

SUPPORTING INFORMATION

Supplemental Figure 1. Validation of valosin-containing protein (VCP) as a nonspecifically cross-reacting protein. VCP-directed IP from wild-type and DJ-1 knockout mice followed by Western blotting with a DJ-1-directed antibody unequivocally establishes nonspecific crossreactivity of the DJ-1-directed antibody with VCP. A VCP-directed polyclonal antibody was used to capture VCP side-by-side from tissue extracts of DJ-1^{-/-} mice and wild-type mice which had been subjected to the tcTPC procedure. A subsequent Western blotting analysis in which the blotting membrane was probed with the DJ-1 antibody we had used for the DJ-1 interactome investigation (i) established that the Dj-1 antibody can cross-react with a 97 kDa band present in both DJ-1 knockout and wild-type mice, (ii) documented that this cross-reactive band is strongly enriched in the VCP directed immunoprecipitation eluate, and (iii) showed complete absence of DJ-1 in the same VCP immunoprecipitation eluate. Thus, the presence of DJ-1 in the interactome list could be explained by an apparent cross-reactivity of the commercial DJ-1 antibody we had employed for the generation of the interactome dataset. Extracts before co-IP (lanes 1 and 4), unbound co-IP material (lanes 2 and 5) and co-IP eluate fractions (lanes 3 and 6). Please note the increase in DJ-1 antibody signal for a band of ~95 kDa (VCP has apparent MW of 97kDa) following VCP directed co-IP from DJ-1 knockout mouse extracts (lanes 4 and 6).

Supplemental Figure 2. Determination of specific candidate DJ-1 interactors based on iTRAQ ratio comparisons. The WT:KO iTRAQ ratios of brain (115:114) (A) and liver (117:116) (B) DJ-1 interactomes and the HZ:KO iTRAQ ratios obtained for the DJ-1 interactome analysis in mouse embryonic stem cell lines (115:114) (C) are depicted graphically. A solid line indicates a baseline iTRAQ ratio of 1.0 (assuming no DJ-1-specific enrichment in a comparison of specific versus control) and dashed lines

represent thresholds of one and two standard deviations (SD) above the baseline calculated from the iTRAQ ratios observed in the individual subdatasets. Note that in addition to the bait protein (DJ-1), the iTRAQ ratios of two outliers in each graph were removed from the calculation of the standard deviations. Proteins which possessed ratios above the threshold of two SD are bolded.

Supplemental Figure 3. Significant correlation of brain and liver DJ-1 interactome data.

(A) Graph depicting the correlation between brain and liver iTRAQ ratios including the line of best fit (solid line) and 95% confidence intervals (dashed lines). A Pearson correlation coefficient of 0.857 was significant at a two-tailed $P = 0.01$ level (SPSS ver. 18, IBM Corporation). (B) The theoretical relation between sample size and the Pearson correlation coefficient at six different powers and at a two-sided 0.01 significance level is depicted based on R statistical modeling source code (Quick-R, Robert I. Kabacoff, and 'pwr' code library, Stéphane Champely). As demonstrated by the intersection of the dashed lines, the brain and liver iTRAQ ratio sample size of 37 at a correlation coefficient of 0.857 is appropriate.

