Supplementary Information:

Manumycin A corrects aberrant splicing of *Clcn1* in myotonic dystrophy type 1 (DM1) mice

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Sample preparation

C2C12 cells were cultured with DMSO or manumycin A (20μM). After drug treatment for 24 h, the cells were harvested in PBS containing 1% Triton X-100 and 0.1% protease inhibitor cocktail (Sigma-Aldrich, St. Louis, MO, USA) and then sonicated on ice for 10 s. The lysate was centrifuged for 30 min at 13,000 rpm at 4℃ to remove cellular debris. The protein concentration of the solubilized material was determined by DC protein assay (BioRad, Hercules, CA, USA). After addition of 2× protein sample buffer containing 0.1 M Tris-HCl (pH 6.8), 4% SDS, 20% glycerol, 0.2% bromophenol blue, and 8.3% 2-mercaptoethanol, samples were boiled for 5 min.

Antibodies

Mouse anti-MBNL1 (1:500; 3A4-1E9, Sigma-Aldrich), mouse anti-CUGBP1 (1:500; 3B1, MBL, Nagoya, Japan) and rabbit anti-actin (1:500; A2066, Sigma-Aldrich) were diluted in TBST (50 mM Tris-HCl (pH7.4), 150 mM NaCl, 0.1% Tween 20) containing 5% skim milk and used as a primary antibodies. HRP-linked anti-mouse IgG (1:10,000; #7074, Cell Signaling, Beverly, MA, USA) or HRP-linked anti-rat IgG (1:10,000; #7077, Cell Signaling) was diluted in TBST and used as the secondary antibody.

Western blotting

Samples (25μg) were separated by SDS-PAGE and transfered to PVDF membranes (Immobilon-P, Millipore, Bedford, MA, USA). The membranes were blocked with 5% skim milk in TBST buffer for 1 h at room temperature and then incubated with the each primary antibody solution overnight at 4℃. Next the membranes were incubated with an HRP-

conjugated secondary antibody solution for 30 min at room temperature. Before and after incubation of each antibody, membranes were washed five times for 5 min with TBST. The immunoreactive bands were visualized using ECL Prime reagent (GE Healthcare, Buckinghamshire, UK). Images of protein bands were captured using a LAS-3000 imager (FUJIFILM, Tokyo, Japan) and analyzed using Multigauge ver 2.3 software (FUJIFILM).

For Western blotting of CUGBP1, membranes used for MBNL1 analysis were stripped by incubation with 0.2 M glycine solution (pH2.8) for 30 min at room temperature. Similarly, membranes used for CUGBP1 analysis were stripped again for Western blotting of actin.

RNA interference

K-Ras and N-Ras target sequences

Small interfering RNAs (siRNAs) specific for K-Ras (K-Ras siRNA) and N-Ras (N-Ras siRNA) were purchased from Sigma-Aldrich. The H-Ras siRNA and negative control siRNA were the same as those described in the main article. The siRNA target sequences were as follows: mouse K-Ras siRNA sense, 5'-GAAACCUGUCUCUUGGAUAdTdT-3'; mouse K-Ras siRNA antisense, 5'-UAUCCAAGAGACAGGUUUCdTdT-3'; mouse N-Ras siRNA sense, 5'-GAGAUACGCCAGUACCGAAdTdT-3'; mouse N-Ras siRNA antisense, 5'-UUCGGUACUGGCGUAUCUCdTdT-3'.

Cell survival assay

Cell survival was determined by assaying viable cells using the Cell Counting Kit-8 (Dojindo Molecular Technologies, Kumamoto, Japan) according to manufacture's protocol. Culture, transfection, chemical compounds treatment (0.1% v/v for 24h) were the same as those described in the main article. After small-molecule treatment for 24h, cell viability

was assayed. The absorbance was measured photometrically at 450nm with a reference wavelength at 650nm.

Supplementary Figure Legends

Supplementary Figure S1

Top 10 compounds that showed the highest luciferase activity in screening. Bars represent the mean + SEM (n=3).

Supplementary Figure S2

Percentages of viable cells after small-molecule treatment. Percentages of viable cells relative to DMSO treatment are presented (mean + SEM, n=3).

Supplementary Figure S3

Manumycin A corrects aberrant splicing of *Clcn1* in a dose-dependent manner (10, 20, and 40 μM) in the presence of the expanded CUG repeat. (a) Cellular splicing assays showed that manumycin A dose-dependently corrects *Clcn1* splicing. (b) Bar charts show the quantified percentages of exon 7A inclusion (mean + SEM, n=3). The gel image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. Statistical significance was determined using Tukey's multiple comparison tests (**p<0.01, ***p<0.001).

Supplementary Figure S4

Effect of manumycin A injection on the alternative splicing of other genes. (a) Results of RT-PCR analysis of *Serca1*, m-Titin and *Gapdh* transcripts. (b,c) Quantitative data for the splicing analysis shown in (a) (mean + SEM, n=3). The gel image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. There were no significant differences between vehicle and manumycin A injection, as determined using *t*-tests.

Supplementary Figure S5

Effect of Ras siRNAs on the splicing of *Clcn1*. (a) Results of cellular splicing assay using the Clcn1-L minigene, DM480 and siRNA. (b) Quantification of results shown in (b) (mean + SEM, n=3). The gel image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. Statistical significance was determined using Dunnett's multiple comparison tests (*$p<0.05$, **$p<0.01$).

Supplementary Figure S6

Effect of the expanded CUG repeat on H-Ras expression. (a) Results of Westen Blot analysis of H-Ras and actin in DM18- or DM480-transfected C2C12 cells. (b) Quantification of the Western blotting shown in (a) (mean + SEM, n=3). The blot image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. There were no significant differences between DM18- and DM480-transfected cells, as determined using *t*-tests.

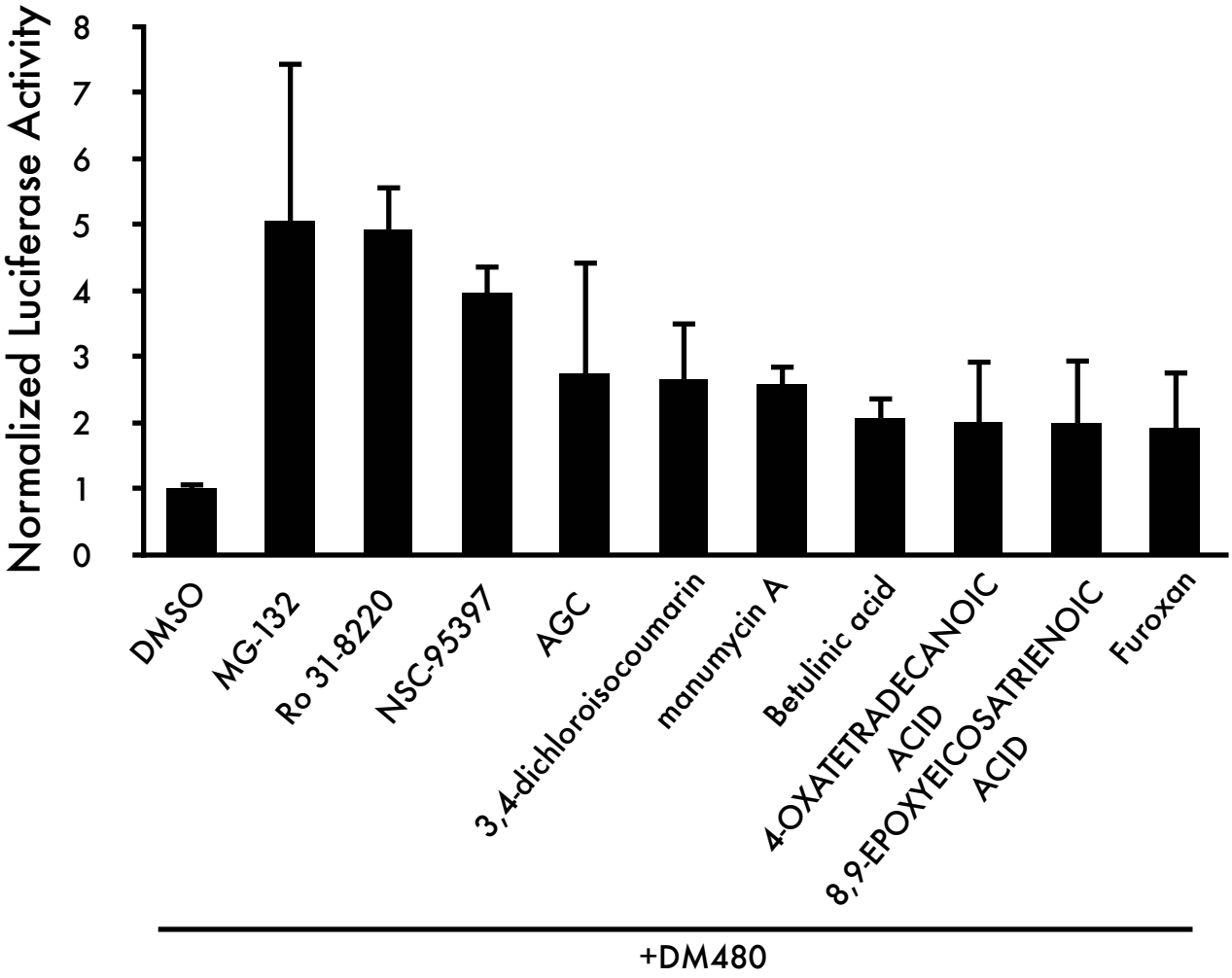
Supplementary Figure S7

Manumycin A treatment did not alter the expression levels of MBNL1 and CUGBP1 in C2C12 cells. (a) Results of Western blot analysis of MBNL1, CUGBP1 and actin in DMSO - or manumycin A-treated cells. (b, c) Quantification of the Western blotting shown in (a) (mean + SEM, n=3). The blot image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. There were no significant differences between DMSO and manumycin A treatment, as determined using *t*-tests.

