

# Comprehensive Observation of Continuous Low Dose-rate Irradiated Mouse Phenotype

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## Abstract

The purpose of this study is to evaluate the effect of radiation exposure on mouse phenotype using the RIKEN Modified SHIRPA method. For the high dose-rate experiment, 8 week-old B6C3F<sub>1</sub> female mice were divided into three groups - a nonirradiated control (n=8) and 2 irradiated (4 Gy, n=8 and 8 Gy, n=8) groups. After exposure to high dose-rate gamma-rays, the mice were evaluated using SHIRPA parameters every 8 weeks. For the low dose-rate experiment, 8 week-old B6C3F<sub>1</sub> female mice were divided into two groups - a nonirradiated control (n=48) and irradiated (n=48) groups. Mice from the irradiated group were chronically exposed to the low dose-rate (20 mGy/day) of gamma rays. The mice were similarly evaluated using SHIRPA parameters every 7 weeks. Some parameters, such as hair morphology, transfer arousal, whisker morphology, minor color, wire maneuver, and contact righting reflex differed among the groups.

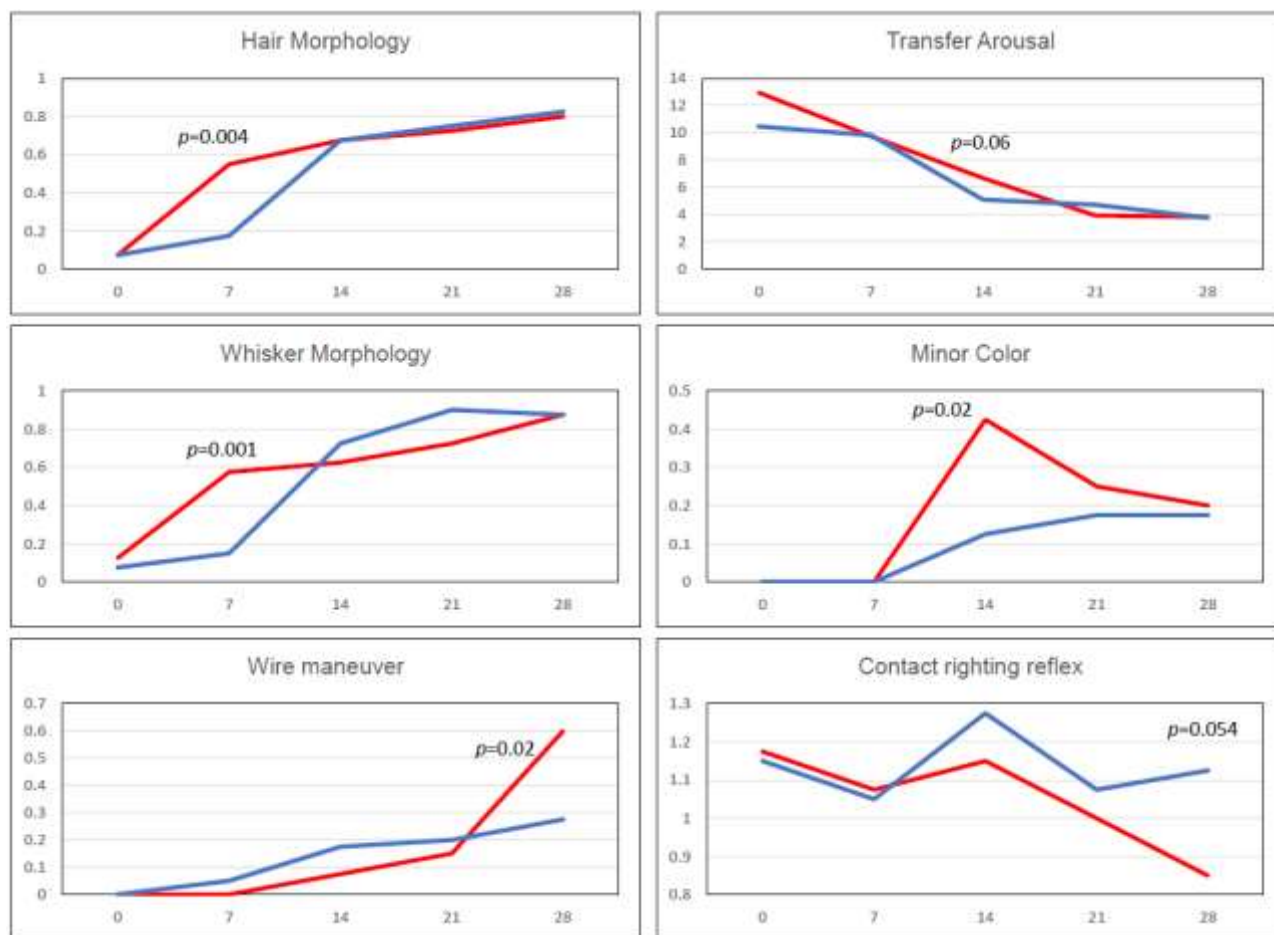


Fig. 1 Parameters that show differences between irradiated and nonirradiated groups in SHIRPA analysis. Longitudinal axis, average value of SHIRPA scores; horizontal axis, weeks from experiment start; red line, irradiated group; blue line, nonirradiated group; p values were calculated by Mann-Whitney test.