



Figure S1 Horizontal bar plot of genes with the highest VAF mutation for each patient with a mutation detected, dichotomized by total tumor volume. VAF, variant allele frequency.

Table S1 Individual patient level volumetric and mutation detection data

Patient	Volume of tumor in brain (mL)	Volume of tumor in lung (mL)	Volume of tumor in bone (mL)	Volume of tumor in liver (mL)	Volume of tumor in lymph nodes (mL)	Volume of tumor in pleura (mL)	Volume of tumor in viscera (mL)	Volume of tumor in adrenal (mL)	Volume of tumor in soft tissue (mL)	Volume of tumor in other sites (mL)	Total tumor volume (mL)	Number of tumors	Number of metastases	Plasma mutation found (0=no, 1=yes)	Plasma mutation gene with highest VAF	Variant allele frequency (VAF)	Tissue mutation found (0=no, 1=yes)	Tissue and plasma gene mutation concordant (0=no, 1=yes)
1	2.1	3.8									5.9	2	1	0	N/A		1	0
2		3.7			0.8	1.2					5.7	4	1	1	TP53	0.2	1	1
3		260.1			4.4			0.2			264.7	9	4	1	KRAS	8.1	0	0
4		19	61.5					0.9			81.4	10	9	1	EGFR	16.3	0	0
5		252.3			1.6						253.9	2	0	1	RET	29.9	0	0
6		181.2	17.6	4.5		47.8					251.1	18	12	1	KRAS	22.5	1	1
7		2.6	29.2		3.9						35.7	6	3	1	MET	9.43	1	1
8		244	11		8.7	34.9		15.5			314.1	27	14	1	TP53	9.7	0	0
9		6.6			0.9						7.5	3	0	0	N/A		1	0
10		124.8			43.2	1.8					169.8	16	6	1	ALK	1.3	1	1
11		270.8	1.9		16.6	16.4			5.1		310.8	8	4	1	EGFR	26.6	1	1
12	5.7	99	138.3	0.3	12.7	2.4	1.7				260.1	127	111	1	EGFR	23.5	1	1
13		8		12.7	9.3						30	7	1	0	N/A		0	0
14		23.2			1.4	2.3	8.5	12.1			47.5	11	8	1	MET	0.08	0	0
15	0.1	33.4	0.4		6.8				0.4		41.1	8	3	1	ALK	0.4	1	1
16		16.2		0.4	1				1.1		18.7	9	3	1	EGFR	1.6	1	1
17		5.3			0.8						6.1	3	0	1	ALK	50.9	1	0
18	0.2	21.7	3.1		12.8	3.5					41.3	17	7	1	ALK	23.3	1	1
19	0.9	9.3	99.3					1.8			111.3	15	14	1	EGFR	4.4	0	0
20		49.4			9.6	50.8					109.8	3	1	0	N/A		1	0
21		4.9			53.9						58.8	34	14	1	ALK	2.7	1	1
22	9.9	28.7	10.1		16.2						64.9	23	10	1	ALK	0.4	0	0
23	0.7	24.4	141.3	112.1	11.9						290.4	65	54	1	KRAS	6.6	1	1
24		341.4			117.2	1.9					460.5	34	14	0	N/A		1	0
25		346.8			34.1	3.9					384.8	15	4	1	MET	0.1	0	0
26		12.4	2.9		0.3						15.6	3	1	0	N/A		1	0
27	2	21	1.6		4						28.6	20	12	0	N/A		1	0
28		3.6									3.6	2	0	0	N/A		1	0
29	13.3	113.3	11.4	0.7	7.3			4.9	12.3		163.2	24	18	1	KRAS	14	1	1
30		3.1			2.1						5.2	3	0	1	TP53	0.8	1	1
31	0.1	60.9	52.3		0.2						113.5	16	14	1	EGFR	4.6	1	1
32					277.5						277.5	1	0	0	N/A		0	0
33		3.7			6						9.7	7	2	1	NRAS	0.5	1	1
34		23.8			42.4						66.2	11	1	1	ALK	4.1	1	1
35		31.1			0.8						31.9	16	3	0	N/A		0	0
36	6.5	34.1			3.9						44.5	16	13	0	N/A		1	0
37	5	12.6	49	29			41.7		1.7	5.2	144.2	32	31	1	EGFR	22.8	1	1