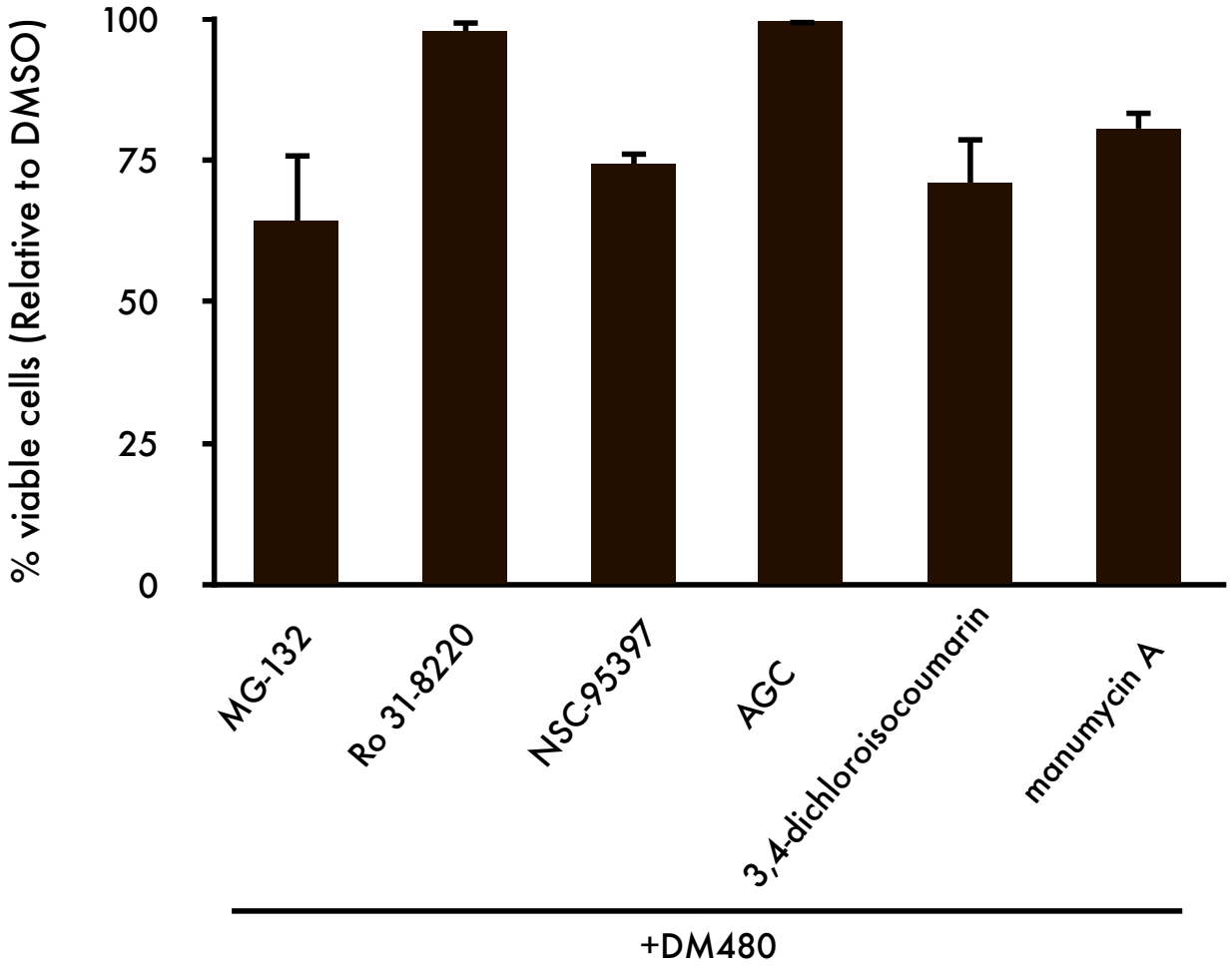
Supplementary Figure S8

Effect of manumycin A on *Clcn1* splicing in the absence of DM480. (a) Results of Cellular splicing analysis. (b) Bar chart shows the quantified percentage of exon 7A inclusion (mean + SEM, n=3). The gel image was cropped around the region of interest and the samples (n=3) were resolved in the same gel. Statistical significance was determined using *t*-tests ($p^* < 0.05$).

