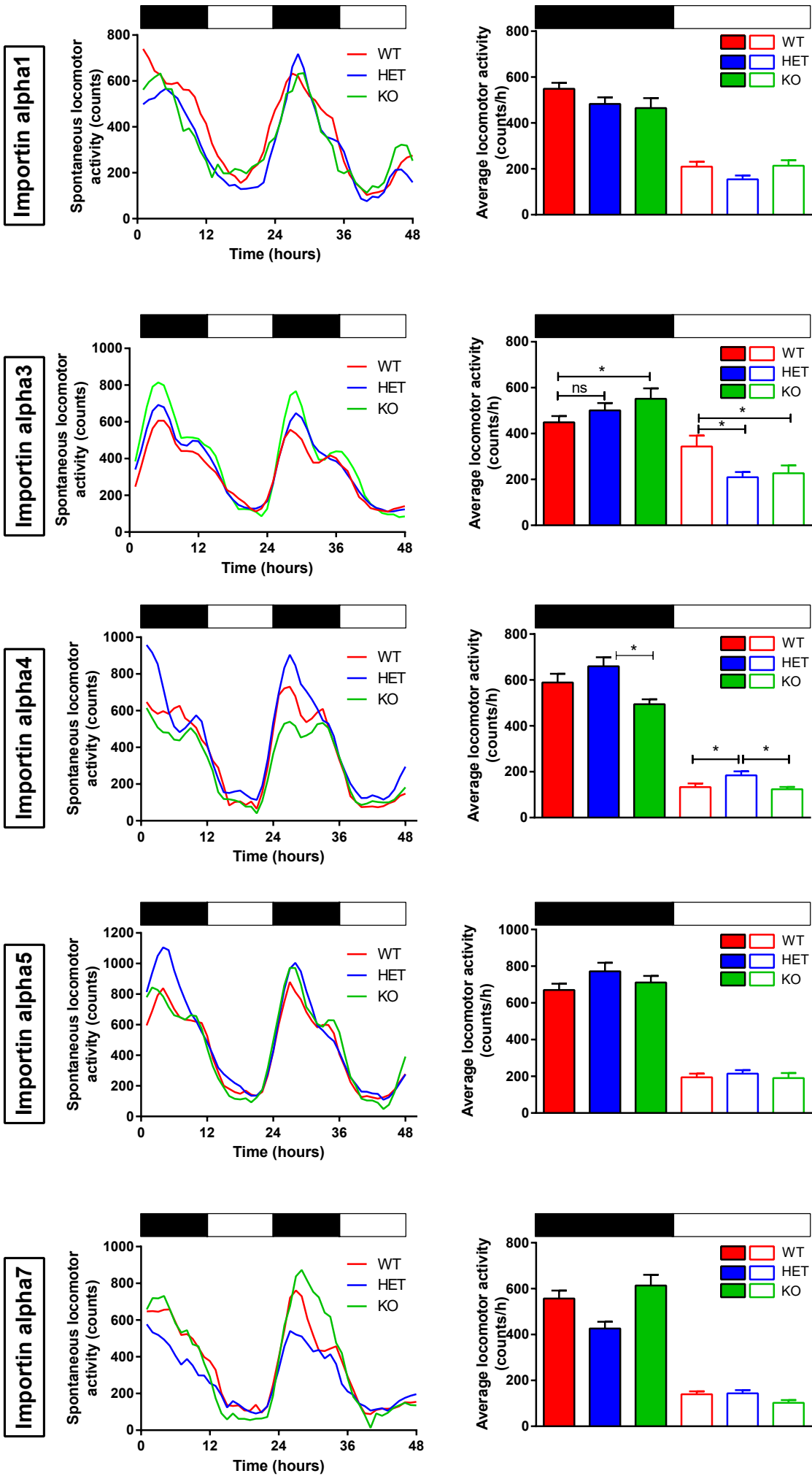
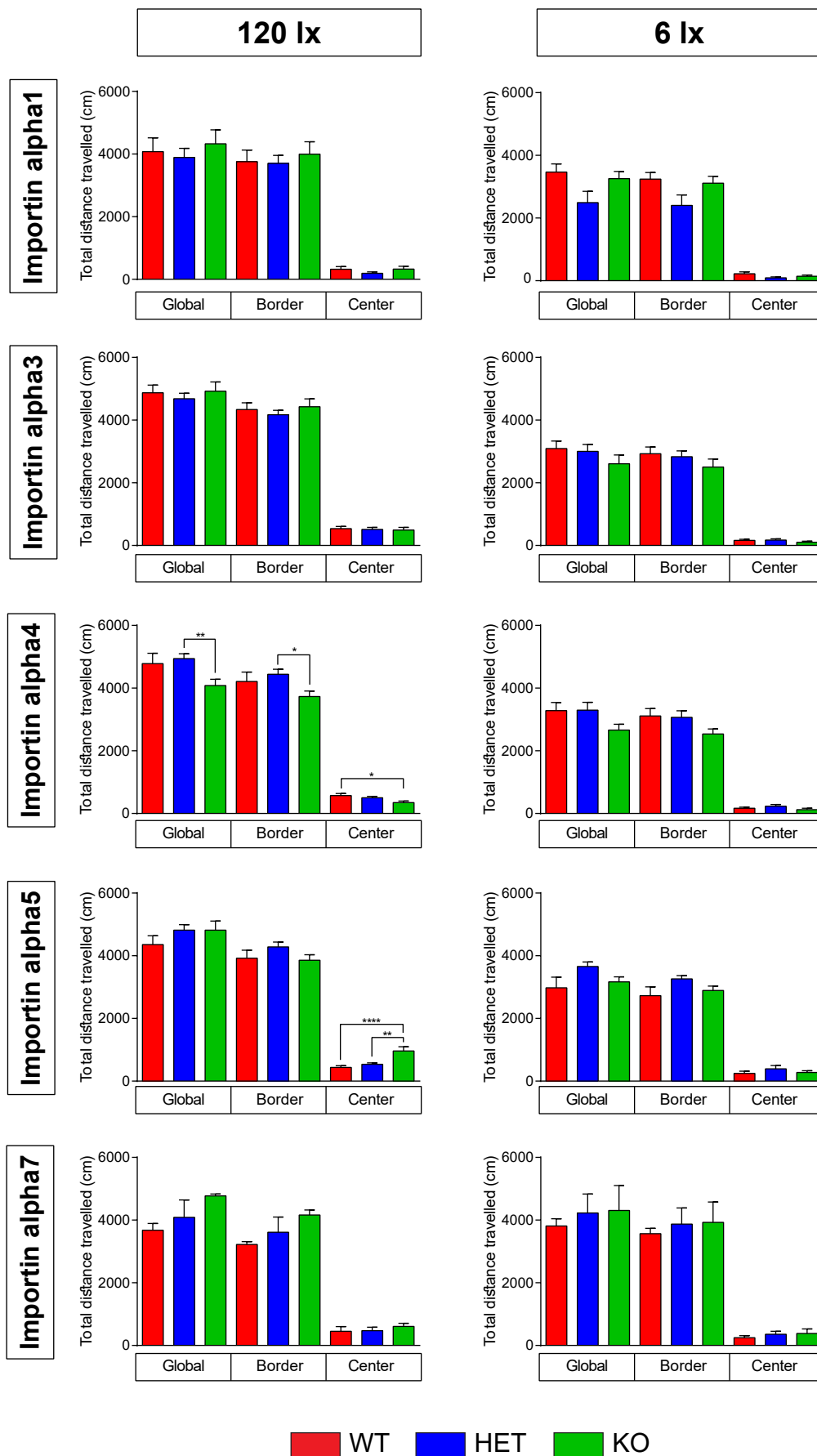


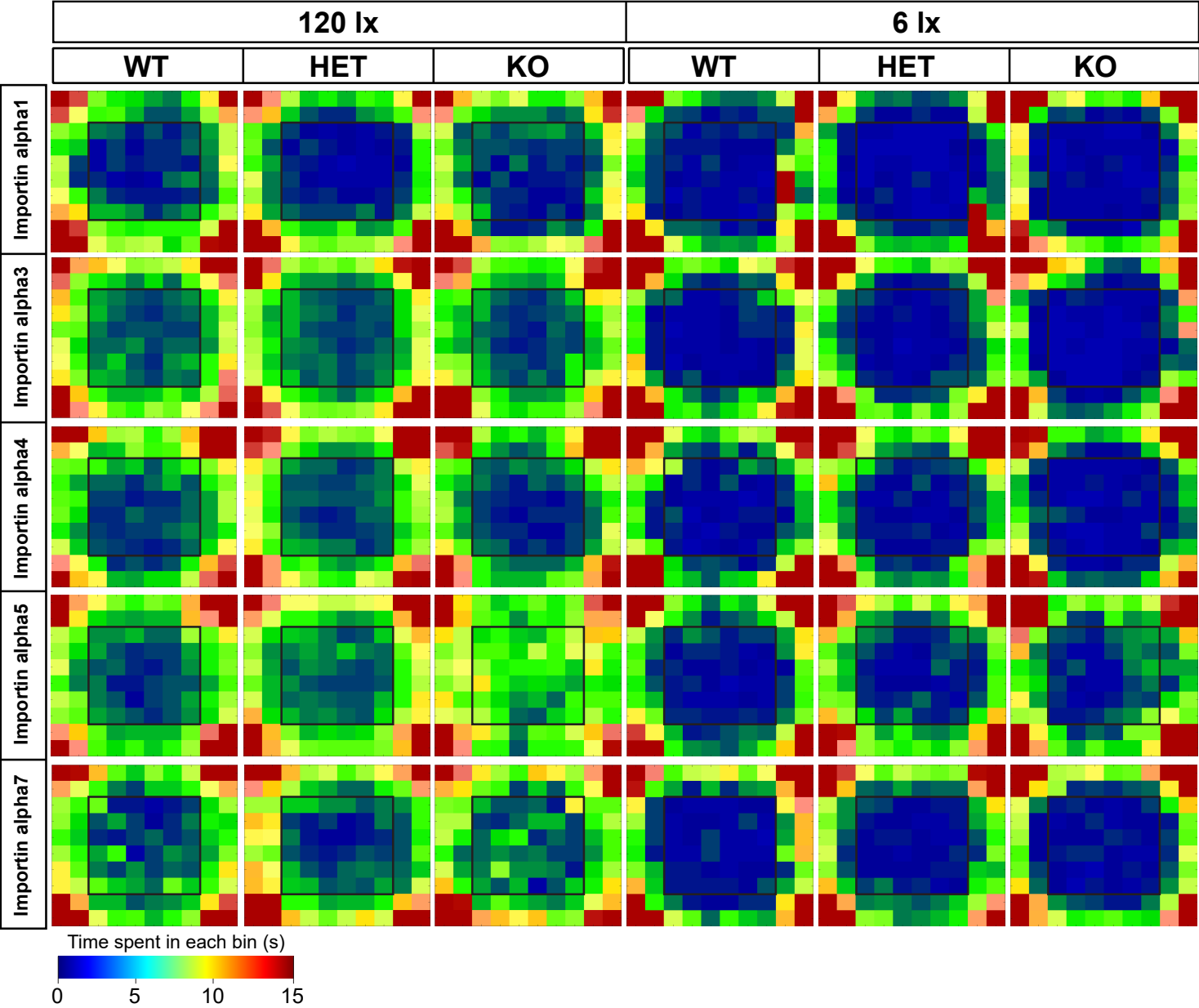
A. Home-cage locomotion



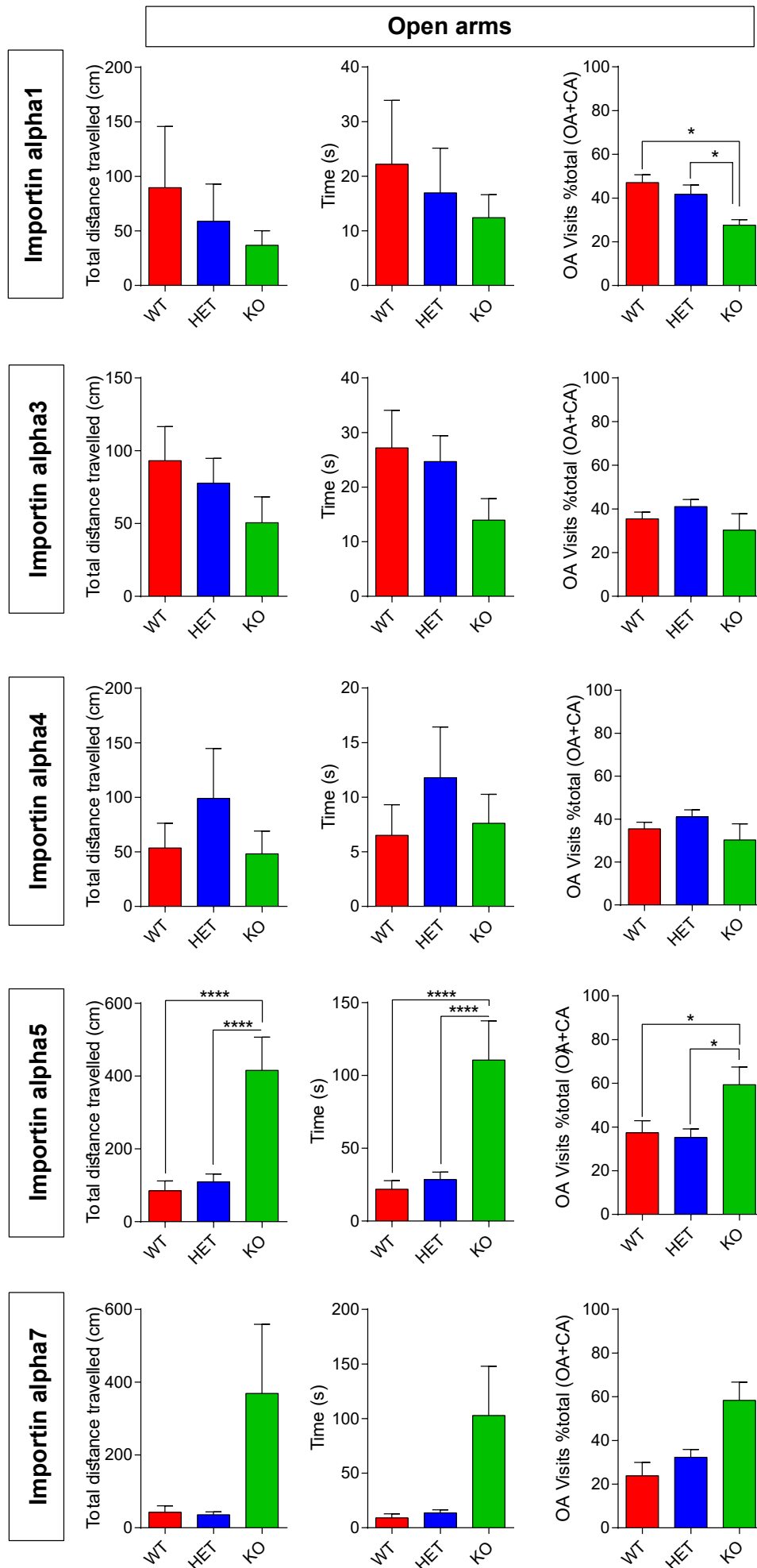
## B. Open field test



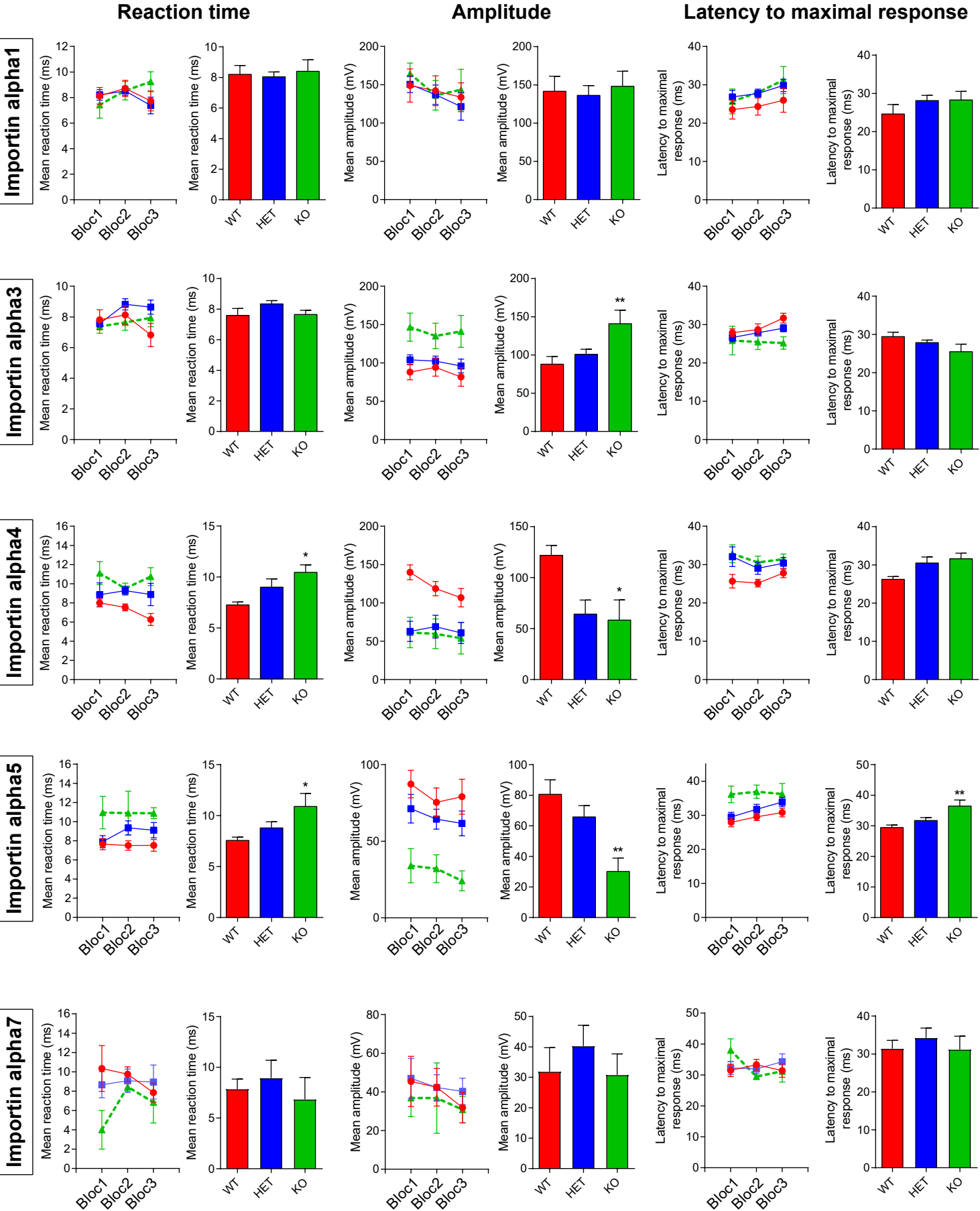
C. Open field test - group heat map



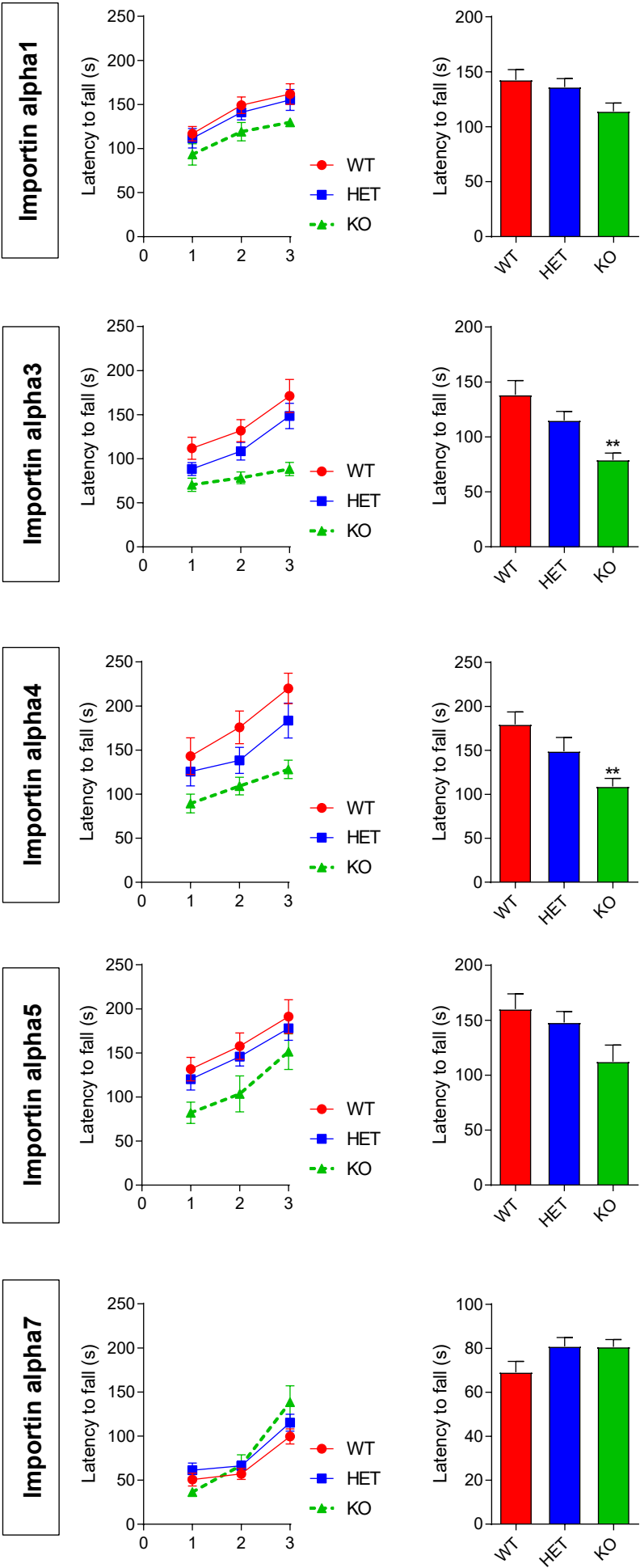
