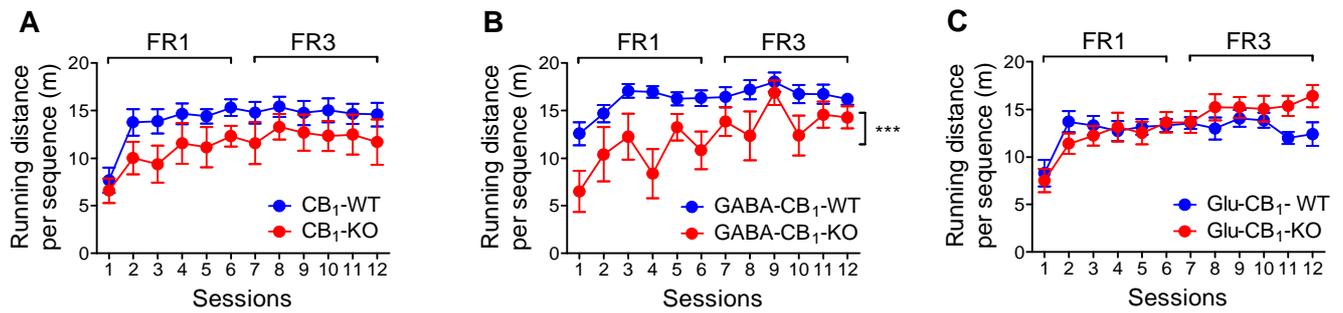


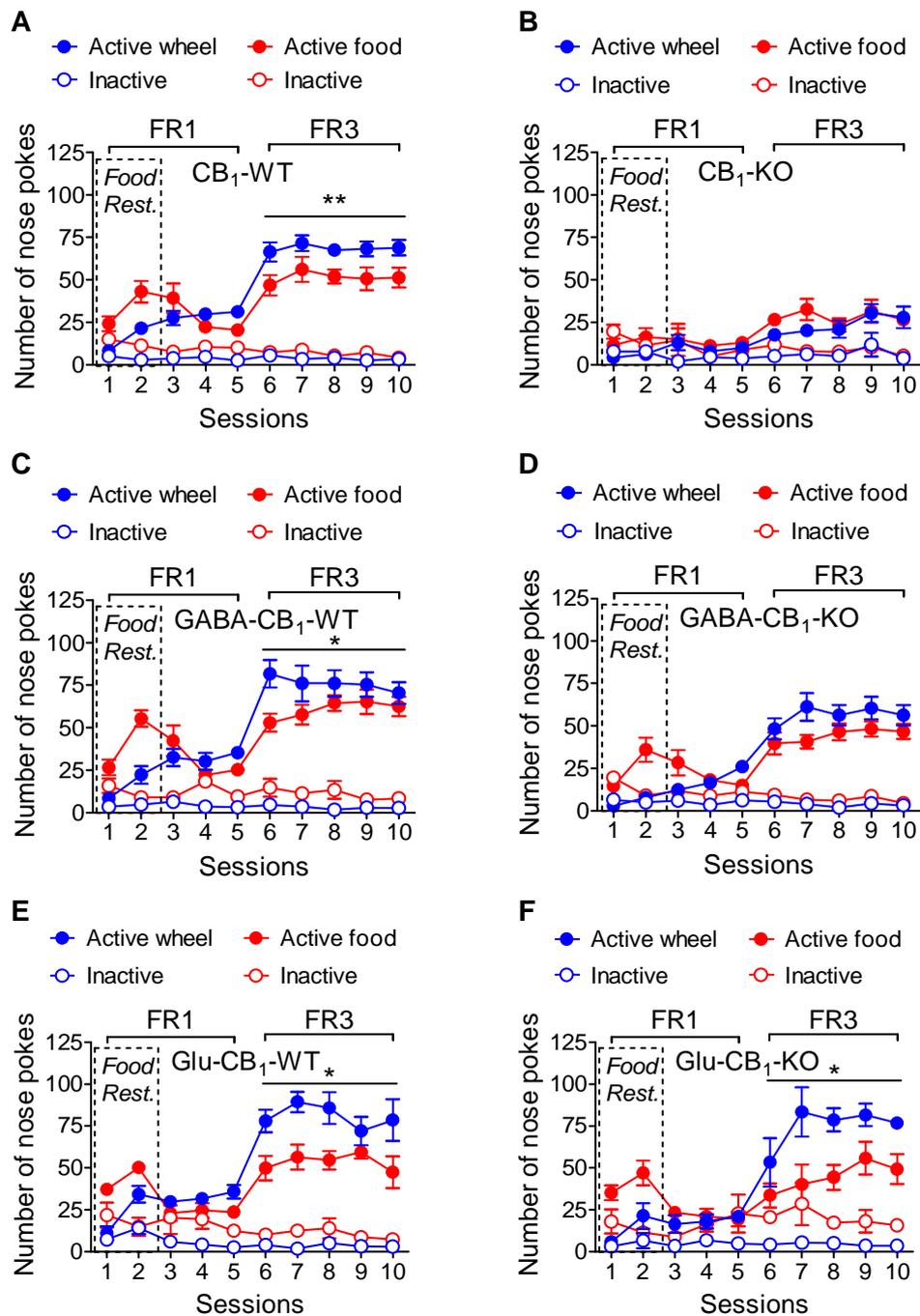
### Supplemental Figure 1.

