**Supplemental Figure 1** Mir screening.

(A) The expression of BDNF-AS and BDNF in PC12 cells which treated with low concentration (1nM，24h) of siRNA-BDNF-AS. Our previous study found that the protein expression of BDNF was significantly up-regulated in PC12 cells which treated with high concentration (10nM, 24h) of siRNA-BDNF-AS (data not shown). Additionally, in PC12 cells which treated with low concentration (1nM, 24h) of siRNA-BDNF-AS, BDNF-AS expression was significantly down-regulated, while the protein expression of BDNF was only slightly increased. These results demonstrated that the use of low concentration of BDNF-AS could not affect the expression of its sense transcripts (BDNF in this case). Therefore, in the current study, we are using a low concentration of siRNA.

(B) MiRNAs expression in PC12 cells were transfected with pcDNA-BDNF-AS. \**P<*0.05 or \*\**P<*0.01 vs. pcDNA group.

(C) MiRNAs expression in PC12 cells were transfected with si-BDNF-AS. \**P<*0.05 or \*\**P<*0.01 vs. si-control group.

(D) PRDM5 expression in PC12 cells were transfected with miRNAs mimic.

(E) PRDM5 expression in PC12 cells were transfected with miRNAs inhibitor.