**OMTN, Volume *18***

## Supplemental Information

# hsa_circ_0092306 Targeting miR-197-3p Promotes Gastric Cancer Development by Regulating PRKCB in MKN-45 Cells

**Zihao Chen, Hongping Ju, Ting Zhao, Shan Yu, Ping Li, Jing Jia, Nan Li, Xiaojie Jing, Bibo Tan, and Yong Li**

**Table S1 Correlation of relative hsa_circ_0092306 expression with the clinicopathological characteristics of 45 patients with gastric cancer**

| Parameters | Group | Cases | hsa_circ_0092306 expression | | | | *P*-value |
|---|---|---|---|---|---|---|---|
| | | | Low | % | High | % | |
| Gender | | | | | | | |
| | Male | 30 | 12 | 40.00 | 18 | 60.00 | 0.5273 |
| | Female | 15 | 8 | 53.33 | 7 | 46.67 | |
| Age at surgery (year) | | | | | | | |
| | < 60 | 16 | 9 | 56.25 | 7 | 43.75 | 0.3484 |
| | ≥ 60 | 29 | 11 | 37.93 | 18 | 62.07 | |
| Tumor size (cm) | | | | | | | |
| | < 3 | 19 | 12 | 63.16 | 7 | 36.84 | 0.0389 |
| | ≥ 3 | 26 | 8 | 30.77 | 18 | 69.23 | |
| Histological grade | | | | | | | |
| | Well | 27 | 8 | 29.63 | 19 | 70.37 | 0.0307 |
| | Moderately and poorly | 18 | 12 | 66.67 | 6 | 33.33 | |
| TNM stage | | | | | | | |
| | I, II | 19 | 13 | 68.42 | 6 | 31.58 | 0.0076 |
| | III, IV | 26 | 7 | 26.92 | 19 | 73.08 | |
| Lymph node metastasis | | | | | | | |
| | Absent | 22 | 15 | 68.18 | 7 | 31.82 | 0.0027 |
| | Present | 23 | 5 | 21.74 | 18 | 78.26 | |

Notes: the mean value of hsa_circ_0092306 expression is set as cutoff value to differentiate the low expression or the high expression of hsa_circ_0092306.

**Table S2 shRNA sequence**

| Name | Sequence (5'-3') |
|---|---|
| **sh-hsa_circ_0092306** | |
| Top Strand | CACCACAGGACCCGATGCAGAACATCGAAATGTTC TGCATCGGGTCCTG |
| Bottom Strand | AAAACAGGACCCGATGCAGAACATTTCGATGTTCTG CATCGGGTCCTGT |
| **sh-PRKCB** | |
| Top Strand | CACCGCGGTATGATACGTCTCTTGGCGAACCAAGAG ACGTATCATACCGC |
| Bottom Strand | AAAAGCGGTATGATACGTCTCTTGGTTCGCCAAGAG ACGTATCATACCGC |
| **sh-NC** | |
| Top Strand | CACCTTCTCCGAACGTGTCACGTTTCAAGAGAACGT GACACGTTCGGAGAATTTTTTG |
| Bottom Strand | GATCCAAAAAATTCTCCGAACGTGTCACGTTCTCTT GAAACGTGACACGTTCGGAGAA |

**Table S3 primer sequence for qRT-PCR**

| Name | Sequence (5'-3') |
|---|---|
| **hsa_circ_0092306** | |
| Forward Primer | GACACAGCAAAGGAAGGGTC |
| Reverse Primer | CAACCTCCACCTCCTGAGTT |
| **miR-197-3p** | |
| Forward Primer | ACACTCCAGCTGGGTTCACCACCTTCTCCA |
| Reverse Primer | TCGTGGAGTCGGCAATTCAGTTGAGGCT |
| **PRKCB** | |
| Forward Primer | AGCCCCACGTTTTGTGACC |
| Reverse Primer | GCTGGGAACATTCATCACGC |
| **GAPDH** | |
| Forward Primer | TGTGGGCATCAATGGATTTGG |
| Reverse Primer | ACACCATGTATTCCGGGTCAAT |
| **U6** | |
| Forward Primer | CTCGCTTCGGCAGCACA |
| Reverse Primer | AACGCTTCACGAATTTGCGT |