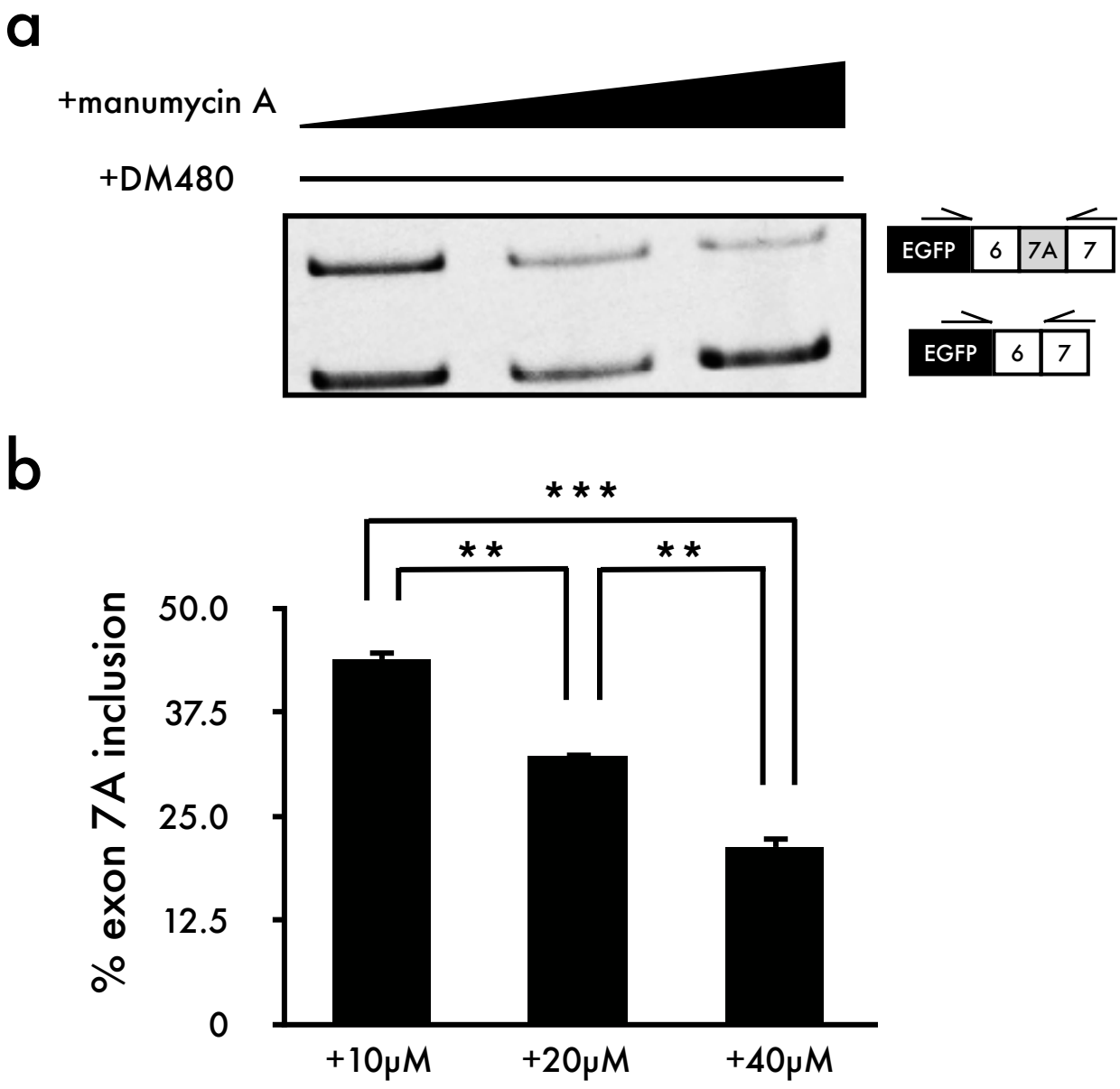
Supplementary Figure S1



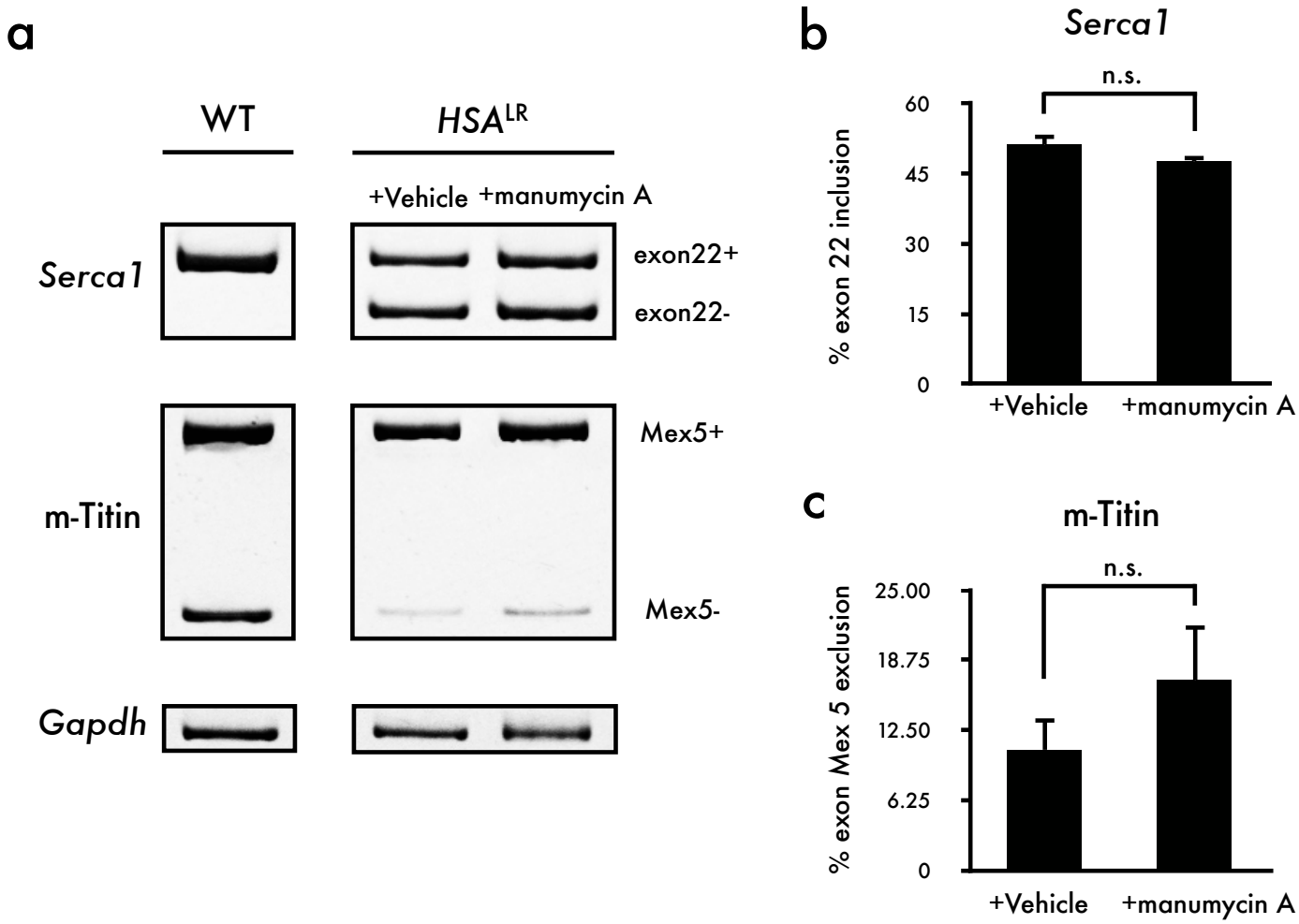
Supplementary Figure S2



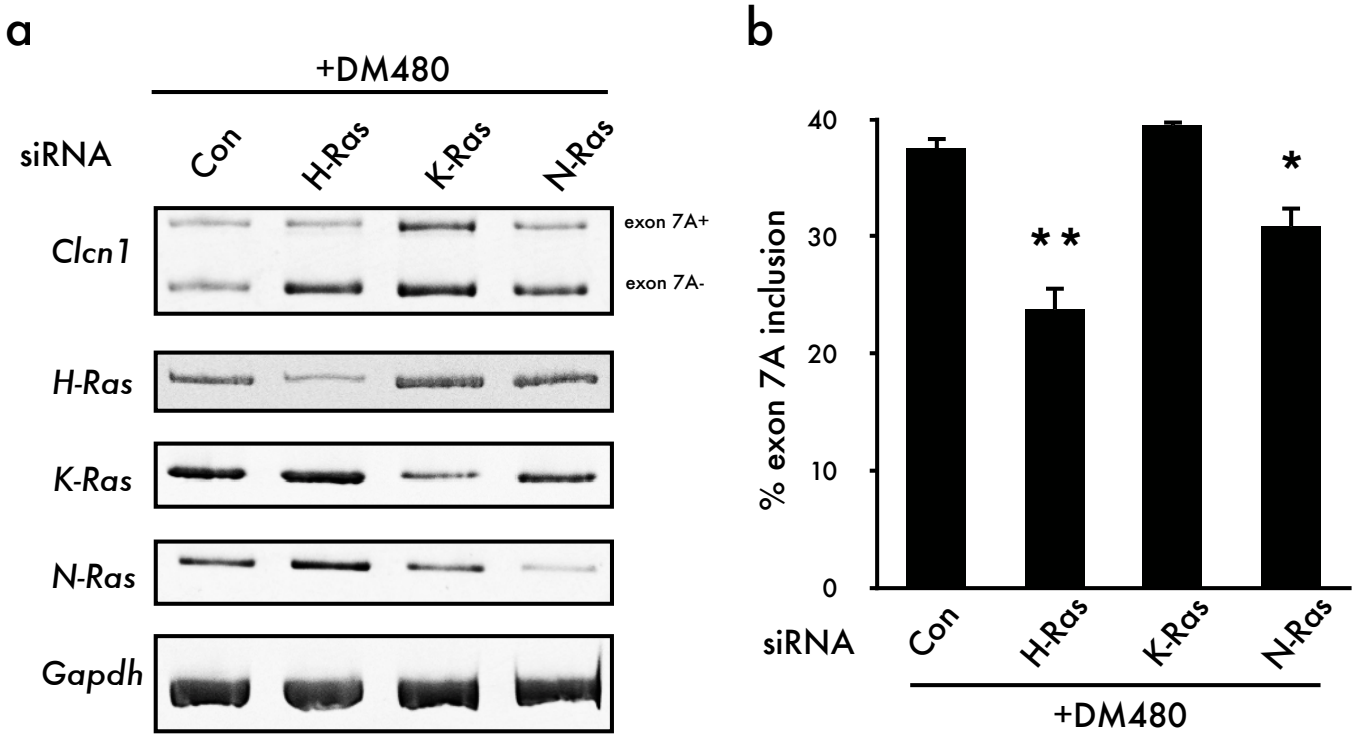
Supplementary Figure S3



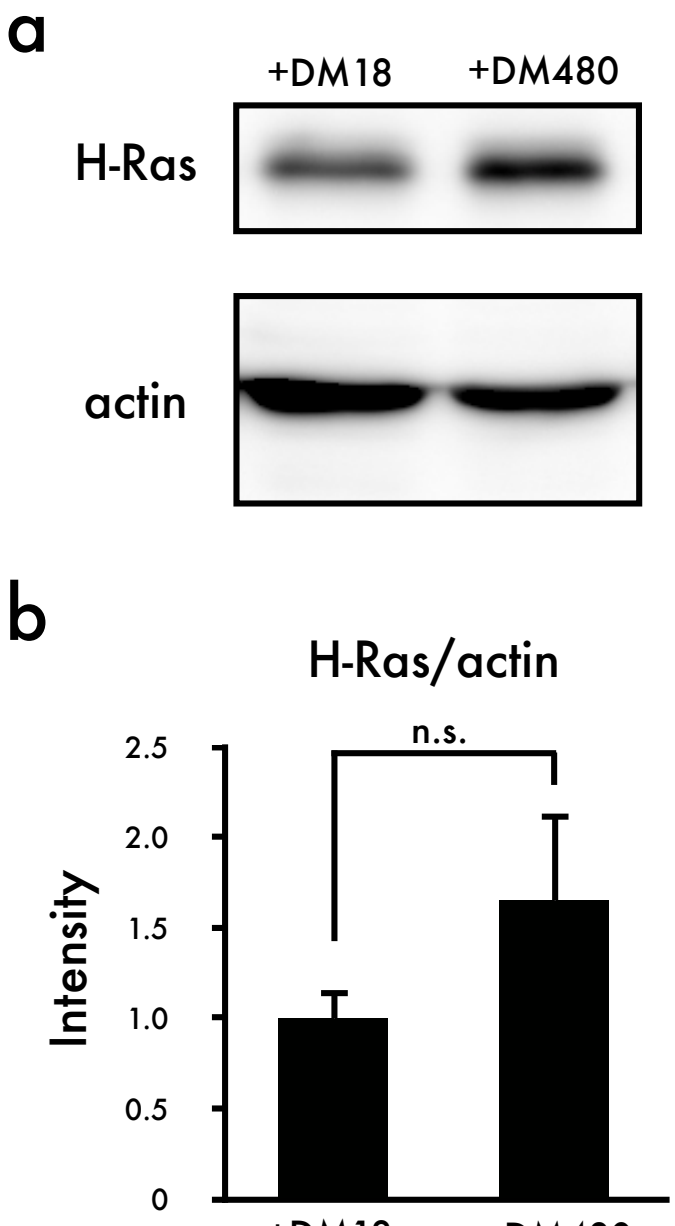
Supplementary Figure S4



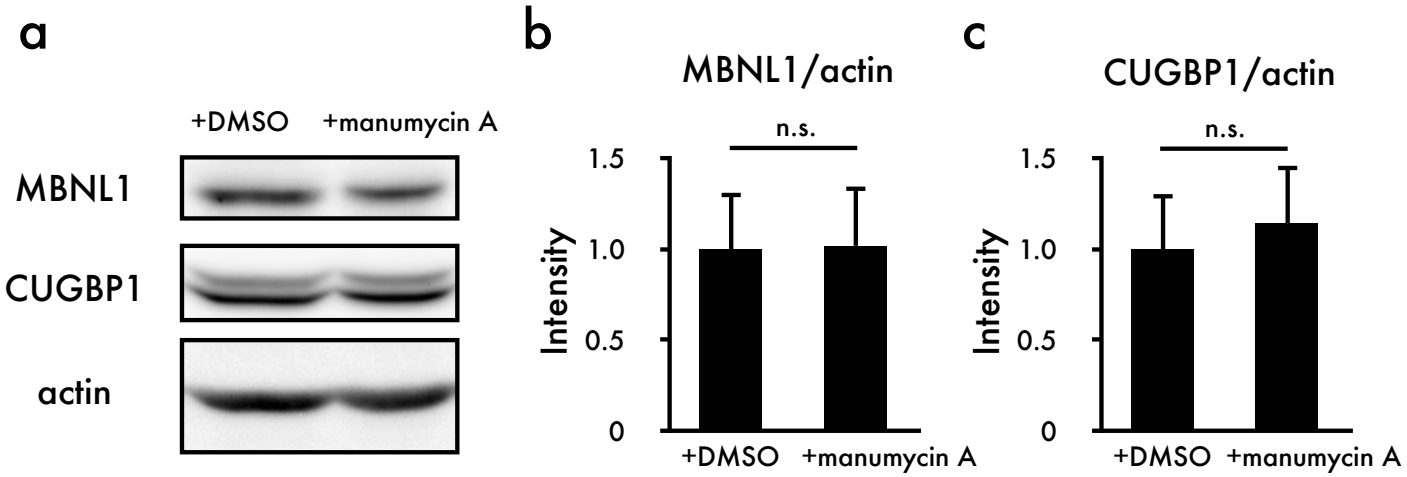
Supplementary Figure S5



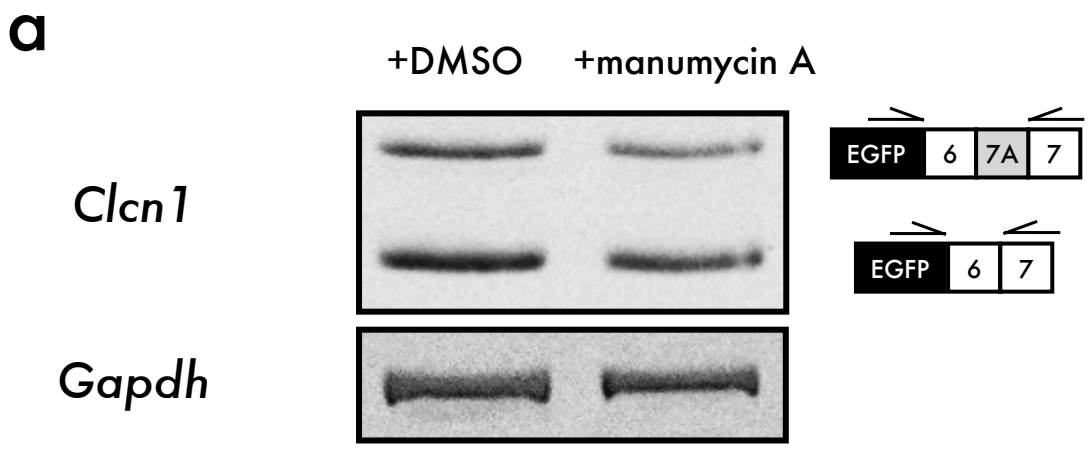
Supplementary Figure S6

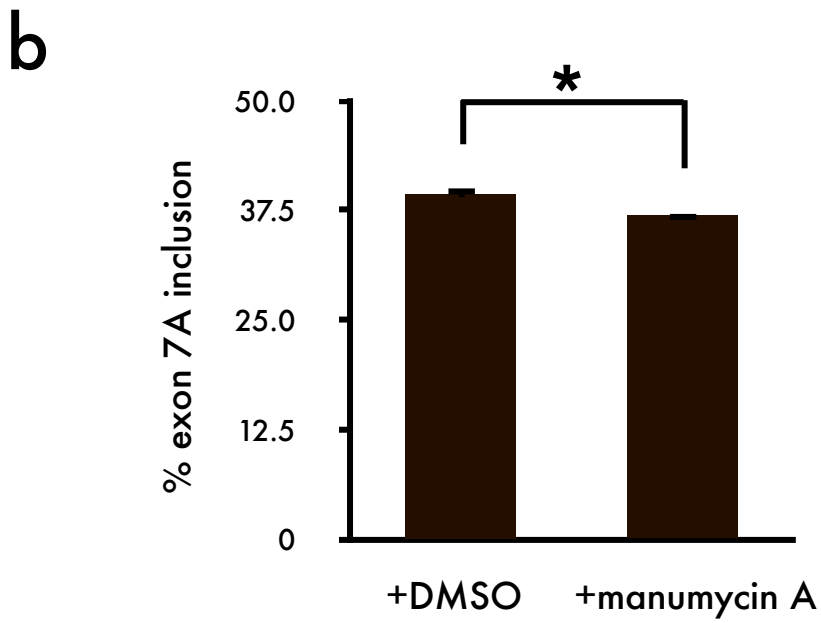


Supplementary Figure S7



Supplementary Figure S8





Supplementary Table S1. Results of screening of ~400 chemical compounds

					MEAN (n=3)	SEM
DMSO				0.1% (v/v)	1.00	0.10
NAME	**Classification of bioactivity**	**Action**	**Solvent**	**Final CONC.(μM)**	**MEAN (n=3)**	**SEM**
MG-132	Protease inhibitors	Proteasome inhibitor	DMSO	11	5.06	2.42
Ro 31-8220	Kinase inhibitors	PKC inhibitor	DMSO	9	4.93	0.69
NSC-95397	Inhibitors	CDC25 phosphatase inhibitor	DMSO	16	3.96	0.46
AGC	Bioactive lipids	Negative control for AGGC and AFC	DMSO	1	2.75	1.73
3,4-dichloroisocoumarin	Protease inhibitors	Granzyme B inhibitor	DMSO	23	2.66	0.89
manumycin A	Inhibitors	ras farnesylation inhibitor	DMSO	20	2.58	0.33
Betulinic acid	Inhibitors	induces mitochondrial permeability pore opening	DMSO	11	2.07	0.35
4-OXATETRADECANOIC ACID	Bioactive lipids	Myristic acid analog	DMSO	1	2.00	0.97
8,9-EPOXYEICOSATRIENOIC ACID	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.99	1.01
Furoxan	Activators	NO donor	DMSO	27	1.92	0.91
1-OCTADECYL-2-METHYLGLYCERO-3 PC	Bioactive lipids	Inhibits PI-specific PLC	DMSO	1	1.89	0.89
DRB	Kinase inhibitors	CKII inhibitor	DMSO	16	1.84	0.19
15d-PROSTAGLANDIN J2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.81	0.77
ARACHIDONOYL-PAF	Bioactive lipids	PAF precursor	DMSO	1	1.79	0.65
ionomycin	Ion channel ligands	Ca++ ionophore	DMSO	7	1.72	0.05
Ala-Ala-Phe-CMK	Protease inhibitors	Tripeptidyl peptidase II inhibitor	DMSO	11	1.68	0.16
Hinokitiol	Inhibitors	Iron chelator	DMSO	30	1.62	0.67
Tyrphostin-8	Inhibitors	Calcineurin inhibitor	DMSO	31	1.60	0.15
N9-Isopropylolomoucine	Kinase inhibitors	CDC-2 kinase inhibitor	DMSO	15	1.58	0.20
juglone	Inhibitors	PIN1 inhibitor	DMSO	29	1.58	0.11
