

Supplementary Table S1: Clinicopathologic information and sequencing statistics of the 38 metastatic breast cancers included in the study.

Sample ID	Diagnosis*	Matrix producing	Predominant Cellular Type**	Histologic grade***	ER	PR	HER2	Triple-negative phenotype****	Age at diagnosis	Tumor size (cm)	pT stage	pN stage	M stage	Follow-up time	Survival	DCIS	Extensive DCIS	Tubule formation	Nuclear grade	Mitotic Count (pT10g)	Necrosis (% tumor)	Necrosis (%)	Borders	Lymphovascular invasion	Stromal TILs (%)	Chondroid component (%)	Osteoid component (%)	Squamous component (%)	Epithelioid component (%)	Rhabdoid component (%)	RNA available for Wnt1 signaling pathway RT-PCR array	RNA available for PI3K/AKT signaling pathway RT-PCR array	Sequencing instrument	Sequencing type	Protein FFPE	Number of reads (tumor)	Mean target coverage (tumor)	% target bases covered at 20x (tumor)	% target bases covered at 50x (tumor)	% target bases covered at 100x (tumor)	Number of reads (normal)	Mean target coverage (normal)	% target bases covered at 20x (normal)	% target bases covered at 50x (normal)	% target bases covered at 100x (normal)					
MTY31	Carcinoma with mesenchymal elements	Yes	Chondroid	2	-	-	-	Yes	59	1.2	T1c	N0	MO	208.99	LIVING	Absent	No	2	3	2.139	Present	20	Mixed	none	6	80	0	0	0	20	0	No	Yes	HiSeq	7876	Fusion	77,823,718	82	79.33%	48.81%	16.44%	124,825,237	101	88.41%	68.92%	30.21%				
MTY33	Carcinoma with mesenchymal elements	No	Chondroid	3	-	-	-	Yes	44	6.2	T2b	N0	MO	43.91	DECEASED	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Yes	HiSeq	7876	Fusion	69,003,841	48	73.26%	38.62%	9.30%	121,613,921	51	74.05%	59.35%	19.86%					
MTY39	Carcinoma with mesenchymal elements	No	Fibrotic	3	-	-	-	Yes	48	6.4	T2b	N0	MO	109.32	LIVING	Absent	No	3	3	3.192	Present	50	Papillary	none	0	10	85	20	0	0	0	0	0	Yes	HiSeq	7876	Fusion	68,112,838	78	81.68%	47.47%	20.82%	124,688,951	73	81.65%	68.95%	24.29%			
MTY42	Carcinoma with squamous metaplasia	No	Squamous	3	-	-	-	Yes	48	3.1	T2	N0	MO	102.82	LIVING	Present	No	3	3	3.144	Present	1	Infiltrating	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	7876	Fusion	74,479,502	68	78.07%	42.89%	14.92%	121,718,764	69	79.46%	61.78%	19.24%			
MTY45	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	56	3.3	T2	N0	MO	133.18	DECEASED	Absent	No	3	3	3.160	Present	20	Papillary	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	7876	Fusion	66,365,747	56	73.44%	38.75%	13.70%	119,433,911	67	81.43%	61.44%	30.30%			
MTY45	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	56	9	T2	N1b	MO	146.71	DECEASED	Absent	No	3	3	3.131	Present	0	Mixed	none	5	90	0	0	0	0	0	0	0	Yes	HiSeq	7876	Fusion	68,818,227	51	74.88%	38.41%	12.01%	109,172,460	70	81.46%	68.81%	24.82%			
MTY49	Carcinoma with mesenchymal elements	No	Fibrotic	3	-	-	-	Yes	56	2.3	T2	N0	MO	58.36	DECEASED	Absent	No	3	3	3.122	Present	0	Mixed	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	7876	Fusion	74,100,567	64	80.13%	47.03%	16.62%	119,482,550	67	82.4%	61.93%	30.30%			
MTY61	Spindle cell carcinoma	No	Fibrotic	2	-	-	-	Yes	51	1.8	T1c	N1b	MO	139.50	LIVING	Absent	No	3	2	2.142	Present	10	Infiltrating	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	7876	Fusion	78,987,846	43	79.11%	49.77%	17.76%	88,368,308	70	80.15%	58.31%	22.92%			
MTY61	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	51	2.2	T2	N0	MO	49.88	LIVING	Present	No	3	3	3.225	Present	20	Infiltrating	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	117,083,230	105	92.05%	60.84%	87.97%	144,521,107	126	86.77%	78.89%	55.61%		
MTY61	Carcinoma with squamous metaplasia	No	Squamous	3	-	-	-	Yes	37	2.2	T2	N0	MO	68.94	LIVING	Present	No	3	3	3.111	Present	40	Infiltrating	irregular	40	6	10	85	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	109,059,404	106	91.36%	60.24%	89.92%	149,024,904	119	89.24%	74.11%	59.61%		
MTY67	Spindle cell carcinoma	No	Fibrotic	3	-	-	-	Yes	64	1.4	T1b	N1a	MO	41.25	DECEASED	Present	No	3	2	3.222	Present	60	Infiltrating	none	15	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	144,759,205	209	91.84%	60.42%	87.70%	144,202,047	120	88.87%	76.30%	47.26%	
MTY67	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	52	1.1	T1c	N0	MO	49.81	LIVING	Present	No	3	3	3.169	Present	0	Infiltrating	irregular	40	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	113,824,660	44	81.14%	48.97%	12.82%	117,034,641	120	83.82%	74.18%	48.36%	