**Summary of the effects of the drugs and mouse lines used in this study on operant running breakpoint levels and/or discrimination rates. (A)** Differential effects of the intraperitoneal injection of haloperidol (0.15 and 0.3 mg/kg, 45 min beforehand;  $n = 9-10$ ), SR141716 (3 mg/kg, 30 min beforehand;  $n = 12$ ), or O-2050 (0.5 mg/kg, 30 min beforehand;  $n = 7$ ), and of the bilateral VTA perfusion of AM251 (1  $\mu\text{g}/\text{side}$ , 30 min beforehand;  $n = 10$ ) with respect to their corresponding vehicles ( $n = 8-15$ ) on breakpoint levels during a PR session. **(B)** Behaviors of CB<sub>1</sub>-KO mice ( $n = 7$ ), GABA-CB<sub>1</sub>-KO mice ( $n = 12$ ), and Glu-CB<sub>1</sub>-KO mice ( $n = 9$ ) against their respective wild-type littermates ( $n = 9-21$ ), and of Stop-CB<sub>1</sub> mice ( $n = 9$ ) and GABA-CB<sub>1</sub>-Rescue mice ( $n = 14$ ) on breakpoint levels reached during a PR session. **(C)** None of the CB<sub>1</sub> receptor mutations used herein impacted the discrimination rate between active and inactive nose pokes during the last FR3 session that preceded the PR sessions (same numbers of animals as in B). Data are provided as mean  $\pm$  SEM. Two-group comparisons were made by means of Student t-tests, excepted for haloperidol whose effects were measured by Tukey tests following a significant one-way ANOVA. \*  $P < 0.05$ , \*\*  $P < 0.01$ .