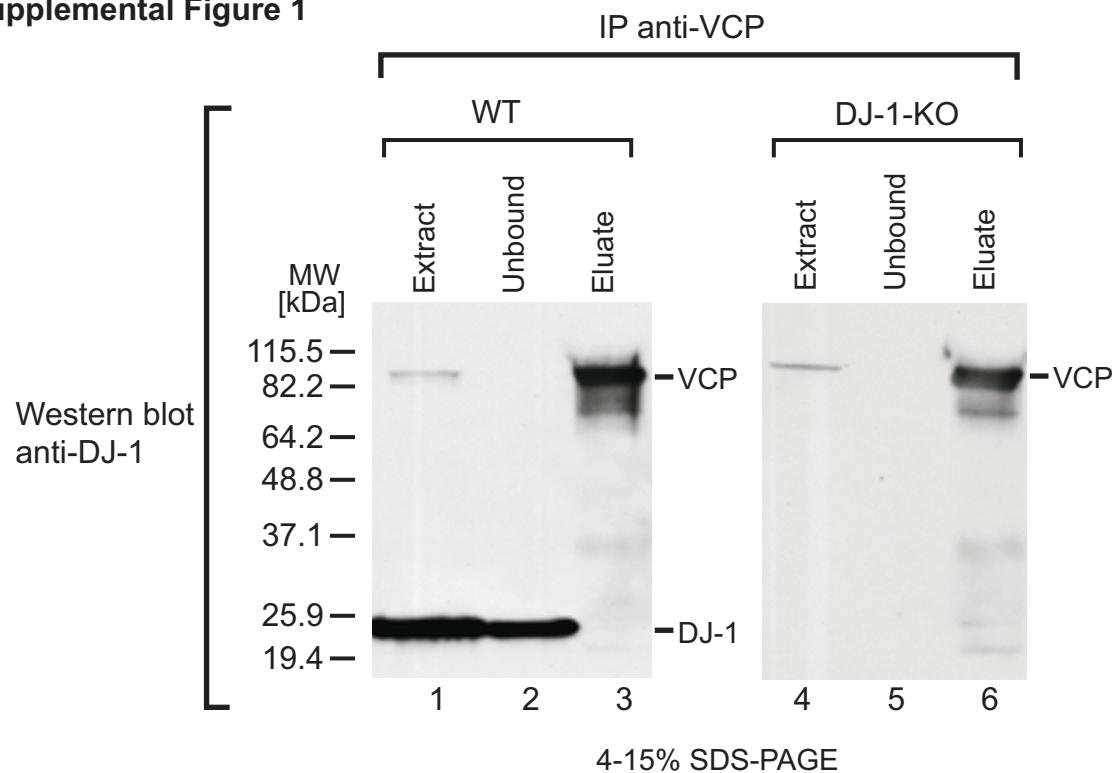
Supplemental Tables. Please refer to **Supplemental Tables 1, 2 or 3** for details of analyses summarized in **Tables 1, 2 or 3**, respectively. Depicted in these Supplemental Tables are information on proteins and peptides observed, including information on masses, percent sequence coverage, confidence scores, iTRAQ ratios, the calculation of average reporter ion intensities and the corresponding standard deviations of this calculation. Note that **Supplemental Tables 1, 2 or 3** depict analyses conducted with ProteinPilot, ProteinProspector and Mascot, respectively, and therefore the formats of the tables (and confidence scores) reflect the different designs of these search algorithms.

Supplemental Table 1. Details of DJ-1 candidate interactors in spectral counting-based comparison of formaldehyde crosslinked DJ-1 KO, HZ or WT ES cells +/- H₂O₂.

Supplemental Table 2. DJ-1 candidate interactors in spectral counting-based comparison of formaldehyde crosslinked DJ-1 KO, HZ or WT ES cells +/- H₂O₂.

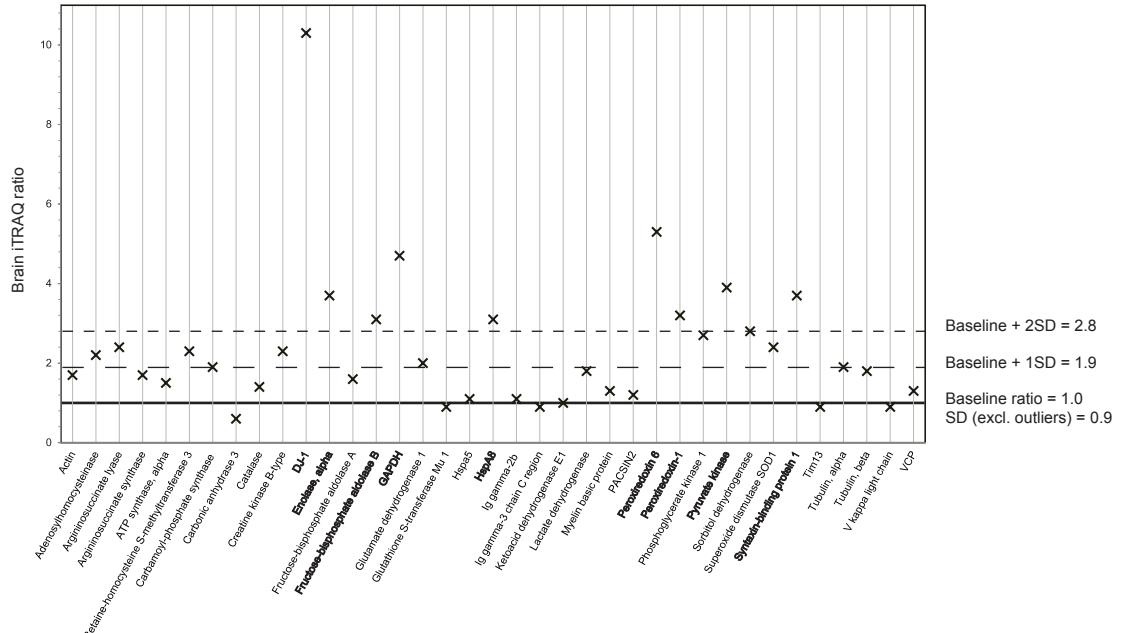
Supplemental Table 3. DJ-1 candidate interactors in four-plex iTRAQ-based comparison of formaldehyde crosslinked DJ-1 KO, HZ or WT ES cells +/- H₂O₂

