**Supplementary Table 1. Primer sequence for real-time quantitative PCR**

|  |  |
| --- | --- |
| primers | sequence |
| PIK3R3-F | ATTCCGTGGTGGAGCTCATT |
| PIK3R3-R | CCTGTTGGTATCTGGACACTGG |
| PIK3CD-F | GGGTTGACCCCTCACCTGAC |
| PIK3CD-R | TCTTCGCAGGAATGGGAGGT |
| β-actin-F | CACTGTGCCCATCTACGAGG |
| β-actin-R | CCGTGGTGGTGAAGCTGTAG |

**Supplementary Table 2. Summary of clinical and pathological data**

|  |  |
| --- | --- |
| characteristics | Informative cases |
| Median age (range), y | 69.3（42-81） |
| Sex  |  |
|  Male | 52 |
|  Female | 16 |
| Stage  |  |
| T1 | 18 |
| T2 | 26 |
| T3 | 18 |
| T4 | 6 |
| Grade  |  |
|  G1 | 12 |
|  G2 | 32 |
|  G3 | 24  |