## Supplementary Table 1. Sequences of Real time-PCR primers

| Gene   | Forward Primer       | Reverse Primer       |
|--------|----------------------|----------------------|
| ACADL  | AGGGGATCTGTACTCCGCAG | CTCTGTCATTGCTATTTGACCA |
| MMP14  | GGCTACAGCAATATGGCTACC | GATGGCCGCTGAGAGTGAC |
| ELK3   | GAGAGTGCAATCAGCTTGTG | GTTCGAGGTCCAGCAGATCA |
| BLM    | CAGACTCCGAAGGAAGTATGTATG | TTTGGGCTTGGGTGTAACAAATGAT |
| ZKSCAN1| CGCTTCAGGCGCTTCTGTATTA | CCACTATCGGGGCGGTATTTC |
| FRS2   | CTGTCCAGATAAAGACACTGTCC | CACGTTTGCAGGTGTAATAAAATC |
| CANT1  | GGAAGGTGATCCTGACGTTC | GTGTCAATGTACCAGTTGGG |
| CCN2   | CAGCATGGACGTTGTCTAG | AACCACGGTGTTCCTTTG |
| SOX18  | TCGTACCAGTACCTCAACTGC | GACATGGAACAAACATAACAG |
| CDK1   | AAATACAGGTTGAGTGTAGCC | TCCTGCAATAAGCAGCATCCTGA |
| TGFR1  | ACAGGGCTTACAGTTTCTG | GCACATAAAGGTTATCTC |
| FoxC2  | CCTCCTGGTATCTCAACCACA | GAGGGTCAGTTCTCAATCCC |
| MAPK14 | CCCAGACGGTACCAGAAACC | TCGCATGAATGATTGGACTGAAT |
| β-actin| CACCATTGGCAATGAGCGGTTC | AGGTCTTTGGGTGATGTCACGT |
Fig. S1 Overexpression of ACADL inhibited HCC cell proliferation and had no significant effect on apoptosis

(A) Cell proliferation was detected by CCK-8 assay at various time points of ACADL overexpression or knockdown in HCC cells. (B) Apoptosis of ACADL overexpression or knockdown in HCC cells and the respective control cells were analyzed by flow cytometry.
Fig. S2 ACADL affected actin cytoskeleton dynamics and endothelial permeability
(A) Pattern diagram of endothelial permeability to FITC–Dextran (~70 kDa). The HUVEC monolayers were cultivated with a CM in advance. (B) ACADL affects the actin cytoskeleton dynamics in SMMC7721 cells as shown by immunofluorescence microscopy.
Fig. S3 Increased expression of MMP14 was associated with poor prognosis in HCC
(A) Gene expression levels of MMP14 in HCC (n = 369) and normal liver tissues (n = 160) from The Cancer Genome Atlas (TCGA) database. (B) Survival plots for groups with high and low expressions of ACADL expression in TCGA LIHC cohorts.