

Supplementary Information

Neonatal anesthesia exposure impacts brain microRNAs and their associated neurodevelopmental processes

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and Ira S. Kass^{1,2}

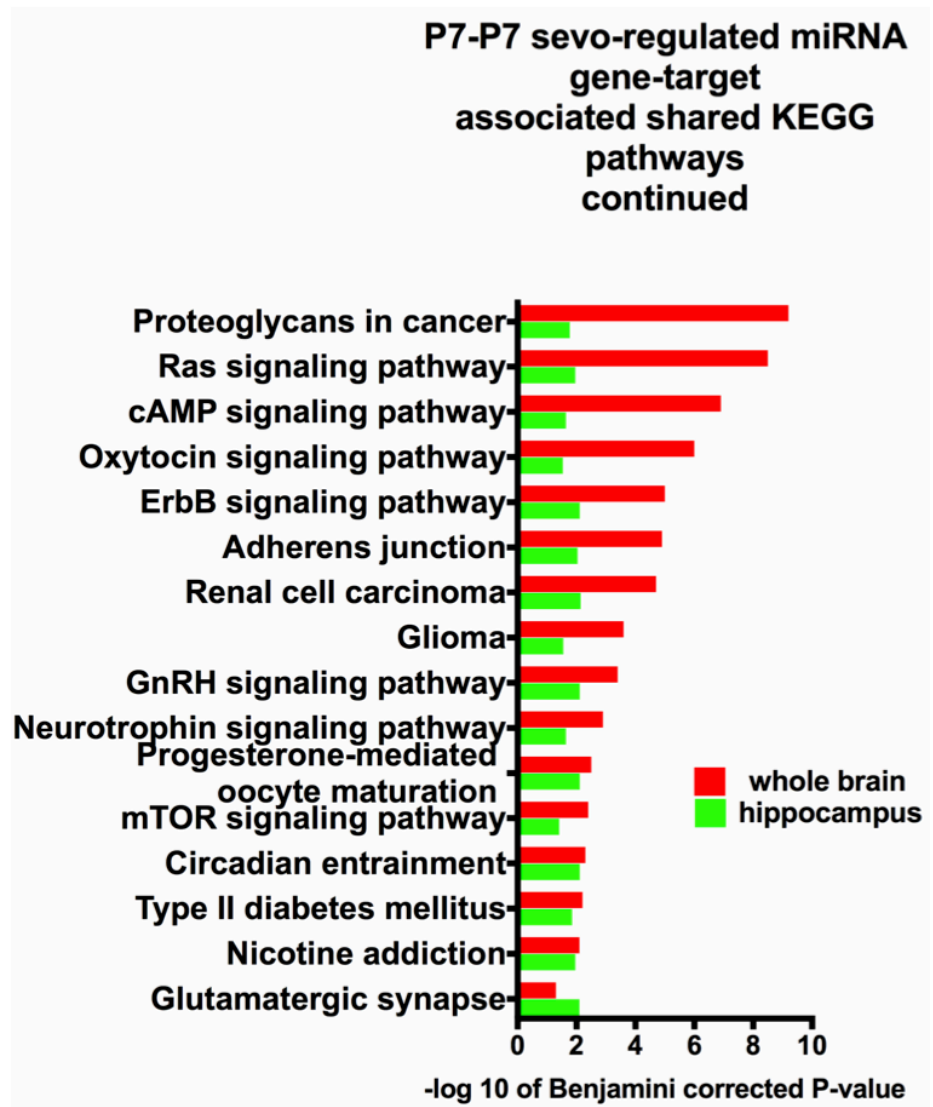
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Supplementary

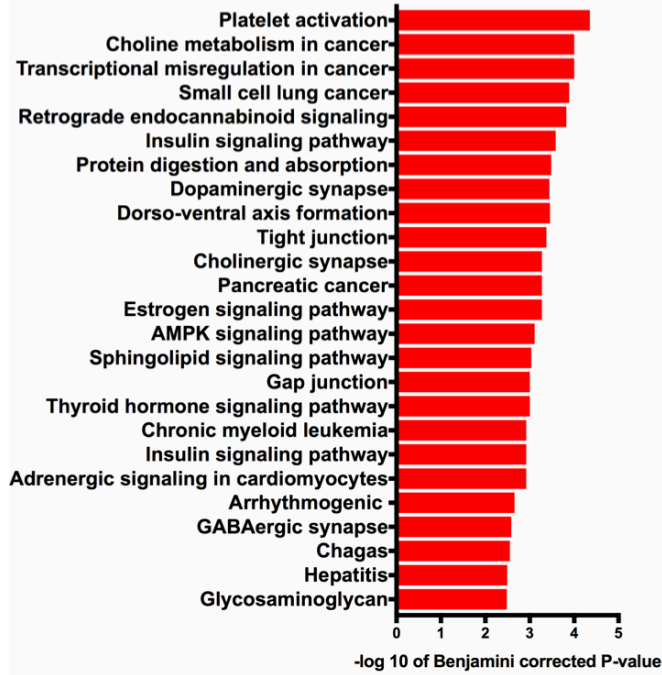
Figure 1.

