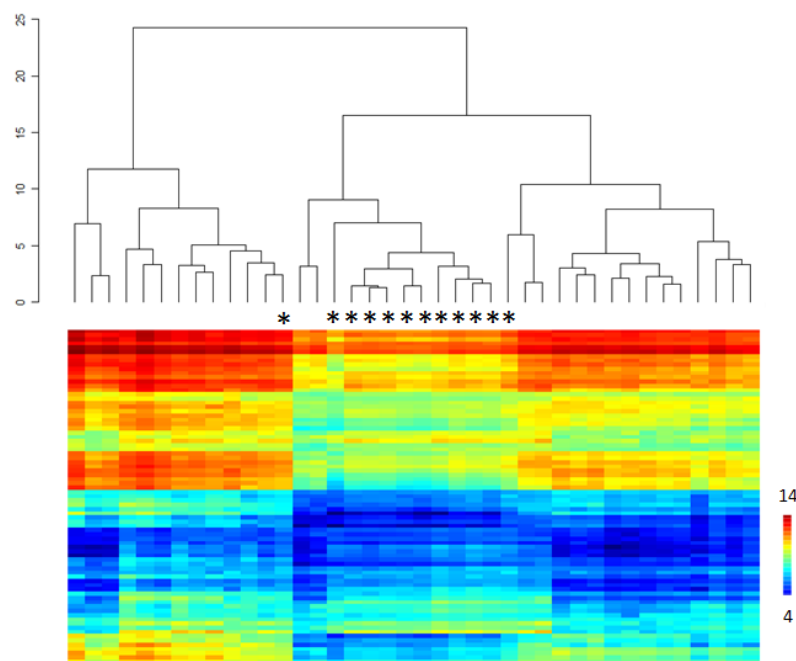


Supplementary Materials: Differential Kinase Activation in Peripheral Blood Mononuclear Cells from Non-Small Lung Cancer Patients Treated with Nivolumab

Gaëlle Noé, Audrey Bellesoeur, Lisa Golmard, Audrey Thomas-Schoemann, Pascaline Boudou-Rouquette, Manuela Tiako Meyo, Alicja Puzkiel, Jennifer Arrondeau, Jérôme Alexandre, François Goldwasser, Benoit Blanchet and Michel Vidal



* Healthy Volunteers

Figure S1. Unsupervised hierarchical clustering of basal kinase activity profiles among non-small-cell lung cancer patients PBMC ($n = 28$) and healthy volunteers ($n = 12$). The heatmap represents phosphorylation levels (Log₂Signal) for 80 peptides of the “QC List” (Y-axis) sorted by hierarchical clustering. Patients are well separated from healthy volunteers; patients are clearly classified in two distinct clusters.

Table S1. QC list of the 80 peptides substrates of serine/threonine kinases presenting nominal CV lower than 50%.

Rank	QC List (in Alphabetical Order)	Rank	QC List (in Alphabetical Order)
1	ACM1_421_433	41	KCNA1_438_450
2	ACM4_456_468	42	KCNA2_442_454
3	ACM5_494_506	43	KCNA3_461_473
4	ACM5_498_510	44	KCNA6_504_516
5	ADDB_706_718	45	KIF2C_105_118_S106G
6	ADRB2_338_350	46	KPB1_1011_1023
7	ANDR_785_797	47	KPCB_19_31_A255
8	ANXA1_209_221	48	KS6A1_374_386
9	ART_025_CXGLRRWSLGGLRRWSL	49	LIPS_944_956
10	BAD_112_124	50	MARCS_160_172
11	BAD_69_81	51	MBP_222_234
12	BAD_93_105	52	MP2K1_287_299
13	CA2D1_494_506	53	MPIP1_172_184
14	CAC1C_1974_1986	54	MYPC3_268_280
15	CDN1A_139_151	55	NCF1_296_308
16	CENPA_1_14	56	NCF1_321_333
17	CFTR_730_742	57	NFKB1_330_342
18	CFTR_761_773	58	NMDZ1_890_902
19	CGHB_109_121	59	NOS3_1171_1183
20	CREB1_126_138	60	NR4A1_344_356
21	CSF1R_701_713	61	PLEK_106_118
22	DESP_2842_2854	62	PLM_76_88
23	E1A_ADE05_212_224	63	PPR1A_28_40
24	EPB42_241_253	64	PTK6_436_448
25	ERBB2_679_691	65	PTN12_32_44
26	ESR1_160_172	66	RAP1B_172_184
27	F263_454_466	67	RBL2_655_667
28	FOXO3_25_37	68	RB_242_254
29	FRAP_2443_2455	69	RB_803_815
30	GBRB2_427_439	70	REL_260_272
31	GPR6_349_361	71	RS6_228_240
32	GPSM2_394_406	72	RYR1_4317_4329
33	GRIK2_708_720	73	SCN7A_898_910
34	GYS2_1_13	74	STK6_283_295
35	H2B1B_27_40	75	STMN2_90_102
36	H32_3_18	76	TOP2A_1463_1475
37	K6PL_766_778	77	TY3H_65_77
38	KAP2_92_104	78	VASP_150_162
39	KAP3_107_119	79	VASP_271_283
40	KAPCG_192_206	80	VTNC_390_402

