Figure S1

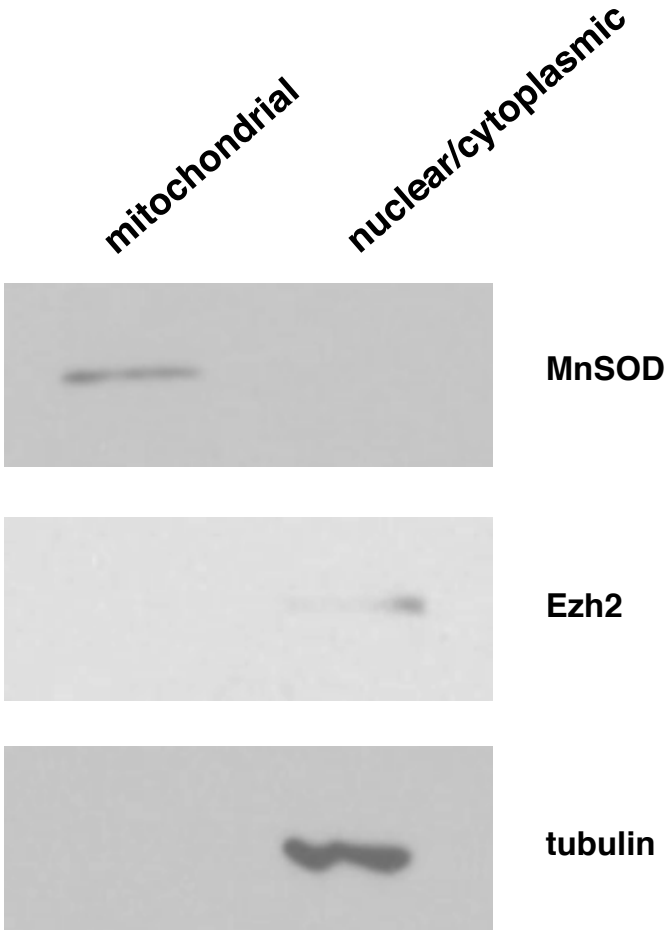


Figure S2

Accession	Description	# AAs	MW [kDa]	ΣCoverage	Σ# Unique Peptides	Σ# PSMs
P45880	Voltage-dependent anion-selective channel protein 2 [VDAC2_HUMAN]	294	31.5	43.54	8	25

Sequence : LTFDTTFSPNTGKK (2 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
1	2	779.56580	1558.12432	852.79		CID	< 1% FDR	2.89	0	8.013E-03	0.00
1	2	779.63800	1558.26872	945.38		CID	< 1% FDR	3.42	0	6.599E-04	0.00

Sequence : LTLSALVDGK (2 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	509.03424	1017.06120	454.75		CID	< 1% FDR	2.38	0	6.622E-03	0.00
0	2	509.36465	1017.72203	1103.78		CID	< 1% FDR	2.85	0	3.614E-03	0.00

Sequence : NNFAVGYR (2 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	470.93692	940.86656	428.32		CID	< 1% FDR	3.01	0	6.285E-03	0.00
0	2	470.87732	940.74736	301.67		CID	< 1% FDR	2.79	0	7.520E-03	0.00

Sequence : ScSGVEFSTSGSSNTDTGK (4 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	954.62878	1908.25029	239.95	C2(Carbamidomethyl)	CID	< 1% FDR	4.43	0	3.977E-04	0.00
0	2	955.07861	1909.14995	711.07	C2(Carbamidomethyl)	CID	< 1% FDR	4.18	0	4.407E-04	0.00
0	2	954.60583	1908.20439	215.90	C2(Carbamidomethyl)	CID	< 1% FDR	4.49	0	1.004E-05	0.00
0	2	955.00671	1909.00615	635.79	C2(Carbamidomethyl)	CID	< 1% FDR	5.10	0	9.215E-06	0.00

Sequence : TGDFQLHTNVNDGTEFGGSIYQK (1 item)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	3	843.65515	2528.95090	309.21		CID	< 1% FDR	4.53	0	7.140E-06	0.00

Sequence : VNNSSLIGVGYTQTLRPGVK (6 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	3	701.99097	2103.95835	381.46		CID	< 1% FDR	3.02	0	7.583E-03	0.00
0	3	702.04419	2104.11802	457.32		CID	< 1% FDR	2.96	0	9.861E-03	0.00
0	2	1052.24390	2103.48052	154.39		CID	< 1% FDR	3.89	0	9.732E-06	0.00
0	2	1052.24634	2103.48540	156.71		CID	< 1% FDR	4.14	0	5.433E-05	0.00
0	2	1052.18677	2103.36626	100.08		CID	< 1% FDR	4.56	0	1.442E-06	0.00
0	2	1052.25659	2103.50591	166.46		CID	< 1% FDR	4.43	0	2.345E-05	0.00

