



Supplementary Figure 1. Analysis of HeLa and HCT116 stable cell lines. Top panel. Whole cell extracts from HeLa control shRNA, RanBPM shRNA (2-6), and RanBPM shRNA (2-7); and HCT control shRNA and RanBPM shRNA (2-8) were analyzed by western blotting and decreased RanBPM expression was verified by hybridizing with a RanBPM antibody. The fold decrease in mRNA expression for each cell line is indicated below the respective western blot for that cell line. **Bottom panel.** Venn diagram of differentially expressed genes in RanBPM shRNA cell lines. The total number of differentially expressed genes for each cell line is indicated in square brackets, and the number of genes with altered expression common between cell lines is denoted within overlapping regions of circles.

Supplementary Table 1. Primers for candidate gene validation by RT-qPCR

Gene	Forward Primer	Reverse Primer
RON (MST1R)	5' AGGGTGTGGAGCGCTGTTGTG 3'	5' CTTCCAGGCCAGGCGGGTTG 3'
ELF3 (ESE-1)	5' AGAAGAGCAAGCACGCGCCC 3'	5' AGCCTCGGAGCGCAGGAAC 3'
MSLN1	5' AGGCTCAGCGCCACGCACTC 3'	5' CCAGGGAGGGAGGCACCGTG 3'
ALDH1A3	5' AGGCGGAGCGTGGAGTATGC 3'	5' ACTGCTTTTGATCAATCTGAGGCC 3'
CHN1	5' TTCAAGGTGCATACATTCAGAGGGC 3'	5' ACCACAATCTGCACATTTCACTCCC 3'
LAMB3	5' CCATTGCAGCCAGGCTCCCC 3'	5' GCTCGGCTCCTGGCTTCCTC 3'
TG2 (TGM2)	5' ACCTCATCAAGGTGCGGGCC 3'	5' TGGGCTCCCCAAGGATCCGG 3'
L1CAM	5' CGCAGCAAGGGCGGCAAATAC 3'	5' TCTCCAGGGACCTGTACTCGC 3'
PHD3 (EGLN3)	5' GCCACGTGGACAACCCCAACG 3'	5' CAGGATCCCACCATGTAGCTTGGC 3'
MFAP5 (MAGP2)	5' TCAGCAGCCAAAGGACTCGGTG 3'	5' CCCAGGGGTATCCAGTCAGAGG 3'
RAB27B	5' CGGGACAAGAGCGGTTCCGG 3'	5' GCTTGCAGTTGGCTCATCCAGT 3'

RON, recepteur d'origine nantais/macrophage stimulating receptor 1 (MST1R); ELF3, E74-like factor 3 (ESE-1); MSLN1, mesothelin 1; ALDH1A3, aldehyde dehydrogenase 1 isoform A3; CHN1, chimerin 1; LAMB3, laminin β 3; TG2, transglutaminase 2 (TGM2); L1CAM, L1 cell adhesion molecule; PHD3, prolyl hydroxylase 3 (EGLN3); MFAP5, microfibrillar associated protein 5 (MAGP2); RAB27B, RAB27B member Ras oncogene family.