Table S2. QC list peptides ($n = 80$) ranking within the different clusters obtained after unsupervised hierarchical clustering of the kinase activity profiles. Peptides ordering is related to Figures 1 and 3.

Rank	Peptides Identity within Clusters A and B	Peptides Identity within Clusters C and D	Rank	Peptides Identity within Clusters A and B	Peptides Identity within Clusters C and D
1	KCNA1_438_450	NOS3_1171_1183	41	VASP_271_283	TY3H_65_77
2	FRAP_2443_2455	ESR1_160_172	42	PPR1A_28_40	NFKB1_330_342
3	KCNA3_461_473	ANDR_785_797	43	ESR1_160_172	NCF1_321_333
4	GPR6_349_361	VASP_271_283	44	NFKB1_330_342	PTK6_436_448
5	RB_242_254	E1A_ADE05_212_224	45	MPIP1_172_184	EPB42_241_253
6	BAD_69_81	GBRB2_427_439	46	PLEK_106_118	ART_025_CXGLRRWSLGGLRRWSL
7	RB_803_815	CREB1_126_138	47	ERBB2_679_691	KCNA3_461_473
8	RBL2_655_667	PTN12_32_44	48	ACM5_494_506	KCNA2_442_454
9	H2B1B_27_40	RYR1_4317_4329	49	NOS3_1171_1183	FRAP_2443_2455
10	ADDB_706_718	RS6_228_240	50	E1A_ADE05_212_224	VAPS_150_162
11	KS6A1_374_386	GRIK2_708_720	51	KIF2C_105_118_S106G	PLM_76_88
12	CA2D1_494_506	NCF1_296_308	52	ADRB2_338_350	REL_260_272
13	MBP_222_234	KCNA6_504_516	53	KAP2_92_104	GPSM2_394_406
14	KAPCG_192_206	F263_454_466	54	STK6_283_295	STMN2_90_102
15	NR4A1_344_356	CFTR_761_773	55	RYR1_4317_4329	DESP_2842_2854
16	MARCS_160_172	KIF2C_105_118_S106G	56	NCF1_321_333	KS6A1_374_386
17	MP2K1_287_299	TOP2A_1463_1475	57	KPB1_1011_1023	CA2D1_494_506
18	ACM4_456_468	KAP3_107_119	58	CSF1R_701_713	GYS2_1_13
19	ACM1_421_433	VTNC_390_402	59	CAC1C_1974_1986	FOXO3_25_37
20	H32_3_18	MYPC3_268_280	60	ART_025_CXGLRRWSLGGLRRWSL	ACM1_421_433
21	CGHB_109_121	MPIP1_172_184	61	VASP_150_162	ACM4_456_468
22	ANXA1_209_221	K6PL_766_778	62	KAP3_107_119	BAD_93_105
23	KCNA2_442_454	NMDZ1_890_902	63	EPB42_241_253	ACM5_494_506
24	RAP1B_172_184	STK6_283_295	64	PTK6_436_448	ACM5_498_510
25	K6PL_766_778	CSF1R_701_713	65	CFTR_730_742	MARCS_160_172
26	STMN2_90_102	CGHB_109_121	66	NMDZ1_890_902	H32_3_18
27	PLM_76_88	RB_242_254	67	PTN12_32_44	NR4A1_344_356