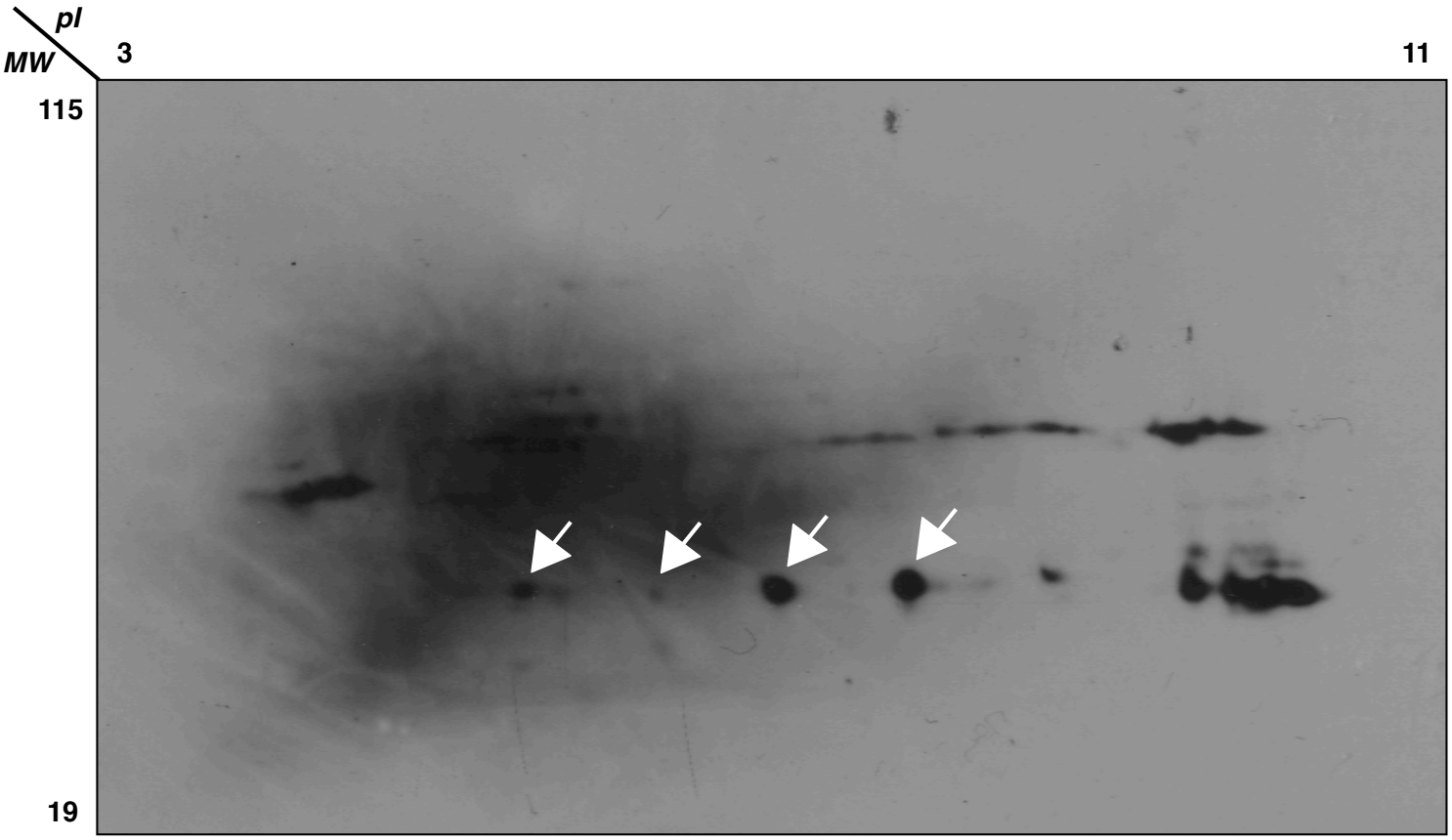
Sequence : WNTDNTLGTEIAIEDQIcQGLK (1 item)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	3	840.71796	2520.13932	369.41	C18(Carbamidomethyl)	CID	< 1% FDR	4.25	0	6.012E-04	0.00

Sequence : YQLDPTASISAK (3 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	647.53613	1294.06499	306.35		CID	< 1% FDR	2.85	0	3.705E-05	0.00
0	2	647.55145	1294.09563	330.02		CID	< 1% FDR	2.49	0	3.630E-03	0.00
0	2	647.53448	1294.06169	303.80		CID	< 1% FDR	2.37	0	5.838E-04	0.00