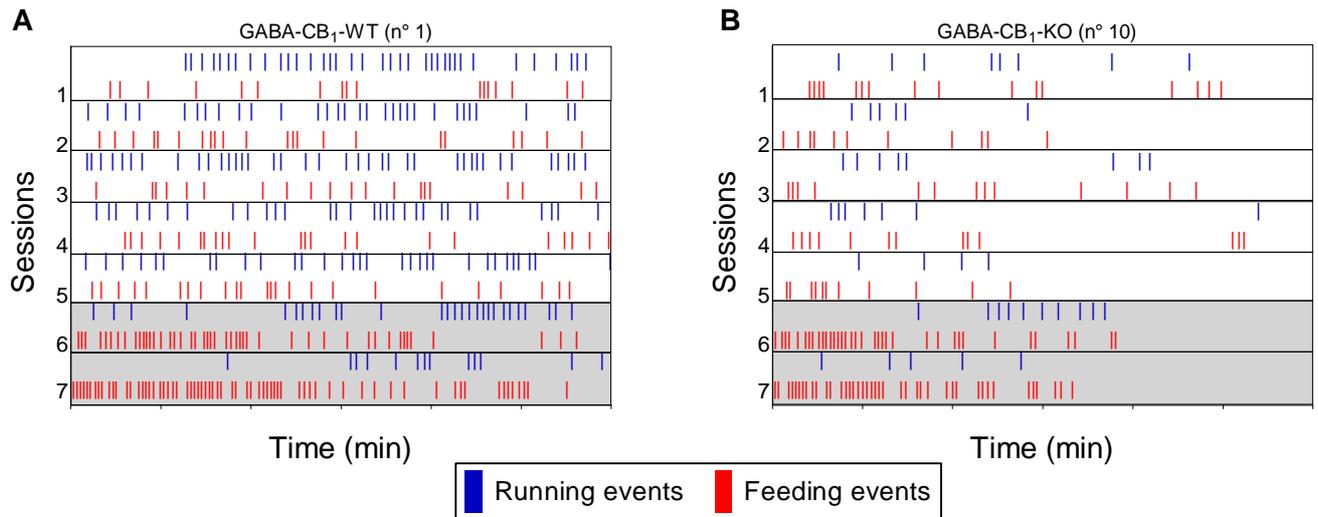
### Supplemental Figure 2.

**Running distances per rewarded sequences in CB<sub>1</sub> receptor mutant lines. (A)** CB<sub>1</sub>-WT mice (n = 9) and CB<sub>1</sub>-KO mice (n = 7) ran similar distances per sequences during FR sessions. **(B)** GABA-CB<sub>1</sub>-KO mice (n = 12) ran less distances per sequences than their GABA-CB<sub>1</sub>-WT mice counterparts (n = 21). **(C)** Glu-CB<sub>1</sub>-WT mice (n = 15) and Glu-CB<sub>1</sub>-KO mice (n = 9) ran similar distances per sequences during FR sessions. Data are provided as mean ± SEM. \*\*\* *P* < 0.001 for the overall impact of the genotype (two-way ANOVA).



### Supplemental Figure 3.

**Influence of CB<sub>1</sub> receptors on nose poke responses to access wheel-running or feeding when rewards were provided alone. (A, B)** CB<sub>1</sub>-WT mice (n = 10), but not CB<sub>1</sub>-KO mice (n = 6), displayed more active nose pokes for wheel-running than for food under FR3 schedules of reinforcement. **(C, D)** GABA-CB<sub>1</sub>-WT mice (n = 8), but not GABA-CB<sub>1</sub>-KO mice (n = 12), displayed more nose pokes for wheel-running than for food under FR3 schedules of reinforcement. **(E, F)** Glu-CB<sub>1</sub>-WT mice (n = 5) and Glu-CB<sub>1</sub>-KO mice (n = 5), displayed more active nose pokes for wheel-running than for food under FR3 schedules of reinforcement. Data are provided as mean ± SEM. \*  $P < 0.05$  and \*\*  $P < 0.01$  for the difference between rewards (two-way ANOVA). *Food Rest.* stands for food restriction.



#### Supplemental Figure 4.

**Within-session kinetics of rewarded sequences in the running/feeding choice paradigm in the GABA-CB<sub>1</sub> mouse line. (A)** Reward actograms of a representative GABA-CB<sub>1</sub>-WT mouse during 60-min choice sessions. **(B)** Reward actograms of a representative GABA-CB<sub>1</sub>-KO mouse during 60-min choice sessions. Test sessions occurred once per day with mice fed *ad libitum* (sessions 1-5) before being food-restricted (sessions 6-7; shaded area).