centro de Cirugía de Mínima Invasión  
Minimally Invasive Surgery Centre  
*Jesús Usón*

*The Jesús Usón Minimally Invasive Surgery Centre (CCMIJU) is a Contract Research Organisation (CRO), an international reference centre in translational research, minimally invasive surgery, technological development and specialised training. Strategic partner in public and private R&D Projects.*



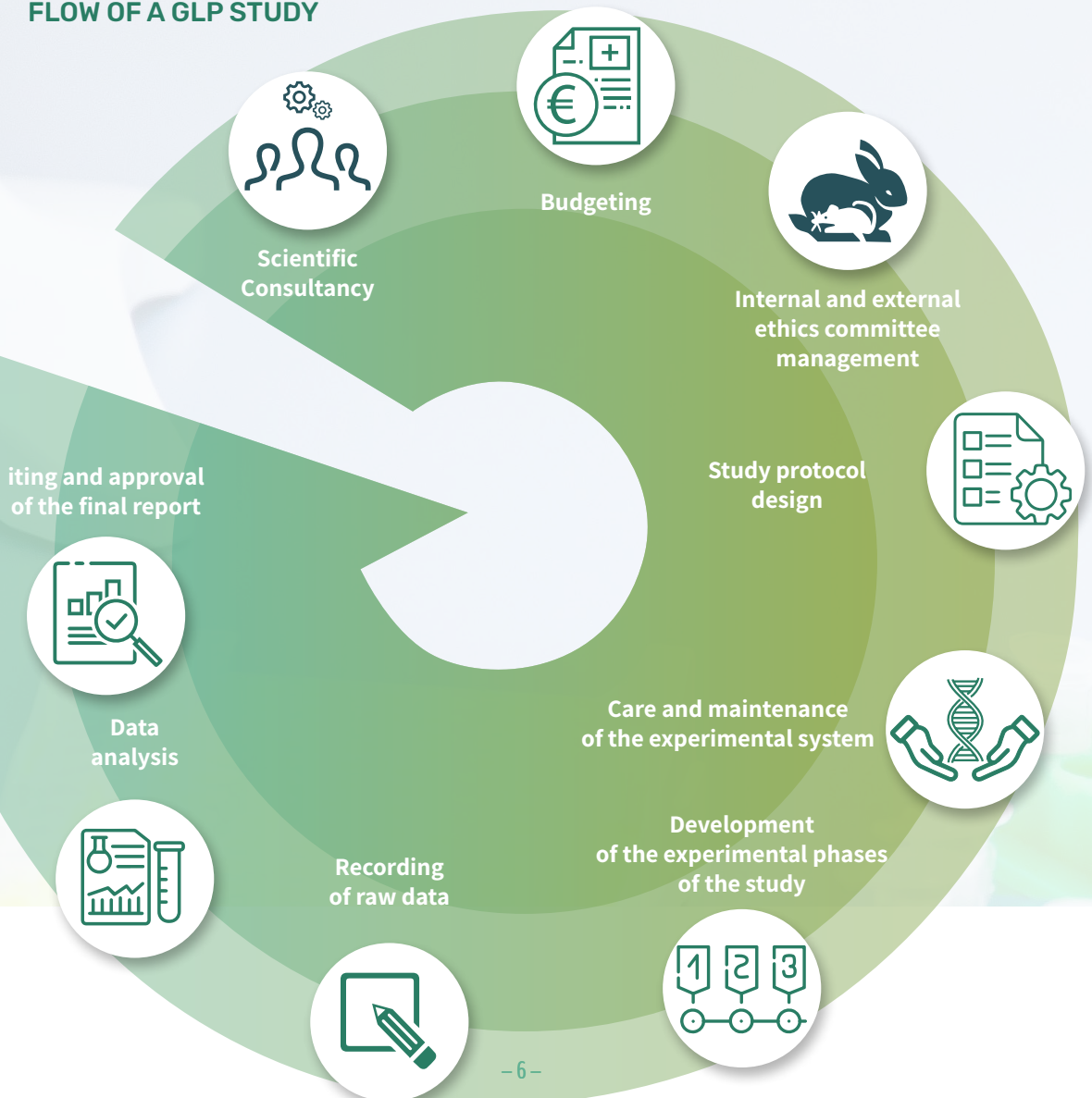
# Regulatory framework

## Certifications

## GLP Services

We have a Quality Assurance and Regulatory Framework department, designed to ensure the quality and integrity of the data obtained in preclinical studies, carrying out audits in the different phases, audits of the facilities, as well as audits of the internal processes related to the studies.

