

**Supplementary**

**Table S1** The comparison of *EGFR* mutation status in the supernatant and sediment of the CSF of all 79 patients

	Supernatant		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
Sediment				0.092	0.656	<0.001
Positive	24	3	27			
Negative	10	42	52			
Total	34	45	79			

The abundance median/quartile of the positive samples of supernatant and sediment was 33.00% (23.00–49.30%) and 5.30% (2.20–15.00%), respectively. CSF, cerebrospinal fluid.

**Table S2** The comparison of *EGFR* mutation status in CSF and plasma in all 79 patients

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.360	–0.081	0.466
Positive	19	18	37			
Negative	25	17	42			
Total	44	35	79			

The abundance median/quartile of the positive samples of CSF and plasma was 33.00% (16.80–49.30%) and 2.05% (0.67–14.75%), respectively. CSF, cerebrospinal fluid.

**Table S3** The comparison of *EGFR* mutation status in the CSF and plasma of 53 BM patients

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				<0.001	0.093	0.381
Positive	11	4	15			
Negative	23	15	38			
Total	34	19	53			

The abundance median/quartile of the positive samples of CSF and plasma was 33.00% (11.00–46.70%) and 2.60% (0.90–19.40%), respectively. BM, brain metastasis; CSF, cerebrospinal fluid.

**Table S4** The comparison of *EGFR* mutation status in the CSF and plasma of 26 LM patients

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.004	–0.061	0.606
Positive	8	14	22			
Negative	2	2	4			
Total	10	16	26			

The abundance median/quartile of the positive samples of CSF and plasma was 31.80% (16.80–55.00%) and 1.27% (0.37–5.08%), respectively. LM, leptomeningeal metastasis; CSF, cerebrospinal fluid.

**Table S5** The comparison of *EGFR* mutation status in the CSF and plasma of 26 patients without neurological symptoms

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				NA	NA	NA
Positive	3	0	3			
Negative	15	8	23			
Total	18	8	26			

The abundance median/quartile of the positive samples of CSF and plasma was 40.00% and 2.20% (0.90–9.90%), respectively. CSF, cerebrospinal fluid.

**Table S6** The comparison of *EGFR* mutation status in the CSF and plasma of 53 patients with neurological symptoms

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.185	-0.051	0.697
Positive	16	18	34			
Negative	10	9	19			
Total	26	27	53			

The abundance median/quartile of the positive samples of CSF and plasma was 32.10% (15.00–49.30%) and 2.00% (0.63–19.50%), respectively. CSF, cerebrospinal fluid.

**Table S7** The comparison of *EGFR* mutation status in the CSF and plasma of 29 EGFR-TKI-naïve patients

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.064	-0.195	0.202
Positive	5	5	10			
Negative	14	5	19			
Total	19	10	29			

The abundance median/quartile of the positive samples of CSF and plasma was 4.90% (3.70–33.80%) and 2.80% (0.60–20.50%), respectively. CSF, cerebrospinal fluid; TKI, tyrosine kinase inhibitor.

**Table S8** The comparison of *EGFR* mutation status in the CSF and plasma of 50 EGFR-TKI-treated patients

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.839	0.040	0.777
Positive	14	13	27			
Negative	11	12	23			
Total	25	25	50			

The abundance median/quartile of the positive samples of CSF and plasma was 33.50% (26.65–52.15%) and 2.00% (0.70–10.60%), respectively. CSF, cerebrospinal fluid; TKI, tyrosine kinase inhibitor.

**Table S9** The comparison of *EGFR* mutation status in the CSF and plasma of 39 patients with *EGFR* exon 19 deletion\*

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				0.263	-0.034	0.821
Positive	13	7	20			
Negative	13	6	19			
Total	26	13	39			

The abundance median/quartile of the positive samples of CSF and plasma was 33.00% (16.40–43.85%) and 1.95% (0.70–9.90%), respectively. \*, two patients had both L858R and E19Del *EGFR* mutation. CSF, cerebrospinal fluid.

**Table S10** The comparison of *EGFR* mutation status in CSF and plasma in 42 patients with *EGFR* exon 21 L858R mutation\*

	Plasma		Total	McNemar's test	Kappa test	
	Positive	Negative		P	Value	P
CSF				1.000	-0.153	0.320
Positive	7	12	19			
Negative	12	11	23			
Total	19	23	42			

The abundance median/quartile of the positive samples of CSF and plasma was 29.60% (15.00–49.30%) and 2.40% (0.57–10.60%), respectively. \*, two patients had both L858R and E19Del *EGFR* mutation. CSF, cerebrospinal fluid.

**Table S11** The comparison of *EGFR* mutation abundance in CSF and plasma

<i>EGFR</i> mutation abundance	Distribution	Median	Z	P
CSF	0.90–94.60%	33.50%	-3.509	<0.001
Plasma	0.16–81.60%	1.75%		

CSF, cerebrospinal fluid.