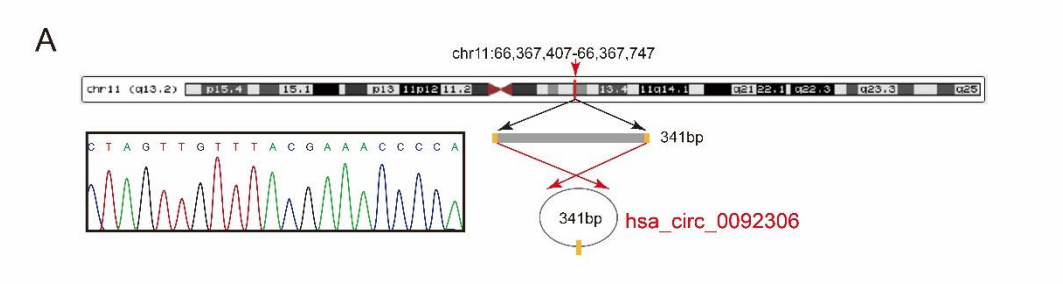


**Figure S1** (A) The ideograph got from UCSC Genome Browser showed that the hsa_circ_0092306 originated from chromosome 11 and matured into 341 bp circle.

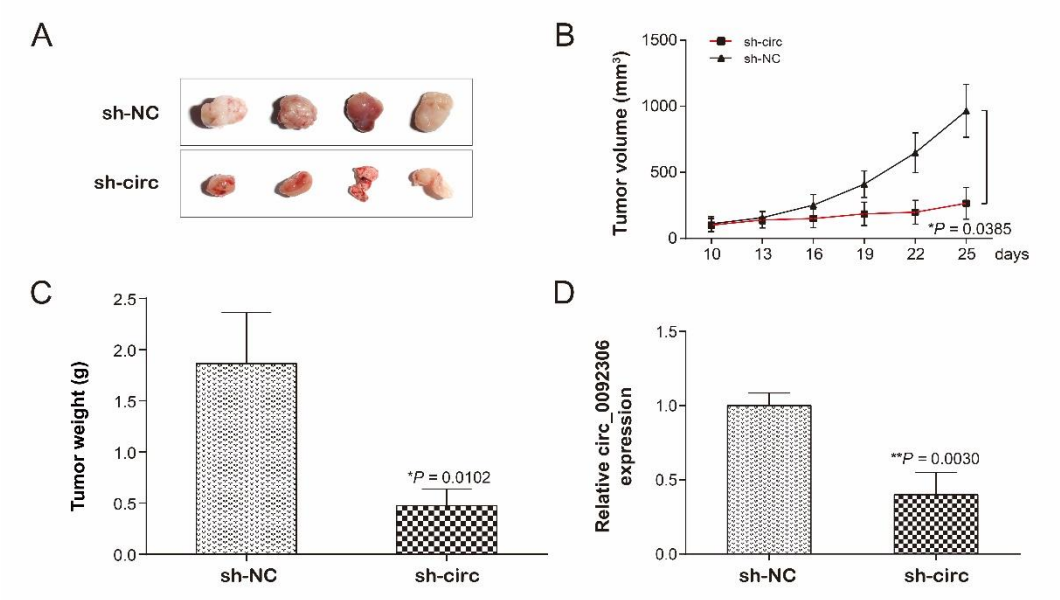


**Figure S2 The knockdown of hsa_circ_0092306 inhibited tumor growth *in vivo*.** (A) The actual size of the tumor showed smaller size in the hsa_circ_0092306 knockdown group compared with NC group. (B) Tumor growth volume was measured every 3 days after 10 days from transplantation and was significantly reduced in the hsa_circ_0092306 knockdown group. (C) The weight of tumor acquired from day 25 in sh-circ group was significantly decreased. (D) The hsa_circ_0092306 expression in the sh-circ group was lower than that in the sh-NC group. **P*<0.05 and ***P* < 0.01 meant significant statistical significances.

