Supplementary Figure 16

Fragment Length Score (FLS) MVA - Outcome: Overall survival

| Variable | | N | Hazard ratio | | р |
|----------------|----------|----|--------------|-------------------|--------|
| delta FLS | Increase | 18 | • | Reference | |
| | Decrease | 35 | ⊢ ■→ | 0.46 (0.24, 0.91) | 0.02 |
| Study Cohort | INS-A | 12 | ė | Reference | |
| | INS-B | 10 | <u> </u> | 0.61 (0.25, 1.48) | 0.27 |
| | INS-C | 10 | ⊢∎ →¦ | 0.28 (0.10, 0.75) | 0.01 |
| | INS-D | 10 | | 0.07 (0.01, 0.33) | <0.001 |
| | INS-E | 11 | ⊢ ∎⊣¦ | 0.34 (0.14, 0.87) | 0.02 |
| PD-L1 fraction | | 53 | | 0.99 (0.98, 1.00) | 0.03 |
| log(TMB) | | 53 | | 1.21 (0.79, 1.88) | 0.38 |

Fragment Length Score (FLS) MVA - Outcome: Progression-free survival

| Variable | | N | Hazard ratio | | р |
|----------------|----------|----|---------------|-------------------|-------|
| delta FLS | Increase | 17 | • | Reference | |
| | Decrease | 35 | | 0.57 (0.29, 1.12) | 0.101 |
| Study Cohort | INS-A | 12 | | Reference | |
| | INS-B | 10 | <u>;</u> | 2.14 (0.87, 5.26) | 0.097 |
| | INS-C | 10 | | 1.47 (0.59, 3.68) | 0.412 |
| | INS-D | 9 | | 0.10 (0.02, 0.56) | 0.009 |
| | INS-E | 11 | ⊢ ■ | 0.58 (0.24, 1.41) | 0.227 |
| PD-L1 fraction | | 52 | | 0.99 (0.98, 1.00) | 0.075 |
| log(TMB) | | 52 | H ii h | 1.01 (0.66, 1.53) | 0.977 |

Supplementary Figure 16. Multivariate Cox analysis of the change in fragment length score (FLS) from baseline to cycle 3 of pembrolizumab. Covariates in clude cohort, PD-L1 expression, and tumor mutation burden.