**Table S1. The targeting sequences and shRNA sequences used in construction**

| Gene | Target sequence | No. | shRNA sequence |
|---|---|---|---|
| ALDH9A1 | TTGGTTATACCAGAAGAGAAC | Pbr-17162a | ccggTTGGTTATACCAGAAGAGAACctcgagGTTCTCTTCTGGTATAACCAAttttttg |
| ALDH9A1 | | Pbr-17162b | aattcaaaaaTTGGTTATACCAGAAGAGAACctcgagGTTCTCTTCTGGTATAACCAA |
| ALDH9A1 | TCCCAAATTAAAGGATGGATA | Pbr-17163a | ccggTCCCAAATTAAAGGATGGATActcgagTATCCATCCTTTAATTTGGGAttttttg |
| ALDH9A1 | | Pbr-17163b | aattcaaaaaTCCCAAATTAAAGGATGGATActcgagTATCCATCCTTTAATTTGGGA |
| ALDH9A1 | ACCTTGGAACTTGGAGGCAAA | Pbr-17164a | ccggACCTTGGAACTTGGAGGCAAActcgagTTTGCCTCCAAGTTCCAAGGTttttttg |
| ALDH9A1 | | Pbr-17164b | aattcaaaaaACCTTGGAACTTGGAGGCAAActcgagTTTGCCTCCAAGTTCCAAGGT |
| CDKL3 | GAGGAGATATCTCAGAACCAA | Pbr-10064a | ccggGAGGAGATATCTCAGAACCAActcgagTTGGTTCTGAGATATCTCCTCttttttg |
| CDKL3 | | Pbr-10064b | aattcaaaaaGAGGAGATATCTCAGAACCAActcgagTTGGTTCTGAGATATCTCCTC |
| CDKL3 | ACTAACTGTAATGGCTTGAAA | Pbr-00158a | ccggACTAACTGTAATGGCTTGAAActcgagTTTCAAGCCATTACAGTTAGTttttttg |
| CDKL3 | | Pbr-00158b | aattcaaaaaACTAACTGTAATGGCTTGAAActcgagTTTCAAGCCATTACAGTTAGT |
| CDKL3 | CACACAGTATTAGATGAGTTA | Pbr-00159a | ccggCACACAGTATTAGATGAGTTActcgagTAACTCATCTAATACTGTGTGttttttg |
| CDKL3 | | Pbr-00159b | aattcaaaaaCACACAGTATTAGATGAGTTActcgagTAACTCATCTAATACTGTGTG |
| CSNK1D | ACGGACATTGCTGCAGGAGAA | Pbr-16375a | ccggACGGACATTGCTGCAGGAGAActcgagTTCTCCTGCAGCAATGTCCGTttttttg |
| CSNK1D | | Pbr-16375b | aattcaaaaaACGGACATTGCTGCAGGAGAActcgagTTCTCCTGCAGCAATGTCCGT |
| CSNK1D | GACAGAAATACGAAAGGATTA | Pbr-16376a | ccggGACAGAAATACGAAAGGATTActcgagTAATCCTTTCGTATTTCTGTCttttttg |
| CSNK1D | | Pbr-16376b | aattcaaaaaGACAGAAATACGAAAGGATTActcgagTAATCCTTTCGTATTTCTGTC |
| CSNK1D | CGGCATGGAGAGAGAGCGGAA | Pbr-16377a | ccggCGGCATGGAGAGAGAGCGGAActcgagTTCCGCTCTCTCTCCATGCCGttttttg |