Supplemental Figure 1

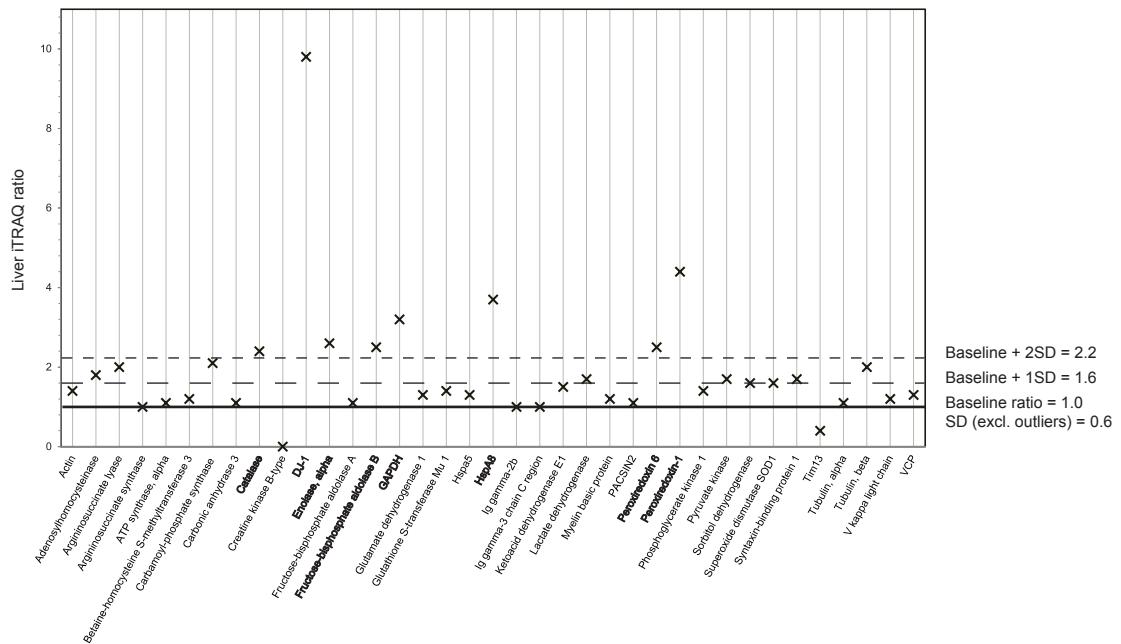


Supplemental Figure 2

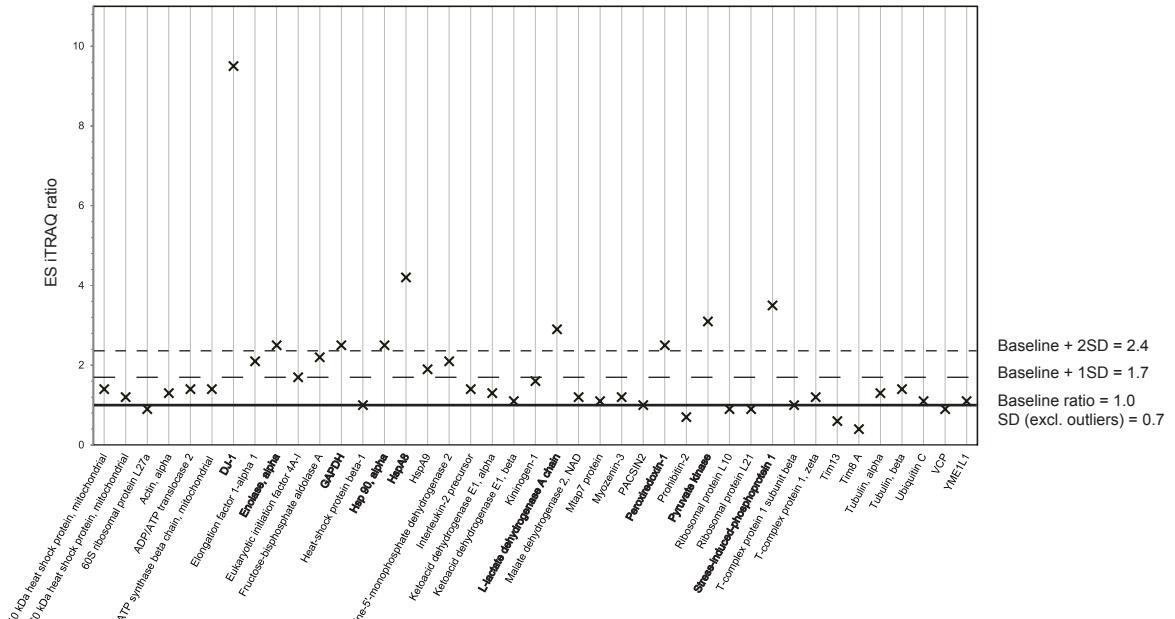
A



B

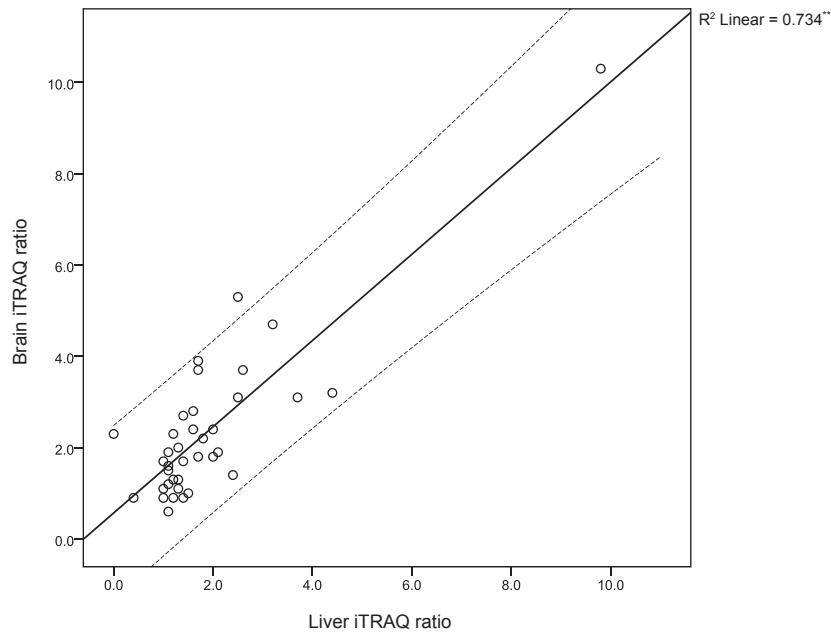


C



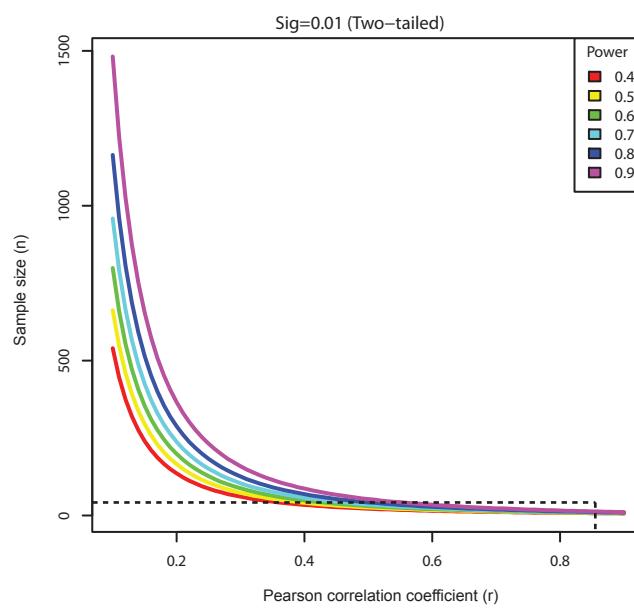
Supplemental Figure 3

A



** Pearson correlation coefficient = 0.857 (significant at the 0.01 level, 2-tailed)

B



Supplemental Table 1

Protein Name	Accession #	MW	Unique	% Cov	z dMass	Prec MW	Prec m/z	Theor MW	Theor m/z	Peptide	Peptide information		Modification	Cleavages	Quantitation				
											% Conf.	Score			114.0	115.0	116.0	117.0	
DJ-1	IP900117264.1	20.022	34	93.8	-0.03	1993.07	499.25	1993.10	499.28	VITAGLACKDGPVQCSR	ITRAQ2, TRAQK1@2, Pyrolytic(C)@14	99	16.5	34.6	13.6	35.5			
						2	0.00	958.56	480.29	958.56	ITRAQ2, No Pyrolytic(C)@14	99	0.0	1.0	1.0	53.3			
						2	0.02	1102.67	502.34	1102.70	502.35	VITAGLACK	ITRAQ2, Lys-Gln@9	99	3.8	46.6	2.9	46.6	
						2	0.02	1098.56	500.29	1098.59	500.30	VITAGLACK	ITRAQ2, TRAQK1@25, TRAQK1@27	99	4.4	59.5	7.8	79.8	
						2	0.01	1001.59	501.80	1001.60	501.81	VITAGLACK	ITRAQ2, Carbamid-N-term; ITRAQK1@9	95	0.0	65.9	8.1	26.0	
						3	0.00	1517.81	500.94	1517.90	506.97	VEGDLTSLR	ITRAQ2, TRAQK1@3	99	9.2	40.1	8.9	41.1	
						4	0.05	3073.55	709.39	3073.55	709.41	TCQPYGVVVLPGGN, GAGNLSEPMVK	ITRAQ2, Pyrolytic(C)@14	99	11.7	2.2	2.6	37.5	
						4	0.02	1000.56	480.29	1000.59	480.30	TCQPYGVVVLPGGN, GAGNLSEPMVK	ITRAQ2, Oxidation(M)@25, TRAQK1@27	99	0.0	55.0	0.0	45.0	