### 1. TYPICAL PROCESS FLOW OF A GLP STUDY



## 2. GOOD LABORATORY PRACTICE CERTIFICATION

The centre is certified under the principles of Good Laboratory Practice (GLP) in the following areas of certification:

- *In vivo* toxicity
- Toxicity *in vitro*
- Tolerance:
  - \* Dermal
  - \* Ocular
- Pharmacodynamics
- Test product administration and specimen procurement
- Biocompatibility of healthcare products

## 3. UNE-EN-ISO 9001:2015 CERTIFICATION

The CCMIJU has the AENOR UNE-EN-ISO 9001:2015 certification, which gives us optimal document management, allowing us to identify and address the needs of our customers and implement strategies for continuous improvement.

## 4. ANIMAL WELFARE ETHICS COMMITTEE

The CCMIJU has its own Animal Experimentation Ethics Committee. It is accredited by the Regional Government of Extremadura and recognised by the Ministry of Science, Innovation and Universities as an authorised body for the evaluation of all kinds of projects in which experimental animals are used.

## 5. AAALAC ACCREDITATION

AAALAC International is an internationally recognised non-profit organisation dedicated to the evaluation of institutions that use animals for experimental and teaching purposes. The aim of this accreditation is to ensure that these institutions make a more humane use and ensure the welfare of the animals they use in their activities. The CCMIJU is in the process of working towards obtaining this accreditation in 2026.

## 6. CONSULTANCY

We offer a specialised consultancy service for the planning, design and execution of preclinical studies, focused on ensuring product safety, scientific soundness and resource optimisation. Our multidisciplinary team provides strategic support from the initial phase of development to the achievement of the scientific and regulatory objectives of the project.



# Facilities



## ANIMAL HOUSING

- SURFACE AREA OF 3200 m<sup>2</sup>
- CAPACITY TO HOUSE SMALL AND LARGE ANIMALS
- TRANSGENIC AREA
- QUARANTINE, RECOVERY AND TREATMENT ROOMS



## OPERATING THEATRES

- 8 SPECIALISED EXPERIMENTAL OPERATING THEATRES
- GENERAL ANAESTHESIA EQUIPMENT
- SPECIFIC EQUIPMENT FOR MINIMALLY INVASIVE SURGERY PROCEDURES:
  - Laparoscopy
  - Endoscopy
  - Interventional radiology
  - Microsurgery
- ROBOTIC PLATFORMS (DA VINCI XI, SYMANI AND VERSIUS)
- ADVANCED MEDICAL IMAGING EQUIPMENT:
  - Half-arc fluoroscope
  - Ultrasound scanner
  - 3 Tesla Magnetic Resonance Imaging (MRI)
  - Digital radiography
  - OCT (Ophthalmology and vascular)
  - Laser speckle contrast analysis (LASCA)
- INSTRON 6800 FOR BIOMECHANICAL TESTING
- HIGH FIDELITY SIMULATED ROOMS AND HYBRID OPERATING THEATRE
- NECROPSY ROOM
- STERILISATION ROOM



## SPECIALISED LABORATORIES

- MAGISTRAL FORMULATION
- CLINICAL ANALYSIS
  - Haematology, biochemistry, urinalysis, coagulation, specific biomarkers
- CELL THERAPY
  - Equipment of molecular biology techniques and biomarkers: ELISAs, qPCR, flow cytometry, fluorescence microscopy
  - Cell culture rooms
- CONFOCAL MICROSCOPY
- ASSISTED REPRODUCTION
  - Equipment for in vitro fertilisation (IVF), ICSI, vitrification and devitrification of gametes and embryos and a time lapse system to evaluate embryo development.
- MEDICAL PRINTING
  - Equipment for 3D printing: FDM, SLA, SLS
  - Equipment for bioprinting and generation of scaffolds: micro-extrusion, droplet, DLP, electrospinning
  - Equipment for manufacturing and characterisation of biomaterials: viscosimetry, rheometry, DMA, UV-Vis
  - Proof of concept and analysis of bioprinted scaffolds and drug delivery
  - Prototyping and improvement of bioprinting systems
  - Prototyping for simulation and surgical planning
  - Computational simulation of biomaterials



