**Supplemental Information**

**Journal name: NeuroMolecular Medicine**

# Transcriptome Analysis of the Mouse Medial Prefrontal Cortex in Chronic Constriction Injury Model: Implications for neuropathic pain-induced cognitive impairment

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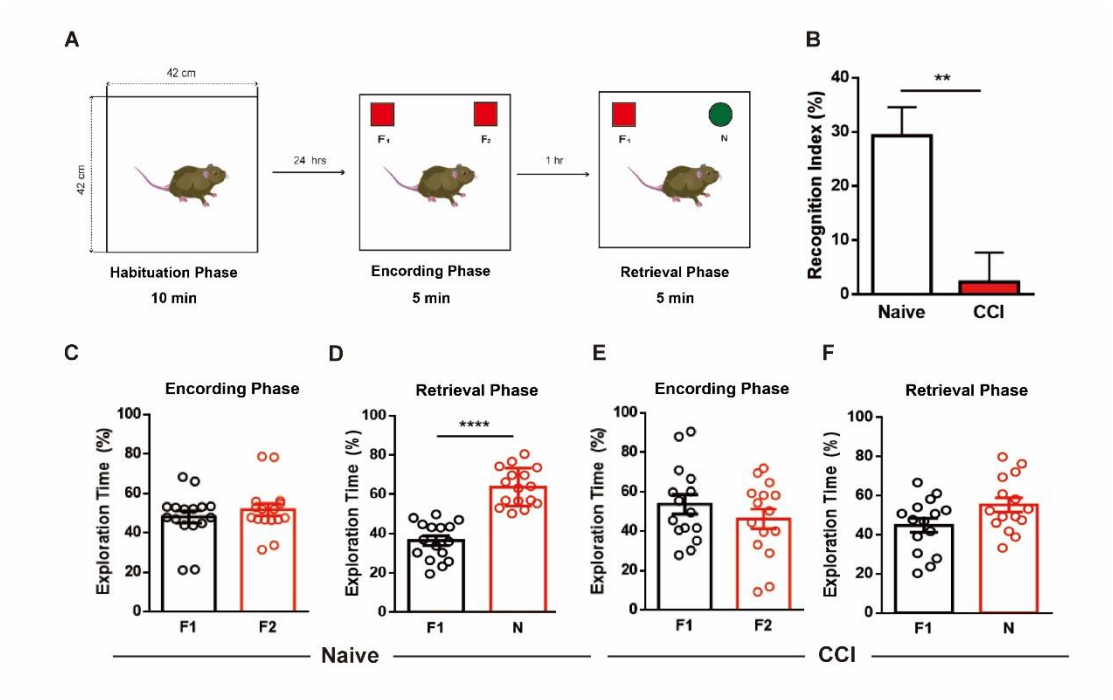
**Inventory of Supplementary Information**

**Supplementary Figure 1.** related to Figure 1, Novel object recognition (NOR) test in male C57BL/6J mice at 28 days after CCI surgery.

**Supplementary Table 1.** related to Figure 2, The Detailed Information of the Top 10 Up/Down-Regulated DEGs in contralateral mPFC of CCI mice.

**Supplementary Table 2.** related to Figure 2, The Detailed Information of the Top 10 Up/Down-Regulated DEGs in ipsilateral mPFC of CCI mice.




**Supplemental Figure 1. Related to Figure 1, Novel object recognition (NOR) test in male C57BL/6J mice at 28 days after CCI surgery.** The procedure of NOR experiment (A). Compared with the Naive group, the recognition index of CCI model mice was significantly decreased (B). The Naive group showed no object preference for the same object during training (C) but a preference for the new object during testing (D), while the CCI group showed no object preference during training (E) and testing (F). Student's *t*-test; n=16, 15. $^{**}P < 0.01$, $^{****}P < 0.0001$ vs Naive group. Mean ± S.E.M

Supplementary Table 1: The Detailed Information of the Top 10 Up/Down-Regulated DEGs in contralateral mPFC of CCI mice.