C16 CERAMIDE	Bioactive lipids	Activates PKC zeta	DMSO	1	1.54	0.54
4-HYDROXYPHENYLRETINAMIDE	Nuclear receptor ligands	Retinoid receptor agonist / apoptosis inducer	DMSO	1	1.50	0.59
H7	Kinase inhibitors	kinase inhibitor	DMSO	14	1.49	0.14
Tanshinone IIA	Inhibitors	AP-1 inhibitor	DMSO	17	1.48	0.17
PHENAMIL	Ion channel ligands	Sodium channels	DMSO	12	1.47	0.22
Fumonisin B1	Lipid biosynthesis	inhibits ceramide synthase	DMSO	7	1.44	0.21
12(S)-HPETE	Bioactive lipids	Fatty acid hydroperoxide	DMSO	0.1	1.43	0.48
DIMETHYLOXALOYLGLYCINE	Inhibitors	Prolyl-4-hydroxylase inhibitor	DMSO	1	1.43	0.23
GM6001	Protease inhibitors	broad spectrum MMP inhibitor	DMSO	13	1.41	0.20
Lavendustin A	Kinase inhibitors	Tyrosine kinase inhibitor EGF-R)	DMSO	13	1.40	0.16
PENITREM A	Ion channel ligands	Potassium channels	DMSO	8	1.39	0.37
bafilomycin A1	Inhibitors	vaculolar ATPase inhibitor	DMSO	1	1.37	0.14
SB-415286	Kinase inhibitors	GSK3 beta inhibitor	DMSO	14	1.36	0.19
MCI-186	Inhibitors	antioxidant, cytoprotectant	DMSO	29	1.36	0.12
FK-506	Inhibitors	FKBP ligand	DMSO	5	1.34	0.11
NIGULDIPINE	Ion channel ligands	Calcium channels	DMSO	8	1.34	0.18
LFM-A13	Kinase inhibitors	BTK inhibitor	DMSO	14	1.34	0.04
Leupeptin	Protease inhibitors	protease inhibitor	DMSO	11	1.34	0.16
5(S)-HETE	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.33	0.37
CARBACYCLIN	Bioactive lipids	PPAR delta agonist	DMSO	1	1.33	0.27
calphostin C	Kinase inhibitors	PKC inhibitor	DMSO	1	1.33	0.16
HBDDE	Kinase inhibitors	PKC inhibitor	DMSO	15	1.32	0.09
cyclosporin A	Inhibitors	calcineurin inhibitor	DMSO	4	1.32	0.22
5,6-EPOXYEICOSATRIENOIC ACID	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.31	0.34
cypermethrin	Inhibitors	calcineurin inhibitor	DMSO	12	1.31	0.13
HA1077	Kinase inhibitors	inhibitor of Rho-dependent kinases	DMSO	14	1.31	0.16
PIMOZIDE	Ion channel ligands	Calcium channels	DMSO	11	1.30	0.28
NIFLUMIC ACID	Ion channel ligands	Misc. channels	DMSO	18	1.30	0.21
9,10-OCTADECENOAMIDE	Endocannabinoids	Endogenous sleep inducing lipid	DMSO	1	1.30	0.25
Histamine	CNS receptor ligands	Histamine receptor agonist	DMSO	45	1.29	0.11
YS035	Ion channel ligands	Calcium channels	DMSO	13	1.29	0.21