Figure S3



VDAC2

Figure S4

Accession	Description	# AAs	MW [kDa]	ΣCoverage	Σ# Unique Peptides	Σ# PSMs
P45880	Voltage-dependent anion-selective channel protein 2 [VDAC2_HUMAN]	294	31.5	35.71	8	66

Sequence : LTFDTTFSPNTGK (2 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	714.85278	1428.69829	-1.61		CID	< 1% FDR	3.69	0	2.932E-06	0.00
0	2	714.85199	1428.69670	-2.72		CID	< 1% FDR	1.67	0.00046	2.988E-03	0.00

Sequence : LTLSALVDGK (3 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	508.80194	1016.59661	-2.05		CID	< 1% FDR	2.60	0	2.654E-04	0.00
0	2	508.80167	1016.59606	-2.59		CID	< 1% FDR	3.01	0	1.706E-05	0.00
0	2	508.80295	1016.59862	-0.07		CID	< 1% FDR	2.22	0.00057	4.554E-03	0.00

Sequence : ScSGVEFSTSGSSNTDTGK (47 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	954.40057	1907.79387	0.76	C2(Carbamidomethyl)	CID	< 1% FDR	5.01	0	1.536E-08	0.00
0	2	954.39929	1907.79131	-0.58	C2(Carbamidomethyl)	CID	< 1% FDR	4.55	0	8.330E-09	0.00
0	3	636.60199	1907.79142	-0.52	C2(Carbamidomethyl)	CID	< 1% FDR	3.34	0	1.539E-08	0.00
0	2	954.39905	1907.79082	-0.84	C2(Carbamidomethyl)	CID	< 1% FDR	3.29	0	1.774E-06	0.00
0	2	954.39771	1907.78813	-2.24	C2(Carbamidomethyl)	CID	< 1% FDR	3.21	0	1.436E-05	0.00
0	2	954.39929	1907.79131	-0.58	C2(Carbamidomethyl)	CID	< 1% FDR	5.28	0	3.660E-09	0.00
0	2	954.39917	1907.79106	-0.71	C2(Carbamidomethyl)	CID	< 1% FDR	5.27	0	3.720E-09	0.00
0	3	636.60144	1907.78977	-1.39	C2(Carbamidomethyl)	CID	< 1% FDR	3.24	0	6.957E-06	0.00
0	2	954.39874	1907.79021	-1.16	C2(Carbamidomethyl)	CID	< 1% FDR	3.16	0	5.989E-04	0.00
0	2	954.39899	1907.79070	-0.90	C2(Carbamidomethyl)	CID	< 1% FDR	3.42	0	2.532E-04	0.00
0	2	954.39905	1907.79082	-0.84	C2(Carbamidomethyl)	CID	< 1% FDR	5.16	0	6.216E-10	0.00
0	2	954.40112	1907.79497	1.34	C2(Carbamidomethyl)	CID	< 1% FDR	4.76	0	9.438E-08	0.00
0	3	636.60071	1907.78757	-2.54	C2(Carbamidomethyl)	CID	< 1% FDR	2.16	0.00069	7.546E-03	0.00
0	3	636.60156	1907.79013	-1.20	C2(Carbamidomethyl)	CID	< 1% FDR	3.14	0	1.747E-05	0.00
0	2	954.40033	1907.79338	0.51	C2(Carbamidomethyl)	CID	< 1% FDR	4.68	0	7.026E-10	0.00
0	2	954.40039	1907.79350	0.57	C2(Carbamidomethyl)	CID	< 1% FDR	4.88	0	2.145E-09	0.00
0	3	636.60181	1907.79087	-0.81	C2(Carbamidomethyl)	CID	< 1% FDR	2.43	0	6.002E-05	0.00
0	2	954.40002	1907.79277	0.19	C2(Carbamidomethyl)	CID	< 1% FDR	5.14	0	8.422E-10	0.00
0	2	954.39893	1907.79057	-0.96	C2(Carbamidomethyl)	CID	< 1% FDR	4.93	0	8.543E-10	0.00
0	2	954.39868	1907.79009	-1.22	C2(Carbamidomethyl)	CID	< 1% FDR	5.03	0	3.333E-10	0.00
0	2	954.39880	1907.79033	-1.09	C2(Carbamidomethyl)	CID	< 1% FDR	4.96	0	3.068E-09	0.00
0	2	954.39972	1907.79216	-0.13	C2(Carbamidomethyl)	CID	< 1% FDR	4.54	0	3.766E-08	0.00