(A)

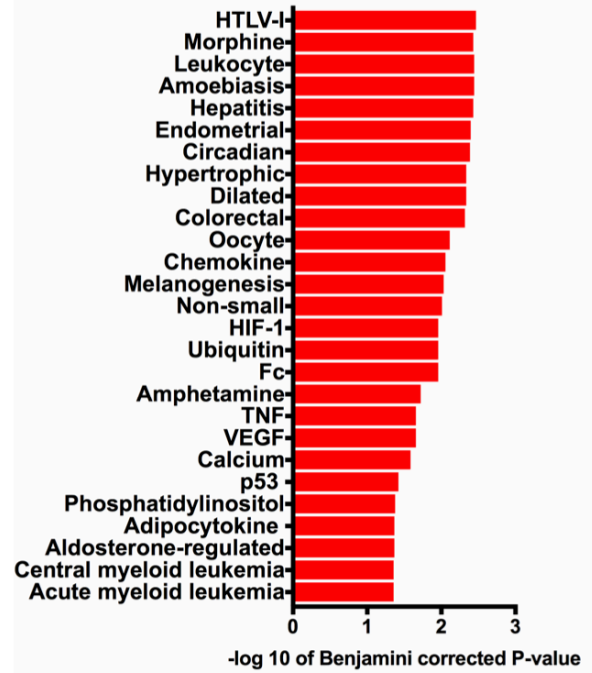


**Supplementary
Figure 1.**

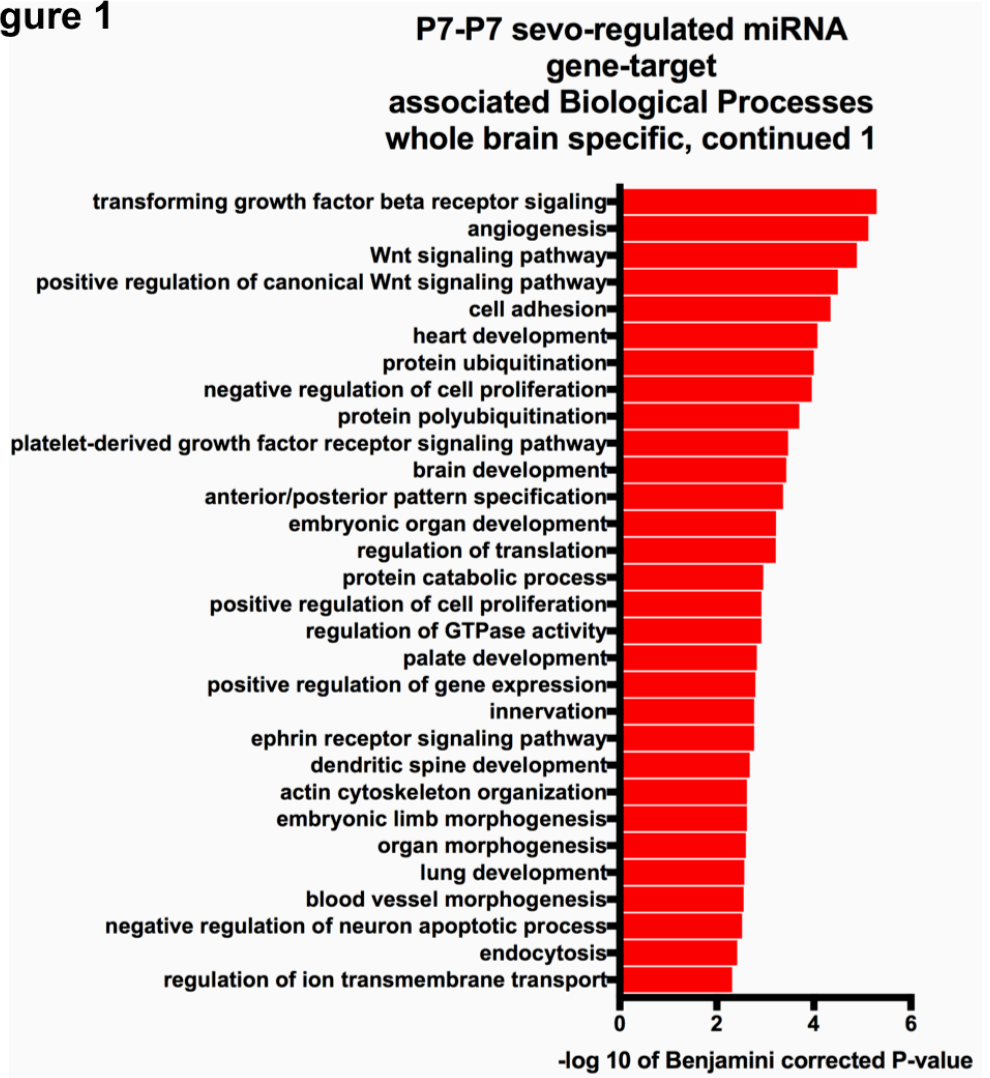
(B) P7-P7 sevo-regulated miRNA gene-target associated KEGG pathways whole brain specific, continued 1



