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| **Supplementary Table 1** Antibodies applied and immunohistochemistry method |
| Primary antibody | Clone | Manufacturer | Positive control | Method | Antigen retrieval (Enzym time) | Dilution and incubation time |
| CK7 | OV-TL12/30 | Dako | General control\* | Ventana Ultra | EDTA/Tris (24’), pH 8 | 1:350, 20’ |
| TTF1 | SP/41 | Ventana | General control\* | Ventana Ultra | EDTA/Tris (32’), pH 8 | P.D., 28’ |
| CK5.6 | D5/16B4 | Dako | General control\* | Ventana Ultra | EDTA/Tris (32’) | 1:100, 28’ |
| Vimentin | V9 | Dako | Appendix | Ventana Ultra | EDTA/Tris (16’) | 1:200, 16’ |
| CD56 | MRQ-42 | Cell Marque | Appendix | Ventana Ultra | EDTA/Tris (32’) | 1:300, 32’ |
| Ki-67 | MiB-1 | Dako | Appendix | Ventana Ultra | EDTA/Tris (24’) | 1:150, 32’ |
| PD-L1 | 22C3 | Dako | Tonsil | Ventana Ultra | EDTA/Tris (48’) | 1:40, 52’ |
| \*Tonsil, liver, lung, kidney, prostate, placenta*ER1* epitope retrieval solution 1, *ER2* epitope retrieval solution 2  |
| **Supplementary table 2** PD-L1 expression according to histological and stromal subtype |
|   | SQC  |   | ADC |
|  | (n = 16) |  | Solid  | Micropapillary  | Acinar  | Mucinous  |
|  |  | (n = 23) | (n = 7) | (n = 12) | (n = 22) |
|  | PD-L1 (n) |  | PD-L1 (n) | PD-L1 (n) | PD-L1 (n) | PD-L1 (n) |
|  | neg. | pos. |  | neg. | pos. | neg. | pos. | neg. | pos. | neg. | pos. |
| Stroma subtype |   |   |   |   |   |   |   |   |   |   |   |
|  Immune-inflamed | 0 | 2 |  | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 1 |
|  Mixed | 1 | 3 |  | 1 | 9 | 1 | 4 | 4 | 0 | 6 | 2 |
|  Fusiform | 6 | 4 |  | 1 | 7 | 1 | 1 | 6 | 1 | 6 | 6 |
|  Lepidic | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| P value | 0.202 |   | 0.725 | 1.000 | 0.677 | 0.336 |
| Fisher's exact test results |  |  |  |  |  |  |
| *SQC* squamous cell carcinoma, *ADC* adenocarcinoma, *neg.* negative, *pos.* positive |

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| **Supplementary Table 3** PD-L1 score in SQC samples (n = 16) by CK7 expression |
|  | PD-L1 stratified score |
|  | 0 | + | ++ | +++ | All PD-L1+ samples |
| CK7 |  |  |  |  |  |
|  Positive | 2 | 0 | 0 | 1 | 1 |
|  Negative | 5 | 2 | 2 | 4 | 8 |

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| **Supplementary Table 4**  Vimentin expression by histological subtype |
|   | n(%) Vimentin  |   |
|   | Negative | Positive | P value |
| Histological subtype  |   |   | *0.037* |
|  Bronchopulmonary carcinomas | 63 (96.92) | 27 (84.38) |  |
|  Pleomorphic carcinoma | 2 (3.08) | 5 (15.63) |  |
| Fisher’s exact test results |

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| **Supplementary Table 5** Patients’ age and pathological factors by PD-L1 expression in tumor cells |
|  |  n (%) PD-L1 |   |
|  | Negative | Positive | P value |
|   | (n = 41) | (n = 56) |
| Age |  |  | 1.000 |
|  ≤ 68 | 21 (51.22) | 28 (50.00) |  |
|  >68 | 20 (48.78) | 28 (50.00) |  |
|  |  |  |  |
| IHC markers |  |  |  |
| TTF1 |  |  | 0.369 |
|  Positive | 27 (65.85) | 42 (75.00) |  |
|  Negative | 14 (34.15) | 14 (25.00) |  |
|  |  |  |  |
| CK7 |  |  | 0.772 |
|  Positive | 36 (87.80) | 47 (83.93) |  |
|  Negative | 5 (12.20) | 9 (16.07) |  |
|  |  |  |  |
| CK 5.6 |  |  | 1.000 |
|  Positive | 11 (26.83) | 14 (25.45) |  |
|  Negative | 30 (73.17) | 41 (74.55) |  |
|  |  |  |  |
| PAS-D |  |  | 0.074 |
|  Positive | 16 (39.02) | 12 (21.82) |  |
|  Negative | 25 (60.98) | 43 (78.18) |  |
|  |  |  |  |
| Histopathological subtype |  |  | 0.549 |
|  SQC | 7 (17.07) | 9 (16.07) |  |
|  ADC | 28 (68.29) | 36 (64.29) |  |
|  ADCSQC | 3 (7.32) | 4 (7.14) |  |
|  Carcinoma NOS | 2 (4.88) | 1 (1.79) |  |
|  Pleomorphic | 1 (2.44) | 6 (10.71) |  |
| Pearson’s χ2 and Fisher’s exact test results |
| *TTF1* thyroid transcription factor 1, *SQC* squamous cell carcinoma, *ADC* adenocarcinoma, *ADSQC* adenosquamous carcinoma, *NOS* not otherwise specified |