Figure S1. Relative protein expression of western blot results. (A) Average grayscale values of western blot results in Fig. 1D. (B) Average grayscale values of western blot results in Fig. 2A. (C) Average grayscale values of western blot results in Fig. 5D. *P<0.05 vs. NHA, NC-Overex or NC-Ko. NC, negative control; overex, overexpression; Ko, knockout.
| Characteristics          | Rab 5 expression\(^a\) | \(a\) | \(b\) | \(c\) | P-value |
|-------------------------|------------------------|------|------|------|---------|
| **Sex**                 |                        |      |      |      |         |
| Male                    | 6                      | 7    |      |      | 0.712   |
| Female                  | 9                      | 8    |      |      |         |
| **Age, years**          |                        |      |      |      | 0.715   |
| <55                     | 7                      | 8    |      |      |         |
| \(\geq 55\)            | 8                      | 7    |      |      |         |
| **T-stage**             |                        |      |      |      | 0.020   |
| T1-2                    | 8                      | 2    |      |      |         |
| T3-4                    | 7                      | 13   |      |      |         |
| **N stage**             |                        |      |      |      | 0.009   |
| N0                      | 10                     | 3    |      |      |         |
| N1/2                    | 5                      | 12   |      |      |         |
| **Lymphatic metastasis**|                        |      |      |      | <0.001  |
| Negative                | 12                     | 2    |      |      |         |
| Positive                | 3                      | 13   |      |      |         |

\(^a\)Cut-off = median Rab5 expression. \(^b\)Classified in 30 patients with expression values <50th percentile. \(^c\)Classified in 30 patients with expression values >50th percentile.
| Gene          | Sequence type   | Sequence (5’→3’)              |
|--------------|----------------|-------------------------------|
| Rab5         | Forward        | AGACCAACGGGCCAAATAC           |
|              | Reverse        | GCCCCAATGGTACTCTCTTTGAA       |
| Rab5 sgRNA1  | HGLibA_39960-f | caccGTACTACAACACTGATCC        |
|              | HGLibA_39960-r | aaacGGAATCAGTGTTGTAGTAAC      |
| Rab5 sgRNA2  | HGLibA_39962-f | caccGTACTACAACACTGATCC        |
|              | HGLibA_39962-r | aaacGGAATCAGTGTTGTAGTAAC      |
| Control sgRNA| HGLibA_65368-f | caccAAGAAGAATGGGGATGATG       |
|              | HGLibA_65368-r | aaacCATCATCCCCAAATTTCTTT      |
| CDK1         | Forward        | AAACTACAGGTCAGTGTTGTAGCC      |
|              | Reverse        | TCCTGCAATAAGCACATCTCTGA       |
| CDK2         | Forward        | ATGTTTACACAAACCAGAATTCG       |
|              | Reverse        | GCCCGTAGTCACTGAGC             |
| CDK4         | Forward        | ATGGCTACCTCTCGATATGAGC        |
|              | Reverse        | CATTGGGACTCTCACACTCT          |
| CDK6         | Forward        | GCTGACCAGCAATCGAATG           |
|              | Reverse        | GCACACATCAAAACAACTGGAC        |
| Cyclin A     | Forward        | GAGGTCCCGATGCTTTGTAGC         |
|              | Reverse        | GTTAGCAGCCCTAGCAGTGT          |
| Cyclin B     | Forward        | AAATAGGGCGAGATCAACATGGGC      |
|              | Reverse        | TTTGTACACAGTGCCCAACAGAG       |
| Cyclin D     | Forward        | GCTGGAAGTGGAAACCATC           |
|              | Reverse        | CCTCCCTTGACACATTTGAAA         |
| Cyclin E     | Forward        | AAGGAGCGGGACACATAGA           |
|              | Reverse        | ACGGTACCTGGCTCTCC            |

sgRNA, single guide RNA; CDK, cyclin-dependent kinase.
Table SIII. Average grayscale values of western blot results in Fig. 1D.

| Protein | HNA     | U87-MG   | SHG-44   | A172     | F value | P-value |
|---------|---------|----------|----------|----------|---------|---------|
| Rab5    | 15.485±2.483 | 28.958±4.372 | 27.694±3.221 | 29.271±2.965 | 19.68   | <0.001  |
| GAPDH   | 21.343±2.345 | 20.123±2.345 | 21.129±2.345 | 20.849±2.345 | 0.35    | 0.788   |
| Group        | Rab5       | GAPDH      | Rab5       | GAPDH      | Rab5       | GAPDH      |
|--------------|------------|------------|------------|------------|------------|------------|
| NC-Overex    | 14.385±3.382 | 25.483±2.483 | 13.385±5.483 | 24.379±3.111 | 22.837±2.845 | 23.465±3.325 |
| Rab5-Overex  | 38.594±2.784 | 24.895±2.855 | 36.857±3.977 | 23.847±2.843 | 38.689±5.443 | 23.194±2.885 |
| t value      | 12.3578    | 0.3475     | 7.7486     | 0.2823     | 5.7714     | 0.3478     |
| P-value      | 0.0000     | 0.7372     | 0.0001     | 0.7849     | 0.0004     | 0.7543     |

Table SIV. Average grayscale values of western blot results in Fig. 2A.
| Group      | Cyclin E | GAPDH     | Cyclin E | GAPDH     | Cyclin E | GAPDH     |
|------------|----------|-----------|----------|-----------|----------|-----------|
| NC-Overex  | 15.485±2.385 | 41.234±4.483 | 17.796±2.184 | 32.184±2.418 | 15.483±2.291 | 20.373±2.116 |
| Rab5-Overex| 38.697±4.385 | 43.284±5.482 | 41.838±4.594 | 30.111±3.485 | 36.779±4.332 | 20.184±2.114 |
| NC-Kd      | 17.486±3.956 | 41.194±3.596 | 15.449±2.119 | 32.182±2.334 | 16.558±2.194 | 20.586±2.110 |
| Rab5-Kd1   | 8.183±1.184  | 41.188±4.596 | 9.375±0.893  | 34.221±3.392 | 9.665±1.111  | 20.340±2.048 |
| Rab5-Kd2   | 9.022±1.032  | 40.598±3.209 | 9.655±1.173  | 31.295±3.885 | 9.481±1.430  | 20.694±2.984 |
| F value    | 88.84      | 0.28       | 137.42     | 1.13       | 97.77      | 0.04       |
| P-value    | <0.0001    | 0.8864     | <0.0001    | 0.3696     | <0.0001    | 0.9968     |