

Mouse GP

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3463797/>

<https://www.sciencedirect.com/science/article/pii/S0092867413007617>

The aim of the phenotyping programme was to perform a comprehensive phenotyping workflow to generate data covering most body systems, physiology, and behaviour. The EUMODIC and SANGER-MGP programmes were set up independently to carry out a comprehensive analysis and a screen of mouse mutant lines, respectively.

The EUMODIC programme used the SOPs developed within the EUMORPHIA consortium (www.eumorphia.org; Brown et al. 2005).

It was shaped around two independent pipelines: the first one was devoted to morphology, metabolism, and skeletal and cardiovascular systems, while the second was oriented toward neurobehavioural and sensory systems, haematology, biochemistry, and baseline immune responses (Eumodic consortium, unpublished). We combined those into one, comprehensive pipeline with the analysis beginning at age 9 weeks and being completed by 16 weeks of age. Its design was based on the use of cohorts of mice, totalling at least seven mutants of each sex, to detect differences in physiology or diseases, recognising that sex may have a considerable impact upon disease prevalence. It was also recommended that control mice be analysed through the phenotyping pipelines at the same time as mutants. Usually C57BL/6N mice have been used. Mice should be born within a timeframe of 7 days. The phenotyping assays that have been chosen for the EMPReSSslim [European Mouse Phenotyping Resource of Standardised Screens (EMPRESS) Slim] workflow are limited, but robust, providing a relatively broad-based first pass phenotype assessment, both high-throughput and cost-effective.

Mouse GP Pipeline

Procedure	Age (weeks)
Hair analysis	4
High-fat diet	4
Hair follicle cycling	6
Open field	9
Modified SHIRPA	9
Grip strength	9
Hot plate	10
Dysmorphology	10
Indirect calorimetry	12
IPGTT	13
DEXA	14
X-ray	14
ABR	14
Core temperature stress reading	15

Slit lamp	15
Ophthalmoscope	15
Haematology	16
Unfasted clinical chemistry	16
Heart dissection	16
Flow cytometry PBL analysis	16
Full necropsy	16