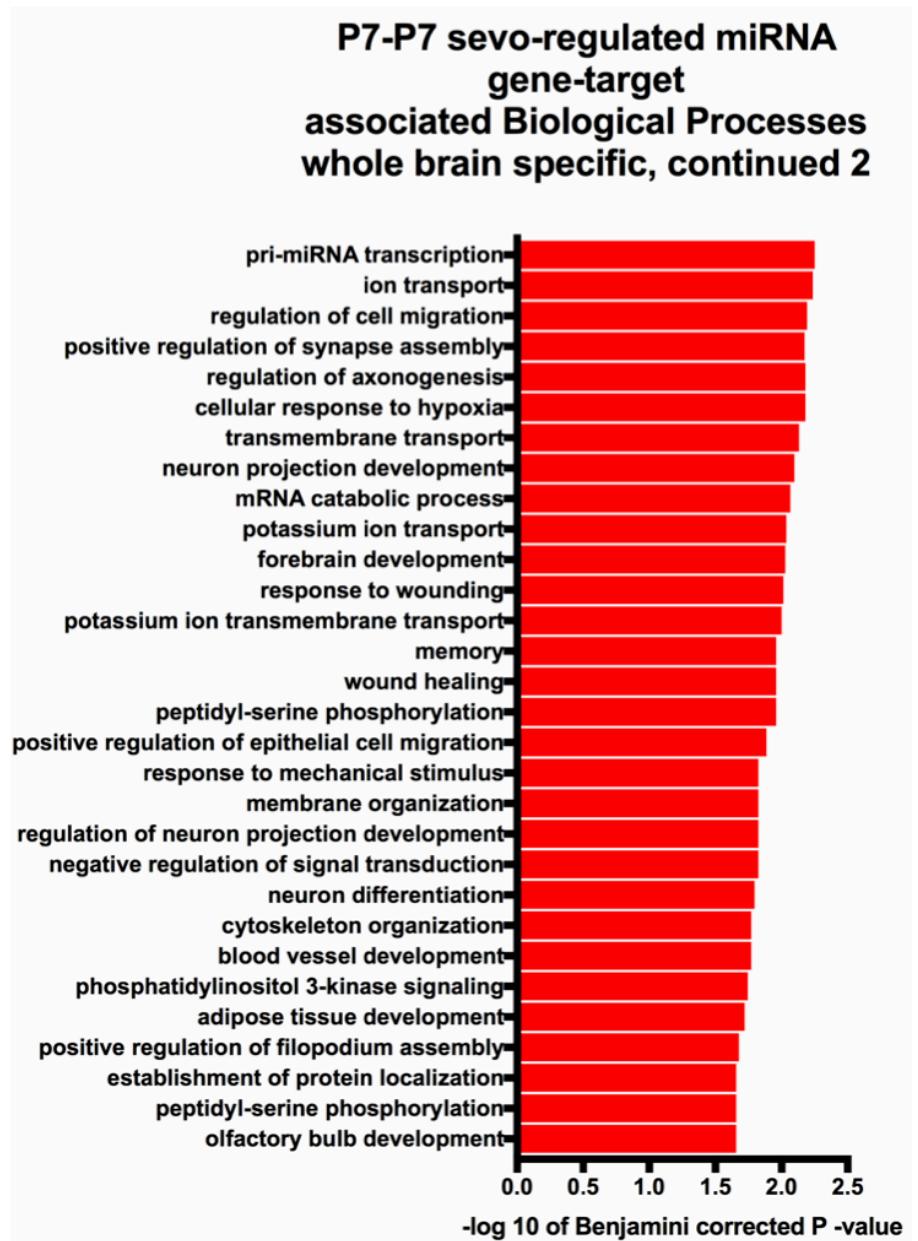
(C) P7-P7 sevo-regulated miRNA gene-target associated KEGG pathways whole brain specific, continued 2