Table S1 (continued)

Table S1 (continued)

Patient	Volume of tumor in brain (mL)	Volume of tumor in lung (mL)	Volume of tumor in bone (mL)	Volume of tumor in liver (mL)	Volume of tumor in lymph nodes (mL)	Volume of tumor in pleura (mL)	Volume of tumor in viscera (mL)	Volume of tumor in adrenal (mL)	Volume of tumor in soft tissue (mL)	Volume of tumor in other sites (mL)	Total tumor volume (mL)	Number of tumors	Number of metastases found	Plasma mutation found (0=no, 1=yes)	Plasma mutation gene with highest VAF	Variant allele frequency (VAF)	Tissue mutation found (0=no, 1=yes)	Tissue and plasma gene concordant (0=no, 1=yes)
38		44.6	0.4	128.9	54.9						228.8	22	7	1	EGFR	45.9	1	1
39	1.8	47.1	12.8		11.6				4.9		78.2	8	5	1	KRAS	3.4	1	1
40		6.9	0.7	1	55.9	1.9					66.4	29	12	1	EGFR	2.1	1	1
41		1.8									1.8	1	0	0	N/A		0	0
42		22.7	0.4			76.1		0.4			99.6	6	5	1	TP53	8	0	0
43		27.4	27		48.6						103	10	3	1	KRAS	12.8	1	1
44	0.5	59			7			0.3			66.8	28	11	1	ERBB2	2.6	0	0
45		0.9			25.5	0.4					26.8	13	1	0	N/A		1	0
46		38.4	26.4		6.1	23		0.9	0.7		95.5	17	14	1	KRAS	7.8	0	0
47	4.9	1.4	47.3	6.3	1.7						61.6	31	27	0	N/A		1	0
48	15.8	7.6	13.5								36.9	14	13	1	EGFR	23.6	1	1
49		11.8	27.1		6.6						45.5	15	10	1	EGFR	1	1	1
50	15.5	42.9			15.3						73.7	6	3	1	EGFR	8.2	0	0
51	38.5	2	8.1		6.6				3.5		58.7	10	6	0	N/A		1	0
52		346.7	37.7		16	0.8					401.2	11	4	1	EGFR	0.5	1	1
53					0.5	4.1	83.8				88.4	12	11	0	N/A		1	0
54		9.8			56						65.8	13	3	1	TP53	0.9	1	1
55		28.5			39.4		0.1				68	8	1	1	EGFR	8.6	0	0
56		15.5			41.6			10			67.1	4	1	1	TP53	0.2	1	0
57	0.7	4.3	5								10	3	2	1	KRAS	0.6	1	1
58		4.1			1.1						5.2	2	0	1	MET	1.3	1	1
59	9.5	139.9									149.4	2	1	1	ALK	11.4	1	1
60	0.3	179.1			86						265.4	10	3	1	ALK	2.3	0	0
61		18.3	35.9					6.9			61.1	4	3	1	KRAS	1.7	1	1
62		15.8		18.8	7			7.2			48.8	20	9	0	N/A		1	0
63		6			30.8			5.7			42.5	12	2	1	MET	15.7	1	1
64		3.6			1.5						5.1	2	0	0	N/A		0	0
65		13.3	0.9		1						15.2	6	2	1	EGFR	0.4	1	1
66	0.1	9.2	0.7	10.6	0.9						21.5	12	8	1	BRAF	54.1	1	1
67	1.86	1.75			200.68						204.29	18	13	1	BRAF	4.7	1	1
68		19.15	58.21		6.83				19.8		103.99	23	17	1	KRAS	4.1	1	1
69		29.85	6.79	2.36	26.46						65.46	20	8	1	MET	43.6	1	1
70		343.61	0.87		650.59			2.65	375.85	9.63	1383.2	32	28	1	MET	0.9	1	1
71		12.1	7.86		3.82						23.78	7	1	0	N/A		1	0
72		35.19	88.64		11.92						135.75	12	7	0	N/A		1	0
73		6.9	2.08		1.77						10.75	6	4	1	KRAS	3.6	1	1