Supplementary Table 2. List of genes affected by RanBPM down-regulation

Gene Symbol	Accession No.	Hela RanBPM sh (2-6)		Hela RanBPM sh (2-7)		HCT RanBPM sh (2-8)	
		p-value	Fold Change	p-value	Fold Change	p-value	Fold Change
Down-regulated Genes							
MLLT11	NM_006818	1.21E-05	-1.94805	0.000178	-1.65798	0.007683	-1.42647
PLA2G4A	NM_024420	0.000994	-1.98148	0.024978	-1.50694	0.103914	-1.38663
CAMSAP1L1	NM_203459	0.000186	-1.28092	0.000756	-1.23381	0.000425	-1.2971
C1orf71	NM_152609	0.000365	-1.26617	5.95E-06	-1.43517	0.0055	-1.20895
PTGS2	NM_000963	0.001552	-2.23247	7.75E-05	-3.13005	0.414784	-1.21651
KDM5B	NM_006618	0.238379	-1.20273	0.236682	-1.20358	0.099806	-1.35748
ADD3	NM_016824	0.143779	-1.20664	0.000316	-1.7965	0.173044	-1.22262
KLC2	NM_022822	7.57E-06	-1.45389	0.000219	-1.30358	0.008601	-1.20564
PANX1	NM_015368	0.016856	-1.28365	0.064952	-1.20168	0.101339	-1.20387
TARBP2	NM_134323	1.36E-07	-1.49385	1.64E-07	-1.48434	0.001023	-1.20971
NAV3	NM_014903	0.035093	-1.25264	0.004963	-1.38175	5.98E-07	-2.70703
ISCU	NM_014301	1.11E-07	-1.56273	6.43E-08	-1.59608	1.68E-05	-1.38687
RERG	NM_032918	0.079681	-1.38315	0.011972	-1.64535	0.022004	-1.66901
SSH1	NM_001161330	0.016604	-1.2583	0.019562	-1.24929	6.79E-05	-1.74098
GNG2	NM_053064	0.000117	-1.56726	0.010662	-1.28025	0.076577	-1.20227
ADAM21	NM_003813	0.23321	-1.23904	0.248423	-1.23016	0.364157	-1.20459
ADAM21	NM_003813	0.00646	-1.49927	0.007953	-1.47916	0.053203	-1.35929
ATPBD4	NM_080650	0.004968	-1.38728	0.027314	-1.27256	0.125026	-1.20153
MNS1	NM_018365	0.00212	-1.24488	0.004023	-1.22116	0.010258	-1.21957
MFGE8	NM_005928	0.000291	-2.09135	0.003832	-1.69699	0.303244	-1.20496
FGF11	NM_004112	0.146057	-1.30058	0.212872	-1.24941	0.302136	-1.23479
STARD3	NM_006804	1.64E-06	-1.32588	2.20E-06	-1.31601	0.000174	-1.22799
PITPNC1	NM_181671	7.03E-05	-2.5873	2.73E-06	-3.68728	0.038723	-1.55431
FXR2	NM_004860	1.81E-05	-1.24529	3.34E-05	-1.22921	0.000213	-1.21627
ALDOC	NM_005165	0.047679	-1.53452	0.08642	-1.43808	0.297333	-1.27832
GPR125	NM_145290	0.002301	-1.27392	0.001747	-1.28586	0.020897	-1.21458
MRPL34	NM_023937	1.87E-07	-1.58934	4.04E-08	-1.69516	2.88E-05	-1.39995
OLFM2	NM_058164	0.005177	-1.79105	0.017936	-1.60066	0.152458	-1.35655
ZNF585B	NM_152279	0.061216	-1.31428	0.007418	-1.52573	1.61E-05	-2.78181
TANK	NM_004180	0.031553	-1.23583	0.040896	-1.22079	5.57E-05	-1.81299
CHN1	NM_001822	0.032715	-1.23527	0.005214	-1.34482	0.000319	-1.6401
SATB2	NM_015265	7.03E-05	-1.53953	0.002165	-1.33286	0.004687	-1.34527
SCG2	NM_003469	0.158392	-1.3339	0.004688	-1.92649	0.122777	-1.44325
SERPINE2	NM_001136529	0.004115	-1.94032	0.353875	-1.20136	0.415976	-1.20337
SPTLC3	NM_018327	3.38E-07	-2.4565	2.13E-06	-2.14408	0.078923	-1.23241
JAG1	NM_000214	0.002957	-1.98526	0.262645	-1.24633	0.048062	-1.60611
GGT7	NM_178026	0.023076	-1.2819	0.023451	-1.28085	0.066558	-1.24981
TGM2 (TG2)	NM_004613	0.000265	-1.8711	0.000145	-1.95422	0.013533	-1.51768
ADRBK2	NM_005160	2.26E-07	-1.89169	6.79E-06	-1.59868	0.00937	-1.25698
MRAS	NM_012219	7.07E-06	-2.08349	6.24E-05	-1.80706	0.10427	-1.22871
ST6GAL1	NM_173216	0.032866	-1.25882	0.07527	-1.20493	0.002218	-1.52625
TBC1D5	NM_014744	1.17E-08	-2.1308	2.04E-07	-1.81176	0.002122	-1.30354
TNNC1	NM_003280	0.001453	-1.47697	2.47E-05	-1.85436	0.012205	-1.38503