## D. Elevated plus maze



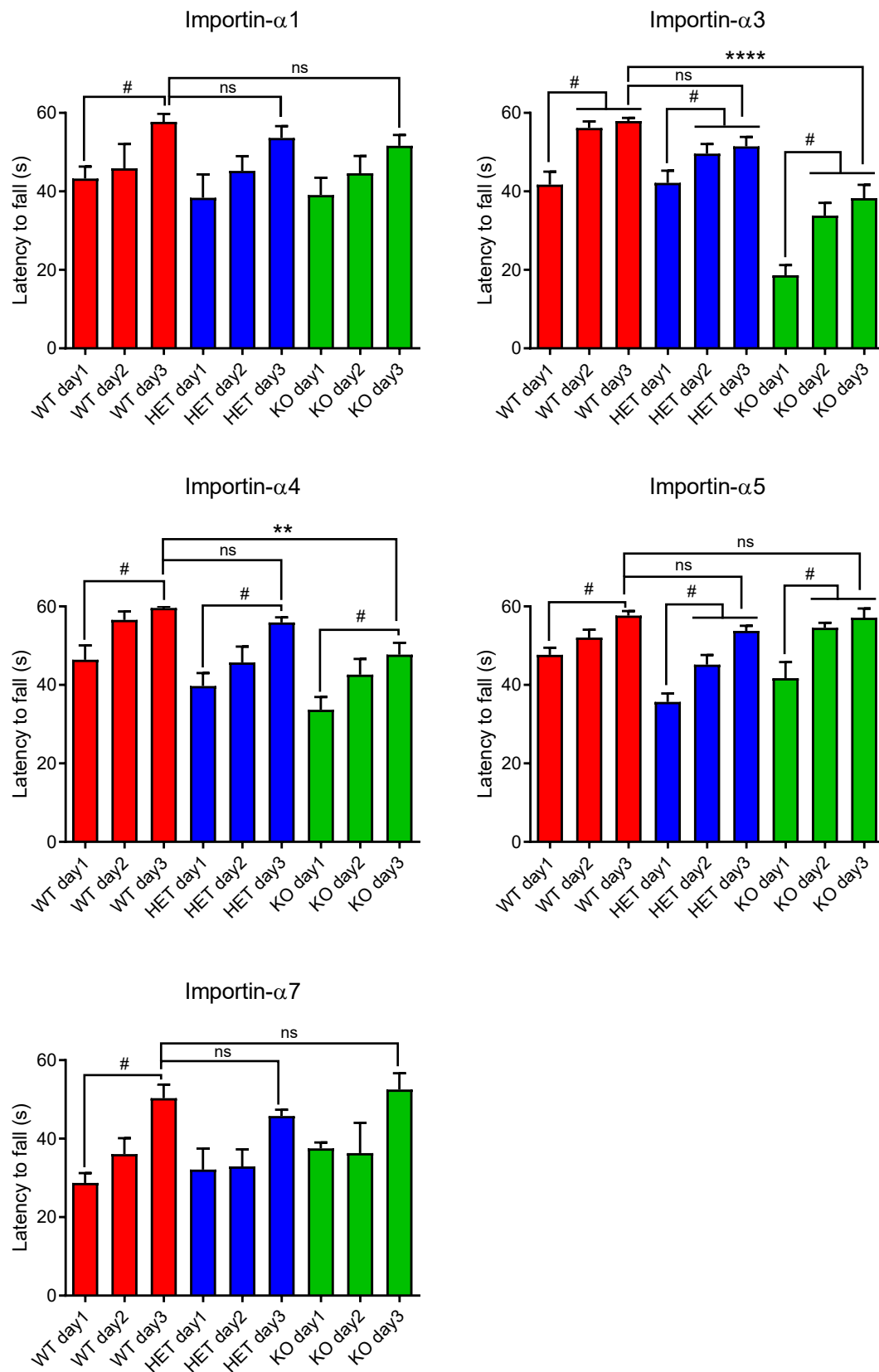
E. Startle response



F. Rotarod



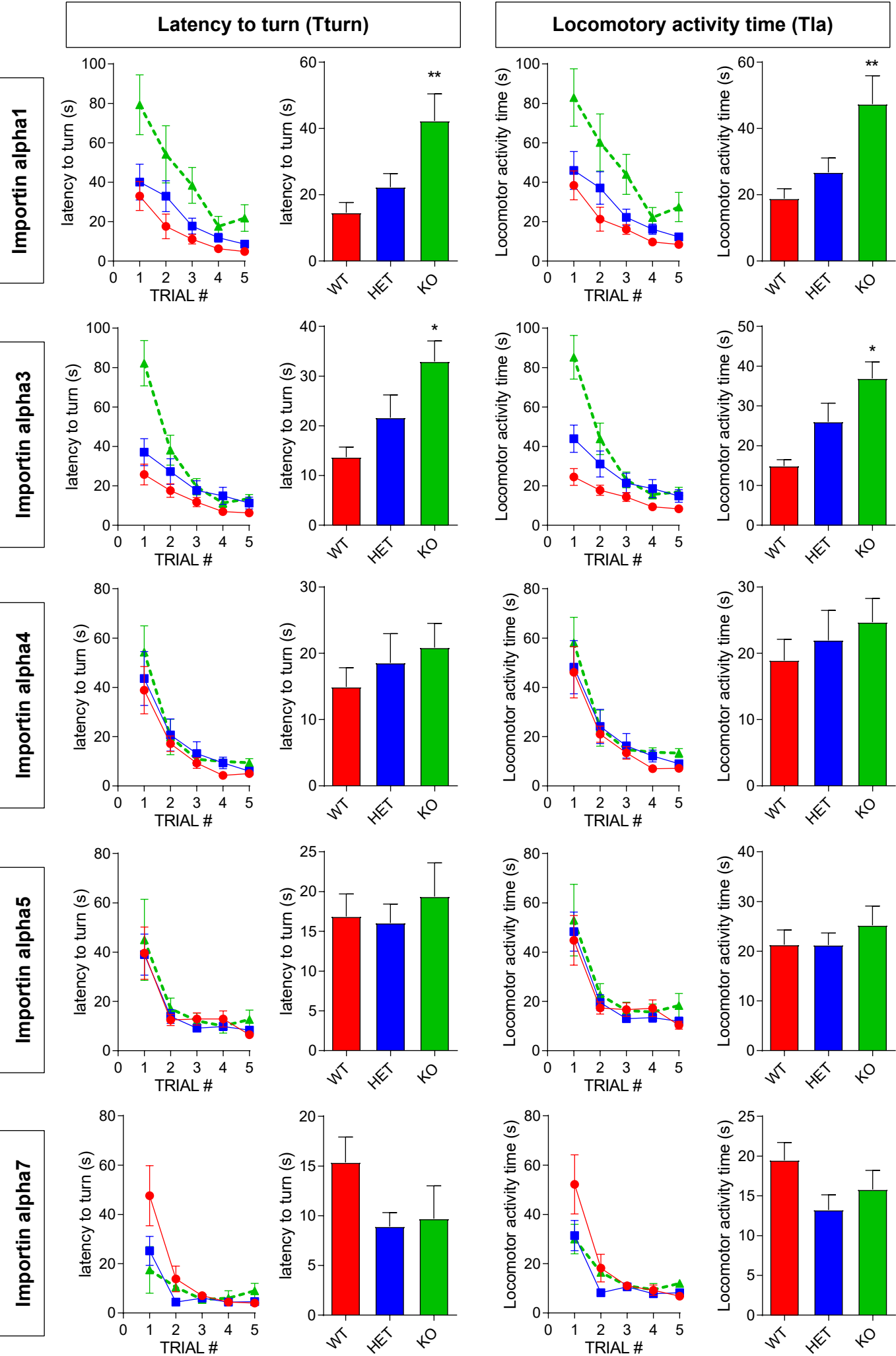
## G. Wire hanging test



# P<0.05 - RM one-way ANOVA + Sidak's multiple comparisons test

\* P<0.05, \*\* P<0.01, \*\*\* P<0.001, \*\*\*\* P<0.0001 - ANOVA + Sidak's multiple comparisons test