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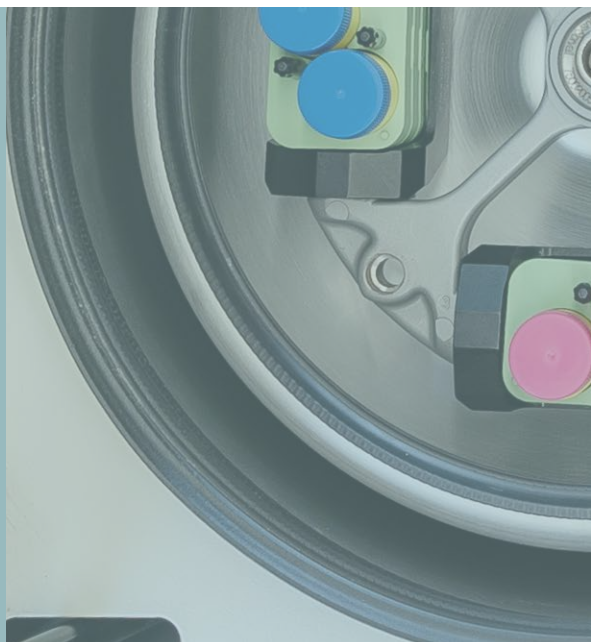
# Preclinical studies

Our CRO specialised in *IN VIVO* preclinical studies, offers customised solutions for both regulatory (GLP) and non-regulatory projects, attending to your needs, from pilot studies and proof of concept to regulated studies, minimising the risks prior to the clinical phase.



## *IN VITRO*

- CYTOTOXICITY
- CELL PROLIFERATION
- CELL METABOLISM
- IMMUNOMODULATION
- GENOTOXICITY
- CELL MIGRATION





 **IN VIVO**

- **TOXICITY**
  - Acute
  - Chronic
  - Subacute
  - Systemic
  - Repeated dose
- **PHARMACOKINETICS**
- **LOCAL TOLERANCE**
- **EFFECTIVENESS**
- **DOSE**
- **BIOCOMPATIBILITY OF MEDICAL DEVICES**
- **VALIDATION OF SURGICAL DEVICES**



**ANIMAL SPECIES**

- Rodents
- Lagomorphs
- Swine
- Sheep
- Canine

**ROUTES OF ADMINISTRATION**

- Oral
- Intravenous
- Intramuscular
- Subcutaneous
- Dermal
- Intraperitoneal
- Vaginal
- Rectal
- Surgical

# Experimental models



## IN VITRO

PRIMARY CULTURE CELL LINES FROM DIFFERENT TISSUES AND ANIMAL SPECIES



CELL LINES ESTABLISHED FOR DIFFERENT DISEASE MODELS



## IN VIVO

### UROLOGICAL MODELS

- » Ureteral obstruction
- » Ureteral stricture
- » Bladder stone disease



### CUTANEOUS CYCATRIZATION MODELS

- » Full-thickness ulcers
- » Partial-thickness ulcers
- » Pressure ulcers
- » Burn sores



### MODELS OF THALMOLOGY

- » Corneal ulcers
- » Ocular inflammation
- » Dry keratoconjunctivitis



### MICROCHIRURGICAL MODELS

- » Ischaemia reperfusion
- » Arterio-venous fistulas
- » Secondary lymphoedema



**CARDIOVASCULAR MODELS**

- » Biocompatibility of stents
- » Device testing
- » Acute myocardial infarction
- » Heart failure - Chronic infarction
- » Ventricular tachyarrhythmias



**TRAUMATOLOGY AND DENTISTRY MODELS**

- » Bone defect
- » Bone regeneration
- » Cartilage defect
- » Partial/complete ligament rupture
- » Synovitis
- » Peripheral nerve injury



**DIABETES MELLITUS MODELS**

- » Drug-induced
- » Genetics



**MALE REPRODUCTIVE APPARATUS MODELS**

- » Benign Prostatic Hyperplasia
- » Prostate Cancer



**DIGESTIVE MODELS**

- » Bile duct obstruction
- » Colon hyperplasia



**VASCULAR MODELS**

- » Thromboembolism
- » Arterial Aneurysms



*Other models available upon request.*

# Strategic partnerships

## ■ STUDIES CO-DESIGNED WITH BIOMEDICAL AND TECHNOLOGY INDUSTRY



## ■ TECHNOLOGY TRANSFER, CLINICAL VALIDATION AND JOINT PUBLICATIONS



FOR FURTHER INFORMATION



*Contact us*

[cro@ccmijesususon.com](mailto:cro@ccmijesususon.com)

[www.ccmijesususon.com](http://www.ccmijesususon.com)





Centro de Cirugía de Mínima Invasión  
Minimally Invasive Surgery Centre  
*Jesús Usón*

CRTA. N-521, KM. 41,8

10071. CÁCERES. SPAIN

TEL. (+34) 927181032

FAX. (+34) 927181033

CCMI@CCMIJESUSUSON.COM

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[WWW.CCMIJESUSUSON.COM](http://WWW.CCMIJESUSUSON.COM)