

# GEIS XVI INTERNATIONAL SYMPOSIUM

**Iván Pérez Grant**

Miquel Taron  
Instituto de Biomedicina de Sevilla (IBIS)

***“New insights in the mechanisms of action of cisplatin in rhabdomyosarcomas: waking up an old drug for a fresh purpose”***

**Research Team:**

**Javier Martín (PI); Institute of Biomedicine of Seville and HUVR**

**Nadia Hindi; Institute of Biomedicine of Seville and HUVR**

**David Moura; Institute of Biomedicine of Seville**

**Miquel Taron; Institute of Biomedicine of Seville**

**Javier Alonso ; ISCIII**

**Catalina Márquez; HUVR**

**Maria López; Institute of Biomedicine of Seville**

**Paloma Sánchez; Institute of Biomedicine of Seville**

## Our project aims to look for the mechanisms of action of cisplatin in RMS

- ✓ Identify predictive biomarkers of response
- ✓ Potential synergistic combinations

1. To evaluate the synergy of cisplatin combinations with inhibitors of **mTOR**, **Wnt/  $\beta$ -catenin** and **notch pathways** in *in vitro* and *in vivo* models of RMS.
2. To analyze the mechanisms underlying **Cancer Stem Cells-associated cisplatin-resistance**.
3. To describe **prognostic and/ or predictive biomarkers** (e.g. **HMGA2**, **HMGB4**) of the response to cisplatin-based schemes.
4. To describe **new synergistic** therapeutic partners to cisplatin in RMS

**Based on the pre-clinical results obtained in this project, new clinical trial(s) will be proposed for RMS patients by the Spanish Group for Research in Sarcomas (GEIS).**

# Chronogram: 2 years Schedule

	Quarter							
Aims and Tasks	1	2	3	4	5	6	7	8
1. Determination of IC50 proliferation indexes	█	█						
2. In vitro studies of cell death		█	█					
Milestone 1 - Determination of IC50 proliferation indexes and cisplatin synergistic combinations.								
3. Isolation of cancer stem cells (CSCs) from rhabdomyosarcoma cell lines			█	█				
4. Inactivation of HMGB4 in RMS cells using CRISPR/Cas9 approach			█	█	█			
Milestone 2 – Unveil new mechanisms of cisplatin-resistance in RMS.								
5. In vivo proof of concept in PDX models of RMS					█	█	█	
Milestone 3 – Description of new predictive biomarkers of response to cisplatin-based regimens.								
Manuscript preparation							█	█







**IVÁN ROCK**