CBLB	NM_170662	0.007236	-1.42617	0.002102	-1.5327	0.084496	-1.27219
METT5D1	NM_001113528	0.00128	-1.24527	0.003228	-1.2131	0.011145	-1.20096
B3GALNT1	NM_001038628	0.000834	-1.51373	0.01342	-1.31586	0.057748	-1.2595
DCUN1D1	NM_020640	0.000928	-1.42207	0.036882	-1.21187	0.074415	-1.20334
TBC1D19	NM_018317	0.032104	-1.20661	0.009704	-1.26742	1.95E-06	-2.0792
SLC7A11	NM_014331	0.082537	-1.39848	0.198453	-1.27329	0.35226	-1.21972
MAML3	NM_018717	0.000345	-4.52242	0.154621	-1.60779	0.480286	-1.30168
PDGFC	NM_016205	0.0048	-1.70882	0.033856	-1.45408	0.10861	-1.36899
C5orf23	BC022250	0.000247	-1.92466	0.138662	-1.22998	0.223455	-1.21372
PCDHB16	NM_020957	1.73E-06	-2.43184	0.000753	-1.60758	0.163017	-1.20361
RUNX2	NM_001024630	0.017366	-1.36279	0.002717	-1.52094	0.000885	-1.75488
DCBLD1	NM_173674	0.000158	-1.97271	0.016803	-1.42643	0.032132	-1.43175
C6orf211	BC011348	0.001046	-1.53886	0.000473	-1.60851	0.027219	-1.34316
SERPINB9	NM_004155	0.029804	-1.41724	0.04754	-1.36721	0.24506	-1.22258
RANBP9 (RANBPM)	NM_005493	1.21E-09	-2.46026	1.37E-10	-2.92317	1.62E-09	-2.76113
POPDC3	NM_022361	1.20E-07	-3.88063	2.63E-06	-2.80793	0.09013	-1.3191
MAN1A1	NM_005907	0.288781	-1.44414	0.000247	-5.24997	0.22326	-1.63354
CHN2	NM_004067	0.001171	-1.33711	0.006346	-1.25631	2.55E-06	-1.8985
GNAI1	NM_002069	0.001221	-1.30292	0.000605	-1.33507	0.001019	-1.36712
ANKIB1	NM_019004	2.15E-09	-1.99628	3.42E-09	-1.94551	1.09E-05	-1.46284
FLJ30064	AK054626	0.01189	-1.23465	0.012042	-1.23407	0.043007	-1.20536
PRKAR2B	NM_002736	0.000345	-1.51304	0.00927	-1.30104	0.008693	-1.35962
ELMO1	NM_014800	3.04E-10	-5.47252	2.36E-09	-4.22104	0.062438	-1.26619
JHDM1D	NM_030647	0.302832	-1.22543	0.224297	-1.2735	0.007075	-2.01056
SQLE	NM_003129	0.020406	-1.36587	0.05015	-1.29043	0.024161	-1.41606
IMPAD1	NM_017813	0.000616	-1.37208	0.004268	-1.27602	0.001434	-1.38843
FBXO32	NM_058229	0.167727	-1.43967	0.185763	-1.41688	0.474234	-1.23644
NR0B1	NM_000475	9.24E-05	-1.35907	0.002862	-1.22408	0.009061	-1.21559
TMSB15A	NM_021992	0.002399	-1.50078	0.005968	-1.42557	0.024515	-1.37353
CAPN6	NM_014289	0.016089	-1.44132	0.001392	-1.70707	8.87E-07	-3.77299
CLIC2	NM_001289	0.00057	-2.21894	0.03483	-1.5143	0.233111	-1.28961

Up-regulated Genes

TMEM56	NM_152487	1.54E-05	1.58243	0.00012	1.45086	0.008575	1.27857
AMY2A	NM_000699	0.000197	1.89055	0.002425	1.59469	0.088113	1.30332
DNM3	NM_015569	3.70E-05	2.27619	0.055299	1.32742	0.218419	1.22254
ELF3 (ESE-1)	NM_001114309	8.38E-10	5.40777	1.61E-08	3.76364	0.603446	1.20112
DUSP5P	NR_002834	0.00013	1.85352	0.000592	1.68014	0.116147	1.25092
DUSP5P	AK055963	0.000346	1.71938	0.025532	1.32929	0.127985	1.23605
DHRS3	NM_004753	0.00122	4.07971	0.240084	1.52307	0.39393	1.41615
PPAP2B	NM_003713	1.56E-05	1.6272	0.000849	1.37031	0.035165	1.21952
GBP1	NM_002053	3.57E-06	1.89229	4.01E-05	1.65635	0.02618	1.2726
LAMB3	NM_001017402	0.009577	1.46725	0.000151	1.94691	0.152389	1.24829
TSPAN15	NM_012339	8.49E-08	2.99291	2.66E-06	2.24679	0.066734	1.26809
C10orf116	NM_006829	0.0553	1.31188	0.128643	1.23276	0.209614	1.2172
FAM107B	BC072452	0.00045	1.36372	0.007201	1.23625	0.002459	1.33376
FAM111B	NM_198947	0.001288	1.47392	0.003448	1.403	0.005367	1.44156
PLCB3	NM_000932	1.73E-06	1.23013	3.31E-06	1.21553	9.54E-06	1.22635