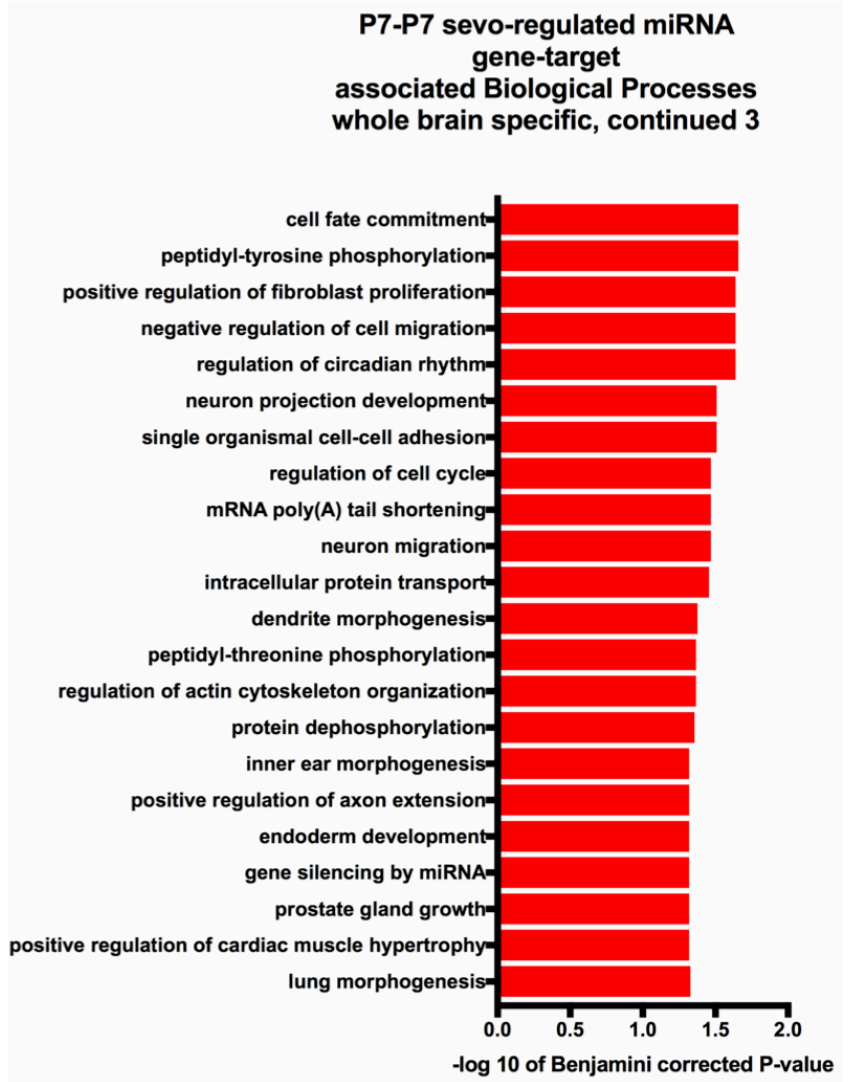
**Supplementary Figure 1
(D)**



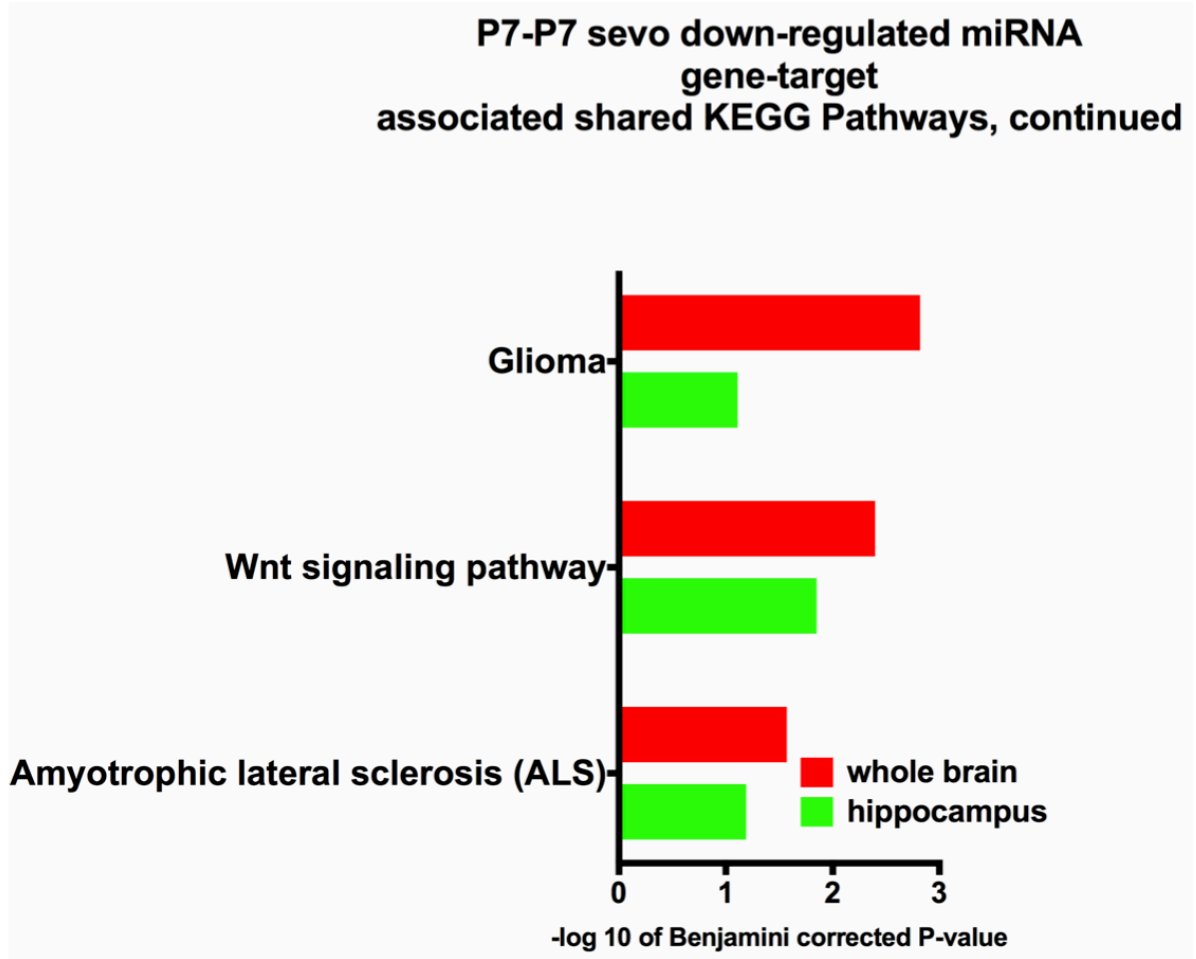
**Supplementary Figure 1.
(E)**



**Supplementary Figure 1.
(F)**

