

**Supplementary Table S1.** Correlation between p-STAT3 expression and the clinicopathological characteristics

| Variables                         | Number of Patients | p-STAT3 expression |          | $\chi^2$ | * <i>P</i> -value |
|-----------------------------------|--------------------|--------------------|----------|----------|-------------------|
|                                   |                    | Low/none(%)        | High(%)  |          |                   |
| <b>Gender</b>                     |                    |                    |          |          |                   |
| Female                            | 72                 | 31(43.1)           | 31(56.9) | 2.914    | 0.088             |
| Male                              | 122                | 68(55.7)           | 54(44.3) |          |                   |
| <b>Age (years)</b>                |                    |                    |          |          |                   |
| <60                               | 101                | 48(47.5)           | 53(52.5) | 1.036    | 0.309             |
| ≥60                               | 93                 | 51(54.8)           | 42(45.2) |          |                   |
| <b>Smoking index</b>              |                    |                    |          |          |                   |
| <400                              | 95                 | 42(44.2)           | 53(55.8) | 3.465    | 0.063             |
| ≥400                              | 99                 | 57(57.6)           | 42(42.4) |          |                   |
| <b>Clinical Stage</b>             |                    |                    |          |          |                   |
| I                                 | 84                 | 47(56.0)           | 37(44.0) | 1.898    | 0.594             |
| II                                | 43                 | 21(48.8)           | 22(51.2) |          |                   |
| IIIa                              | 54                 | 26(48.1)           | 28(51.9) |          |                   |
| IIIb                              | 13                 | 5(38.5)            | 8(61.5)  |          |                   |
| <b>Tumor size</b>                 |                    |                    |          |          |                   |
| ≤3cm                              | 92                 | 44(47.8)           | 48(52.2) | 0.719    | 0.396             |
| >3cm                              | 102                | 55(53.9)           | 47(46.1) |          |                   |
| <b>Regional LN metastasis</b>     |                    |                    |          |          |                   |
| No                                | 107                | 62(57.9)           | 45(42.1) | 4.563    | <b>0.033</b>      |
| Yes                               | 87                 | 37(42.5)           | 50(57.5) |          |                   |
| <b>Histology</b>                  |                    |                    |          |          |                   |
| AD                                | 101                | 47(46.5)           | 54(53.5) | 1.704    | 0.192             |
| SQ                                | 93                 | 52(55.9)           | 41(44.1) |          |                   |
| <b>Pathologic differentiation</b> |                    |                    |          |          |                   |
| Well                              | 64                 | 34(48.4)           | 30(51.6) | 0.168    | 0.682             |
| Poor                              | 130                | 65(50.0)           | 65(50.0) |          |                   |
| <b>c-Myc expression</b>           |                    |                    |          |          |                   |
| Low/ none                         | 93                 | 44(47.3)           | 49(52.7) | 0.989    | 0.320             |
| High                              | 101                | 55(54.5)           | 46(45.5) |          |                   |
| Total                             | 194                | 110(56.7)          | 84(43.3) |          |                   |

LN: lymph node. SQ: squamous cell carcinoma. AD: adenocarcinoma. \**P* values < 0.05 in bold.

**Supplementary Table S2.** Correlation between c-Myc expression and the clinicopathological characteristics

| Variables                  | Number of Patients | c-Myc expression |           | $\chi^2$ | P-value |
|----------------------------|--------------------|------------------|-----------|----------|---------|
|                            |                    | Low/none(%)      | High(%)   |          |         |
| Gender                     |                    |                  |           |          |         |
| Female                     | 72                 | 35(48.6)         | 37(51.4)  | 0.021    | 0.885   |
| Male                       | 122                | 58(47.5)         | 64(52.5)  |          |         |
| Age (years)                |                    |                  |           |          |         |
| <60                        | 101                | 49(48.5)         | 52(51.5)  | 0.028    | 0.867   |
| ≥60                        | 93                 | 44(47.3)         | 49(52.7)  |          |         |
| Smoking index              |                    |                  |           |          |         |
| <400                       | 95                 | 40(42.1)         | 55(57.9)  | 2.538    | 0.111   |
| ≥400                       | 99                 | 53(53.5)         | 46(46.5)  |          |         |
| Clinical Stage             |                    |                  |           |          |         |
| I                          | 84                 | 38(45.2)         | 46(54.8)  | 0.533    | 0.912   |
| II                         | 43                 | 22(51.2)         | 21(48.8)  |          |         |
| IIIa                       | 54                 | 27(50.0)         | 27(50.0)  |          |         |
| IIIb                       | 13                 | 6(46.2)          | 7(53.8)   |          |         |
| Tumor size                 |                    |                  |           |          |         |
| ≤3cm                       | 92                 | 41(44.6)         | 51(55.4)  | 0.798    | 0.372   |
| >3cm                       | 102                | 52(51.0)         | 50(49.0)  |          |         |
| Regional LN metastasis     |                    |                  |           |          |         |
| No                         | 107                | 48(44.9)         | 59(55.1)  | 0.906    | 0.341   |
| Yes                        | 87                 | 45(51.7)         | 42 (48.3) |          |         |
| Histology                  |                    |                  |           |          |         |
| AD                         | 101                | 47(46.5)         | 54(53.5)  | 0.166    | 0.683   |
| SQ                         | 93                 | 46(49.5)         | 47(50.5)  |          |         |
| Pathologic differentiation |                    |                  |           |          |         |
| Well                       | 64                 | 28(43.8)         | 36(56.2)  | 0.671    | 0.413   |
| Poor                       | 130                | 65(50.0)         | 65(50.0)  |          |         |
| Total                      | 194                | 93(47.9)         | 101(52.1) |          |         |

LN: lymph node. SQ: squamous cell carcinoma. AD: adenocarcinoma.

**Supplementary Figure S1.**

Kaplan-Meier OS and DFS curves for AD and SCC patients with (red line) or without (blue line) increases in PIM1 mRNA expression based on TCGA biospecimens and clinical data. (A) OS of AD patients; (B) DFS of AD patients; (C) OS of SCC patients; (D) DFS of SCC patients.