TCIRG1	NM_006019	3.70E-06	1.42594	6.37E-05	1.30811	0.00066	1.26936
PRSS23	NM_007173	0.085484	1.21509	0.072644	1.22687	0.015928	1.39761
GLB1L2	NM_138342	0.000199	1.29167	0.000331	1.27335	0.004537	1.21882
IFITM3	NM_021034	0.001053	1.52729	0.038999	1.2609	0.138539	1.20209
PRKCDBP	NM_145040	0.014525	1.2689	0.012701	1.27643	0.007472	1.36171
IL18	NM_001562	0.014599	1.47751	0.0954	1.28318	0.178973	1.2554
EMP1	NM_001423	0.00031	2.03037	0.028562	1.43137	0.112893	1.33105
SRGAP1	NM_020762	0.010734	1.2594	0.028893	1.20969	7.36E-06	1.89828
MFAP5 (MAGP2)	NM_003480	5.91E-08	3.81188	2.38E-06	2.63256	0.18677	1.21632
PRICKLE1	NM_153026	0.000865	2.53978	0.262914	1.28881	0.097997	1.56251
PCOTH	NM_001014442	0.12575	1.22419	0.00932	1.45778	0.141202	1.25062
LHFP	NM_005780	7.48E-06	2.2658	0.000544	1.68312	0.00088	1.76235
THTPA	NM_024328	1.22E-06	1.24314	7.77E-06	1.20133	1.37E-05	1.22202
PLEKHG3	NM_015549	1.15E-06	1.64696	1.93E-06	1.6097	0.005157	1.25555
LOC388022	AK131040	0.006072	1.35422	0.000188	1.61103	0.000306	1.68425
AP1G2	NM_003917	5.58E-05	1.33624	0.00045	1.25886	0.003594	1.22432
DHRS1	NM_001136050	3.93E-05	1.78477	0.001618	1.45926	0.074394	1.23808
EGLN3 (PHD3)	NM_022073	0.000231	1.62416	0.000185	1.64412	0.069996	1.24591
FBLN5	NM_006329	0.000478	2.09136	0.021841	1.51535	0.330412	1.20486
ALDH1A3	NM_000693	6.93E-06	2.48605	0.00035	1.83368	0.057367	1.35584
MEIS2	NM_172316	0.000981	1.25657	0.000674	1.2704	0.000562	1.32651
MSLN	NM_005823	0.000596	1.90214	0.033952	1.40282	0.085631	1.35907
TMC5	NM_001105248	0.00043	1.96946	0.097664	1.29488	0.101966	1.34208
HSD3B7	NM_025193	1.63E-06	1.53082	8.75E-05	1.33532	0.000159	1.36754
C16orf93	NM_001014979	0.002815	1.25639	0.009185	1.20921	0.008974	1.24636
CDRT1	NM_006382	0.000198	1.73327	0.048062	1.26431	0.005323	1.51366
CDRT1	NM_006382	0.000479	1.62109	0.005343	1.41757	0.022817	1.36553
ULK2	NM_014683	9.18E-05	1.42662	8.44E-05	1.43116	0.000574	1.39582
RDM1	NM_145654	0.03303	1.24351	0.059623	1.20757	0.077494	1.22423
HOXB5	NM_002147	0.000807	1.57366	0.025996	1.30036	0.019123	1.38102
HOXB6	NM_018952	0.000211	1.85847	0.010196	1.44224	0.046166	1.36399
SCARNA17	NR_003003	0.000681	1.33125	0.002274	1.27697	0.022463	1.21306
RAB27B	NM_004163	0.000319	2.14986	0.041343	1.42978	0.098696	1.38312
PMAIP1	NM_021127	0.000322	1.33759	0.001166	1.28228	1.17E-05	1.60819
PSTPIP2	NM_024430	1.83E-06	1.63595	5.71E-05	1.42369	0.000187	1.43202
ALPK2	NM_052947	8.31E-06	3.5668	0.001725	2.02592	0.365885	1.21451
ZNF91	NM_003430	0.000298	1.72095	0.039344	1.28992	0.000316	1.86383
HNMT	NM_006895	0.009081	1.33786	0.063227	1.21293	0.024468	1.32208
DKFZp434H1419	AK125369	0.007618	1.3181	0.007735	1.31719	0.02096	1.30412
EDAR	NM_022336	0.011451	1.28525	0.049452	1.20299	0.028749	1.27402
GALNT3	NM_004482	5.55E-07	2.28147	8.67E-07	2.20981	0.003337	1.45717
SCN9A	NM_002977	6.71E-05	2.68432	0.000236	2.36665	0.129245	1.37881
SLC4A11	NM_032034	4.11E-05	1.3121	0.000118	1.2752	2.28E-05	1.39485
CTD-2514C3.1	NR_004846	0.001103	1.61351	0.029639	1.32356	0.037102	1.36039
SDC4	NM_002999	0.022647	1.27084	0.016157	1.29191	0.081838	1.22376
USP18	NM_017414	0.000457	1.70765	0.006157	1.45632	0.11388	1.25282
MST1R (RON)	NM_002447	0.000175	1.59982	1.30E-05	1.84799	0.003403	1.45303