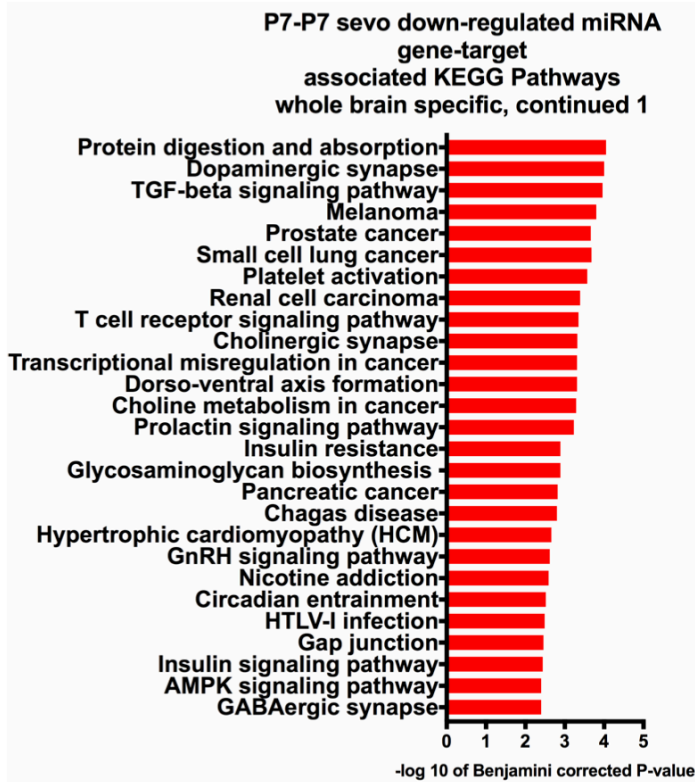


Supplementary Figure 2.
(A)

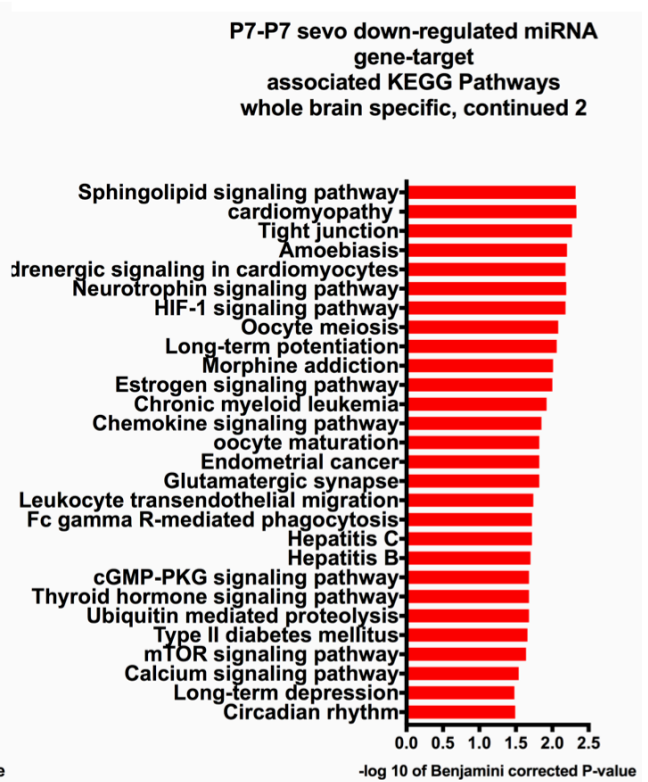


Supplementary Figure 2.

(B)

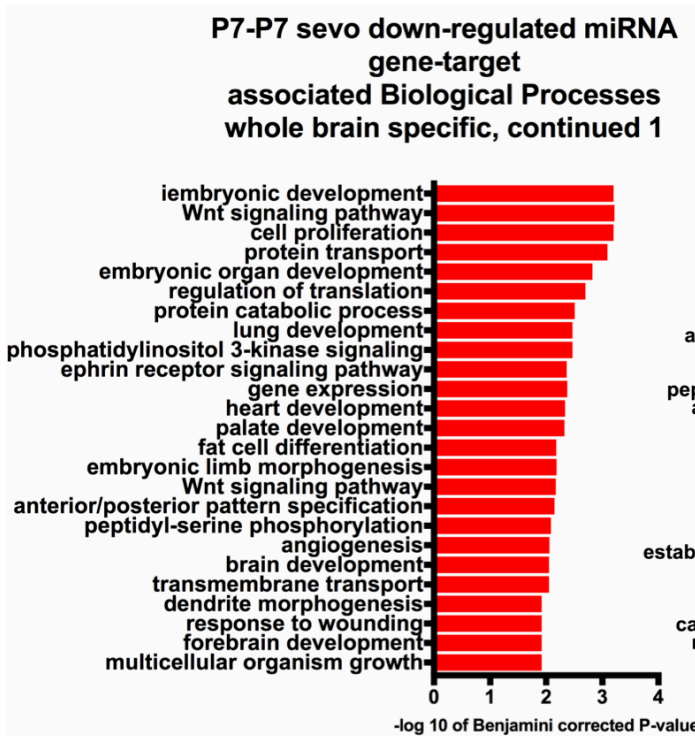


(C)