Indomethacin	Lipid biosynthesis	cyclooxygenase inhibitor	DMSO	14	1.29	0.16
QX-314	Ion channel ligands	Sodium channels	DMSO	15	1.28	0.24
aristolochic acid	Lipid biosynthesis	phospholipase A2 inhibitor	DMSO	15	1.27	0.21
1400W	Inhibitors	iNOS inhibitor	DMSO	20	1.27	0.16
CLOPROSTENOL Na	Bioactive lipids	Prostaglandin FP receptor agonist	DMSO	1	1.27	0.25
Curcumin	Inhibitors	NFkappaB inhibitor	DMSO	14	1.26	0.15
PRIMA-1	Inhibitors	p53 reactivator	DMSO	27	1.26	0.16
Amino-1,8-naphthalimide [4-Amino-1,8-naphthalimide]	Inhibitors	PARP inhibitor	DMSO	24	1.25	0.22
clozapine	CNS receptor ligands	Dopamine antagonist	DMSO	15	1.25	0.23
1,2-DIOLEOYL-GLYCEROL (18:1)	Bioactive lipids	Activates PKC	DMSO	1	1.24	0.31
SKF-96365	Ion channel ligands	Calcium channels	DMSO	12	1.24	0.26
bumetanide	Inhibitors	Na+K+Cl- cotransport inhibitor	DMSO	14	1.24	0.13
GW-5074	Kinase inhibitors	cRAF1 kinase inhibitor	DMSO	10	1.24	0.03
QUININE	Ion channel ligands	Potassium channels	DMSO	15	1.23	0.20
damnacanthal	Kinase inhibitors	p56lck inhibitor	DMSO	18	1.23	0.17
BAY 11-7082	Inhibitors	Inhibits IKK kinase activation	DMSO	24	1.23	0.14
Bestatin	Protease inhibitors	Aminopeptidase inhibitor	DMSO	16	1.22	0.16
CGP-37157	Inhibitors	inhibitor of mitochondrial Na+Ca+2 exchange	DMSO	15	1.22	0.14
NPPB	Ion channel ligands	Misc. channels	DMSO	17	1.22	0.16
5(S)-HPETE	Bioactive lipids	Fatty acid hydroperoxide	DMSO	0.1	1.22	0.29
MnTBAP	Inhibitors	SOD mimetic	DMSO	6	1.22	0.08
Monastrol	Inhibitors	Eg5 inhibitor	DMSO	17	1.21	0.08
HA-1004	Kinase inhibitors	kinase inhibitor	DMSO	14	1.21	0.08
5-KETOEICOSATETRAENOIC ACID	Bioactive lipids	5-KETE receptor (R527) agonist	DMSO	0.1	1.21	0.19
AG-879	Kinase inhibitors	NGF receptor inhibitor	DMSO	16	1.21	0.24
Aminobenzamide (3-ABA) [3-aminobenzamide (3-ABA)]	Inhibitors	ADP ribose polymerase, apoptosis inhibitor	DMSO	37	1.21	0.17
NIFEDIPINE	Ion channel ligands	Calcium channels	DMSO	14	1.21	0.27
AG-1296	Kinase inhibitors	c-kit, FGF and PDGF kinase inhibitor	DMSO	19	1.20	0.16
ARACHIDONAMIDE	Endocannabinoids	Bioactive arachidonic acid metabolite	DMSO	1	1.20	0.29
Decylubiquinone	Inhibitors	inhibits mitochondrial permeability pore opening	DMSO	16	1.19	0.10
RYANODINE	Ion channel ligands	Intracellular calcium	DMSO	10	1.19	0.15
1-HEXADECYL-2-METHYLGLYCERO-3 PC	Bioactive lipids	PAF receptor agonist	DMSO	1	1.19	0.35
E6 berbamine	Inhibitors	calmodulin inhibitor	DMSO	7	1.19	0.06
AG-370	Kinase inhibitors	PDGF receptor kinase inhibitor	DMSO	19	1.19	0.15
U-37883A	Ion channel ligands	Potassium channels	DMSO	13	1.19	0.11
THAPSIGARGIN	Ion channel ligands	Intracellular calcium	DMSO	8	1.19	0.09
Gliotoxin	Protease inhibitors	Inhibitor of 20S-proteasome chymotrypsin activity	DMSO	15	1.19	0.10
BAPTA-AM	Inhibitors	cell permeable Ca++ chelator	DMSO	7	1.19	0.16
14,15-EPOXYEICOSATRIENOIC ACID	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.18	0.27
ML9	Kinase inhibitors	kinase inhibitor	DMSO	14	1.18	0.11
IB-MECA	CNS receptor ligands	Adenosine receptor agonist	DMSO	10	1.18	0.24
12(S)-HETE	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.18	0.25
PHENTOLAMINE	Ion channel ligands	Potassium channels	DMSO	18	1.18	0.14
C2 CERAMIDE	Bioactive lipids	Apoptosis inducer	DMSO	1	1.17	0.16
AG213 (Tyrphostin 47)	Kinase inhibitors	EGF-R tyrosine kinase inhibitor	DMSO	23	1.17	0.18
BENZAMIL	Ion channel ligands	Calcium channels	DMSO	14	1.17	0.16
12-METHOXYDODECANOIC ACID	Bioactive lipids	Myristic acid analog	DMSO	1	1.17	0.23
Triptolide	Inhibitors	inhibits NFkappaB transcriptional activation	DMSO	14	1.17	0.15
mastoparan	Activators	activates heterotrimeriuc GTPases	DMSO	3	1.17	0.10
16,16-DIMETHYL-PROSTAGLANDIN E2	Bioactive lipids	Prostaglandin EP receptor agonist	DMSO	1	1.16	0.19
Mevinolin (lovastatin)	Lipid biosynthesis	Inhibitor HMG-CoA reductase	DMSO	12	1.16	0.06
ascomycin (FK-520)	Inhibitors	binds to FKBP inhibits calcineurin	DMSO	6	1.16	0.13
FCCP	Inhibitors	mitochondrial uncoupler	DMSO	20	1.16	0.17
Bromo-7-nitroindazole [3-Bromo-7-nitroindazole]	Inhibitors	NO synthase inhibitor	DMSO	21	1.15	0.16
bezafibrate	Nuclear receptor ligands	PPAR alpha agonist	DMSO	14	1.15	0.11
aphidicolin	Inhibitors	DNA polymerase inhibitor	DMSO	15	1.15	0.21
PCO-400	Ion channel ligands	Potassium channels	DMSO	17	1.15	0.21
castanospermine	Inhibitors	glucosidase inhibitor	DMSO	26	1.15	0.12
CA-074-Me	Protease inhibitors	Cathepsin B inhibitor	DMSO	13	1.15	0.17
VERAPAMIL	Ion channel ligands	Calcium channels	DMSO	10	1.15	0.18

