

Supplementary Table S2. Dataset of molecular profiling and expression signatures

Sample ID	Cancer type	Grade	TCGA	TP53_subtype
UT_001	Endometrioid carcinoma	G2	3_GS	TP53active
UT_002	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_003	Endometrioid carcinoma	G1	3_GS	TP53active
UT_004	clear cell carcinoma	NA	3_GS	TP53inactive
UT_005	Endometrioid carcinoma	G2	2_MSI	2_MSI
UT_006	Endometrioid carcinoma	G2	3_GS	TP53active
UT_007	Endometrioid carcinoma	G1	3_GS	TP53active
UT_008	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_009	Endometrioid carcinoma	G1	3_GS	TP53active
UT_010	Endometrioid carcinoma	G3	1_POLE	1_POLE
UT_011	Endometrioid carcinoma	G1	4_CIN	TP53active
UT_012	Endometrioid carcinoma	G1	3_GS	TP53active
UT_013	high grade carcinoma	NA	4_CIN	TP53inactive
UT_014	Endometrioid carcinoma	G1	3_GS	TP53active
UT_015	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_016	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_017	Endometrioid carcinoma	G2	2_MSI	2_MSI
UT_018	Endometrioid carcinoma	G1	3_GS	TP53active
UT_019	Endometrioid carcinoma	G2	3_GS	TP53active
UT_020	Endometrioid carcinoma	G1	3_GS	TP53active
UT_021	clear+EM	NA	3_GS	TP53inactive
UT_022	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_023	serous carcinoma	NA	3_GS	TP53inactive
UT_024	Endometrioid carcinoma	G1	3_GS	TP53active
UT_025	Endometrioid carcinoma	G3	4_CIN	TP53inactive
UT_026	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_027	Endometrioid carcinoma	G1	3_GS	TP53active
UT_028	Endometrioid carcinoma	G1	2_MSI	2_MSI
UT_029	Endometrioid carcinoma	G1	3_GS	TP53active
UT_030	Endometrioid carcinoma	G1	2_MSI	2_MSI
UT_031	Endometrioid carcinoma	G1	4_CIN	TP53inactive
UT_032	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_033	Endometrioid carcinoma	G1	4_CIN	TP53active
UT_034	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_035	clear cell carcinoma	NA	1_POLE	1_POLE
UT_036	Endometrioid carcinoma	G1	3_GS	TP53active
UT_037	serous carcinoma	NA	2_MSI	2_MSI
UT_038	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_039	clear cell carcinoma	NA	2_MSI	2_MSI
UT_040	Endometrioid carcinoma	G1	4_CIN	TP53active
UT_041	Endometrioid carcinoma	G1	2_MSI	2_MSI
UT_042	Endometrioid carcinoma	G2	4_CIN	TP53inactive
UT_043	Endometrioid carcinoma	G1	3_GS	TP53active
UT_044	Endometrioid carcinoma	G2	3_GS	TP53active
UT_045	clear+EM	NA	3_GS	TP53inactive
UT_046	Endometrioid carcinoma	G3	4_CIN	TP53inactive
UT_047	Endometrioid carcinoma	G1	3_GS	TP53active
UT_048	Endometrioid carcinoma	G1	4_CIN	TP53active

UT_049	Endometrioid carcinoma	G1	3_GS	TP53active
UT_050	serous carcinoma	NA	4_CIN	TP53inactive
UT_051	Endometrioid carcinoma	G1	3_GS	TP53active
UT_052	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_053	Endometrioid carcinoma	G1	3_GS	TP53active
UT_054	serous carcinoma	NA	4_CIN	TP53inactive
UT_055	Endometrioid carcinoma	G1	3_GS	TP53active
UT_056	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_057	Endometrioid carcinoma	G1	3_GS	TP53active
UT_058	Endometrioid carcinoma	G2	3_GS	TP53active
UT_059	Endometrioid carcinoma	G2	2_MSI	2_MSI
UT_060	Endometrioid carcinoma	G1	3_GS	TP53active
UT_061	Endometrioid carcinoma	G2	3_GS	TP53active
UT_062	serous carcinoma	NA	4_CIN	TP53inactive
UT_063	Endometrioid carcinoma	G1	2_MSI	2_MSI
UT_064	Endometrioid carcinoma	G2	2_MSI	2_MSI
UT_065	Endometrioid carcinoma	G3	4_CIN	TP53inactive
UT_066	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_067	LCNEC	NA	2_MSI	2_MSI
UT_068	serous carcinoma	NA	2_MSI	2_MSI
UT_069	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_070	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_071	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_072	Endometrioid carcinoma	G1	4_CIN	TP53active
UT_073	Endometrioid carcinoma	G1	3_GS	TP53active
UT_074	Endometrioid carcinoma	G3	2_MSI	2_MSI
UT_075	Endometrioid carcinoma	G2	2_MSI	2_MSI
UT_076	Endometrioid carcinoma	G3	3_GS	TP53active
UT_077	Endometrioid carcinoma	G1	3_GS	TP53active
UT_078	Endometrioid carcinoma	G1	3_GS	TP53active
UT_079	Endometrioid carcinoma	G1	3_GS	TP53active
UT_080	Endometrioid carcinoma	G2	4_CIN	TP53active
UT_081	Endometrioid carcinoma	G1	1_POLE	1_POLE
UT_082	clear cell carcinoma	NA	1_POLE	1_POLE
UT_083	serous carcinoma	NA	4_CIN	TP53inactive
UT_084	Endometrioid carcinoma	G1	3_GS	TP53active
UT_085	Endometrioid carcinoma	G1	2_MSI	2_MSI

