**Supplementary Table 1. The siRNAs sequences**

| Name | sense (5' > 3') | antisense (5' > 3') |
|---|---|---|
| siSPINK6 #1 | GAGGAGUUCAAUGUAUGUCU AUA | UAUAGACAUACAUUGAACUC CUC |
| siSPINK6 #2 | CUGGUGGAUUCCUUUAAUUC AUA | UAUGAAUUAAAGGAAUCCAC CAG |
| siELAVL1 #1 | GACCAUGACAAACUAUGAATT | UUCAUAGUUUGUCAUGGUCTT |
| siELAVL1 #2 | GAGGCAAUUACCAGUUUCATT | UGAAACUGGUAAUUGCCUCTT |
| siELAVL1 #3 | CCAGUUUCAAUGGUCAUAATT | UUAUGACCAUUGAAACUGGTT |
| siELAVL1 #4 | GACGCCAACUUGUACAUCATT | UGAUGUACAAGUUGGCGUCTT |

**Supplementary Table 2. The vector and sequences of lentivirus**

| Name | Vector | sequence (5' > 3') |
|---|---|---|
| BAP31 | pCDH-CMV-MCS-EF1-GFP-Puro | Full-length BAP31 cDNA (NCBI Reference Sequence: NM_005745.7) |
| shBAP31 | hU6-MCS-Ubiquitin-EGFP-IRES-Puro | GGTGAACCTCCAGAACAAT |
| shBAP31 | LV16(U6/Luciferase17&Puro) | GGTGAACCTCCAGAACAAT |
| shSPINK6 | LV16(U6/Luciferase17&Puro) | AGGAGTTCAATGTATGTCT |
| shELAVL1 | LV16(U6/Luciferase17&Puro) | GACGCCAACTTGTACATCA |
| SPINK6 | LV11(CMV/Neo) | >NM_205841.4:56-298 Homo sapiens serine peptidase inhibitor Kazal type 6 (SPINK6), transcript variant 1, mRNA ATGAAACTGTCAGG CATGTTTCTGCTCCTCTCTCTG GCTCTTTTCTGCTTTTTAACAGG TGTCTTCAGTC AGGGAGGACA GGTTGACTGTGGTGAGTTCCAG GACCCCAAGGTCTACTGCACTC GGGAATCTAACCCACA CTGTG GCTCTGATGGCCAGACATATGG CAATAAATGTGCCTTCTGTAAGG CCATAGTGAAAAGTGGTGGA AA GATTAGCCTAAAGCATCCTGGA AAATGCTGA |

**Supplementary Table 3. Primer sequences**

| Gene | Forward primer (5′→3′) | Reverse primer (5′→3′) |
|---|---|---|
| BAP31 | CGGCTGGTGGAGTTGTTAGT | CGGGATTGTTCTGGAGGTT |
| ELAVL1 | GAAGACCACATGGCCGAAGA | GGCGAGCATACGACACCTTA |
| SPINK6 | CGGGAGGATGTATTGGTTGTTAG | TGTGTCAGTTAGCTCACTCAGATC |
| MRP2 | CCCTGCTGTTCGATATACCAATC | TCGAGAGAATCCAGAATAGGGAC |
| NTCP | CATAGGGATCGTCCTCAAATCCA | GCCACACTGCACAAGAGAATG |
| E-cadherin | CGAGAGCTACACGTTCACGG | GGGTGTCGAGGGAAAAATAGG |
| Vimentin | AGTCCACTGAGTACCGGAGAC | CATTTCACGCATCTGGCGTTC |
| β-actin | TCCCTCCATCCTGGCCTCGCTGT | GTCACCTTCACCGTTCC |

**Supplementary Table 4. Primary and secondary antibodies and dilution ratio**

| Target | Company | Cat.No. | Dilution ratio |
|---|---|---|---|
| BAP31 | Proteintech, China | 11200-1-AP | 1:5000 |
| ELAVL1 | Proteintech, China | 11910-1-AP | 1:5000 |
| SPINK6 | Abcam, UK | ab201319 | 1:500 |
| SPINK6 | Biorbyt, UK | CB7283 | 1:500 |
| MRP2 | Abcam, UK | ab172630 | 1:1000 |
| NTCP | Biorbyt, UK | W0760 | 1:1000 |
| E-cadherin | Proteintech, China | 20874-1-AP | 1:20000 |
| N-cadherin | Proteintech, China | 22018-1-AP | 1:3000 |
| Vimentin | Proteintech, China | 10366-1-AP | 1:5000 |
| SNAIL1 | Proteintech, China | 13099-1-AP | 1:800 |
| SLUG | Proteintech, China | 12129-1-AP | 1:5000 |
| TWIST1 | Proteintech, China | 25465-1-AP | 1:1000 |
| β-actin | Bioss,China | bs-0061R | 1:5000 |
| anti-mouse HRP secondary antibody | Proteintech, China | SA00001-1 | 1:5000 |
| anti-Rabbit HRP secondary antibody | CST, USA | 7074P2 | 1:5000 |