0	2	954.39880	1907.79033	-1.09	C2(Carbamidomethyl)	CID	< 1% FDR	4.79	0	2.321E-09	0.00
0	2	954.39783	1907.78838	-2.12	C2(Carbamidomethyl)	CID	< 1% FDR	5.00	0	1.214E-08	0.00
0	2	954.39874	1907.79021	-1.16	C2(Carbamidomethyl)	CID	< 1% FDR	5.22	0	1.222E-08	0.00
0	2	954.39801	1907.78874	-1.92	C2(Carbamidomethyl)	CID	< 1% FDR	4.59	0	3.806E-09	0.00
0	2	954.39783	1907.78838	-2.12	C2(Carbamidomethyl)	CID	< 1% FDR	4.64	0	6.928E-09	0.00
0	2	954.39825	1907.78923	-1.67	C2(Carbamidomethyl)	CID	< 1% FDR	3.93	0	8.780E-07	0.00
0	2	954.39868	1907.79009	-1.22	C2(Carbamidomethyl)	CID	< 1% FDR	4.73	0	5.992E-09	0.00
0	2	954.40247	1907.79766	2.75	C2(Carbamidomethyl)	CID	< 1% FDR	4.42	0	5.868E-08	0.00
0	2	954.39996	1907.79265	0.12	C2(Carbamidomethyl)	CID	< 1% FDR	4.10	0	3.759E-09	0.00
0	2	954.39752	1907.78777	-2.44	C2(Carbamidomethyl)	CID	< 1% FDR	5.02	0	2.409E-09	0.00
0	2	954.39746	1907.78765	-2.50	C2(Carbamidomethyl)	CID	< 1% FDR	4.73	0	1.447E-07	0.00
0	2	954.39899	1907.79070	-0.90	C2(Carbamidomethyl)	CID	< 1% FDR	4.24	0	6.066E-07	0.00
0	2	954.39752	1907.78777	-2.44	C2(Carbamidomethyl)	CID	< 1% FDR	3.74	0	1.539E-08	0.00
0	2	954.39813	1907.78899	-1.80	C2(Carbamidomethyl)	CID	< 1% FDR	3.99	0	1.500E-06	0.00
0	2	954.39862	1907.78996	-1.28	C2(Carbamidomethyl)	CID	< 1% FDR	3.36	0	2.898E-07	0.00
0	2	954.40051	1907.79375	0.70	C2(Carbamidomethyl)	CID	< 1% FDR	2.61	0	3.947E-04	0.00
0	2	954.40381	1907.80034	4.15	C2(Carbamidomethyl)	CID	< 1% FDR	3.18	0	1.525E-04	0.00
0	2	954.40106	1907.79485	1.27	C2(Carbamidomethyl)	CID	< 1% FDR	4.30	0	1.523E-04	0.00
0	2	954.40076	1907.79424	0.95	C2(Carbamidomethyl)	CID	< 1% FDR	3.71	0	2.259E-05	0.00
0	2	954.40424	1907.80120	4.60	C2(Carbamidomethyl)	CID	< 1% FDR	4.01	0	1.922E-05	0.00
0	2	954.40454	1907.80181	4.92	C2(Carbamidomethyl)	CID	< 1% FDR	4.16	0	1.576E-05	0.00
0	2	954.40155	1907.79582	1.79	C2(Carbamidomethyl)	CID	< 1% FDR	2.96	0	1.590E-04	0.00
0	2	954.40381	1907.80034	4.15	C2(Carbamidomethyl)	CID	< 1% FDR	3.06	0.00057	1.244E-03	0.00
0	2	954.39874	1907.79021	-1.16	C2(Carbamidomethyl)	CID	< 1% FDR	2.53	0.00057	3.276E-03	0.00
0	2	954.40308	1907.79888	3.39	C2(Carbamidomethyl)	CID	< 1% FDR	2.04	0.00057	5.954E-03	0.00

Sequence : VNNSSLIGVGYTQTLRPGVK (4 items)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	3	701.72253	2103.15305	-1.29		CID	< 1% FDR	2.40	0.00046	1.990E-03	0.00
0	3	701.72186	2103.15104	-2.25		CID	< 1% FDR	2.52	0	1.052E-04	0.00
0	2	1052.08105	2103.15483	-0.44		CID	< 1% FDR	2.65	0.00057	4.580E-03	0.00
0	2	1052.08240	2103.15752	0.84		CID	< 1% FDR	3.97	0	6.514E-07	0.00

Sequence : VTGTLETK (1 item)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	424.73865	848.47002	-2.82		CID	< 1% FDR	2.00	0.00046	1.522E-03	0.00