8-EPI-PROSTAGLANDIN F2a	Bioactive lipids	Thromboxane TP receptor agonist	DMSO	1	1.15	0.30
24(S)-Hydroxycholesterol	Nuclear receptor ligands	LXR agonist	DMSO	12	1.15	0.13
PROSTAGLANDIN F1a	Bioactive lipids	Prostaglandin FP receptor agonist	DMSO	1	1.15	0.23
ADRENIC ACID (22:4, n-6)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.14	0.22
methotrexate	CNS receptor ligands	DHFR inhibitor	DMSO	11	1.14	0.19
11,12-EPOXYEICOSATRIENOIC ACID	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.14	0.23
dibutyrylcyclic GMP	Activators	PKA activator	DMSO	10	1.14	0.23
Bromo-cGMP [8-Bromo-cGMP]	Activators	PKG activator	DMSO	11	1.14	0.15
PHENYTOIN	Ion channel ligands	Sodum channels	DMSO	20	1.14	0.18
CAPE	Inhibitors	Antioxidant/ NFkappa B inhibitor	DMSO	18	1.14	0.32
KT-5720	Kinase inhibitors	PKA inhibitor	DMSO	1	1.14	0.16
E-64-d	Protease inhibitors	calpain/cathepsin inhibitor	DMSO	15	1.14	0.14
1-HEXADECYL-2-O-METHYL-GLYCEROL	Bioactive lipids	Blocks DAG activation of PKC	DMSO	1	1.14	0.21
AGGC	Bioactive lipids	ICMT inhibitor	DMSO	1	1.14	0.22
HNMPA-(AM)3	Kinase inhibitors	Insulin receptor TK inhibitor	DMSO	11	1.14	0.04
monensin	Ion channel ligands	Na+ ionophore	DMSO	7	1.14	0.07
4-AMINOPYRIDINE	Ion channel ligands	Potassium channels	DMSO	53	1.13	0.13
U-74389G	Inhibitors	superoxide/free-radical inhibitor	DMSO	7	1.13	0.21
2-HYDROXYMYRISTIC ACID	Bioactive lipids	Protein myristoylation inhibitor	DMSO	1	1.13	0.24
GRAYANOTOXIN III	Ion channel ligands	Sodium channels	DMSO	12	1.13	0.16
Huperzine A [(-)-Huperzine A]	Inhibitors	acetylcholinesterase inhibitor	DMSO	21	1.13	0.14
ANANDAMIDE (22:4,n-6)	Endocannabinoids	Cannabinoid receptor agonist	DMSO	1	1.13	0.26
1-ACYL-PAF	Bioactive lipids	PAF agonist	DMSO	1	1.13	0.26
1-HEXADECYL-2-O-ACETYL-GLYCEROL	Bioactive lipids	Blocks DAG activation of PKC	DMSO	1	1.13	0.29
ICRF-193	Inhibitors	topo II inhibitor that does not cause DNA breaks	DMSO	18	1.13	0.10
5,8,11-EICOSATRIYNOIC ACID	Bioactive lipids	Lipoxygenase inhibitor	DMSO	1	1.13	0.26
H9	Kinase inhibitors	kinase inhibitor	DMSO	15	1.13	0.11
CIRAZOLINE	CNS receptor ligands	adrenoreceptor agonist (alpha)	DMSO	23	1.12	0.18
ANANDAMIDE (20:4, n-6)	Endocannabinoids	Cannabinoid receptor agonist	DMSO	1	1.12	0.36
6-KETO-PROSTAGLANDIN F1a	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.12	0.31
LIDOCAINE	Ion channel ligands	Sodium channels	DMSO	21	1.12	0.20
9(S)-HPODE	Bioactive lipids	Fatty acid hydroperoxide	DMSO	0.1	1.12	0.17
A-23187	Ion channel ligands	Calcium ionophore	DMSO	10	1.12	0.26
5-iodotubercidin	Kinase inhibitors	ERK-2 inhibitor	DMSO	13	1.11	0.25
9(S)-HODE	Bioactive lipids	Bioactive linoleic acid metabolite	DMSO	0.1	1.11	0.30
N,N-DIMETHYLSPHINGOSINE	Lipid biosynthesis	Sphingosine kinase inhibitor	DMSO	1	1.11	0.19
PROSTAGLANDIN E1	Bioactive lipids	Prostaglandin EP receptor agonist	DMSO	1	1.11	0.14
SDZ-201106	Ion channel ligands	Sodium channels	DMSO	11	1.11	0.17
CLOFIBRATE	Nuclear receptor ligands	PPAR alpha agonist	DMSO	1	1.11	0.24
L-NAME	Inhibitors	NO synthesis inhibitor	DMSO	19	1.11	0.17
FARNESYLTHIOACETIC ACID	Bioactive lipids	Carboxymethylation inhibitor	DMSO	1	1.11	0.17
MAPP, L-erythro	Lipid biosynthesis	Negative control for D-erythro-MAPP	DMSO	1	1.10	0.09
epibatidine (+/-) (danger)	CNS receptor ligands	nicotinic cholinergic agonist	DMSO	24	1.10	0.11
PROSTAGLANDIN F2a	Bioactive lipids	Prostaglandin FP receptor agonist	DMSO	1	1.10	0.10
1,2-DIDECANOYL-GLYCEROL (10:0)	Bioactive lipids	Activates PKC	DMSO	1	1.10	0.17
MEAD ACID (20:3 n-9)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.10	0.13
Thiorphan	Protease inhibitors	Neutral endopeptidase inhibitor	DMSO	20	1.10	0.13
TMB-8	Ion channel ligands	Intracellular calcium	DMSO	12	1.10	0.13
BAY K-8644	Ion channel ligands	Calcium channels	DMSO	14	1.09	0.14
clonidine	CNS receptor ligands	adrenoreceptor agonist (alpha)	DMSO	22	1.09	0.07
MINOXIDIL SULFATE	Ion channel ligands	Potassium channels	DMSO	17	1.09	0.09
13(S)-HPODE	Bioactive lipids	Fatty acid hydroperoxide	DMSO	0.1	1.09	0.15
MISOPROSTOL, FREE ACID	Bioactive lipids	Prostaglandin EP receptor agonist	DMSO	1	1.09	0.12
IBMX	Inhibitors	PDE inhibitor (broad spec), adenosineR agonist	DMSO	23	1.09	0.07
ARACHIDONIC ACID (20:4, n-6)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.09	0.19
ANANDAMIDE (20:3,n-6)	Endocannabinoids	Cannabinoid receptor agonist	DMSO	1	1.09	0.28
1-OLEOYL-2-ACETYL-GLYCEROL	Bioactive lipids	PKC activator	DMSO	1	1.09	0.15
cytochalasin D	Inhibitors	F actin capper	DMSO	10	1.08	0.14
Pregnenolone 16alpha carbonitrile	Nuclear receptor ligands	PXR/SXR agonist	DMSO	15	1.08	0.19
PROCAINAMIDE	Ion channel ligands	Sodium channels	DMSO	21	1.08	0.17

15-KETOEICOSATETRAENOIC ACID	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.08	0.17
PROSTAGLANDIN D2	Bioactive lipids	Prostaglandin DP receptor agonist	DMSO	1	1.08	0.15
7,7-DIMETHYLEICOSADIENOIC ACID	Bioactive lipids	PLA2 inhibitor	DMSO	1	1.08	0.27
12(R)-HETE	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.08	0.14
Hoechst 33342 (cell permeable) (BisBenzimide)	Inhibitors	DNA minor groove binder	DMSO	9	1.08	0.12
2-FLUOROPALMITIC ACID	Bioactive lipids	Protein palmitoylation inhibitor	DMSO	1	1.07	0.32
dipyridamole	Inhibitors	cGMP phosphodiesterase inhibitor	DMSO	10	1.07	0.16
6,7-ADTN HBr	CNS receptor ligands	Dopamine agonist	DMSO	19	1.07	0.20
CIGLITAZONE	Nuclear receptor ligands	PPAR gamma agonist	DMSO	1	1.07	0.27
24,25-DIHYDROXYVITAMIN D3	Nuclear receptor ligands	Vitamin D receptor ligand	DMSO	1	1.07	0.19
L-NASPA	Bioactive lipids	LPA agonist / antagonist	DMSO	1	1.07	0.22
LYSOPHOSPHATIDIC ACID	Bioactive lipids	LPA receptor antagonist	DMSO	1	1.07	0.18
bongkrekic acid	Inhibitors	ANT inhibitor	DMSO	1	1.07	0.11
C8 DIHYDROCERAMIDE	Bioactive lipids	Negative control for C8 ceramide	DMSO	1	1.07	0.31
IAA-94	Ion channel ligands	Misc. channels	DMSO	14	1.07	0.15
25-HYDROXYVITAMIN D3	Nuclear receptor ligands	Vitamin D receptor ligand	DMSO	1	1.07	0.19
CIMATEROL	CNS receptor ligands	adrenoceptor agonist (beta)	DMSO	23	1.07	0.19
ACONITINE	Ion channel ligands	Sodium channels	DMSO	8	1.07	0.13
PAF C18	Bioactive lipids	PAF receptor agonist	DMSO	1	1.06	0.09
N-LINOLEOYLGLYCINE	Endocannabinoids	FAAH inhibitor	DMSO	1	1.06	0.14
TOLAZAMIDE	Ion channel ligands	Potassium channels	DMSO	16	1.06	0.08
H-89	Kinase inhibitors	PKA inhibitor	DMSO	10	1.06	0.14
9beta,11alpha-PROSTAGLANDIN F2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.06	0.33
LEUKOTRIENE D4	Bioactive lipids	CysLT receptor agonist	DMSO	0.1	1.06	0.16
Ikarugamyin	Inhibitors	inhibits clathrin coated pit mediated endocytosis	DMSO	10	1.06	0.14
dibutyrylcyclic AMP	Activators	PKA activator	DMSO	10	1.06	0.19
ANANDAMIDE (18:2,n-6)	Endocannabinoids	Cannabinoid receptor agonist	DMSO	1	1.06	0.24
B581	Inhibitors	farnesyltransferase inhibitor	DMSO	11	1.06	0.14
Boc-GVV-CHO	Protease inhibitors	Gamma secretase inhibitor	DMSO	14	1.06	0.05
cycloheximide-N-ethylethanoate	Inhibitors	FKBP12 inhibitor	DMSO	14	1.06	0.14
PROSTAGLANDIN A1	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.06	0.14
vinpocetine	Inhibitors	phosphodiesterase (PDE1) inhibitor	DMSO	14	1.05	0.11
13(S)-HODE	Bioactive lipids	Bioactive linoleic acid metabolite	DMSO	0.1	1.05	0.24
1-STEAROYL-2-ARACHIDONOYL-GLYCEROL	Bioactive lipids	PKC activator	DMSO	1	1.05	0.18
5-HYDROXYDECANOATE	Ion channel ligands	Potassium channels	DMSO	24	1.05	0.14
MEAD ETHANOLAMIDE	Endocannabinoids	Cannabinoid receptor agonist	DMSO	1	1.05	0.22
PROSTAGLANDIN E2	Bioactive lipids	Prostaglandin EP receptor agonist	DMSO	1	1.05	0.13
cycloheximide	Inhibitors	protein synthesis inhibitor	DMSO	18	1.05	0.11
15(S)-HETE	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.05	0.16
N-PHENYLANTHRANILIC (CL)	Ion channel ligands	Misc. channels	DMSO	23	1.05	0.12
PHOSPHATIDIC ACID, DIPALMITOYL	Bioactive lipids	Activates MAP kinase cascade	DMSO	1	1.05	0.15
VERATRIDINE	Ion channel ligands	Sodium channels	DMSO	7	1.05	0.17
LINOLEIC ACID	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.05	0.22
U-50488	Ion channel ligands	Calcium channels	DMSO	11	1.05	0.16
anisomycin	Inhibitors	MAP kinase activator	DMSO	19	1.05	0.10
LEUKOTRIENE E4	Bioactive lipids	CysLT1 receptor agonist	DMSO	0.1	1.05	0.09
PAF C16	Bioactive lipids	PAF receptor agonist	DMSO	1	1.04	0.08
Rolipram	Inhibitors	phosphodiesterase (PDE4) inhibitor	DMSO	18	1.04	0.12
Nimesulide	Lipid biosynthesis	Cox 2 inhibitor	DMSO	16	1.04	0.14
9alpha,11beta-PROSTAGLANDIN F2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.04	0.25
K252A	Kinase inhibitors	Kinase inhibitor (Broad spectrum)	DMSO	1	1.04	0.03
TETRANDRINE	Ion channel ligands	Calcium channels	DMSO	8	1.04	0.20
N-ACETYL-LEUKOTRIENE E4	Bioactive lipids	Bioactive arachidonic acid metabolite	DMSO	0.1	1.04	0.12
SQ-29548	Bioactive lipids	Thromboxane A2 antagonist	DMSO	1	1.04	0.12
capsacin(E)	Ion channel ligands	vanilloid receptor agonist	DMSO	16	1.04	0.07
BML-190	Bioactive lipids	Cannabinoid CB1 inverse agonist	DMSO	1	1.04	0.25
2-ARACHIDONOYLGLYCEROL	Endocannabinoids	Cannabinoid CB1 receptor agonist	DMSO	1	1.04	0.14
NICARDIPINE	Ion channel ligands	Calcium channels	DMSO	10	1.04	0.08
N-ARACHIDONOYLGLYCINE	Endocannabinoids	FAAH inhibitor	DMSO	1	1.03	0.10
PROSTAGLANDIN J2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.03	0.09

