

Between-laboratory inconsistency of behavioral and cognitive mouse phenotypes re-assessed in the IntelliCage

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The between-laboratory effects on behavioral phenotypes of 3 strains of laboratory mice were evaluated in a fully balanced and synchronized study using a completely automated behavioral phenotyping device (IntelliCage). Activity pattern and spatial conditioning performance differed consistently between strains, i.e. exhibited no interaction with the between-laboratory factor, while the gross laboratory effect showed up significantly in the majority of measures. It is argued that overall differences between laboratories may not realistically be preventable, as subtle differences in animal housing and treatment will not be controllable, in practice. However, consistency of strain (or treatment) effects appears to be far more important in behavioral and brain sciences than the absolute overall level of such measures. In this respect, at least in the IntelliCage, basic behavioral and cognitive measures proved to be highly consistent and, therefore, present a valid basis for meaningful research hypothesis testing.

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