						3	0.00	2913.47	972.16	2913.47	972.16	TCQPYGVVVLPGGN, GAGNLSEPMVK	ITRAQ2, Lys-Gln@25, TRAQK1@27	99	0.0	20.1	0.0	79.9	
						3	0.00	1727.66	512.23	1727.71	512.24	MNMGSNHYSYSESR	ITRAQ2, Oxidation(M)@1	99	6.4	36.1	5.9	51.6	
						3	0.02	1723.68	512.27	1723.71	512.28	MNMGSNHYSYSESR	ITRAQ2, Oxidation(M)@1; Oxidation(M)@2	99	3.5	29.3	2.0	23.4	
						3	0.00	1719.71	512.24	1719.71	512.24	MNMGSNHYSYSESR	ITRAQ2, Ser-Asp@12	99	0.0	47.1	5.9	47.0	
						3	0.01	1673.71	509.91	1673.70	508.91	MNMGSNHYSYSESR	ITRAQ2, Dehydrox(S)@12	83	10.6	43.1	9.7	36.6	
						3	0.00	1659.71	509.94	1659.70	508.94	MNMGSNHYSYSESR	ITRAQ2, TRAQK1@3	99	0.0	23.4	0.0	23.4	
						3	0.00	2193.16	732.00	2193.23	732.08	GPTDFEFLAEVAVLGK	ITRAQ2, TRAQK1@19	99	2.4	56.2	0.0	41.5	
						3	0.01	1014.70	502.27	1014.70	502.28	GPTDFEFLAEVAVLGK	ITRAQ2, TRAQK1@19	99	3.1	54.5	4.4	40.9	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Pyrolytic(C)@14	99	9.2	43.6	0.4	48.6	
						3	0.00	1014.70	502.27	1014.70	502.28	DGLTLSLR	ITRAQ2, Oxidation(M)@3; Pyrolytic(C)@15; TRAQK1@14	99	2.4	32.0	2.2	31.2	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Pyrolytic(C)@15; Pyrolytic(C)@16; TRAQK1@14	99	0.0	42.4	8.8	48.8	
						3	0.00	1014.70	502.27	1014.70	502.28	DGLTLSLR	ITRAQ2, Oxidation(M)@3; Pyrolytic(C)@15; Ala-Val@13; TRAQK1@14	99	9.3	32.4	13.7	44.6	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Dehydrox(S)@12; Pyrolytic(C)@15; TRAQK1@14	99	0.0	44.3	2.2	53.5	
						3	0.00	1014.70	502.27	1014.70	502.28	DGLTLSLR	ITRAQ2, TRAQK1@7	97	5.7	48.8	3.3	42.2	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Ser-Asp@7	93	3.6	45.3	1.2	49.8	