zaprinast	Inhibitors	phosphodiesterase (PDE1) inhibitor	DMSO	18	1.03	0.17
GAMMA-LINOLENIC ACID (18:3 n-6)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.03	0.17
PALMITYLETHANOLAMIDE	Endocannabinoids	Cannabinoid CB2 receptor agonist	DMSO	1	1.03	0.18
calpeptin	Protease inhibitors	Calpain inhibitor	DMSO	14	1.03	0.11
13,14-DIHYDRO-PROSTAGLANDIN E1	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.03	0.26
5'-N-Ethylcarboxamidoadenosine (NECA)	CNS receptor ligands	adenosine receptor agonist	DMSO	16	1.02	0.12
13-KETOOCTADECADIENOIC ACID	Bioactive lipids	Bioactive linoleic acid metabolite	DMSO	0.1	1.02	0.20
LINOLENIC ACID (18:3 n-3)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	1.02	0.11
C8 CERAMIDE	Bioactive lipids	Stimulates Cer-activated PK	DMSO	1	1.02	0.23
1-HEXADECYL-2-ARACHIDONOYL-GLYCEROL	Bioactive lipids	DAG analog	DMSO	1	1.02	0.19
17-OCTADECYNOIC ACID	Lipid biosynthesis	Inhibits fatty acid omega oxidation	DMSO	1	1.02	0.17
1,25-DIHYDROXYVITAMIN D3	Nuclear receptor ligands	Vitamin D receptor agonist	DMSO	1	1.02	0.14
BADGE	Nuclear receptor ligands	PPAR gamma antagonist	DMSO	15	1.02	0.10
Z-prolyl-prolinal	Protease inhibitors	Prolyl endopeptidase inhibitor	DMSO	15	1.02	0.09
17-PHENYL-TRINOR-PGE2	Bioactive lipids	Prostaglandin EP1 receptor agonist	DMSO	1	1.02	0.24
Arvanil	Ion channel ligands	Vaniloid receptor agonist	DMSO	11	1.02	0.07
ENANTIO-PAF C16	Bioactive lipids	Negative control for PAF	DMSO	1	1.02	0.12
METHOPRENE ACID	Nuclear receptor ligands	Retinoid RXR agonist	DMSO	1	1.02	0.18
acetyl (N)-s-farnesyl-l-cysteine	Inhibitors	farnesylation inhibitor	DMSO	14	1.01	0.11
PROSTAGLANDIN I2 Na	Bioactive lipids	Prostaglandin IP receptor agonist	DMSO	1	1.01	0.12
D609	Lipid biosynthesis	PC-PLC inhibitor	DMSO	19	1.01	0.24
QUINIDINE	Ion channel ligands	Sodium channels	DMSO	15	1.01	0.12
U-46619	Bioactive lipids	Thromboxane TP receptor agonist	DMSO	1	1.01	0.15
LINOLEAMIDE	Endocannabinoids	Bioactive linoleic acid metabolite	DMSO	1	1.00	0.14
Manoalide	Lipid biosynthesis	Phospholipase A2 inhibitor	DMSO	12	1.00	0.11
L-cis-DILTIAZEM	Ion channel ligands	Calcium channels	DMSO	11	1.00	0.15
SPHINGOSINE	Bioactive lipids	PKC inhibitor	DMSO	1	1.00	0.13
CinnGEL 2Me	Inhibitors	PTP1B inhibitor	DMSO	10	1.00	0.07
LEUKOTOXIN B (12,13-EODE)	Bioactive lipids	Bioactive linoleic acid metabolite	DMSO	0.1	1.00	0.13
deoxymannojirimycin(1)	Inhibitors	mannosidase inhibitor	DMSO	25	1.00	0.14
Helenalin	Inhibitors	NFkappaB inhibitor	DMSO	19	1.00	0.19
PROSTAGLANDIN B1	Bioactive lipids	Bioactive prostaglandin	DMSO	1	1.00	0.14
AMIODARONE	Ion channel ligands	Calcium channels	DMSO	8	1.00	0.15
6-FORMYLINDOLO [3,2-B] CARBAZOLE	Bioactive lipids	AHR agonist	DMSO	1	1.00	0.33
EICOSATRIENOIC ACID (20:3 n-3)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.99	0.13
8-methoxymethyl-IBMX	Inhibitors	phosphodiesterase (PDE1) inhibitor	DMSO	19	0.99	0.10
DOCOSAPENTAENOIC ACID	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.99	0.21
WIN 55,212-2	CNS receptor ligands	Cannabinoid CB1/CB2 receptor agonist	DMSO	0.1	0.99	0.06
Blebbistatin	Inhibitors	Myosin II inhibitor	DMSO	17	0.99	0.18
LEUKOTRIENE C4	Bioactive lipids	CysLT receptor agonist	DMSO	0.1	0.99	0.07
Tosyl-Phe-CMK (TPCK)	Protease inhibitors	Serine protease inhibitor	DMSO	14	0.99	0.13
FLUPROSTENOL	Bioactive lipids	Prostaglandin FP receptor agonist	DMSO	1	0.98	0.13
EICOSA-5,8-DIENOIC ACID (20:2 n-12)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.98	0.15
BW-B 70C	Lipid biosynthesis	5 lipoxygenase inhibitor	DMSO	16	0.98	0.15
ML7	Kinase inhibitors	kinase inhibitor	DMSO	11	0.98	0.13
LY-171883	Bioactive lipids	Leukotriene D4 receptor antagonist	DMSO	1	0.98	0.17
C-PAF	Bioactive lipids	PAF receptor agonist	DMSO	1	0.98	0.19
PROSTAGLANDIN B2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	0.98	0.13
REV-5901	Lipid biosynthesis	5-Lipoxygenase inhibitor	DMSO	1	0.97	0.15
MAPP, D-erythro	Lipid biosynthesis	Ceramidase inhibitor	DMSO	1	0.97	0.11
MINOXIDIL	Ion channel ligands	Potassium channels	DMSO	24	0.97	0.04
(R)-METHANANDAMIDE	CNS receptor ligands	Cannabinoid CB1 receptor agonist	DMSO	1	0.97	0.18
DOCOSAHEXAENOIC ACID (22:6 n-3)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.97	0.21
brefeldin A	Inhibitors	ARF GEF inhibitor	DMSO	18	0.97	0.09
MDL-28170	Protease inhibitors	Calpain inhibitor	DMSO	13	0.97	0.06
dexamethasone	Nuclear receptor ligands	corticosteroid	DMSO	13	0.97	0.11
EICOSADIENOIC ACID (20:2 n-6)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.96	0.11
deoxynorjrimycin(1)	Inhibitors	glucosidase inhibitor	DMSO	25	0.96	0.11
LOPERAMIDE	Ion channel ligands	Calcium channels	DMSO	10	0.96	0.10
U-75302	Bioactive lipids	Leukotriene B4 receptor antagonist	DMSO	0.1	0.96	0.09

