**S1 Table.** The correlation of Vps34 expression and clinical features of HCC patients

| Clinical feature      | No. of cases | Peri-carcinoma (%) | Carcinoma (%) | p-value   | p-value   |
|-----------------------|--------------|---------------------|----------------|-----------|-----------|
|                       |              | Low Vps34 | High Vps34 | p-value | Low Vps34 | High Vps34 | p-value   |
| Sex                   |              |           |           |         |           |           |           |
| Male                  | 12           | 4 (26.7)  | 8 (13.8)  | 0.2305  | 6 (12.2)  | 6 (25.0)  | 0.1672    |
| Female                | 61           | 11 (73.3) | 50 (86.2) |          | 43 (87.8) | 18 (75.0) |           |
| Age (yr)              |              |           |           |         |           |           |           |
| < 60                  | 44           | 10 (66.7) | 34 (58.6) | 0.5703  | 32 (65.3) | 12 (50.0) | 0.2093    |
| ≥ 60                  | 29           | 5 (33.3)  | 24 (41.4) |          | 17 (34.7) | 12 (50.0) |           |
| Tumor size (cm)       |              |           |           |         |           |           |           |
| < 5                   | 41           | 7 (46.7)  | 34 (58.6) | 0.3280  | 27 (55.1) | 14 (58.3) | 0.5008    |
| ≥ 5                   | 30           | 8 (53.3)  | 22 (37.9) |          | 22 (44.9) | 8 (33.3)  |           |
| Microvascular invasion|              |           |           |         |           |           |           |
| -                     | 31           | 4 (26.7)  | 27 (46.6) | 0.1649  | 16 (32.7) | 15 (62.5) | 0.0154*   |
| +                     | 42           | 11 (73.3) | 31 (53.4) | 0.6908  | 33 (67.3) | 9 (37.5)  |           |
| Liver cirrhosis       |              |           |           |         |           |           |           |
| -                     | 26           | 6 (40.0)  | 20 (34.5) | 0.6908  | 16 (32.7) | 10 (41.7) | 0.4500    |
| +                     | 47           | 9 (60.0)  | 38 (65.5) |          | 33 (67.3) | 14 (58.3) |           |
| HEP1 staining         |              |           |           |         |           |           |           |
| -                     | 17           | 2 (13.3)  | 15 (25.9) | 0.3062  | 9 (18.4)  | 8 (33.3)  | 0.1553    |
| +                     | 56           | 13 (86.7) | 43 (74.1) |          | 40 (81.6) | 16 (66.7) |           |

HCC, hepatocellular carcinoma; Vps34, vacuolar protein sorting 34.