| | | | |
|---|---|---|---|
| CSNK1D | | Pbr-16377b | aattcaaaaaCGGCATGGAGAGAGAGCGGAActcgagTTCCGCTCTCTCTCCATGCCG |
| ERCC8 | ACTAGAGGACCCAAAGTACAA | Pbr-13855a | ccggACTAGAGGACCCAAAGTACAActcgagTTGTACTTTGGGTCCTCTAGTttttg |
| ERCC8 | | Pbr-13855b | aattcaaaaaACTAGAGGACCCAAAGTACAActcgagTTGTACTTTGGGTCCTCTAGT |
| ERCC8 | GTATGGGATACAAATACATTA | Pbr-13856a | ccggGTATGGGATACAAATACATTActcgagTAATGTATTTGTATCCCATACttttg |
| ERCC8 | | Pbr-13856b | aattcaaaaaGTATGGGATACAAATACATTActcgagTAATGTATTTGTATCCCATAC |
| ERCC8 | AGTCTGGATCCTGTTCTCACA | Pbr-13857a | ccggAGTCTGGATCCTGTTCTCACActcgagTGTGAGAACAGGATCCAGACTttttg |
| ERCC8 | | Pbr-13857b | aattcaaaaaAGTCTGGATCCTGTTCTCACActcgagTGTGAGAACAGGATCCAGACT |
| EZR | GGCCAAAGAAGCCCAGGATGA | Pbr-12106a | ccggGGCCAAAGAAGCCCAGGATGActcgagTCATCCTGGGCTTCTTTGGCCttttg |
| EZR | | Pbr-12106b | aattcaaaaaGGCCAAAGAAGCCCAGGATGActcgagTCATCCTGGGCTTCTTTGGCC |
| EZR | GAGAGAAACCGTGGAGAGAGA | Pbr-12107a | ccggGAGAGAAACCGTGGAGAGAGActcgagTCTCTCTCCACGGTTTCTCTCttttg |
| EZR | | Pbr-12107b | aattcaaaaaGAGAGAAACCGTGGAGAGAGActcgagTCTCTCTCCACGGTTTCTCTC |
| EZR | CGTGTACGAGCCGGTGAGCTA | Pbr-12108a | ccggCGTGTACGAGCCGGTGAGCTActcgagTAGCTCACCGGCTCGTACACGttttg |
| EZR | | Pbr-12108b | aattcaaaaaCGTGTACGAGCCGGTGAGCTActcgagTAGCTCACCGGCTCGTACACG |
| HADHA | ATGCTGACTGGTAGAAGCATT | Pbr-17306a | ccggATGCTGACTGGTAGAAGCATTctcgagAATGCTTCTACCAGTCAGCATttttg |
| HADHA | | Pbr-17306b | aattcaaaaaATGCTGACTGGTAGAAGCATTctcgagAATGCTTCTACCAGTCAGCAT |
| HADHA | TGCCAAAGGACTAGCTGATAA | Pbr-17307a | ccggTGCCAAAGGACTAGCTGATAActcgagTTATCAGCTAGTCCTTTGGCAttttg |
| HADHA | | Pbr-17307b | aattcaaaaaTGCCAAAGGACTAGCTGATAActcgagTTATCAGCTAGTCCTTTGGCA |
| HADHA | GAGGTTGCCATTTCATGCCAA | Pbr-17308a | ccggGAGGTTGCCATTTCATGCCAActcgagTTGGCATGAAATGGCAACCTCttttg |
| HADHA | | Pbr-17308b | aattcaaaaaGAGGTTGCCATTTCATGCCAActcgagTTGGCATGAAATGGCAACCTC |

| | | | |
|---|---|---|---|
| SDHC | TTCTTACTGTGTTGTCCTCTA | Pbr-11628a | ccggTTCTTACTGTGTTGTCCTCTActcgagTAGAGGACAACACAGTAAGAAttttttg |
| SDHC | | Pbr-11628b | aattcaaaaaTTCTTACTGTGTTGTCCTCTActcgagTAGAGGACAACACAGTAAGAA |
| SDHC | TTGGTCTCTTCCCATGGCGAT | Pbr-11629a | ccggTTGGTCTCTTCCCATGGCGATctcgagATCGCCATGGGAAGAGACCAAttttttg |
| SDHC | | Pbr-11629b | aattcaaaaaTTGGTCTCTTCCCATGGCGATctcgagATCGCCATGGGAAGAGACCAA |
| SDHC | CCTGAAGATTCCCCAGCTATA | Pbr-11630a | ccggCCTGAAGATTCCCCAGCTATActcgagTATAGCTGGGGAATCTTCAGGttttttg |
| SDHC | | Pbr-11630b | aattcaaaaaCCTGAAGATTCCCCAGCTATActcgagTATAGCTGGGGAATCTTCAGG |
| SPRTN | AATCAAGGAACCAGAGAATTA | Pbr-13786a | ccggAATCAAGGAACCAGAGAATTActcgagTAATTCTCTGGTTCCTTGATTttttg |
| SPRTN | | Pbr-13786b | aattcaaaaaAATCAAGGAACCAGAGAATTActcgagTAATTCTCTGGTTCCTTGATT |
| SPRTN | CCAGTATTGGCCGCAGAGAAT | Pbr-13787a | ccggCCAGTATTGGCCGCAGAGAATctcgagATTCTCTGCGGCCAATACTGGttttttg |
| SPRTN | | Pbr-13787b | aattcaaaaaCCAGTATTGGCCGCAGAGAATctcgagATTCTCTGCGGCCAATACTGG |
| SPRTN | CCGTATTACGGCTATGTCAAA | Pbr-13788a | ccggCCGTATTACGGCTATGTCAAActcgagTTTGACATAGCCGTAATACGGttttttg |
| SPRTN | | Pbr-13788b | aattcaaaaaCCGTATTACGGCTATGTCAAActcgagTTTGACATAGCCGTAATACGG |
| TRPS1 | ATGCTGCAGAACTAAATCATA | Pbr-11698a | ccggATGCTGCAGAACTAAATCATActcgagTATGATTTAGTTCTGCAGCATttttttg |
| TRPS1 | | Pbr-11698b | aattcaaaaaATGCTGCAGAACTAAATCATActcgagTATGATTTAGTTCTGCAGCAT |
| TRPS1 | CACCAAGTATTTCCGCTGTAA | Pbr-11699a | ccggCACCAAGTATTTCCGCTGTAActcgagTTACAGCGGAAATACTTGGTGttttttg |
| TRPS1 | | Pbr-11699b | aattcaaaaaCACCAAGTATTTCCGCTGTAActcgagTTACAGCGGAAATACTTGGTG |
| TRPS1 | GTGCCAATTGCCTGACCACAA | Pbr-11700a | ccggGTGCCAATTGCCTGACCACAActcgagTTGTGGTCAGGCAATTGGCACttttttg |
| TRPS1 | | Pbr-11700b | aattcaaaaaGTGCCAATTGCCTGACCACAActcgagTTGTGGTCAGGCAATTGGCAC |
| ZMPSTE24 | GAGGGAAAGCTTAAAGAAGAA | Pbr-16714a | ccggGAGGGAAAGCTTAAAGAAGAActcgagTTCTTCTTTAAGCTTTCCCTCttttttg |