Sequence : WNTDNTLGTEIAIEDQIcQGLK (1 item)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	3	840.40723	2519.20713	-0.49	C18(Carbamidomethyl)	CID	< 1% FDR	3.32	0	1.450E-03	0.00

Sequence : YQLDPTASISAK (1 item)

# Missed Cleavages	Charge	m/z [Da]	MH+ [Da]	ΔM [ppm]	Modifications	Activation Type	Confidence	XCorr	q-Value	PEP	ΔCn
0	2	647.33423	1293.66118	-5.70		CID	< 1% FDR	2.65	0.00069	7.493E-03	0.00

Figure S5

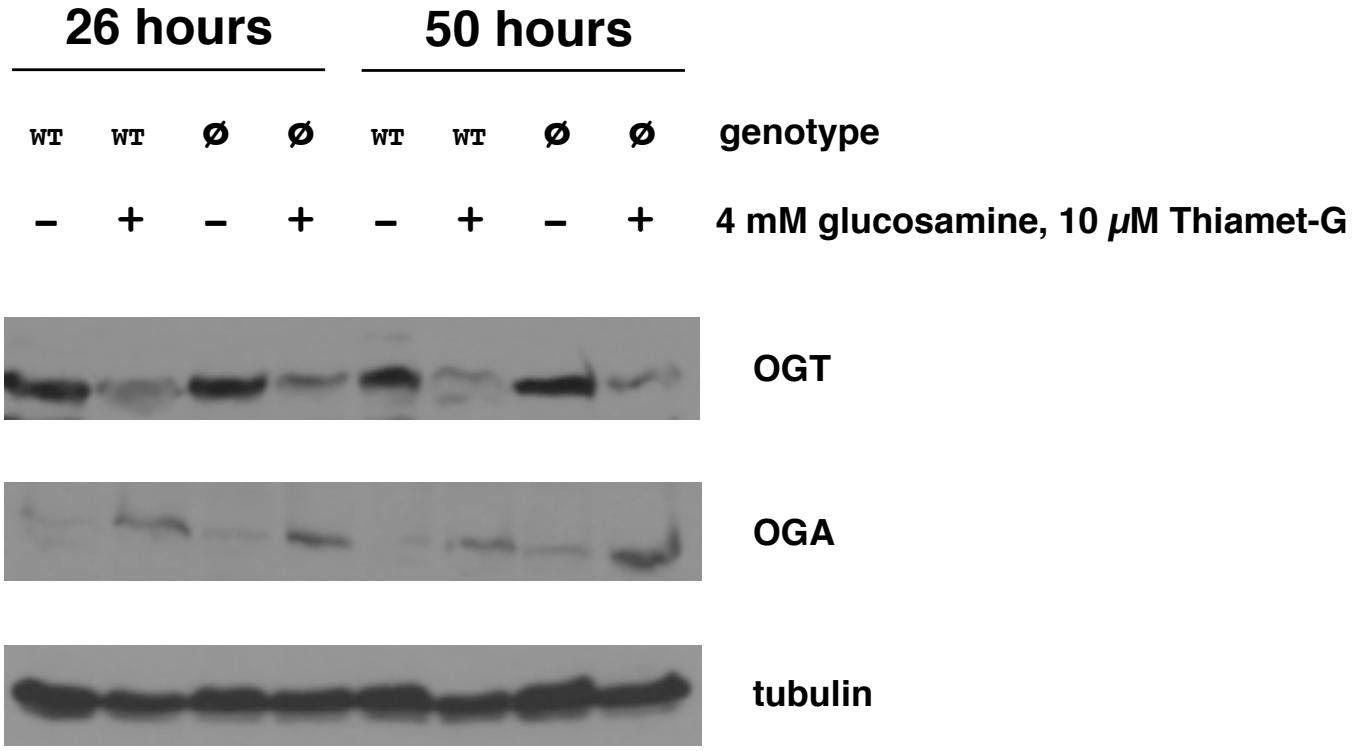
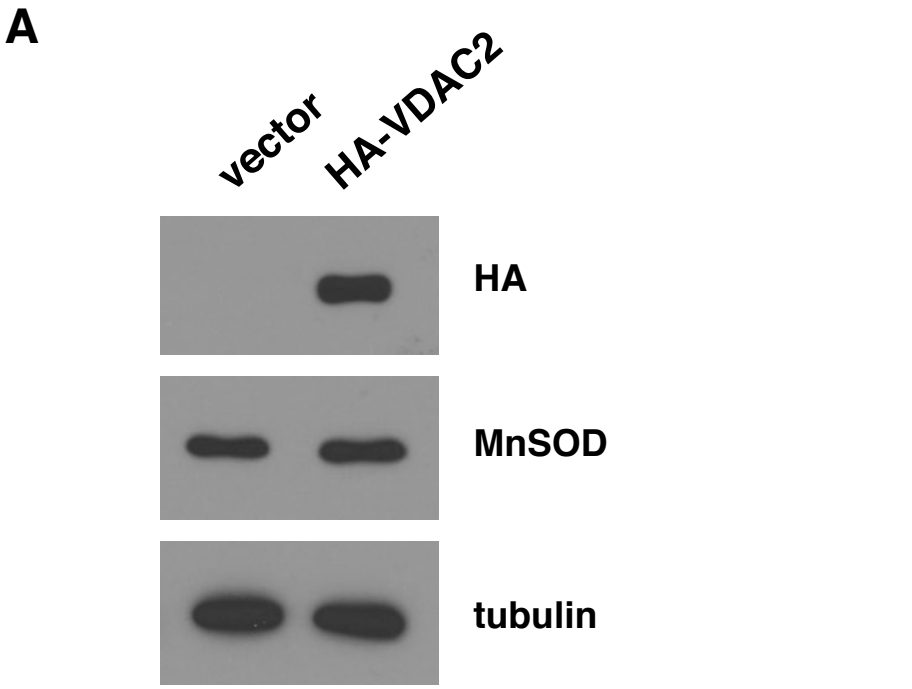

