

Quality Assurance for PhysGen Phenotypic Data

Quality Assurance for the Physiological data is intrinsic in the Standard Operating Procedure (SOP) for data collection and analysis. Detailed descriptions of the protocol appear on the PhysGen Website (http://pga.mcw.edu/pga-bin/protocol_desc.cgi).

The phenotyping component of the PhysGen PGA provides 203 phenotypic measurements of heart, lung, vascular, and blood function. Each strain enters the protocols allowing for the functional characterization of both genders and parental control rats over a 5-week period. The data provides the functional information required to link each of the rat's 22 chromosomes to cardiovascular, pulmonary, renal and blood function.

All protocols for the collection of phenotypic data have been reviewed and approved by the Animal Care and Use Committee of the Medical College of Wisconsin. In general specifically trained technicians under the direct supervision of a Ph.D. level supervisor collect all phenotypic data. Data are screened electronically against the historic PGA database for suspect values and then each data point is certified by one of the 9 co-investigators. This is accomplished in two stages. First, Drs. Cowley, Kunert, Dwinell, and one of the 9 faculty level investigators for a single protocol meet weekly to review data for a particular protocol. Second, certified data is then reviewed by the entire Phenotyping committee of the PGA at one of its biweekly meetings. Minimum numbers of animals studied for each phenotype have been established. For general phenotypes, the minimum number of animals for posting is set for three. A strain is considered "complete" when a minimum of seven values for each phenotype has been posted on the website. For quality control in each protocol, 2 male animals of the background strain (SS or FHH) are run in parallel with the strain being studied. All data are reported with an estimate of variability for the value. For histological data, two animals of each sex are studied for each strain. Once the data is approved at this level the certified dataset is re-screened electronically and the Phenotyping supervisor resolves any conflicts. When all conflicts are resolved and the minimum number of values is achieved, the data are posted to the PhysGen Website. Data posting is on a quarterly basis.