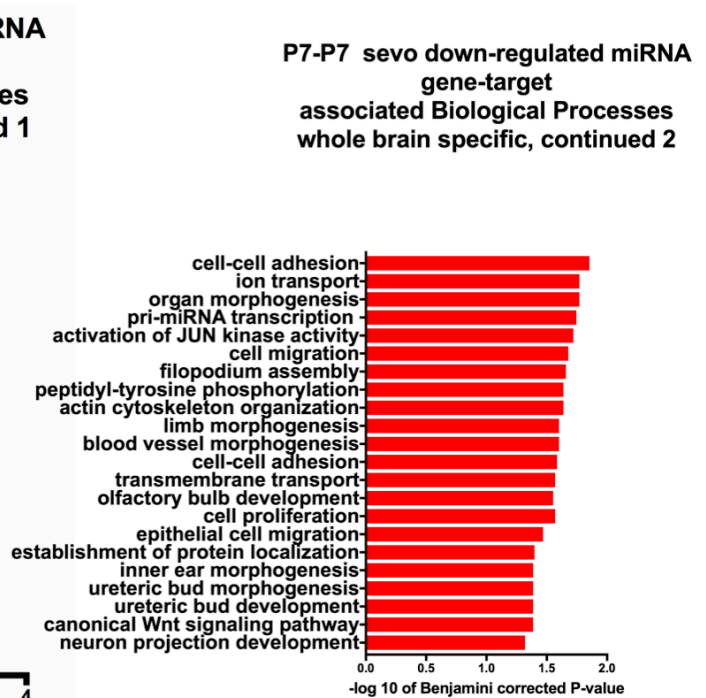


Supplementary Figure 2.

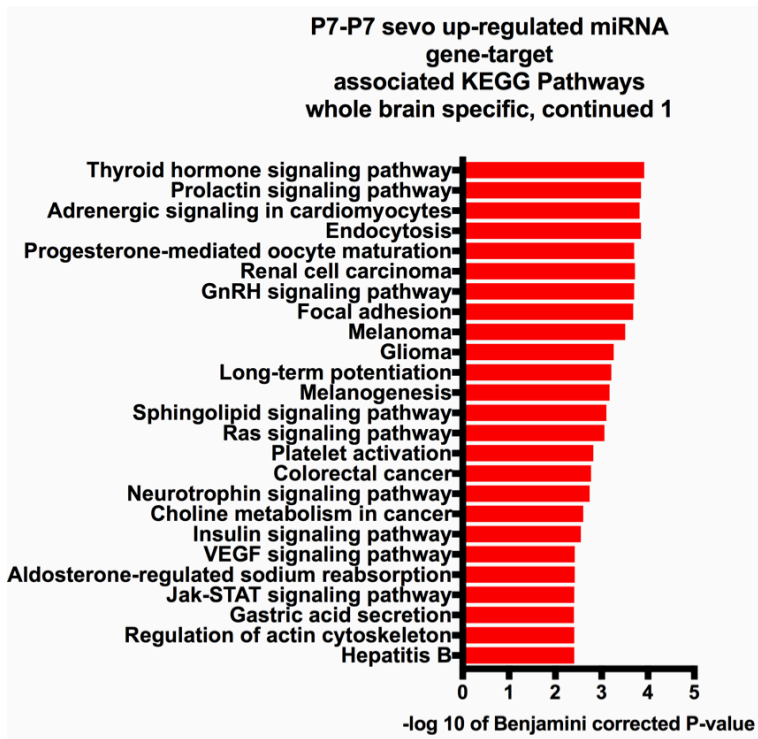
(D)



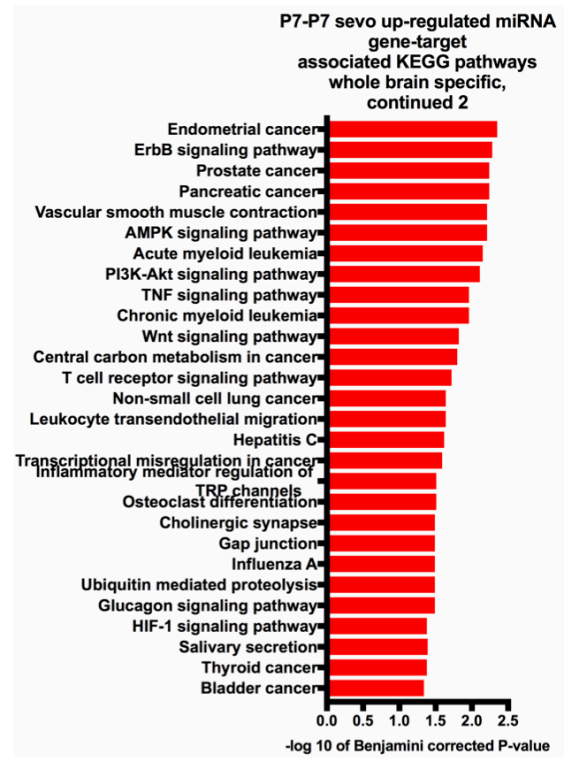
(E)