26 hours
50 hours
WT WT Ø Ø WT WT Ø Ø
genotype
– + – + – + – +
4 mM glucosamine, 10 μM Thiamet-G
OGT
OGA
tubulin

Figure S6


A
vector
HA-VDAC2
HA
MnSOD
tubulin

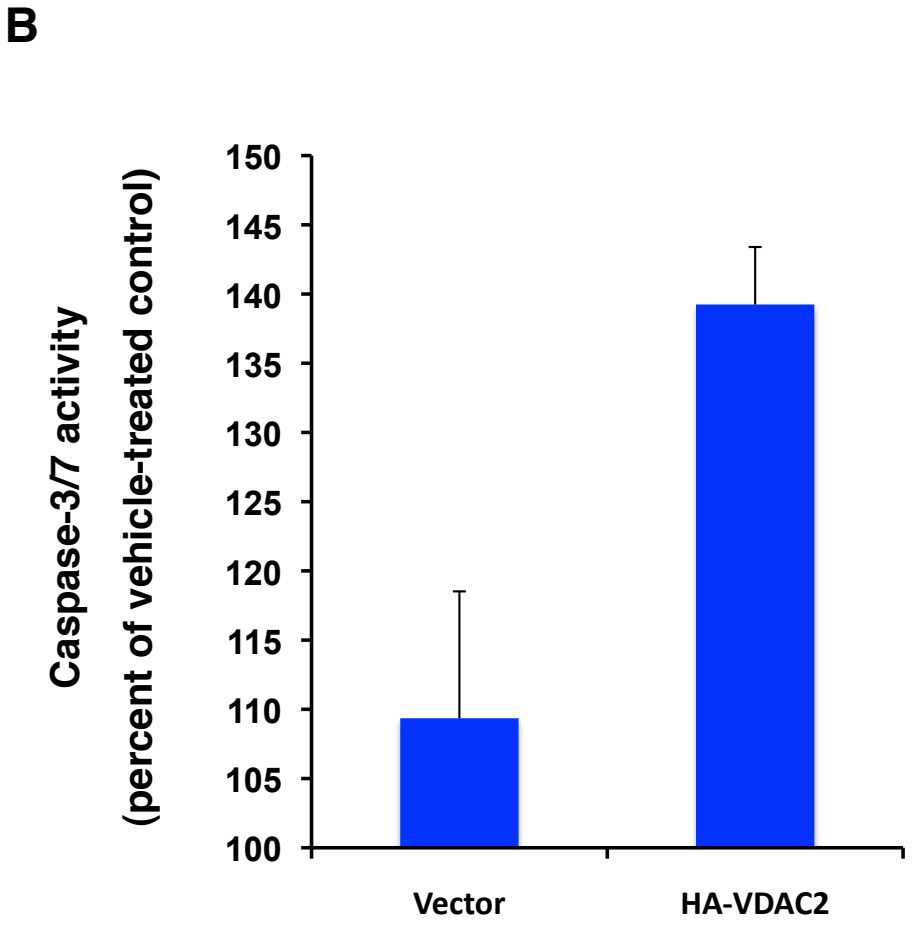
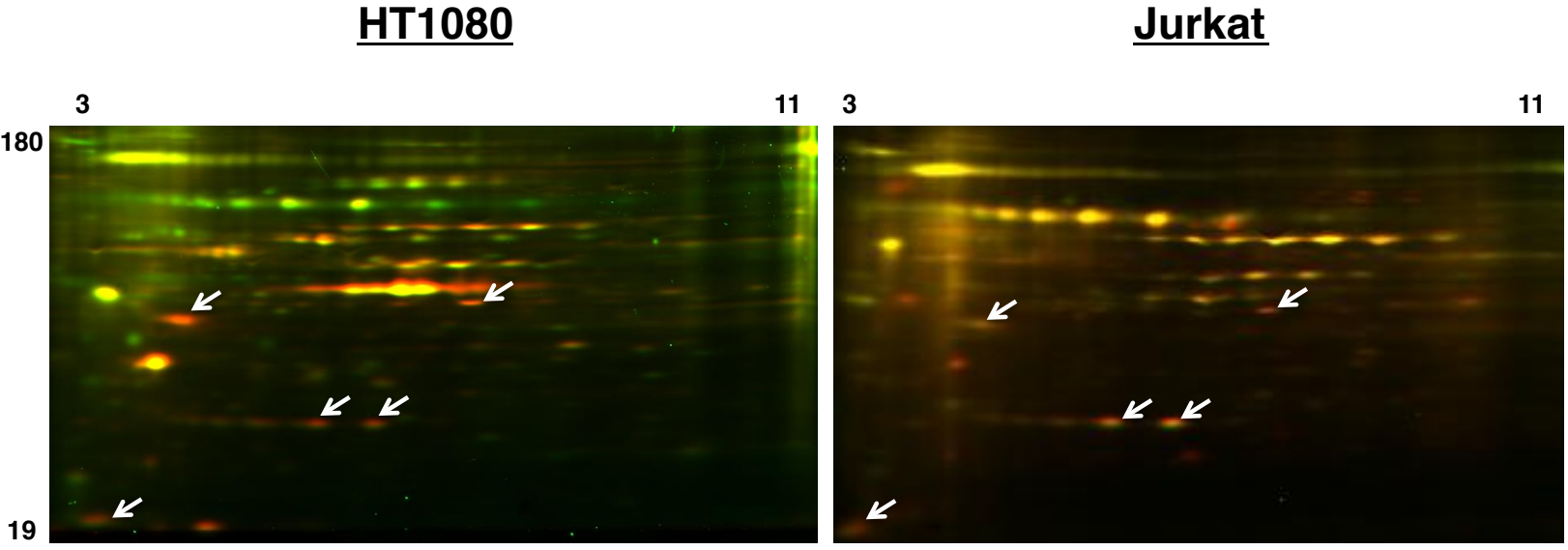