FRAS1	NM_025074	0.000163	1.88825	0.018941	1.38504	0.20981	1.20351
ANXA3	NM_005139	0.002405	1.30439	0.004907	1.27043	0.029267	1.22156
CCDC109B	NM_017918	0.008208	1.40159	0.004979	1.44161	0.006451	1.50005
TLR3	NM_003265	2.85E-07	2.40756	1.99E-05	1.81232	0.060818	1.24193
FBXO4	NM_012176	0.020975	1.422	0.024873	1.40495	0.229073	1.21585
SH3RF2	NM_152550	0.012417	1.53236	0.028012	1.43895	0.049957	1.44378
ERAP1	NM_001040458	1.38E-06	1.63246	1.48E-05	1.48083	0.000436	1.37218
MRAP2	NM_138409	2.00E-05	2.13295	7.38E-06	2.30291	0.036684	1.36787
PLEKHG1	NM_001029884	0.007218	1.67107	0.041213	1.4414	0.168728	1.31205
MBOAT1	NM_001080480	7.64E-07	1.71621	1.40E-05	1.51059	0.006264	1.2591
C6orf132	ENST000003418	2.99E-07	2.60787	1.76E-06	2.26832	0.012001	1.4013
COBL	NM_015198	0.045209	1.33178	0.075382	1.28395	0.100709	1.30195
MATN2	NM_002380	0.000963	1.50342	0.00361	1.4057	0.03654	1.29524
RHPN1	NM_052924	0.000123	1.29147	0.000374	1.25316	0.004867	1.20379
C8orf51	NR_026785	8.67E-07	1.27628	5.59E-06	1.22846	8.06E-05	1.20001
C8orf73	NM_001100878	0.010437	1.37454	0.068042	1.23581	0.010284	1.44525
NPR2	NM_003995	1.58E-05	1.46282	6.67E-05	1.38947	0.008633	1.22615
GRHRP	NM_012203	0.002375	1.2851	0.015994	1.20268	0.028042	1.20965
FAM189A2	NM_004816	0.026802	1.46127	0.002051	1.79215	0.138782	1.31887
C9orf3	AF043897	1.69E-05	1.48498	2.18E-05	1.47055	2.43E-06	1.73043
NIPSNAP3A	NM_015469	1.28E-05	1.44175	0.002957	1.21701	0.009713	1.20717
ARRDC1	NM_152285	4.09E-07	1.74846	5.70E-07	1.72052	0.00451	1.26792
PTPLAD2	NM_001010915	2.21E-07	2.42495	3.35E-06	2.00393	0.032532	1.28292
TLE1	NM_005077	7.80E-05	1.98957	0.000676	1.71392	0.148742	1.24041
HDHD3	NM_031219	0.027341	1.21184	0.001792	1.35297	0.022021	1.26123
PTRH1	NM_001002913	0.008474	1.25899	0.023049	1.211	0.005872	1.32616
NPDC1	NM_015392	0.000595	1.43109	0.001549	1.37363	0.05301	1.21613
SCML1	NM_001037540	3.55E-05	1.47592	3.27E-06	1.63206	0.000495	1.40074
FAM156A	NM_014138	0.009974	1.21367	0.000506	1.34309	0.008815	1.25655
GABRE	NM_004961	6.66E-05	1.81362	0.002293	1.47851	0.004392	1.5082
GABRE	U92285	0.000259	2.57423	0.041728	1.53774	0.33932	1.24385
L1CAM	NM_000425	0.008882	1.31114	0.002745	1.38376	0.032139	1.27652