						3	0.00	1014.70	502.27	1014.70	502.28	DGLTLSLR	ITRAQ2, TRAQK1@7	94	3.4	81.1	6.8	8.7	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, TRAQK1@7	94	1.7	50.0	0.0	49.2	
						3	0.00	1014.70	502.27	1014.70	502.28	DGLTLSLR	Average	4.3	44.3	4.8	46.6		
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	STDEV	4.5	13.9	4.3	4.1		
PACSIN2	IP900125880.1	55.833	18	56.2	3	0.00	1340.79	447.84	1340.79	447.84	VESHLAEVKG	ITRAQ2, TRAQK1@9	99	22.2	30.1	2.0	27.1		
						2	0.00	1056.56	502.33	1056.56	502.79	DMMSLNSVASYK	ITRAQ2, TRAQK1@7	99	2.4	32.0	2.4	25.5	
						3	0.04	1533.80	523.27	1533.80	523.29	DMMSLNSVASYK	ITRAQ2, TRAQK1@11	98	29.3	29.3	17.2	24.2	
						2	0.08	1244.68	622.35	1244.76	623.39	EVLEVOK	ITRAQ2, TRAQK1@8	79	17.4	28.4	2.7	25.5	
						2	0.01	1151.00	502.27	1151.00	502.28	EVLEVOK	ITRAQ2, TRAQK1@7	99	13.1	24.3	3.0	23.1	
						3	0.02	1238.66	413.90	1238.66	413.89	EAEDEGFRK	ITRAQ2, TRAQK1@8	99	2.8	42.3	2.3	22.9	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, TRAQK1@11	94	22.4	27.5	2.8	23.8	
						3	0.00	1017.70	502.27	1017.69	502.28	DGLTLSLR	ITRAQ2, TRAQK1@7	99	24.0	25.0	2.4	24.4	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Dimeth(R)@9	99	2.4	48.8	3.3	42.2	
						3	0.00	1017.70	502.27	1017.69	502.28	DGLTLSLR	ITRAQ2, TRAQK1@7	97	5.7	48.8	3.3	42.2	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, Meth(V)@7	93	3.6	45.3	1.2	49.8	
						3	0.00	1017.70	502.27	1017.69	502.28	DGLTLSLR	ITRAQ2, TRAQK1@7	84	3.4	81.1	6.8	8.7	
