

1 **Supplemental Figure Legends**

2 **Supplemental Figure 1.** a) CPR significantly increases locomotion as measured by total number
3 of beam breaks in both vehicle-treated (n = 7) and isradipine-treated mice (n = 7). b) SPR
4 significantly increases locomotion in both vehicle-treated (n = 6) and isradipine-treated mice (n =
5 5). c) Acquisition did not alter average cocaine-paired duration in mice who would later receive
6 vehicle (n = 13) or mice who would later receive isradipine (n = 11). d) Acquisition did not alter
7 number of cocaine-paired entries in mice who would later receive vehicle or mice who would
8 later receive isradipine. Data are presented as mean + SEM.

9 **Supplemental Figure 2.** a) Acute stress reduces time spent in the open arms of the elevated plus
10 maze in both WT (n = 8/group) and $Ca_v1.2^{+/-}$ mice (n = 9/group). b) Acute stress reduces the
11 percentage of spontaneous alternations performed by both WT (n = 8) and $Ca_v1.2^{+/-}$ (n = 9) mice.
12 c) Acute stress increases serum corticosterone (CORT) in both WT and $Ca_v1.2^{+/-}$ mice (n =
13 5/group). Data are presented as mean + SEM.

14 **Supplemental Figure 3.** a) Spread of AAV-Cre-GFP expression in animals utilized in
15 experiments displayed in Figure 2. Dense viral expression was observed at AP +2.0 and sparse
16 expression was observed ranging between AP +2.4 and AP +1.6. b) Representative optical fiber
17 placement in animals utilized in experiments displayed in Figure 3. c) Spread of AAV-DREADD
18 expression in animals utilized in experiments displayed in Figure 4 and Figure 5. Dense
19 DREADD expression was observed exclusively at AP +2.0, and rare sparse expression was
20 observed ranging to AP +2.4 in some mice. No differences in DREADD viral spread were
21 observed between AAV-hM4Di and AAV-hM3Dq or between WT and $Ca_v1.2$ heterozygous
22 mice.

23 **Supplemental Figure 4.** a) *cacna1c*-floxed mice were injected with either AAV2-Cre (IL-Cre)
24 or AAV2-GFP (IL-GFP) into the infralimbic cortex (IL) to focally knockdown Cav1.2
25 expression. b) Both IL-GFP and IL-Cre mice acquired cocaine CPP ($***p < 0.001$, $**p < 0.01$,
26 bonferroni post-hoc baseline vs. acquisition). IL-GFP mice extinguished cocaine CPP ($##p <$
27 0.01 , bonferroni post-hoc acquisition vs. extinction; $n = 7$) while IL-Cre mice did not ($n = 7$). c)
28 CPR had no effect on the average saline-paired duration or d) the number of saline-paired entries
29 in PrL-GFP ($n = 6$) or PrL-Cre ($n = 5$) mice. e) SPR had no effect on average saline-paired
30 duration or f) number of saline-paired entries in PrL-GFP ($n = 5$) or PrL-Cre ($n = 9$) mice. Data
31 are presented as mean + SEM.

32 **Supplemental Figure 5.** a) Representative image of GFP-tagged cells in the PrL b)
33 Representative RNAscope in situ hybridization images of *cacna1c* mRNA (red), GFP-tagged
34 cells (green) and DAPI (blue) in the PrL of control mice injected with AAV-GFP (left) and
35 experimental mice injected with AAV-fDIO-Cre-GFP into the PrL and retro-AAV-FLP into the
36 NAcC (right). c) Representative image of positive control mRNA (Polr2a: red) and GFP-tagged
37 cells in PrL-NAcC Cav1.2 KO mice.

38 **Supplemental Figure 6.** a) PrL→NAcC fiber photometry trace centered around entry into the
39 cocaine-paired chamber (red) or saline-paired chamber (blue) averaged across entries of vehicle-
40 treated mice during CPR. b) No difference in mean amplitude was observed prior to cocaine- and
41 saline-paired entries during the baseline test, c) the acquisition test, or d) the extinction test in
42 vehicle-treated mice. e) PrL→NAcC fiber photometry trace centered around entry into the
43 cocaine-paired chamber (magenta) or saline-paired chamber (cyan) averaged across entries of
44 isradipine-treated mice during CPR. f) No correlation was observed between average amplitude
45 5 seconds prior to cocaine-paired entry and average saline-paired duration during CPR ($r = 0.26$,

46 n=13). g) PrL→NAcC fiber photometry trace centered on entry into the cocaine-paired chamber
47 (red) or saline-paired chamber (blue) averaged across entries of vehicle-treated mice during SPR.
48 h) In vehicle-treated mice, SPR significantly increased the number of events per minute in the
49 PrL→NAcC projection while mice were in both the saline-paired and cocaine-paired chamber
50 ($*p < 0.05$, bonferroni post-hoc extinction vs. SPR; $n = 6$). i) Acute stress had no effect on the
51 number of events per minute in the PrL→NAcC projection when recorded in a home cage test (n
52 $= 5$). j) No correlation was observed between the number of events per minute and the number of
53 saline-paired entries during SPR ($r = 0.16$, $n = 11$). k) Treatment with isradipine had no effect on
54 PrL→NAcC mean amplitude of calcium events (vehicle, $n = 5$; isradipine, $n = 6$, l) the maximum
55 amplitude of calcium events (vehicle, $n = 4$; isradipine, $n = 5$), or m) the number of events per
56 minute when tested in a home cage (vehicle/isradipine, $n = 6$). Data are presented as mean +
57 SEM.

58 **Supplemental Figure 7.** a) No difference in baseline, acquisition, extinction or CPR behavior
59 was observed between WT hM4Di mice ($n = 3$) and WT sham mice ($n = 3$). b) No difference in
60 CPP behavior was observed between WT hM4Di ($n = 4$) and WT sham mice ($n = 7$) in a cohort
61 tested for SPR. c) CPR had no effect on average saline-paired duration in control ($n = 6$) or
62 hM4Di-expressing mice injected with CNO ($n = 7$). d) SPR had no effect on the number of
63 saline-paired entries in control ($n = 11$) or hM4Di-expressing mice injected with CNO ($n = 8$).
64 Data are presented as mean + SEM.

65 **Supplemental Figure 8.** a) No difference in baseline, acquisition, extinction or CPR behavior
66 was observed between $Ca_v1.2^{+/-}$ hM3Dq mice ($n = 4$) and $Ca_v1.2^{+/-}$ sham mice ($n = 4$) in a cohort
67 tested for CPR. b) No difference in CPP behavior was observed between $Ca_v1.2^{+/-}$ hM3Dq mice
68 ($n = 4$) and $Ca_v1.2^{+/-}$ sham mice ($n = 4$) in a cohort tested for SPR. c) CPR had no effect on

69 average saline-paired duration in $Cav1.2^{+/-}$ control (n = 8) or $Cav1.2^{+/-}$ hM3Dq-expressing mice
70 injected with CNO (n = 7). d) SPR had no effect on the number of saline-paired entries in
71 $Cav1.2^{+/-}$ control (n = 8) or $Cav1.2^{+/-}$ hM3Dq-expressing mice injected with CNO (n = 8). Data
72 are presented as mean + SEM.

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