B
Caspase-3/7 activity
(percent of vehicle-treated control)
150
145
140
135
130
125
120
115
110
105
100
Vector
HA-VDAC2

Figure S7

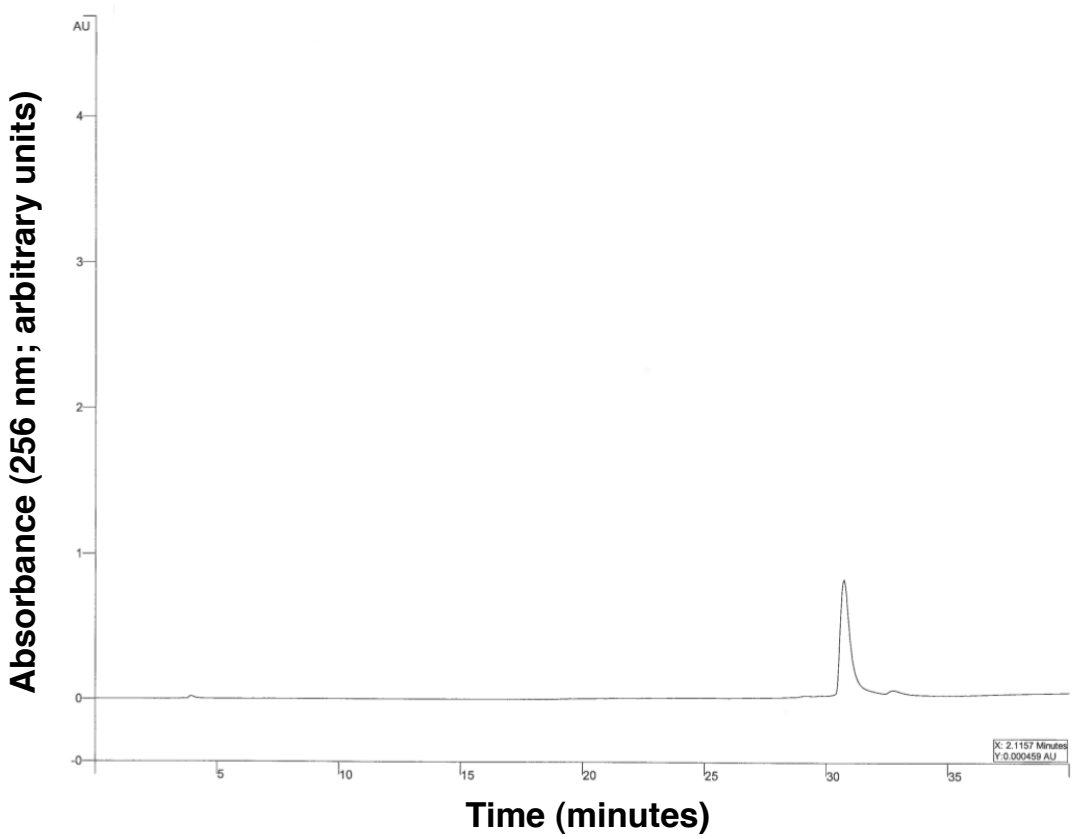


1: $Ac_4GalNAz$ and vehicle control

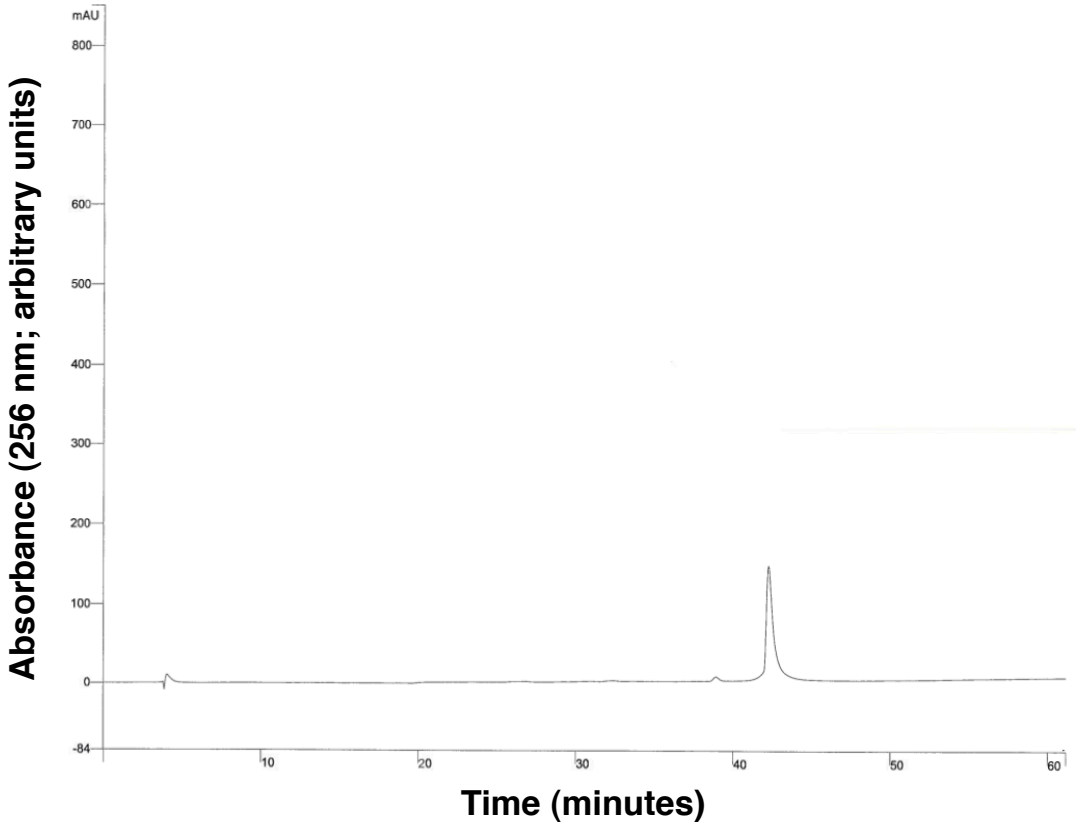
2: $Ac_4GalNAz$ and 1 μg/ml doxorubicin

Figure S8

A


AU
4
3
2
1
0
-0
5
10
15
20
25
30
35
X: 2.1157 Minutes
Y: 0.000459 AU
Absorbance (256 nm; arbitrary units)
Time (minutes)

B


mAU
800
700
600
500
400
300
200
100
0
-84
10
20
30
40
50
60
Absorbance (256 nm; arbitrary units)
Time (minutes)