| Gene Name | Official Name (NCBI) | Locus | $Log_2$Fold Change | P-value | Up/Down |
|---|---|---|---|---|---|
| ***Birc7*** | baculoviral IAP repeat containing 7 livin | 2:180929023-180934010 | 3.83 | 1.45E-02 | **Up** |
| ***Impg1*** | interphotoreceptor matrix proteoglycan 1 | 9:80313330-80465481 | 3.59 | 9.56E-03 | **Up** |
| ***Pcdhgb4*** | protocadherin gamma subfamily B 4 | 18:37720369-37841870 | 3.57 | 3.54E-05 | **Up** |
| ***Slc43a1*** | solute carrier family 43 member 1 | 2:84838850-84863594 | 3.22 | 1.29E-03 | **Up** |
| ***Bsx*** | brain specific homeobox | 9:40874127-40877972 | 3.10 | 3.79E-02 | **Up** |
| ***Foxi1*** | forkhead box I1 | 11:34204338-34208089 | 3.02 | 7.29E-03 | **Up** |
| ***Cnksr1*** | connector enhancer of kinase suppressor of Ras 1 | 4:134228041-134238399 | 2.93 | 2.49E-04 | **Up** |
| ***Pcdhgb1*** | protocadherin gamma subfamily B 1 | 18:37680233-37841870 | 2.87 | 2.12E-04 | **Up** |
| ***Matn3*** | matrilin 3 | 12:8947929-8972028 | 2.83 | 3.75E-02 | **Up** |
| ***Slc25a31*** | solute carrier family 25 mitochondrial carrier; adenine nucleotide translocator member 31 | 3:40708855-40726096 | 2.75 | 1.35E-02 | **Up** |
| ***Tgfb1i1*** | transforming growth factor beta 1 induced transcript 1 | 7:128248895-128253365 | -4.31 | 1.28E-04 | **Down** |
| ***Ugt1a10*** | UDP glycosyltransferase 1 family polypeptide A10 | 1:88055388-88219004 | -3.85 | 4.71E-04 | **Down** |
| ***Cyp2d26*** | cytochrome P450 family 2 subfamily d polypeptide 26 | 15:82790107-82794245 | -3.82 | 3.16E-03 | **Down** |
| ***Rab25*** | RAB25 member RAS oncogene family | 3:88542029-88548300 | -3.37 | 2.77E-02 | **Down** |
| ***Ltb4r2*** | leukotriene B4 receptor 2 | 14:55761428-55763229 | -3.23 | 2.54E-02 | **Down** |
| ***Ctla4*** | cytotoxic T lymphocyte associated protein 4 | 1:60887000-60915832 | -2.74 | 2.76E-02 | **Down** |
| ***Pcdhga9*** | protocadherin gamma subfamily A 9 | 18:37736936-37841870 | -2.73 | 2.65E-04 | **Down** |
| ***Sln*** | sarcolipin | 9:53850251-53853844 | -2.56 | 5.67E-03 | **Down** |
| ***Wfdc17*** | WAP four disulfide core domain 17 | 11:83703991-83706268 | -2.48 | 1.30E-02 | **Down** |
| ***Phldb3*** | pleckstrin homology like domain family B member 3 | 7:24610763-24629297 | -2.47 | 9.16E-03 | **Down** |

Supplemental Table 2: The Detailed Information of the Top 10 Up/Down-Regulated DEGs in ipsilateral mPFC of CCI mice.

| Gene Name | Official Name (NCBI) | Locus | log2Fold Change | P-value | Up/Down |
|---|---|---|---|---|---|
| ***Slc43a1*** | solute_carrier_family_43_member_1 | 2:84838850-84863594 | 3.67 | 4.69E-06 | **UP** |
| ***Pcdhgb4*** | protocadherin_gamma_subfamily_B_4 | 18:37720369-37841870 | 3.60 | 2.08E-03 | **UP** |
| ***Sgsm3*** | small_G_protein_signaling_modulator_3 | 15:81002628-81011736 | 2.87 | 4.83E-07 | **UP** |
| ***Foxi1*** | forkhead_box_I1 | 11:34204338-34208089 | 2.80 | 1.19E-02 | **UP** |
| ***Cnksr1*** | connector_enhancer_of_kinase_suppressor_of_Ras_1 | 4:134228041-134238399 | 2.26 | 1.39E-02 | **UP** |
| ***Slc25a31*** | solute_carrier_family_25_mitochondrial_carrier;_adenine_nucleotide_translocator_member_31 | 3:40708855-40726096 | 2.16 | 4.05E-02 | **UP** |
| ***Rs1*** | retinoschisis_X_linked_juvenile_1_human_ | X:160768013-160799663 | 2.04 | 2.70E-02 | **UP** |
| ***Mylk4*** | myosin_light_chain_kinase_family_member_4 | 13:32700827-32783954 | 1.61 | 6.92E-04 | **UP** |
| ***Tmem52*** | transmembrane_protein_52 | 4:155469114-155470858 | 1.52 | 3.96E-02 | **UP** |
| ***Fam65c*** | family_with_sequence_similarity_65_member_C | 2:167980164-168010618 | 1.39 | 3.66E-02 | **UP** |
| ***Exoc3l2*** | exocyst_complex_component_3_like_2 | 7:19489056-19496760 | -1.40 | 9.35E-03 | **DOWN** |
| ***Pcdhgb2*** | protocadherin_gamma_subfamily_B_2 | 18:37689828-37841873 | -1.44 | 7.87E-03 | **DOWN** |
| ***Sln*** | sarcolipin | 9:53850251-53853844 | -1.90 | 2.21E-02 | **DOWN** |
| ***Zfp62*** | zinc_finger_protein_62 | 11:49203292-49218816 | -1.90 | 1.57E-04 | **DOWN** |
| ***Pilra*** | paired_immunoglobin_like_type_2_receptor_alpha | 5:137821952-137836281 | -1.94 | 2.10E-03 | **DOWN** |
| ***Sh3rf2*** | SH3_domain_containing_ring_finger_2 | 18:42053667-42158960 | -1.94 | 4.11E-02 | **DOWN** |
| ***Tfap2d*** | transcription_factor_AP_2_delta | 1:19103022-19166346 | -1.98 | 1.30E-06 | **DOWN** |
| ***Pcdhga9*** | protocadherin_gamma_subfamily_A_9 | 18:37736936-37841870 | -2.29 | 1.50E-03 | **DOWN** |
| ***Tgfb1i1*** | transforming_growth_factor_beta_1_induced_transcript_1 | 7:128248895-128253365 | -3.51 | 1.27E-03 | **DOWN** |
| ***Ndst4*** | N_deacetylase_N_sulfotransferase_heparin_glucosaminyl_4 | 3:125404076-125728899 | -3.76 | 4.02E-59 | **DOWN** |