MTY67	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	52	1.8	T1c	N0	MO	49.87	LIVING	Present	No	3	3	3.180	Present	10	Mixed	none	0	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	116,424,100	406	91.10%	60.21%	86.26%	144,184,176	127	88.03%	78.81%	52.06%	
MTY67	Spindle cell carcinoma	No	Fibrotic	3	-	-	-	Yes	52	2.8	T2	N0	MO	61.30	LIVING	Present	No	3	3	3.201	Present	10	Mixed	none	5	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	118,958,719	84	92.37%	60.32%	86.30%	149,000,670	147	90.03%	78.81%	52.06%	
MTY67	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	51	2.5	T2b	N0	MO	58.41	DECEASED	Absent	No	2	3	3.117	Present	10	Infiltrating	none	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	131,409,889	424	89.02%	60.70%	79.11%	129,180,884	70	81.10%	69.42%	26.32%		
MTY68	Spindle cell carcinoma	No	Fibrotic	3	-	-	-	Yes	49	1.8	T2	N0	MO	121.33	DECEASED	Present	No	3	3	3.044	Present	0	Mixed	none	0	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	146,294,892	436	90.65%	60.81%	81.36%	146,081,649	115	82.83%	69.42%	26.32%	
MTY68	Spindle cell carcinoma	No	Fibrotic	3	-	-	-	Yes	49	2.3	T2	N0	MO	121.88	LIVING	Absent	No	3	3	3.120	Present	0	Infiltrating	irregular	20	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	151x101	FFPE	138,413,256	385	88.12%	51.84%	84.38%	150,884,289	151	81.37%	69.42%	26.32%	
MTY68	Spindle cell carcinoma	Yes	Chondroid	3	-	-	-	Yes	47	3.8	T2	N0	MO	132.87	LIVING	Present	No	3	3	3.110	Present	30	Infiltrating	none	0	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	827,837,483	271	91.82%	68.17%	80.82%	801,260,049	180	89.85%	85.88%	47.94%	
MTY68	Spindle cell carcinoma	Yes	Chondroid	3	-	-	-	Yes	44	3.2	T2	N0	MO	103.42	LIVING	Present	No	3	3	3.120	Present	0	Papillary	irregular	20	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	426,364,814	216	91.93%	63.21%	80.32%	139,455,512	68	90.05%	69.25%	34.76%	
MTY68	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	48	2.3	T2	N0	MO	49.44	LIVING	Present	No	3	3	3.150	Present	10	Papillary	irregular	20	20	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	426,887,838	358	91.43%	69.11%	84.88%	117,488,228	104	88.45%	74.63%	47.44%	
MTY68	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	46	1.6	T2	N0	MO	28.96	LIVING	Present	No	3	3	3.110	Present	0	Infiltrating	none	0	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	316,511,099	176	91.94%	69.26%	71.69%	380,174,443	89	87.64%	67.18%	26.93%	
MTY67	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	60	2.2	T2	N0	MO	68.12	LIVING	Present	No	3	3	3.165	Present	60	Papillary	irregular	20	30	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	361,364,870	243	91.84%	68.07%	81.62%	104,187,422	84	81.16%	69.89%	33.15%	
MTY71	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	49	4	T2	N0	MO	54.67	DECEASED	Absent	No	3	3	3.150	Present	0	Infiltrating	none	1	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	273,411,844	249	94.41%	78.99%	76.26%	174,888,880	89	88.89%	72.41%	36.91%	
MTY73	Carcinoma with mesenchymal elements	Yes	Chondroid	2	-	-	-	Yes	62	3.5	T2	N0	MO	2.81	LIVING	Present	No	5	5	4.171	Absent	0	Infiltrating	irregular	40	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	158,191,684	138	89.79%	56.92%	11.82%	151,918,278	69	88.89%	71.25%	38.89%	
MTY73	Carcinoma with mesenchymal elements	Yes	Chondroid	2	-	-	-	Yes	45	4	T2	N0	MO	75.50	LIVING	Present	Yes	3	3	3.150	Absent	0	Infiltrating	none	1	20	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	273,404,144	231	91.70%	63.41%	76.26%	158,581,421	84	88.89%	74.81%	36.91%
MTY74	Carcinoma with mesenchymal elements	Yes	Chondroid	3	-	-	-	Yes	38	3.1	T2	N0	MO	29.25	LIVING	Present	No	3	3	3.190	Present	40	Papillary	none	5	15	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	316,789,830	264	91.48%	67.43%	78.31%	119,283,701	104	87.79%	74.81%	47.13%	
MTY75	Spindle cell carcinoma	No	Fibrotic	3	-	-	-	Yes	60	5	T2	N0	MO	54.31	LIVING	Present	No	3	3	3.111	Absent	0	Infiltrating	none	5	0	0	0	0	0	0	0	0	0	Yes	HiSeq	2000	7876	Fusion	315,023,227	254	91.02%	61.04%	78.93%	117,603,021	95	87.44%	74.52%	42.90%	
MTY76	Carcinoma with squamous metaplasia	No	Squamous	3	-	-	-	Yes	54	3.6	T2	N0	MO	104.30	DECEASED	Absent	No	3	3	3.180	Present	0	Infiltrating	none	0	0																								