Table S1 (continued)

Table S1 (continued)

Patient	Volume of tumor in brain (mL)	Volume of tumor in lung (mL)	Volume of tumor in bone (mL)	Volume of tumor in liver (mL)	Volume of tumor in lymph nodes (mL)	Volume of tumor in pleura (mL)	Volume of tumor in viscera (mL)	Volume of tumor in adrenal (mL)	Volume of tumor in soft tissue (mL)	Volume of tumor in other sites (mL)	Total tumor volume (mL)	Number of tumors	Number of metastases found	Plasma mutation found (0=no, 1=yes)	Plasma mutation gene with highest VAF	Variant allele frequency (VAF)	Tissue mutation found (0=no, 1=yes)	Tissue and plasma gene concordant (0=no, 1=yes)
74		50.47	33.73		21.85				33.14		139.19	19	13	1	KRAS	2.2	1	0
75		4.57									4.57	1	0	1	EGFR	0.2	1	1
76	2.48	77.12			47.11			1.6			128.31	38	13	1	EGFR	16.5	1	1
77		0.94			4.04						4.98	5	3	1	KRAS	0.9	1	1
78	0.26	34.85			17.79						52.9	4	1	0	N/A		1	0
79	14.06	2.52			12.82			2.19			31.59	26	13	1	TP53	1.9	1	1
80	22.6	21.14	232.38	306.67	19.25			2.1	0.88		605.02	102	85	1	ALK	27.2	1	1
81		22.99	41.4		0.3						64.69	11	9	0	N/A		1	0
82	2.84	20.62			11.57	62.48					97.51	6	4	1	TP53	9.2	1	1
83		113.37	3.23			3.3					119.9	11	2	0	N/A		1	0
84	3.95	48.24			11.63						63.82	5	2	1	EGFR	1.1	1	1
85		20.17			1.07	79.99					101.23	3	1	0	N/A		1	0
86		27.66	4.68		10.29						42.63	4	1	1	KRAS	6.5	1	0
87		37	2.44		31.4						70.84	32	11	1	KRAS	1.6	1	1
88		7	32.35		17.64	240.15					297.14	51	41	1	ROS1	2.5	1	1
89		0.38			1.46	109.79					111.63	23	21	0	N/A		1	0
90		3.31									3.31	1	0	0	N/A		1	0
91		37.45		25.82	33.77						97.04	11	6	1	TP53	1.3	1	1
92	0.06	84.16			13.36	110.13			12.58		220.29	22	2	1	ALK	50.5	1	1
93		158.56			2.79						161.35	8	0	1	RET	1	1	1
94		6.41	4.97		10.3	57.84		1.78			81.3	37	30	1	EGFR	2.5	1	1
95		31.52	3.26		3.59						38.37	6	1	1	TP53	0.4	1	0
96		3.91			2.69	1.86	58.84				67.3	8	3	1	KRAS	0.8	1	1
97	0.2	11.91		1.57	26.01			5.9			45.59	14	3	0	N/A		1	0
98		34.97	0.32		18.78						54.07	11	4	0	N/A		1	0
99		12.23			15.32						27.55	11	1	1	MET	1.2	1	1
100	0.25	175.51	32.98		35.82				1.17		245.73	35	21	1	KRAS	1	0	0
101		24.43	99.5		15.58			34.3	8.37		182.18	36	30	1	KRAS	32.8	1	1
102		3.42	278.29								281.71	57	56	1	KRAS	2.2	1	1
103		43.97			13.38						57.35	12	3	0	N/A		1	0
104		44.38			8.28	1.74					54.4	66	28	1	FGFR1	11.1	1	1
105		12.14			90.98						103.12	15	6	1	TP53	5.8	1	1
106	1.35	5.81			14.11						21.27	13	5	0	N/A		1	0
107		1.59	68.85								70.44	18	17	1	KRAS	6.5	1	1
108		3.18	122.92	0.54	8.97						135.61	36	7	1	KRAS	10.6	1	1
109		15.79			0.7						16.49	80	28	0	N/A		1	0
110		21.07			8.36					0.17	29.6	5	1	0	N/A		0	0