used in this study

TMB (mutation/Mb)	CNV_gain (Mb)	CNV_loss (Mb)	cnLOH (Mb)	signature	POLE
1.613	120.972	92.055	3.154	NA	
31.550	19.769	17.906	31.991		0.000
2.253	201.655	69.731	70.199		0.000
279.667	0.000	3.066	84.504		0.000
33.250	0.033	19.927	88.868		0.000
1.996	0.000	9.469	81.242		0.000
2.306	245.829	38.236	0.000		0.087
24.193	0.000	0.158	89.148		0.000
2.094	389.739	9.528	25.480		0.120
153.070	11.948	0.292	0.000		0.941
1.913	646.773	25.535	0.000		0.000
0.181	0.000	0.000	0.000	NA	
2.120	142.188	380.039	1.271		0.000
33.175	77.825	39.144	0.000		0.000
28.476	8.348	33.283	25.064		0.000
750.980	17.298	30.231	0.000		0.068
16.040	282.470	40.389	0.000		0.000
0.885	23.546	38.319	0.000	NA	
2.251	0.000	0.000	70.634		0.000
2.399	0.788	0.000	137.996		0.072
2.179	344.736	86.218	0.000		0.000
77.534	0.000	0.000	0.000		0.789
0.149	0.000	4.164	0.000	NA	
2.037	8.991	19.127	79.807		0.000
2.581	216.248	642.599	0.619		0.071
48.577	3.500	0.000	0.000		0.666
0.601	46.473	54.240	0.000	NA	
24.041	78.216	4.897	0.000		0.000
2.365	64.575	177.982	164.343		0.071
26.179	86.210	16.269	0.000		0.000
9.131	420.282	124.567	0.000		0.000
394.444	316.893	216.874	0.000		0.065
2.356	238.316	178.663	180.527		0.092
45.310	156.455	289.003	29.061		0.000
437.031	146.790	187.316	0.000		0.816
1.240	122.473	3.841	0.000	NA	
12.091	203.524	497.403	1.211		0.000
432.707	88.827	99.688	0.000		0.925
24.609	13.686	198.919	0.000		0.000
1.654	906.610	17.154	16.990		0.126
23.675	502.602	14.425	0.000		0.000
1.730	30.207	404.438	60.028		0.000
2.771	186.064	0.239	2.051		0.000
2.859	297.670	130.523	62.937		0.000
1.219	0.000	0.000	55.792	NA	
1.692	404.941	405.439	63.381		0.000
2.125	137.316	234.793	4.604		0.093
0.883	519.919	319.537	4.883	NA	