H. Pole test





**Dataset S1** (*SI related to Fig. 1*). Behavioral profiling of importin  $\alpha 1$ ,  $\alpha 3$ ,  $\alpha 4$ ,  $\alpha 5$  and  $\alpha 7$  (3 groups per line: wild-type, heterozygous, knockouts). **A**, Home-cage locomotion. Left panel: spontaneous activity along the 48 hrs of the monitoring and the respective average activity in counts/h for the dark (black box) and light periods (white box). **B-C**, Open-field test. Total distance travelled, globally or in the center or border region of the arena under 120lx or 6lx illumination condition (B) and respective open-field group heat-maps of activity (color coding expressed as time spent in each bin) generated with COLORcation (C). **D**, Elevated plus maze. Distance travelled (cm), time spent (s) in the open arms and percentage of open arms visits (OA visits). **E**, Startle response values expressed as reaction time (ms), the amplitude and the latency to produce the maximal response (MaxMs). For each parameter, the left panel depicts the values in each of the 3 blocs while the right panel shows the average responses. **F**, Latency to fall from the accelerating rotarod over the 3 consecutive trials and on average. **G**, Wire-hanging test data expressed as the latency to fall (s). **H**, Pole test latency to turn (Tturn) and locomotory activity time (Tla, time to turn + time needed to reach the cage at the bottom of the vertical pole). 8-15 animals were used for each line in the different assays of this data-set., \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ , \*\*\*\*  $p < 0.0001$  (one-way ANOVA followed by Tukey's HSD post hoc correction for multiple comparisons (A, B, D, E, F, H). Two-way ANOVA showing the intra-group ability to improve the performances from day1 to day3 and one-way ANOVA + Sidak post-hoc analyses to analyze group differences on the last testing day (G).