Phenotyping and preclinical studies in mouse models at PHENOMIN-iCS

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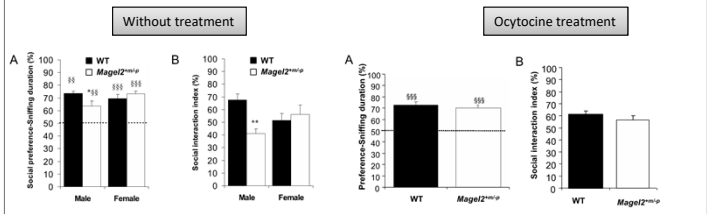
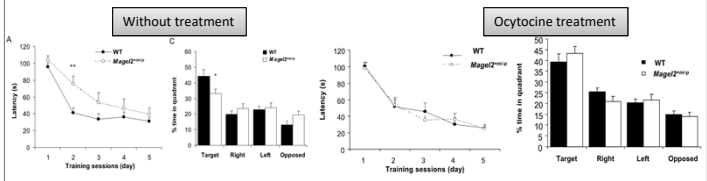
PHENOMIN-iCS is a research infrastructure of excellence for translational research and functional genomics. Our activities are focused on **understanding the role of genetics in health and diseases** and combine the ability to generate genetically modified **mouse or rat models** with **comprehensive phenotypic analysis**. The phenotyping platform can also be used for preclinical studies, including validation of therapeutic targets, pharmacological and toxicological studies. Studies can be focused in a specific therapeutic area or more broadly, with the ability to explore all physiological systems.

Alteration of social behavior and learning and memory capabilities in *Magel2*$^{+m/-p}$ male mice.
Post-natal Ocytocine treatment prevents these deficits *(Meziane et al, 2015, Biol Psychiatry)*

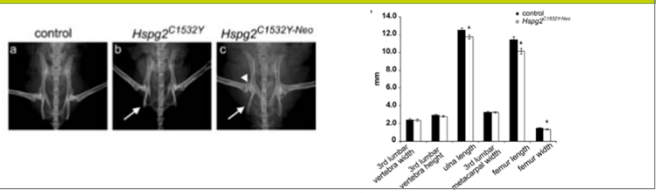
Social recognition and social interaction test



Morris water maze (spatial memory)

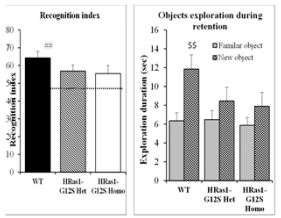


Chondrodysplasia in a model of Schwartz-Jampel syndrome, carrying a point mutation in the Perlecan gene (*Hspg2*^{C1532Y}) *(Stum et al, 2008, Hum Mol Genet)*

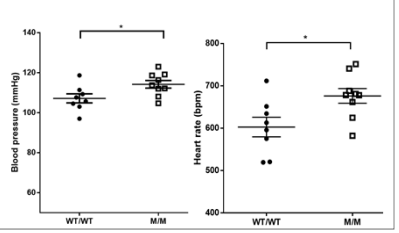


Development and characterization of a *H-Ras*^{G12S} mouse model for the Costello syndrome
Polysyndromic phenotype reproducing most of the symptoms observed in human clinics

Learning and memory deficit (NOR)

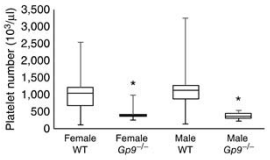


Systolic blood pressure and heart rate increase

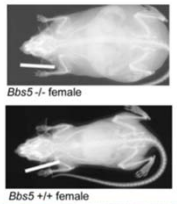


IMPC (International Mouse Phenotyping Consortium www.mousephenotype.org): mouse models of human diseases and understanding gene function *(Meehan et al, 2017, Nat Genet)*

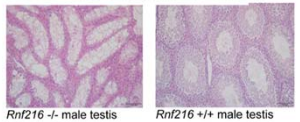
Platelets decrease in a Bernard-Soulier syndrome mouse model (*Gp9*$^{tm1.(KOMP)Vlcg}$)



Fat mass increase in a Bardet-Biedl syndrome mouse model (*Bbs5*$^{tm1b(EUCOMM)Wtsi}$)



Degeneration of seminiferous tubes and hyperplasia of Leydig cells in a Gordon-Holmes syndrome mouse model (*Rnf216* $^{tm1b(EUCOMM)Wtsi}$)



The expertise and wide range of services offered by PHENOMIN-iCS allow to generate and characterize rodent models for human pathologies that:

1) Are relevant, validated and robust, to meet scientific and medical challenges;
2) Best reproduce diseases;
3) Meet the needs of the scientific community;
4) Ensure reliability and reproducibility of results, according to standardized protocols, in a controlled environment and in the respect of the animal welfare.

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EXCELLENCE IN MOUSE PHENOGENOMICS