0.239	0.000	56.775	0.000	NA	
1.810	352.201	307.073	163.043		0.000
0.355	90.769	167.404	0.000	NA	
55.139	707.668	172.001	1.816		0.800
1.965	37.664	110.296	0.219		0.189
4.525	290.651	423.412	95.102		0.213
0.968	175.477	112.124	8.457	NA	
282.641	754.755	21.777	4.052		0.940
2.519	0.000	62.897	0.000		0.181
2.793	115.817	115.914	3.591		0.000
21.872	0.000	97.740	57.879		0.000
2.940	0.799	179.491	106.830		0.000
2.528	37.850	120.112	0.783		0.000
1.400	55.669	260.896	315.754	NA	
22.012	112.538	26.499	2.669		0.000
48.453	162.934	178.746	81.916		0.000
2.729	521.483	165.383	24.978		0.000
53.743	0.000	6.913	0.000		0.851
44.070	59.439	25.211	0.000		0.000
6.501	571.765	305.076	268.706		0.000
36.189	94.899	69.568	34.295		0.000
76.495	0.000	10.635	103.973		0.000
82.828	0.000	63.212	0.000		0.840
1.329	292.827	418.283	20.836	NA	
2.052	386.702	2.615	11.267		0.000
425.627	10.411	62.191	0.081		0.148
23.936	5.982	0.000	31.715		0.000
40.317	13.473	2.558	79.049		0.000
2.534	212.666	45.907	0.000		0.000
1.820	0.000	0.000	0.000		0.106
1.787	0.000	1.429	0.000		0.118
2.361	76.551	731.531	179.665		0.000
89.953	85.258	136.071	7.653		0.739
142.455	0.000	0.000	0.000		0.630
1.646	130.219	642.101	50.456		0.000
1.818	99.308	126.921	4.006		0.137
2.603	240.347	99.208	84.358		0.000

signature MSI	signature Deamination	TP53 inactivation score	T cell-inflamed GEP signature	PI3K/mTOR CMAP UP signature
NA	NA	-1.277	0.440	1.306160817
0.426	0.465	-0.855	3.192	1.300984608
0.255	0.305	-0.104	-0.255	1.331128863
0.659	0.072	0.010	2.040	1.432908255
0.393	0.577	0.013	0.734	1.272539457
0.000	0.433	-0.514	0.032	1.390595649
0.166	0.287	-0.059	-0.302	1.329520125
0.369	0.321	-0.304	-0.957	1.258669757
0.000	0.295	-1.123	-1.056	1.258271979
0.000	0.000	-0.069	0.703	1.608547419
0.335	0.452	-0.236	-0.426	1.253439693
NA	NA	-1.522	1.099	1.261667437
0.279	0.000	0.339	-0.954	1.414843925
0.440	0.488	-0.228	1.117	1.224598122
0.664	0.109	-0.064	0.551	1.277464071
0.574	0.144	-0.123	2.342	1.547774438
0.503	0.280	-1.320	1.168	1.079582209
NA	NA	-2.269	0.507	1.025537602
0.253	0.281	-0.697	-0.761	1.344975899
0.000	0.366	-0.990	0.947	1.144743723
0.000	0.241	0.435	-0.204	1.483810433
0.000	0.000	0.831	-1.358	1.220858652
NA	NA	0.669	0.567	1.482051719
0.282	0.407	-0.266	0.032	1.259088332
0.161	0.203	-0.211	-0.594	1.543103223
0.128	0.081	0.485	1.623	1.419625782
NA	NA	-2.702	-0.058	1.177077226
0.372	0.581	-0.157	0.981	1.556903016
0.104	0.343	-1.678	0.223	1.349440819
0.457	0.514	-0.317	1.352	1.299287108
0.071	0.000	0.985	-0.376	1.484044326
0.700	0.167	0.689	0.123	1.976296172
0.380	0.271	-1.993	-0.444	1.209022795
0.350	0.547	0.765	1.802	1.718701363
0.000	0.082	0.166	0.006	1.657458525
NA	NA	-2.095	-1.596	1.064180671
0.000	0.000	0.636	0.382	1.594260782
0.000	0.067	0.318	1.910	1.223726373
0.519	0.402	-0.036	4.424	1.486817255
0.224	0.181	-1.172	0.635	1.348935781
0.613	0.305	-0.190	0.948	1.417271237
0.196	0.104	0.707	-0.733	1.736129004
0.276	0.251	0.016	-0.741	1.482883162
0.289	0.188	-0.954	-0.103	1.388680519
NA	NA	0.690	-0.285	1.829674008
0.109	0.199	1.644	0.024	1.655103493
0.209	0.313	-0.480	-0.740	1.501932152
NA	NA	-2.142	-0.730	1.137882069