| | | | |
|---|---|---|---|
| ZMPSTE24 | | Pbr-16714b | aattcaaaaaGAGGGAAAGCTTAAAGAAGAActcgagTTCTTCTTTAAGCTTTCCCTC |
| ZMPSTE24 | AGCGGCAGAGAAGGATATATA | Pbr-16715a | ccggAGCGGCAGAGAAGGATATATActcgagTATATATCCTTCTCTGCCGCTttttttg |
| ZMPSTE24 | | Pbr-16715b | aattcaaaaaAGCGGCAGAGAAGGATATATActcgagTATATATCCTTCTCTGCCGCT |
| ZMPSTE24 | TAACAAAGATAACTTGGGATT | Pbr-16716a | ccggTAACAAAGATAACTTGGGATTctcgagAATCCCAAGTTATCTTTGTTAttttttg |
| ZMPSTE24 | | Pbr-16716b | aattcaaaaaTAACAAAGATAACTTGGGATTctcgagAATCCCAAGTTATCTTTGTTA |
| RRM2 | CGGAGGAGAGAGTAAGAGAAA | Pbr48744a | CcggCGGAGGAGAGAGTAAGAGAAActcgagTTTCTCTTACTCTCTCCTCCGttttttg |
| RRM2 | | Pbr48744b | aattcaaaaaCGGAGGAGAGAGTAAGAGAAActcgagTTTCTCTTACTCTCTCCTCCG |
| RRM2 | GCTCAAGAAACGAGGACTGAT | Pbr48745a | CcggGCTCAAGAAACGAGGACTGATctcgagATCAGTCCTCGTTTCTTGAGCttttttg |
| RRM2 | | Pbr48745b | aattcaaaaaGCTCAAGAAACGAGGACTGATctcgagATCAGTCCTCGTTTCTTGAGC |
| RRM2 | GCAGATGTATAAGAAGGCAGA | Pbr48746a | CcggGCAGATGTATAAGAAGGCAGActcgagTCTGCCTTCTTATACATCTGCttttttg |
| RRM2 | | Pbr48746b | aattcaaaaaGCAGATGTATAAGAAGGCAGActcgagTCTGCCTTCTTATACATCTGC |

Table S2. Antibodies used in Western blot analysis.

| Primary antibodyies | Dilution | Company |
|---|---|---|
| CDKL3 | 1:1000 | Bioss |
| GAPDH | 1:3000 | Bioworld |
| N-cadherin | 1:5000 | Abcam |
| Vimentin | 1:1000 | Abcam |
| Snail | 1:1000 | Abcam |
| ERK | 1:1000 | Abcam |
| p-ERK | 1:1000 | Abcam |
| JNK | 1:1000 | Abcam |
| p-JNK | 1:1000 | Abcam |
| P38 | 1:1000 | Abcam |
| p-P38 | 1:1000 | Abcam |
| MEK | 1:3000 | CST |
| p-MEK | 1:500 | Bioss |
| EGFR | 1:1000 | Abcam |
| RRM2 | 1:1000 | Abcam |
| PPM1A | 1:1000 | Abcam |
| CD133 | 1:1000 | abcam |
| MELK | 1:1000 | abcam |
| SOX2 | 1:1000 | abcam |
| TLR4 | 1:1000 | SANTA CRUZ |
| NF-κB | 1:1000 | CST |
| c-Myc | 1:1000 | CST |
| Secondary antibody | | |
| HRP Goat Anti-Rabbit IgG | 1:3000 | Beyotime |
| HRP Goat Anti-Mouse IgG | 1:3000 | Beyotime |

Table S3. Clinicopathological characteristics of 149 glioblastoma patients recruited in the detection of RRM2.

| Characteristics | Patients (n = 149) | RRM2 Expression | |
|---|---|---|---|
| | | Low | High |
| Gender | | | |
| Male | 96 (64.4%) | 46 | 50 |
| Female | 53 (35.6%) | 28 | 25 |
| Tumor recurrence | | | |
| No | 68 (45.6%) | 55 | 13 |
| Yes | 81 (54.4%) | 19 | 62 |
| Grade | | | |
| I | 17 (11.4%) | 15 | 2 |
| II | 70 (47.0%) | 51 | 19 |
| III | 44 (29.5%) | 8 | 36 |
| IV | 18 (12.1%) | 0 | 18 |
| | | | |