**Supplementary figures and tables**

**Figure S1. Incidence of *KRAS*, *STK11*, and *KEAP1* (co-)mutations by TMBa status and histological subtype (A), and PD-L1 expressionb status and histological subtype (B)**

**A
**

**B**

aThe PGDx elio™ tissue complete assay was used to determine TMB high (≥16.0 mut/Mb) vs. TMB low (<16.0 mut/Mb) status; bThe PD-L1 IHC 22C3 pharmDx assay was used to determine PD-L1 positive (TPS ≥1%) vs. PD-L1 negative (TPS <1%) status**.**

KEAP1(m), Kelch-like ECH-associated protein 1 (mutation-positive); KRAS(m), Kirsten rat sarcoma virus (mutation-positive); PD-L1, programmed cell death ligand-1; STK11(m), serine/threonine kinase 11 (mutation-positive); TMB, tumor mutational burden; TPS, tumor proportion score

**Table S1. Commercially available comprehensive genome profiling tests**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Biomarker test | Sample type | Testing method | *KRAS* | *KEAP1* | *STK11*  | Guideline-recommended biomarkers\*,1 |
| FoundationOne®CDx2 | Tissue | NGS/MPS | ✔ | ✔ | ✔ | ✔ |
| FoundationOne®Liquid CDx3 | Plasma | NGS/MPS | ✔ | ✔ | ✔ | ✔ |
| Guardant360®4 | Tissue | NGS | ✔ | ✔ | ✔ | ✔ |
| Ion Torrent™ Oncomine™ Dx Express Test5 | Tissue | NGS | ✔ | ✔ | ✔ | ✔ |
| oncoReveal™ Solid Tumor v2 Panel6 | Tissue or plasma | NGS | ✔ | ✔ | ✔ | ✔ |
| Resolution ctDx-Lung™ Assay7 | Blood | NGS (DNA) | ✔ | ✔ | ✔ | ✔ |
| Tempus xF assay8 | Blood | NGS (DNA) | ✔ | ✔ | ✔ | ✔ |
| LiquidHALLMARK®9 | Blood | NGS | ✔ | ✔ | ✔ | ✔ |
| Tempus xT assay10 | Tissue | NGS (DNA, RNA) | ✔ | ✔ | ✔ | ✔ |
| Molecular Intelligence® Comprehensive Tumor Profiling11 | Tissue | NGS (DNA and RNA), IHC, ISH | ✔ | ✔ | ✔ | ✔ |
| OmniSeq INSIGHT®12 | Tissue | NGS (DNA and RNA) | ✔ | ✔ | ✔ | ✔ |
| NeoTYPE® Lung Tumor Profile13 | Tissue | NGS, FISH, IHC, and other molecular methods | ✔ | ✔ | ✔ | ✔ |
| Endeavor14 | Tissue | NGS/MPSIHC (for PD-L1 expression) | ✔ | ✔ | ✔ | ✔ |

\*NCCN-recommended biomarkers: *EGFR* mutation, *ALK* rearrangement, *KRAS* G12C mutation, *ROS1* rearrangement, *BRAF* V600E mutation, *NTRK1*/*2*/*3* gene fusion, *MET* exon 14 skipping mutation, *RET* rearrangement, *ERBB2* (*HER2*) mutation1

ALK, anaplastic lymphoma kinase; EGFR, epidermal growth factor receptor; FISH, fluorescent in situ hybridization; IHC, immunohistochemistry; ISH, in-situ hybridization; KEAP1, Kelch-like ECH-associated protein 1; KRAS, Kirsten rat sarcoma virus; MPS, massively parallel sequencing; NCCN, National Comprehensive Cancer Network; NGS, next-generation sequencing; PD-L1, programmed cell death ligand-1; STK11, serine/threonine kinase 11

**References**

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