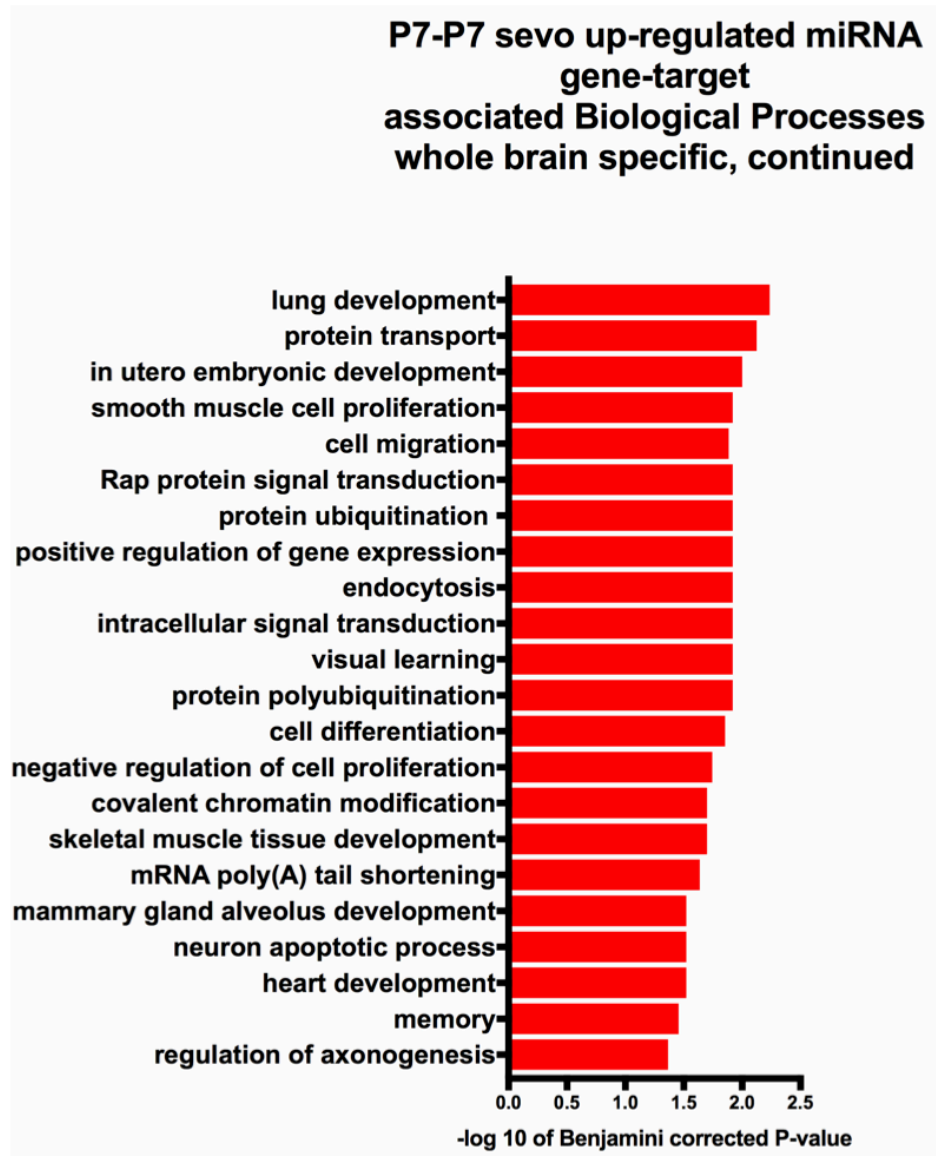
Supplementary Figure 3.
(A)



(B)

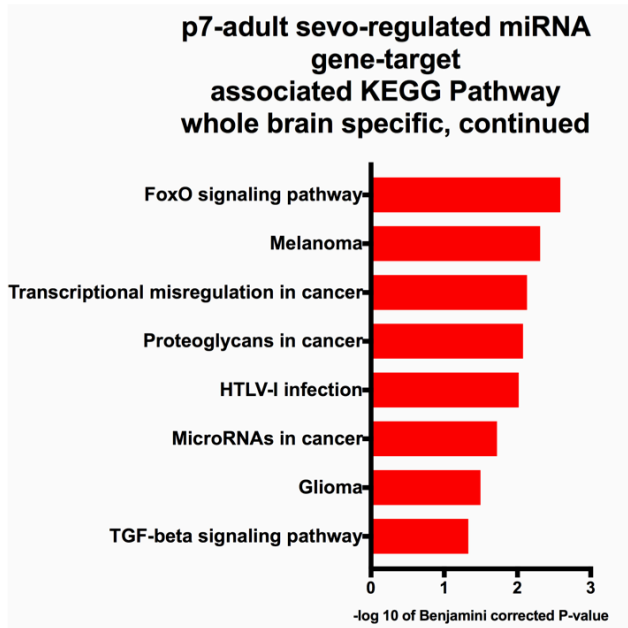


Supplementary Figure 3.
(C)

