**Virologica Sinica**

**Supplementary Data**

**Long noncoding RNA 1392 regulates MDA5 by interaction with ELAVL1 to inhibit Coxsackievirus B5 infection**

Jing Li, Jinwei Li, Peiying Teng, Fan Yang, Jihong Zhang, Bo Sun, Wei Chen\*

Medical School, Kunming University of Science and Technology, Kunming, 650500, China

\*Corresponding author:

Email address: wchen@kust.edu.cn (W. Chen).

ORCID: 0000-0002-6728-4277

|  |  |  |
| --- | --- | --- |
| Primer target | Forward Sequence (5′–3′) | Reverse Sequence (5′–3′) |
| LINC1392 | GGCTTTGCTCAACACTGGAG | GTGTATCTGTGTGCCTCCCA |
| LINC1392-1 | CGTCCTGAACTGGAGATGCT | ACGATGAGCTGGTGTCGAAG |
| LINC1392-2 | GCCAAGGTTTGTAGCTGTGC | CCTGATTTCCCACCGTGTCT |
| LINC1392-3 | CAGGGTTGGGGGTCTGATCT | TTCTGCCTGCATTCCATCCT |
| LINC1392-4 | GCTGCTAGCTGGATGCTGA | ACTTCTGTTTCACCCAGCCT |
| GAPDH | GTATGACAACGAATTTGGCTACAG | AGCACAGGGTACTTTATTGATGG |
| U6 | CTCGCTTCGGCAGCACA | AACGCTTCACGAATTTGCGT |
| IFN-β | CTTGGATTCCTACAAAGAAGCAGC | TCCTCCTTCTGGAACTGCTGCA |
| OASL | TTGTGCCTGCCTACAGAGC | TTCAGCTTAGTTGGCCGATGT |
| MXA | TTCAGCACCTGATGGCCTATC | TGGATGATCAAAGGGATGTGG |
| ISG15 | CTCTGAGCATCCTGGTGAGGAA | AAGGTCAGCCAGAACAGGTCGT |
| ISG20 | TGACCTGAAGCACGACTTCC | CAGGCTGTTCTGGATGCTCT |
| IFIT1 | TCTCAGAGGAGCCTGGCTAAG | CCACACTGTATTTGGTGTCTAGG |
| IFIT2 | ACCTCTGGACTGGCAATAGC | GTCAGGATTCAGCCGAATGG |
| IFITM3 | CATCGTCATCCCAGTGCTGAT | ATGGAAGTTGGAGTACGTGGG |

Table S1 List of primer pairs.

Table S2 The predicted proteins interacting with LINC1392

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Protein ID | Transcript ID | Z-score | Discriminative Power | Interaction Strength | Motif Reference | Domain Presence | Domain Score | Star Rating Score |
| sp|P23246|SFPQ\_HUMAN | input\_rna\_1 | 1.86 | 0.99 | 0.72 | yes | yes | 1 | 2.88 |
| sp|P26599|PTBP1\_HUMAN | input\_rna\_1 | 0.84 | 0.96 | 0.65 | yes | yes | 1 | 2.68 |
| sp|Q15717|ELAV1\_HUMAN | input\_rna\_1 | 0.26 | 0.79 | 0.91 | yes | yes | 1 | 2.57 |
| sp|Q6ZN17|LN28B\_HUMAN | input\_rna\_1 | 0.22 | 0.64 | 0.96 | yes | yes | 1 | 2.55 |
| sp|Q01130|SRSF2\_HUMAN | input\_rna\_1 | -0.02 | 0.59 | 0.89 | yes | yes | 1 | 2.51 |
| sp|Q13242|SRSF9\_HUMAN | input\_rna\_1 | -0.14 | 0.47 | 0.84 | yes | yes | 1 | 2.49 |
| sp|Q9H6T0|ESRP2\_HUMAN | input\_rna\_1 | -0.18 | 0.45 | 0.27 | yes | yes | 1 | 2.48 |
| sp|P84103|SRSF3\_HUMAN | input\_rna\_1 | -0.33 | 0.32 | 0.71 | yes | yes | 1 | 2.45 |



Figure S1. The expression of LINC1392 after transfected with si-MDA5. si-MDA5#2 or si-MDA5#3 (50 nmol/L) was transfected into RD cells, then the cells were infected with CVB5 (MOI = 1) at 24 hours after transfection. Cells were harvested at 24 hours post-infected, and qRT-qPCR was performed to measure the MDA5 and LINC1392 expression levels.