FIPRONIL	Ion channel ligands	Misc. channels	DMSO	11	0.96	0.10
GINGEROL	Ion channel ligands	Intracellular calcium	DMSO	17	0.96	0.07
9-CIS RETINOIC ACID	Nuclear receptor ligands	Retinoid RXR agonist	DMSO	1	0.96	0.22
LIPOXIN A4	Bioactive lipids		DMSO	0.1	0.95	0.15
DILTIAZEM	Ion channel ligands	Calcium channels	DMSO	11	0.95	0.17
FLUFENAMIC ACID	Ion channel ligands	Potassium channels	DMSO	18	0.95	0.13
cytochalasin B	Inhibitors	F actin capper	DMSO	10	0.95	0.11
AG1478	Kinase inhibitors	Tyrosine kinase inhibitor. Broad spectrum	DMSO	14	0.95	0.12
FLUNARIZINE	Ion channel ligands	Calcium channels	DMSO	10	0.95	0.16
S-FARNESYL-L-CYSTEINE ME	Bioactive lipids	MDR ATPase activator	DMSO	1	0.95	0.17
etoposide	Inhibitors	topoisomerase II inhibitor	DMSO	8	0.95	0.11
DL-PPMP	Lipid biosynthesis	Glucosylceramide synthase inhibitor	DMSO	1	0.95	0.12
E-4031	Ion channel ligands	Potassium channels	DMSO	10	0.95	0.14
C2 DIHYDROCERAMIDE	Bioactive lipids	Negative control for C2 ceramide	DMSO	1	0.94	0.20
PROSTAGLANDIN A2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	0.94	0.18
Ro 20-1724	Inhibitors	phosphodiesterase (PDE4) inhibitor	DMSO	18	0.94	0.12
C8 CERAMINE	Bioactive lipids	Ceramide analog. Apoptosis inducer	DMSO	1	0.94	0.14
LEUKOTRIENE B4	Bioactive lipids	Leukotriene B4 receptor agonist	DMSO	0.1	0.94	0.15
HA14-1	Inhibitors	Bcl-2 ligand induces apoptosis	DMSO	12	0.93	0.13
LYSO-PAF C16	Bioactive lipids	Inactive PAF metabolite	DMSO	1	0.93	0.05
EICOSAPENTAENOIC ACID (20:5 n-3)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.93	0.15
1-STEAROYL- 2-LINOLEOYL-GLYCEROL	Bioactive lipids	PKC activator	DMSO	1	0.93	0.24
LY-83583	Inhibitors	Inhibits NO-activation of guanylate cyclase	DMSO	20	0.92	0.09
WY-14643	Nuclear receptor ligands	PPAR alpha agonist	DMSO	0.1	0.92	0.10
DL-DIHYDROSPHINGOSINE	Lipid biosynthesis	Sphingosine kinase inhibitor	DMSO	1	0.92	0.18
METHOXY VERAPAMIL	Ion channel ligands	Calcium channels	DMSO	10	0.92	0.15
decoyinine	Inhibitors	lowers GTP levels	DMSO	18	0.92	0.05
MY-5445	Inhibitors	phosphodiesterase (PDE5) inhibitor	DMSO	15	0.92	0.11
alamethicin	Inhibitors	monovalent cation ionophore	DMSO	3	0.92	0.16
DICHLOROBENZAMIL	Ion channel ligands	Calcium channels	DMSO	12	0.91	0.12
Bromo-cAMP [8-Bromo-cAMP]	Activators	PKA activator	DMSO	12	0.91	0.05
Siguazodan	Inhibitors	phosphodiesterase (PDE3) inhibitor	DMSO	18	0.91	0.15
TRIM	Inhibitors	bNOS/iNOS inhibitor	DMSO	24	0.90	0.08
Delta 12-PROSTAGLANDIN J2	Bioactive lipids	Bioactive prostaglandin	DMSO	1	0.90	0.08
GW-9662	Nuclear receptor ligands	PPAR gamma antagonist	DMSO	18	0.90	0.11
DL-PDMP	Lipid biosynthesis	Glucosylceramide synthase inhibitor	DMSO	1	0.90	0.15
YC-1	Activators	GC stimulator / Hif-1 alpha inhibitor	DMSO	16	0.89	0.07
DOCOSATRIENOIC ACID (22:3 n-3)	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.89	0.19
2,5-ditertbutylhydroquinone	Ion channel ligands	ER Ca++ ATPase inhibitor	DMSO	22	0.89	0.09
AM-580	Nuclear receptor ligands	Retinoid RAR agonist	DMSO	1	0.89	0.21
actinomycin D	Inhibitors	transcription inhibitor	DMSO	4	0.89	0.06
FLUSPIRILINE	Ion channel ligands	Potassium channels	DMSO	11	0.88	0.10
FLECAINIDE	Ion channel ligands	Sodium channels	DMSO	12	0.88	0.08
chelerythrine	Kinase inhibitors	PKC inhibitor	DMSO	13	0.88	0.15
1,2-DIOCTANOYL-SN-GLYCEROL	Bioactive lipids	Activates PKC	DMSO	1	0.87	0.09
PINACIDIL	Ion channel ligands	Potassium channels	DMSO	20	0.87	0.07
PAXILLINE	Ion channel ligands	Potassium channels	DMSO	11	0.87	0.09
DANTROLENE	Ion channel ligands	Intracellular calcium	DMSO	16	0.87	0.12
AMANTIDINE	Ion channel ligands	Misc. channels	DMSO	33	0.87	0.03
LY-294002	Lipid biosynthesis	PI-3-Kinase inhibitor	DMSO	16	0.86	0.08
DIINDOLYLMETHANE	Nuclear receptor ligands	AHR agonist	DMSO	1	0.86	0.08
Lycorine	Inhibitors	inhibits TNFalpha production	DMSO	15	0.86	0.06
DIHOMO-GAMMA-LINOLENIC ACID	Bioactive lipids	Polyunsaturated fatty acid	DMSO	1	0.86	0.10
Parthenolide	Inhibitors	IkappaB kinase inhibitor	DMSO	20	0.86	0.24
AG-490	Kinase inhibitors	JAK2 inhibitor	DMSO	17	0.85	0.07
BEPRIDIL	Ion channel ligands	Calcium channels	DMSO	14	0.85	0.08
Latrunculin B	Inhibitors	Actin inhibitor	DMSO	13	0.84	0.25
AMILORIDE	Ion channel ligands	Calcium channels	DMSO	19	0.83	0.11
NITRENDIPINE	Ion channel ligands	Calcium channels	DMSO	14	0.83	0.12
Milrinone	Inhibitors	phosphodiesterase (PDE3) inhibitor	DMSO	24	0.83	0.09

13-CIS RETINOIC ACID	Nuclear receptor ligands	Retinoid receptor ligand	DMSO	1	0.82	0.16
Trequinsin	Inhibitors	phosphodiesterase (PDE3) inhibitor	DMSO	11	0.82	0.04
Ac-Leu-Leu-Nle-CHO	Protease inhibitors	Calpain inhibitor	DMSO	13	0.82	0.10
AM 92016	Ion channel ligands	Potassium channels	DMSO	10	0.82	0.15
ESTRADIOL	Nuclear receptor ligands	estrogen	DMSO	18	0.81	0.07
DIHYDROSPHINGOSINE	Bioactive lipids	Apoptosis inducer	DMSO	1	0.81	0.07
ZM226600	Ion channel ligands	Potassium channels	DMSO	13	0.81	0.08
MBCQ	Inhibitors	phosphodiesterase (PDE5) inhibitor	DMSO	16	0.81	0.06
CYCLOPIAZONIC ACID	Ion channel ligands	Intracellular calcium	DMSO	15	0.80	0.17
NS-1619	Ion channel ligands	Potassium channels	DMSO	14	0.77	0.11
cantharidin	Inhibitors	PP2A inhibitor	DMSO	25	0.76	0.12
NIMODIPINE	Ion channel ligands	Calcium channels	DMSO	12	0.76	0.09
PROPAFENONE	Ion channel ligands	Potassium channels	DMSO	15	0.76	0.02
KN-62	Kinase inhibitors	CaM kinase II inhibitor	DMSO	7	0.76	0.07
RETINOIC ACID, ALL TRANS	Nuclear receptor ligands	Retinoid RAR agonist	DMSO	1	0.76	0.12
zardaverine	Inhibitors	phosphodiesterase (PDE1/2) inhibitor	DMSO	19	0.75	0.12
GLIPIZIDE	Ion channel ligands	Potassium channels	DMSO	11	0.75	0.15
FPL-64176	Ion channel ligands	Calcium channels	DMSO	14	0.75	0.09
TOLBUTAMIDE	Ion channel ligands	Potassium channels	DMSO	18	0.74	0.11
PAF C18:1	Bioactive lipids	PAF receptor agonist	DMSO	1	0.73	0.12
Nigericin	Inhibitors	induces intracellular acidification	DMSO	7	0.73	0.18
forskolin	Activators	Adenylate cyclase activator	DMSO	12	0.71	0.06
TTNPB	Nuclear receptor ligands	Retinoid RAR agonist	DMSO	1	0.69	0.04
diphenyleneiodonium Cl	Inhibitors	flavoprotein inhibitor	DMSO	16	0.64	0.04
EHNA HCl	Inhibitors	Phosphodiesterase (PDE2) inhibitor/adenosine deaminase inhibitor	DMSO	16	0.64	0.06
doxorubicin	Inhibitors	topoisomerase II inhibitor, induces apoptosis	DMSO	9	0.63	0.07
Go6976	Kinase inhibitors	PKC inhibitor	DMSO	13	0.61	0.12
2-methoxyantimycin A3	Inhibitors	Bcl-2/Bcl-XL ligand induces apoptosis	DMSO	9	0.61	0.03
GLYBURIDE	Ion channel ligands	Potassium channels	DMSO	10	0.61	0.15
calyculin A	Inhibitors	PP1, PP2A inhibitor	DMSO	0	0.59	0.09
beta-lapachone	Inhibitors	topoisomerase 1 inhibitor	DMSO	21	0.58	0.10
NapSul-Ile-Trp-CHO	Protease inhibitors	Cathepsin L inhibitor	DMSO	10	0.57	0.04
capsazepine	Ion channel ligands	vanilloid receptor antagonist	DMSO	13	0.56	0.03
A-3	Kinase inhibitors	kinase inhibitor	DMSO	16	0.56	0.07
17-Allylamino-geldanamycin	Inhibitors	HSP-90 inhibitor	DMSO	9	0.50	0.08
geldanamycin	Inhibitors	HSP90 inhibitor	DMSO	9	0.48	0.05
genistein	Kinase inhibitors	Tyrosine kinase inhibitor	DMSO	19	0.43	0.03
DIAZOXIDE	Ion channel ligands	Potassium channels	DMSO	22	0.40	0.05
mitomycin C	Inhibitors	cross links DNA	DMSO	15	0.28	0.04
10-hydroxycamptothecin	Inhibitors	topoisomerase 1 inhibitor	DMSO	14	0.21	0.01
camptothecin	Inhibitors	Topoisomerase 1 inhibitor	DMSO	14	0.18	0.01

Supplementary Table S2 Primer Sequence used for RT-PCR

PRIMER	SEQUENCE
Serca1-Fw	ATCTTCAAGCTCCGGGCCCT
Serca1-Rv	CAGCTTTGGCTGAAGATGCA
m-Titin-Fw	GTGTGAGTCGCTCCAGAAACG
m-Titin-Rv	CCACCACAGGACCATGTTATTTC
Gapdh-Fw	TGCTGAGTATGTCGTGGAGTCTA
Gapdh-Rv	AGTGGGAGTTGCTGTTGAAGTCG
H-Ras-Fw	AAAGTGCCTCACTGGTTGCT
H-Ras-Rv	ACTTCACCCAATTCCACTCG
K-Ras-Fw	ACATTAACCTCCCAGCCGTG
K-Ras-Rv	TGGCCAAGGATTGAGGACAC
N-Ras-Fw	AGTGTGTACAATGGAGGCGG
N-Ras-Rv	GACGGCACGCATGGAAATAC