

**Cohesive regulation of neural progenitor development by microRNA
miR-26, its host gene Ctdsp and target gene Emx2 in the mouse
embryonic cerebral cortex**

Haijun Zhang^{1,*}, Longbin Zhang^{2,*}, and Tao Sun^{1,2,#}

¹Department of Cell and Developmental Biology, Cornell University Weill Medical
College, 1300 York Avenue, New York, NY 10065

²School of Medicine and School of Biomedical Sciences, Huaqiao University,
Quanzhou, Fujian, China 361021

#Corresponding author: Dr. Tao Sun, Email: taosun@hqu.edu.cn

*These authors contributed equally to this work.

Running head: Regulatory loop of miR-26

Keywords: miR-26, Ctdsp, Emx2, neural progenitor, cell-cycle progression

Supplementary figure legends

FIGURE S1. (A) Conserved mature sequences of miR-26 among species. Comparison of each miR-26 homolog sequence in *Mus musculus* (mmu), *Homo sapiens* (has) and *Danio rerio* (dre). The seed sequence is shown in blue, and mismatched nucleotide is shown in red. **(B)** The *in situ* control staining for Ctdsp2 with sense probe, miR-26 with control probe and Emx2 with sense probe respectively.

FIGURE S2. Relative expression of Ctdsp2 and Emx2 in cells carrying pSelincer vector versus shRNA-expressing vector. Values represent mean \pm SEM, n>3. * P < 0.05; *** P < 0.001. Analysis of variance (ANOVA) with post hoc test was used.

FIGURE S3. Design of miR-26 sponge. miR-26 sponge and its mutated sequence compared to three miR-26 homologs. The seed sequence is shown in blue, mismatched nucleotide is shown in red and the mutated nucleotide is shown in green.

FIGURE S1

A

mmu-miR-26a-1 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'
 hsa-miR-26a-1 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'
 dre-miR-26a-1 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'

mmu-miR-26a-2 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'
 hsa-miR-26a-2 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'
 dre-miR-26a-2 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'

dre-miR-26a-3 5' **UUCAAGU**AAUCCAGGAUAGGCU 3'

mmu-miR-26b 5' **UUCAAGU**AAU**U**CAGGAUAGG-U 3'
 hsa-miR-26b 5' **UUCAAGU**AAU**U**CAGGAUAGG-U 3'
 dre-miR-26b 5' **UUCAAGU**AAUCCAGGAUAGG**U** 3'

seed sequence
 Mismatch
 miRNA is named based on its stem-loop sequence

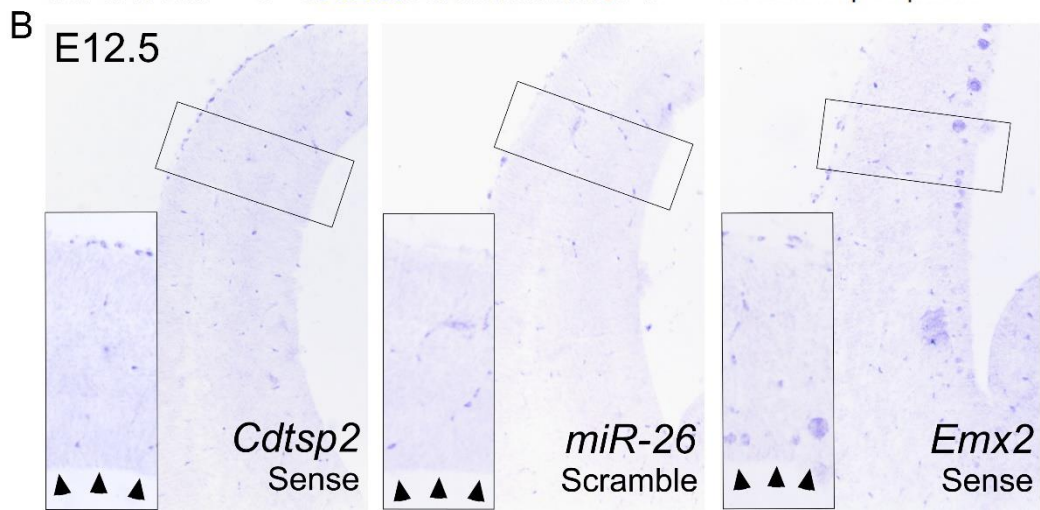


FIGURE S2

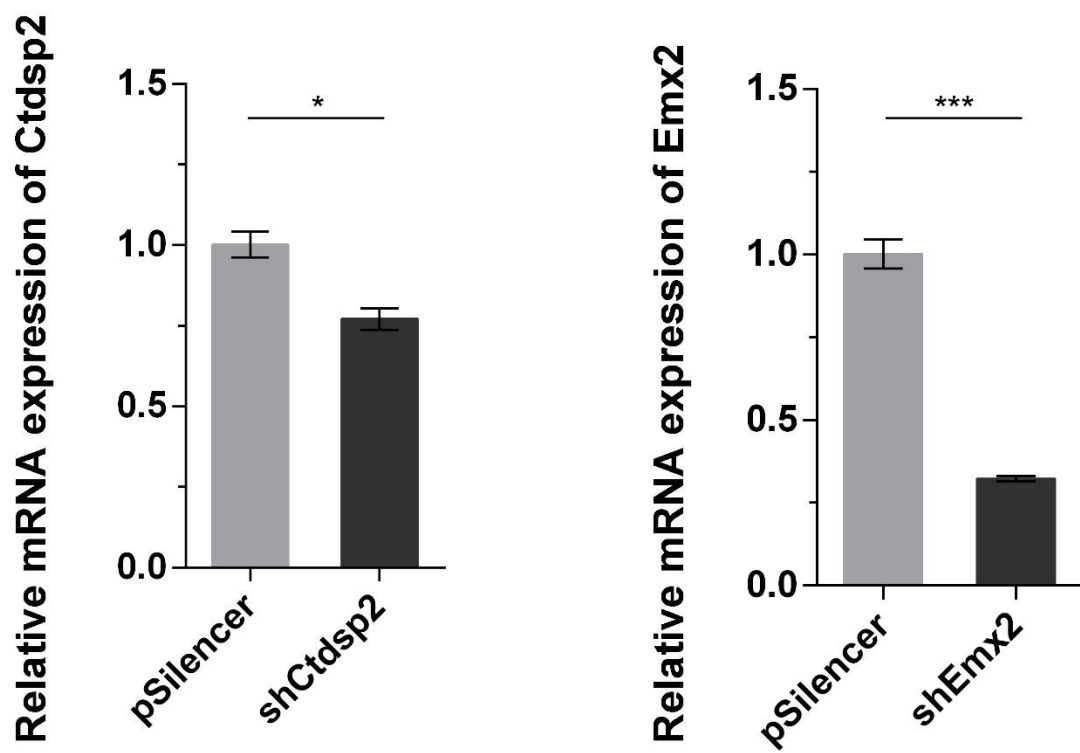


FIGURE S3

26SP unit	5'	AGCCUAUCCUG	CU	-UACUUGAA	3'
26SPmut unit	5'	AGCCUAUCCUG	CU	-UAGUUCUA	3'
miR-26a-1	3'	UCGGAUAGGAC	CUA	AUGAACUU	5'
miR-26a-2	3'	UCGGAUAGGAC	CUA	AUGAACUU	5'
miR-26b	3'	U-GGAUAGGAC	UUA	AUGAACUU	5'

seed sequence

Mismatch

Mutated nucleotide