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	ITRAQ2, TRAQK1@7	94	1.7	50.0	0.0	49.2	
						3	0.00	1017.70	502.27	1017.69	502.28	DGLTLSLR	Average	4.3	44.3	4.8	46.6		
						3	0.00	1044.59	523.00	1045.49	523.80	DGLTLSLR	STDEV	4.5	13.9	4.3	4.1		
Actin	IP000110850.1	41.947	11	54.4	4	0.08	2428.87	428.00	610.60	610.60	VAPEEPVLTAALEPKNR	ITRAQ2, Lys-Gln@18	91	12.8	21.7	1.6	44.9		
						4	0.00	2241.31	501.33	2241.28	501.32	VAPEEPVLTAALEPKNR	ITRAQ2, TRAQK1@9	99	12.2	63.8	10.9	13.1	
						3	0.01	1691.81	504.28	1690.99	504.27	VQEYDEGSPVWR	ITRAQ2, TRAQK1@7	99	16.4	36.5	2.3	24.8	
						2	0.00	1044.59	523.00	1045.49	523.80	VQEYDEGSPVWR	ITRAQ2, TRAQK1@8	99	2.4	32.0	1.3	31.5	
						2	0.00	1217.70	609.88	1217.64	609.83	DTLDLSGDR	ITRAQ2, TRAQK1@11	98	29.3	29.3	17.2	24.2	
						3	0.02	1459.74	499.59	1459.72	499.58	TYASTMDHAR	ITRAQ2, TRAQK1@8	99	17.4	28.4	2.7	25.5	
						3	0.00	1139.65	502.77	1139.64	502.78	TYASTMDHAR	ITRAQ2, TRAQK1@10; TRAQK1@11	99	2.2	42.0	0.0	42.0	
						3	0.00	1044.59	523.00	1045.49	523.80	TYASTMDHAR	ITRAQ2, TRAQK1@8	99	2.4	42.0	0.0	42.0	
						3	0.00	1014.70	502.27	1014.70	502.28	TYASTMDHAR	ITRAQ2, TRAQK1@7	99	2.4	42.0	0.0	42.0	
						3	0.00	1044.59	523.00	1045.49	523.80	TYASTMDHAR	Average	20.8	35.1	18.3	25.6		
						3	0.00	1014.70	502.27	1014.70	502.28	TYASTMDHAR	STDEV	6.7	16.4	6.7	12.5		
Myelin basic protein	IP002235903.1	4	51.8	2	0.00	1189.65	506.53	1189.64	506.53	SDTDSIGR	ITRAQ2	99	34.6	49.7	2.7	6.0			
						2	0.01	1479.71	494.26	1479.73	494.25	TYASTMDHAR	ITRAQ2	99	2.4	31.9	0.9	11.1	