28	FOXO3_25_37	RAP1B_172_184	68	CREB1_126_138	MP2K1_287_299
29	ACM5_498_510	BAD_69_81	69	TY3H_65_77	RB_803_815
30	GYS2_1_13	GPR6_349_361	70	RS6_228_240	KAPCG_192_206
31	BAD_93_105	ANXA1_209_221	71	VTNC_390_402	MBP_222_234
32	ANDR_785_797	LIPS_944_956	72	NCF1_296_308	PPR1A_28_40
33	REL_260_272	KCNA1_438_450	73	TOP2A_1463_1475	CDN1A_139_151
34	BAD_112_124	BAD_112_124	74	MYPC3_268_280	RBL2_655_667
35	DESP_2842_2854	KPB1_1011_1023	75	GRIK2_708_720	PLEK_106_118
36	KPCB_19_31_A25S	CFTR_730_742	76	GBRB2_427_439	CENPA_1_14
37	CENPA_1_14	SCN7A_898_910	77	KCNA6_504_516	H2B1B_27_40
38	LIPS_944_956	CAC1C_1974_1986	78	CDN1A_139_151	ERBB2_679_691
39	GPSM2_394_406	ADRB2_338_350	79	F263_454_466	ADDB_706_718
40	SCN7A_898_910	KAP2_92_104	80	CFTR_761_773	KPCB_19_31_A25S

Table S3. Differences in peptides phosphorylation ($n = 80$) before and after nivolumab treatment, determined by a Student's paired t -test. Peptides are ordered by p -value: highest ranking represents lowest p -value.

Rank	Peptide Identity	Rank	Peptide Identity
1	VASP_271_283	41	STMN2_90_102
2	RBL2_655_667	42	BAD_112_124
3	GRIK2_708_720	43	BAD_69_81
4	KS6A1_374_386	44	VASP_150_162
5	RS6_228_240	45	GBRB2_427_439
6	PTK6_436_448	46	GPSM2_394_406
7	PLEK_106_118	47	RB_242_254
8	NR4A1_344_356	48	MBP_222_234
9	KAP2_92_104	49	DESP_2842_2854
10	KIF2C_105_118_S106G	50	CA2D1_494_506
11	ADRB2_338_350	51	CREB1_126_138
12	CFTR_761_773	52	NOS3_1171_1183
13	CAC1C_1974_1986	53	ACM4_456_468
14	NMDZ1_890_902	54	CSF1R_701_713
15	TOP2A_1463_1475	55	KCNA2_442_454
16	F263_454_466	56	CDN1A_139_151
17	RYR1_4317_4329	57	FRAP_2443_2455
18	MARCS_160_172	58	E1A_ADE05_212_224
19	KAP3_107_119	59	ACM1_421_433
20	K6PL_766_778	60	ERBB2_679_691
21	KPB1_1011_1023	61	EPB42_241_253
22	SCN7A_898_910	62	KCNA3_461_473
23	CFTR_730_742	63	PPR1A_28_40
24	NCF1_296_308	64	ESR1_160_172
25	VTNC_390_402	65	PLM_76_88
26	MYPC3_268_280	66	GYS2_1_13
27	PTN12_32_44	67	KAPCG_192_206
28	NCF1_321_333	68	H2B1B_27_40
29	CGHB_109_121	69	RAP1B_172_184
30	TY3H_65_77	70	H32_3_18
31	LIPS_944_956	71	KPCB_19_31_A25S
32	STK6_283_295	72	CENPA_1_14
33	KCNA6_504_516	73	ACM5_494_506
34	NFKB1_330_342	74	GPR6_349_361
35	REL_260_272	75	ADDB_706_718
36	MPIP1_172_184	76	ACM5_498_510
37	KCNA1_438_450	77	MP2K1_287_299
38	RB_803_815	78	FOXO3_25_37
39	ART_025_CXGLRRWSLGGLRRWSL	79	BAD_93_105
40	ANDR_785_797	80	ANXA1_209_221