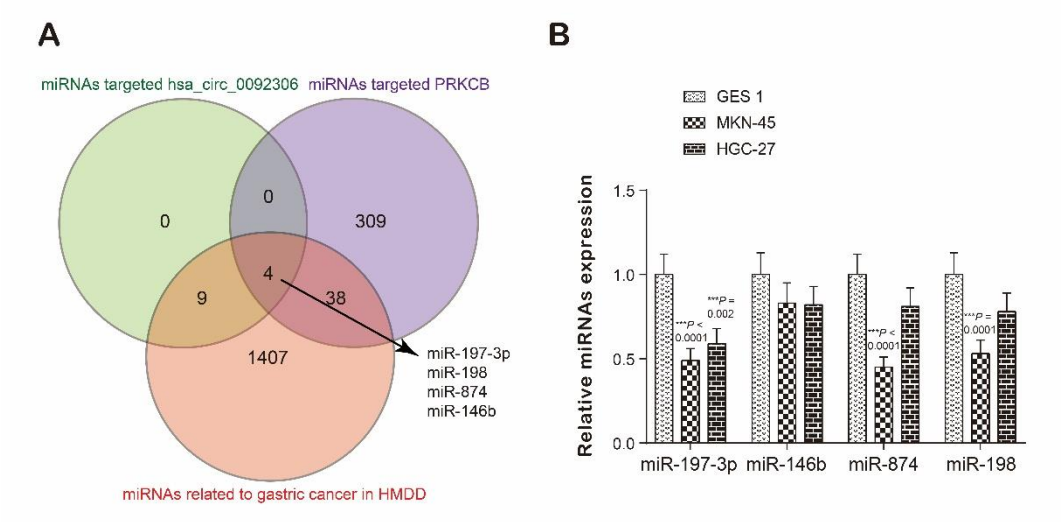


**Figure S3 MiR-197-3p was screened out for further investigation.** (A) The four miRNAs were screened out in miRNAs who targeted hsa_circ_0092306 and PRKCB, and related to GC in HMDD. (B) MiR-197-3p expression detected by qRT-PCR was both lower in MKN-45 and HGC-27 cells than that in GSE 1 cells. ***$P$<0.001 meant significant statistical significances.

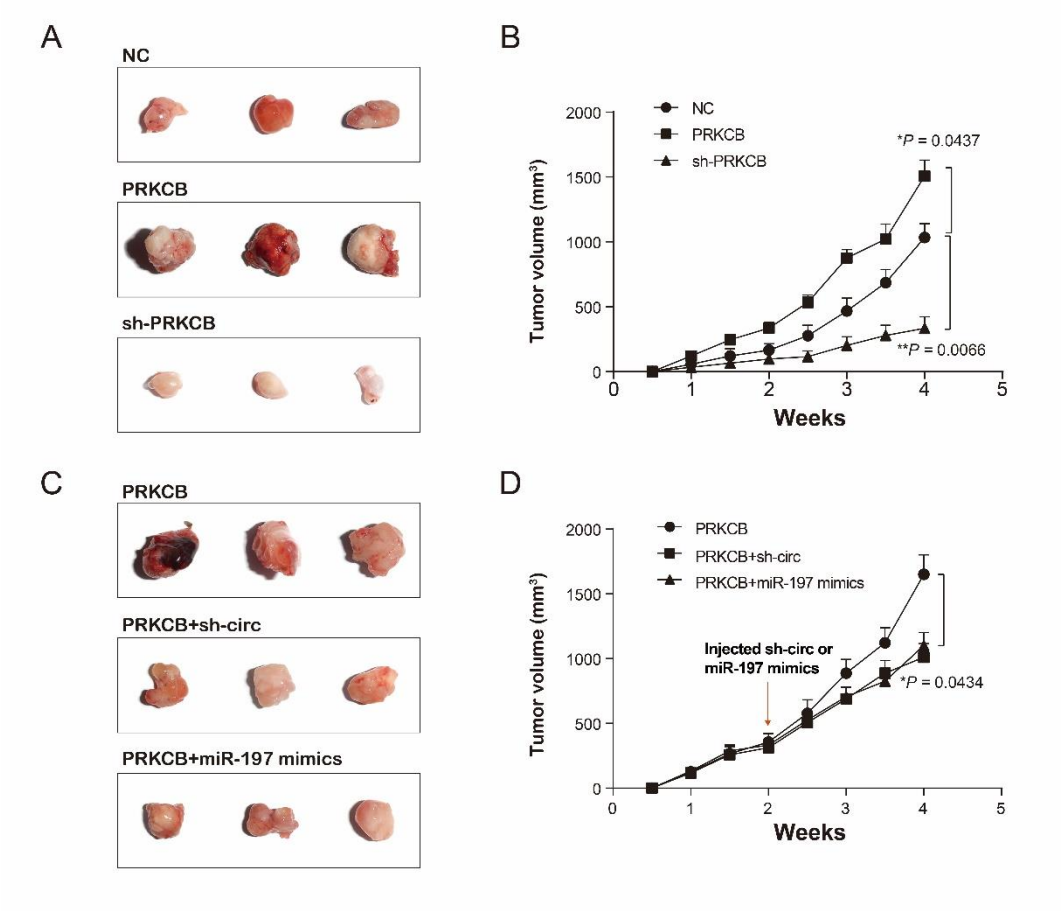


**Figure S4 Hsa_circ_0092306 inhibited GC growth through regulating miR-197-3p/PRKCB.** (A-B) Tumor actual sizes and tumor growth volume curve showed PRKCB promoted GC growth *in vivo*. (C-D) Hsa_circ_0092306 knockdown or miR-197-3p mimics injection attenuated the growth of tumors induced by the PRKCB overexpression *in vivo*. The red arrow represented the inject time of sh-circ and miR-197-3p mimics. *$P < 0.05$ and **$P < 0.01$, compared with NC or PRKCB overexpression group, meant significant statistical significances.