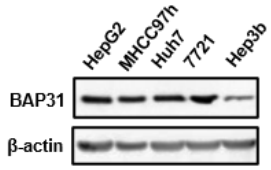
**Supplementary Table 5. FISH probes sequences**

| Name | sequence |
|---|---|
| SPINK6-1 | GCCACAGTGTGGGTTAGATTCCCG ttt CTTACAAAC |
| SPINK6-2 | TCACTATGGCCTTACAGAAGGCAC ttt CTTACAAAC |

**Supplementary Table 6. The vector and insert sequences in luciferase reporter assay**

| Name | Vector | Insert sequence (5' > 3') |
|---|---|---|
| PCDNA 3.1-ELAVL1 | PCDNA3.1 | >NM_001419.3: 164-1144 Homo sapiens ELAV like RNA binding protein 1 (ELAVL1), mRNA,<br>GCCACCATGTCTAATGGTTATGAAGACCACATGGCC<br>GAAGACTGCAGGGGTGACATCGGGAGAACGAATTT<br>GATCGTCAACTACCTCCCTCAGAACATGACCCAGGA<br>TGAGTTACGAAGCCTGTTCAGCAGCATTGGTGAAGT<br>TGAATCTGCAAAACTTATTCGGGATAAAGTAGCAGG<br>ACACAGCTTGGGCTATGGCTTTGTGAACTACGTGAC<br>CGCGAAGGATGCAGAGAGAGCGATCAACACGCTGA<br>ACGGCTTGAGGCTCCAGTCAAAAACCATTAAGGTGT<br>CGTATGCTCGCCCGAGCTCAGAGGTGATCAAAGACG<br>CCAACTTGTACATCAGCGGGCTCCCGCGGACCATGA<br>CCCAGAAGGACGTAGAAGACATGTTCTCTCGGTTTG<br>GGCGGATCATCAACTCGCGGGTCCTCGTGGATCAGA<br>CTACAGGTTTGTCCAGAGGGGTTGCGTTTATCCGGT<br>TTGACAAACGGTCGGAGGCAGAAGAGGCAATTACC<br>AGTTTCAATGGTCATAAACCCCCAGGTTCCTCTGAG<br>CCCATCACAGTGAAGTTTGCAGCCAACCCCAACCA<br>GAACAAAAACGTGGCACTCCTCTCGCAGCTGTACC<br>ACTCGCCAGCGCGACGGTTCGGAGGCCCCGTTCAC<br>CACCAGGCGCAGAGATTCAGGTTCTCCCCCATGGGC<br>GTCGATCACATGAGCGGGCTCTCTGGCGTCAACGTG<br>CCAGGAAACGCCTCCTCCGGCTGGTGCATTTTCATC<br>TACAACCTGGGGCAGGATGCCGACGAGGGGATCCT<br>CTGGCAGATGTTTGGGCCGTTTGGTGCCGTCACCAA<br>TGTGAAAGTGATCCGCGACTTCAACACCAACAAGT<br>GCAAAGGGTTTGGCTTTGTGACCATGACAAACTATG<br>AAGAAGCCGCGATGGCCATAGCCAGCCTGAACGGC<br>TACCGCCTGGGGGACAAAATCTTACAGGTTTCCTTC<br>AAAACCAACAAGTCCCACAAATAA |
| pmirGLO-SPINK6-3′UTR | pmirGLO vector | >NM_205841.4:299-485 Homo sapiens serine peptidase inhibitor Kazal type 6 (SPINK6), transcript variant 1,mRNA<br>GTTAAAGCCAATGTTTCTTGGTGACTTGCCAGCTTTT<br>GCAGCCTTCTTTTCTCACTTCTGCTTATACTTTTGCT<br>GGTGGATTCCTTTAATTCATAAAGACATACCTACTCT<br>GCCTGGGTCTTGAGGAGTTCAATGTATGTCTATTTCT<br>CTTGATTCACTTGTCAATAAAGTACATTCTGCAAAAG<br>CA |

**Supplementary Figure 1. The expression level of BAP31 in five common HCC cell lines**




**Supplementary Figure 2. The effect of BAP31 knockdown on HCC cells were observed using transmission electron microscopy.**