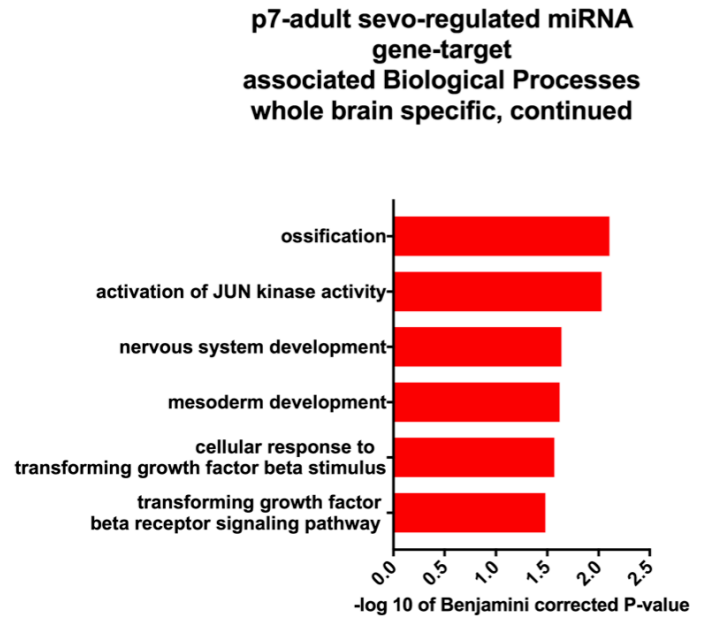


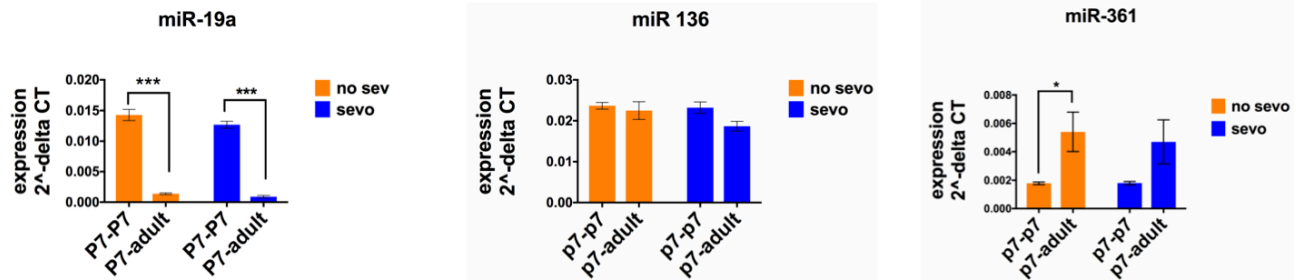
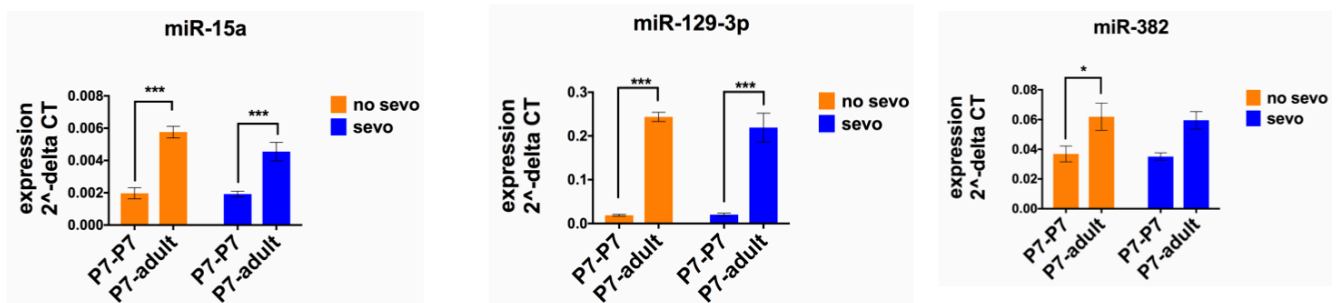
Supplementary Figure 4.

(A)



(B)



Supplementary Figure 5.**(A) Whole brain:****(B) Hippocampus:****Supplementary Figures:**

1) P7-P7 sevo-regulated miRNA gene-target associated KEGG pathways and Biological processes, continued after the top ten pathways. P7-P7 sevo-regulated miRNA (from Table 1, both up and down-regulated miRNAs) gene-targets have shared (A), whole brain specific (B, C, D and E) (Kegg pathways and biological processes). (Pathways shown are based on Benjamini corrected p-value of <math><0.05</math>).

2) P7-P7 sevo down-regulated miRNA gene target associated KEGG pathway and biological process, continued after the top ten pathways. P7-P7 sevo down-regulated miRNA gene- targets have shared (A), whole brain specific (B, C, D and E) Kegg pathways

and biological processes. (Pathways shown are based on Benjamini corrected p-value of <0.05).

3) P7-P7 sevo up-regulated miRNA gene-target associated KEGG pathways and biological processes, continued after the top ten pathways. P7-P7 sevo up-regulated whole brain specific (A, B and C) Kegg pathways and biological processes. (Pathways shown are based on Benjamini corrected p-value of <0.05).

4) P7-adult sevo regulated miRNA gene-target associated KEGG pathways and biological processes, continued after the top ten pathways. Sevo-regulated miRNA gene-targets have whole brain specific (A and B) Kegg pathways and biological processes. (Pathways shown are based on Benjamini corrected p-value of <0.05).

5) P7 sevo treatment did not have long-lasting effect on the expression of the following miRNAs from Table 1. miR-19a, 136 and 361 from the whole brain and miR-15a, 129-3p and 382 from the hippocampus are not differentially expressed in P7-adult comparing no sevo vs. sevo. Among these miRNAs however, some are shown to have significant fluctuation in expression as result of age (P7-P7 vs. P7-adult) (* and *** denote $P < 0.05$ and $P < 0.0001$, respectively).