

Table S1 FFPE lung tissue samples from patients with a confirmed NSCLC diagnosis

Sample ID	Sample form	Nucleic acid analyzed	Pathology or clinical diagnosis	Result from NGS-based assays
NSCLC_005	FFPE lung tissue	DNA/RNA	Neuroendocrine	No variants identified
NSCLC_009	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_010	FFPE lung tissue	DNA/RNA	Neuroendocrine/large cell carcinoma	COSM520 <i>KRAS</i> p.G12V
NSCLC_016	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_018	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6223 <i>EGFR</i> p.E746_A750del
NSCLC_019	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_020	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_022	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_023	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_025	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM29312 <i>MET</i> exon 14 skipping
NSCLC_028	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_033	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_037	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_038	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_039	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_040	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_041	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_042	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_044	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_046	FFPE lung tissue	DNA/RNA	Large cell carcinoma	No variants identified
NSCLC_048	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6223 <i>EGFR</i> p.E746_A750del
NSCLC_049	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM516 <i>KRAS</i> p.G12C
NSCLC_051	FFPE lung tissue	DNA/RNA	Large cell carcinoma	No variants identified
NSCLC_052	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	COSM6240; COSM6213 <i>EGFR</i> p.T790M; <i>EGFR</i> p.L861Q
NSCLC_055	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_057	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM476 <i>BRAF</i> p.V600E
NSCLC_060	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_061	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6224 <i>EGFR</i> p.L858R
NSCLC_069	FFPE lung tissue	DNA/RNA	Adenocarcinoma	<i>EML4/ALK</i> fusion [†]
NSCLC_070	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_073	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_077	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_081	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM13428 <i>EGFR</i> p.S768_D770dup
NSCLC_088	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM553 <i>KRAS</i> p.Q61L
NSCLC_094	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6223 <i>EGFR</i> p.E746_A750del
NSCLC_098	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM476 <i>BRAF</i> p.V600E
NSCLC_103	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6224 <i>EGFR</i> p.L858R
NSCLC_105	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM12370 <i>EGFR</i> p.L747_P753delinsS
NSCLC_109	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_111	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM476 <i>BRAF</i> p.V600E
NSCLC_112	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM6223 <i>EGFR</i> p.E746_A750del
NSCLC_119	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM516 <i>KRAS</i> p.G12C
NSCLC_120	FFPE lung tissue	DNA/RNA	Pleomorphic cell carcinoma	No variants identified
NSCLC_123	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_125	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_127	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_128	FFPE lung tissue	DNA/RNA	Adenocarcinoma	No variants identified
NSCLC_130	FFPE lung tissue	DNA/RNA	Large cell carcinoma	COSM522 <i>KRAS</i> p.G12A
NSCLC_131	FFPE lung tissue	DNA/RNA	Adenocarcinoma	COSM29312 <i>MET</i> exon 14 skipping
NSCLC_140	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_143	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_144	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_148	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
NSCLC_149	FFPE lung tissue	DNA/RNA	Squamous cell carcinoma	No variants identified
UP03	FFPE slide	DNA	NSCLC	COSM6255 <i>EGFR</i> p.L747_Ser752del
UP07	FFPE lung tissue	DNA	NSCLC	COSM516 <i>KRAS</i> p.G12C
UP08	FFPE slide	DNA	NSCLC	COSM527 <i>KRAS</i> p.G13C
UP17	FFPE lung tissue	TNA	NSCLC	<i>EML4/ALK</i> fusion
UP18	FFPE lung tissue	TNA	NSCLC	<i>EML4/ALK</i> fusion
UP23	FFPE slide	TNA	NSCLC	COSM29312 <i>MET</i> exon 14 skipping
UP28	FFPE lung tissue	TNA	NSCLC	No variants identified

The table shows the clinical characteristics associated with each sample. [†], not an *ALK* fusion that is detected by the ASPYRE panel. FFPE, formalin-fixed paraffin-embedded; NSCLC, non-small cell lung cancer; NGS, next-generation sequencing; TNA, total nucleic acid.

Table S2 Cytology sample types and derived nucleic acid used in this study

Sample ID	Sample form	Nucleic acid analyzed	Pathology or clinical diagnosis	Result from NGS-based assays
UP02	Peritoneal fluid	DNA	NSCLC	COSM12384 <i>EGFR</i> p.E746_S752delinsV
UP04	Pleural fluid	DNA	NSCLC	COSM6224 <i>EGFR</i> p.L858R
UP05	Pleural effusion	DNA	NSCLC	COSM6224; COSM6240 <i>EGFR</i> p.L858R; <i>EGFR</i> p.T790M
UP10	FNA rinse	DNA	NSCLC	COSM12553 <i>ERBB2</i> p.G776delinsVC
UP12	Fresh tissue, liver	DNA	None	No variants identified
UP15	FNA	DNA	NSCLC	No variants identified
UP16	FNA	DNA	NSCLC	No variants identified
UP19	FNA rinse	TNA	NSCLC	<i>RET</i> fusion
UP20	FNA rinse	TNA	NSCLC	<i>RET</i> fusion
UP21	FNA rinse	TNA	NSCLC	<i>ROS1</i> fusion
UP22	FNA rinse	TNA	NSCLC	<i>ROS1</i> fusion
UP24	Fresh tissue, brain	TNA	Lung cancer	COSM29312 <i>MET</i> exon 14 skipping
UP26	FNA	TNA	NSCLC	No variants identified
UP27	FNA	TNA	Lung cancer	No variants identified
UP31	Fresh tissue, lung	TNA	NSCLC	No variants identified
UP32	Fresh tissue, brain	TNA	Lung cancer	No variants identified

Fresh tissue, FNA, FNA rinse, pleural fluid and effusion samples were sourced from patients with the indicated clinical diagnoses, extracted and the nucleic acid shown used in this study. Tissue source is lung, unless stated otherwise. Also shown are the biomarkers identified by NGS-based panels for each sample. NGS, next-generation sequencing; NSCLC, non-small cell lung cancer; FNA, fine needle aspirate; TNA, total nucleic acid.