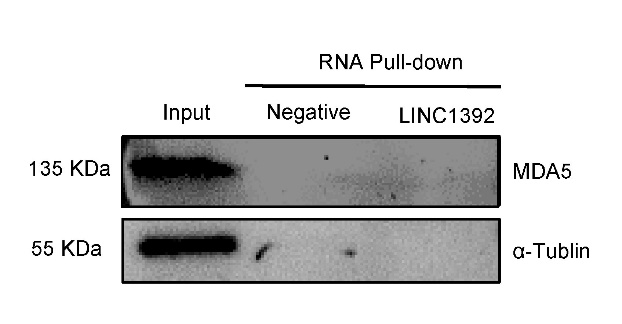


Figure S2. The interaction between LINC1392 and MDA5 by RNA pull-down. CVB5 (MOI = 1) infected RD cells and cells were harvested 24 hours post-infected. Cell lysates, the biotinylated LINC1392 positive strand (50 pmol) (the biotinylated LINC1392 negative chain as control) and magnetic beads were incubated at room temperature to obtain the protein-RNA complexes. Samples were uploaded on 8% SDS-PAGE gel and subjected to MDA5 Western blotting.

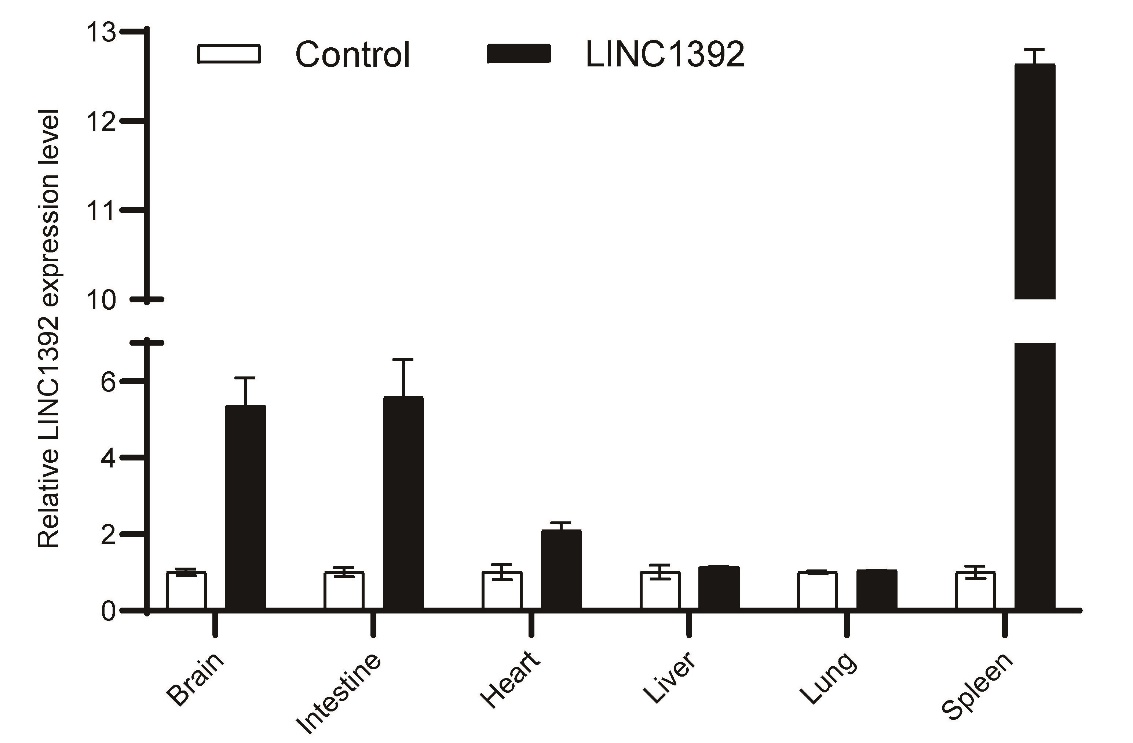


Figure S3. The expression of LINC1392 in different tissue after inject AAV2/9-CMV-LINC1392-zsgreen (AAV2/9-CMV-zsgreen as control). BALB/c mice aged three days injected AAV2/9-CMV-LINC1392-zsgreen (2 × 1011 IU/mL) or AAV2/9-CMV-zsgreen (2 × 1011 IU/mL) via intraperitoneal for three times. After 14 days, brain, intestine, heart, liver, lung and spleen were collected for RT-qPCR to detect the expression of LINC1392.