Supplementary

Table S1 Concordance of guideline-recommended biomarkers detection between cell pellet samples and known tissue results in 15 cases

Group & cellularity*	Mutation detected by NGS (MAF)	
	FFPE tissue	Cell pellet
CNB3-Moderate	EGFR Ex19 del (37.8%)	EGFR Ex19 del (69.6%)
CNB3-High	EGFR L858R (66.1%)	EGFR L858R (47.5%)
CNB2-High	EGFR Ex19 del (50.5%)/MET amplification	EGFR Ex19 del (45.8%)/MET amplification
CNB2-Moderate	EGFR Ex19 del/T790M (63.9%/28.5%)	EGFR Ex19 del/T790M (72.9%/50.2%)
CNB3-Moderate	EGFR Ex20 ins (35.0%)	EGFR Ex20 ins (42.1%)
CNB1-High	EGFR L861Q (13.9%)	EGFR L861Q (25.4%)
CNB2-High	EGFR amplification	EGFR amplification
CNB3-High	ALK fusion	ALK fusion
CNB2-High	ROS1 fusion	ROS1 fusion
CNB3-Moderate	KRAS G12C (29.3%)	KRAS G12C (59.3%)
CNB3-High	BRAF V600E (41.7%)	BRAF V600E (74.7%)
CNB2-High	ERBB2 Ex20 ins (18.3%)	ERBB2 Ex20 ins (48.3%)
CNB2-Moderate	ERBB2 amplification	ERBB2 amplification
CNB3-Moderate	RET fusion	RET fusion
CNB2-Moderate	NTRK fusion	NTRK fusion

The column marked with an asterisk (*) represents the origin of cell pellet samples, including both the group classification and the tumor cellularity level of the samples used in the NGS analysis. CNB1: samples collected with steam sterilization indicator cards. CNB2: samples collected with polypropylene microporous membranes. CNB3: samples collected by rinsing the biopsy needle. CNB, core needle biopsy; MAF, minor allele frequency; NGS, next-generation sequencing.

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Table S2 Guideline-recommended biomarkers detected by NGS in 45 matched plasma and cell pellet samples

Case	Group & cellularity*	Mutation detected by NGS (MAF)	
		Plasma	Cell pellet
1	CNB1-High	EGFR Ex19 del (2.0%)	EGFR Ex19 del (12.5%)
2	CNB3-High	KRAS G12R (12.8%)	KRAS G12R (28.9%)
3	CNB3-Moderate	EGFR L858R/T790M (1.1%/2.7%)	EGFR L858R/T790M (11.7%/4.2%)
4	CNB2-Moderate	KRAS G12C (3.8%)	KRAS G12C (15.4%)
5	CNB3-High	KRAS G12C (0.2%)	KRAS G12C (16.9%)
6	CNB2-Moderate	EGFR Ex19 del (17.5%)	EGFR Ex19 del (61.7%)/MET amplification
7	CNB3-Moderate	EGFR Ex19 del (4.7%)	EGFR Ex19 del (27.7%)
8	CNB2-Moderate	ERBB2 Ex20 ins (0.9%)	ERBB2 Ex20 ins (20.1%)
9	CNB3-High	EGFR Ex19 del/KRAS G12A (9.2%/7.8%)	EGFR Ex19 del/KRAS G12A (43.4%/16.6%)
10	CNB2-High	ALK fusion	ALK fusion
11	CNB2-High	EGFR Ex19 del (1.6%)	EGFR Ex19 del (25.2%)
12	CNB1-Moderate	EGFR C797S (1.1%)	EGFR C797S (6.2%)
13	CNB2-Moderate	EGFR Ex19 del (16.2%)	EGFR Ex19 del (7.8%)
14	CNB3-High	BRAF V600E (0.6%)	BRAF V600E (60.7%)
15	CNB3-High	EGFR Ex19 del (1.5%)	EGFR Ex19 del (17.2%)/EGFR amplification
16	CNB2-Moderate	KRAS G13C (11.8%)	KRAS G13C (13.1%)
17	CNB3-High	EGFR Ex19 del (14.2%)	EGFR Ex19 del (33.2%)
18	CNB2-High	ALK fusion	ALK fusion
19	CNB2-High	EGFR L858R (1.8%)	EGFR L858R (70.7%) MET amplification
20	CNB2-Moderate	EGFR Ex19 del (9.0%)	EGFR Ex19 del (32.1%)
21	CNB2-Moderate	EGFR L858R (5.2%)	EGFR L858R (58.1%)
22	CNB3-Moderate	EGFR Ex19 del/T790M (11.9%/3.2%)	EGFR Ex19 del/T790M (48.3%/21.5%)
23	CNB2-High	EGFR L858R (6.6%)	Negative
24	CNB3-Moderate	Negative	ALK fusion
25	CNB3-Moderate	Negative	EGFR L858R (45.9%)
26	CNB2-Moderate	Negative	EGFR Ex19 del (22.5%)/MET amplification
27	CNB3-Moderate	Negative	EGFR Ex19 del (20.0%)
28–31	CNB2-Moderate	Negative	Negative
32–34	CNB2-High	Negative	Negative
35–44	CNB3-Moderate	Negative	Negative
45	CNB3-High	Negative	Negative

The column marked with an asterisk (*) represents the origin of cell pellet samples, including both the group classification and the tumor cellularity level of the samples used in the NGS analysis. CNB1: samples collected with steam sterilization indicator cards. CNB2: samples collected with polypropylene microporous membranes. CNB3: samples collected by rinsing the biopsy needle. CNB, core needle biopsy; MAF, minor allele frequency; NGS, next-generation sequencing.

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