NA	NA		-1.258	0.373	1.276645971
	0.079	0.223	1.334	-0.279	1.664075906
NA	NA		-0.224	2.183	1.406281079
	0.106	0.086	0.050	0.301	1.646519791
	0.279	0.285	-2.099	0.401	1.376245405
	0.000	0.108	0.396	-1.287	1.545720483
NA	NA		-0.390	-0.399	1.297403032
	0.000	0.060	0.027	2.292	1.72610845
	0.243	0.317	-0.194	0.287	1.283040754
	0.306	0.269	-1.639	-1.147	1.324554169
	0.606	0.120	-0.010	1.801	1.528876435
	0.186	0.331	-0.414	0.066	1.459181658
	0.199	0.221	-0.827	-0.644	1.2761725
NA	NA		-0.283	-0.371	1.563212978
	0.564	0.191	-0.144	1.025	1.387734109
	0.582	0.000	-0.072	1.474	1.556562146
	0.239	0.311	0.083	0.897	1.619147237
	0.000	0.076	-0.350	1.553	1.477197174
	0.619	0.125	0.772	-1.228	1.500977853
	0.000	0.121	-0.436	-1.081	1.518990105
	0.657	0.236	-0.090	2.132	1.615823251
	0.587	0.299	-0.964	1.474	1.366706559
	0.000	0.000	-0.928	1.983	1.458167726
NA	NA		-0.795	-1.277	1.209483947
	0.259	0.264	-0.232	1.126	1.428571022
	0.624	0.100	0.472	2.285	1.875965268
	0.750	0.000	0.048	0.929	1.49330611
	0.361	0.568	-0.215	2.817	1.701187704
	0.438	0.110	-0.838	-0.630	1.115359361
	0.375	0.299	-1.717	0.287	0.973167516
	0.244	0.328	-1.056	0.082	1.398393559
	0.295	0.357	0.048	-0.322	1.598797571
	0.139	0.000	1.073	1.363	1.68475396
	0.216	0.000	0.943	1.991	1.942547353
	0.110	0.301	0.138	-1.722	1.514573415
	0.199	0.249	-1.201	-1.108	1.446839488
	0.294	0.303	-0.289	0.514	1.477317504

EMT-up signature	Autophagy-up signature
-0.878233398	0.417974297
-0.335429205	0.822318978
-0.528495282	0.93978585
-1.318786213	1.083134956
-1.14600145	0.684179999
-1.945543944	0.709311365
-1.627149192	0.929494718
-1.847021774	0.675050659
-0.448393323	0.632729621
-0.405816516	0.758363704
-1.485554897	0.972545724
0.185627894	1.042708829
-1.937580246	1.637232373
-1.298365142	0.587493296
-1.551015376	1.22636543
-1.765335958	0.587586015
-1.386831315	0.152716155
0.561245916	0.419145766
-0.560185137	0.652684823
-0.880506463	0.740472621
-0.869061317	0.968236483
-1.337731085	0.769781084
-0.890234189	1.322834473
-1.170131851	0.667892761
-0.719690204	1.189189736
-0.655968392	0.564647693
0.170400372	0.075422187
-0.636862971	0.698056433
-1.012290631	0.840808944
-1.219940534	0.518641918
-1.287555934	0.323204733
-1.613470028	1.219001266
-1.458707856	0.721323694
-1.269797837	1.412550398
-0.27320696	1.372479256
-0.021558696	0.132422661
-0.868376203	1.171708208
-1.022020542	0.512568659
-0.683188396	1.081981746
-0.560902292	0.997215026
-0.879409568	0.643299072
-1.313467636	0.951401008
-0.896882021	0.860395959
-0.883841245	0.863929152
-0.802493497	1.72895862
-0.786116458	1.032219338
-1.315699103	1.013434969
-0.131797943	0.142191151

0.237199929	0.577903016
-0.51080593	1.296585125
-0.751483438	0.575881104
-1.386917614	0.756695826
0.131193863	0.483489432
-1.748631346	0.878968225
-0.278986756	0.323865443
-0.901835846	0.572660741
-1.026875549	0.643979528
-1.43526807	0.534810089
-0.970745408	0.303754324
-0.352422142	0.665384154
-1.224403846	0.548977996
0.662656659	1.106520902
-1.848865071	0.687387534
-1.575651527	0.940006097
-0.105711534	0.496858175
-0.434512416	1.09858226
-1.236206108	0.632966106
-0.531851943	0.388779156
-0.45011357	0.79548402
-0.330918872	1.484197408
-0.897546391	0.689946434
-0.917286751	0.313097769
-0.629531609	0.742458316
-2.073350354	1.150165111
-0.042385589	0.761584442
0.341905462	0.80575817
-0.003470143	-0.014222142
-0.912312202	0.567812722
-0.955164064	0.465448196
-1.067905339	0.509496984
-1.34323966	0.840970999
-0.278475409	0.998404737
-0.447547692	0.841508046
-1.851888086	0.556310484
-1.502588641	0.961221461