						2	0.00	1217.70	609.88	1217.64	609.83	SDTDSIGR	ITRAQ2, Ser-Asp@7	92	44.8	55.2	0.0	0.0	
						3	0.02	1459.74	499.59	1459.72	499.58	TYASTMDHAR	ITRAQ2, Oxidation(M)@8	99	2.4	42.0	0.0	42.0	
						3	0.00	1139.65	502.77	1139.64	502.78	TYASTMDHAR	ITRAQ2, TRAQK1@8	99	5.3	6.2	47.9	40.3	
						3	0.00	1044.59	523.00	1045.49	523.80	TYASTMDHAR	Average	4.5	7.7	44.2	4.4	44.4	
						3	0.00	1014.70	502.27	1014.70	502.28	TYASTMDHAR	STDEV	2.0	3.7	3.9	3.9	4.4	
Argininosuccinate synthase	IP000134745.6	46.813	5	44.2	3	0.00	1749.94	502.99	1749.84	502.99	APRISDPOVLEIFK	ITRAQ2, TRAQK1@13	99	6.3	10.6	4.3	39.5		
						2	0.01	1046.63	522.32	1046.62	522.31	GOVYILGR	ITRAQ2	99	6.0	12.6	3.6	42.9	
						2	0.00	1139.65	506.34	1139.67	506.34	YLGYTSLAR	ITRAQ2	99	2.2	41.1	4.3	50.6	
						2	0.02	1044.59	523.00	1045.49	523.80	YLGYTSLAR	ITRAQ2, TRAQK1@8	99	3.4	44.6	0.0	44.6	

Supplemental Table 2

Supplemental Table 3

Protein Name	Protein information				Peptide information													
	Accession #	MW	Mascot Score	Unique	% Conf.	Mt#	m/z	Mw	Mr	Peptide	Start	End	Mascot Score	114.0	115.0	116.0	117.0	
D2.1	IP001172441	20.022	876.2		24	54.1	3	1029.03	943.98	1029.98 TRAQ-DVMDPDTSLSDADK(TRAQ K)	49	62	38.1	5.7	28.9	29.7	37.8	
						54.1	2	1692.54	864.98	1692.72 TRAQ-QMMSHYSYNEER	133	145	30.4	1.3	25.2	38.4	35.1	
						54.1	2	1692.54	864.98	1692.72 TRAQ-QMMSHYSYNEER	137	145	24.7	2.2	24.8	24.8	36.6	
						54.2	2	1043.64	822.33	1043.69 TRAQ-PPLVKITRAQ KID	183	189	29.6	1.1	37.3	27.0	34.6	
						54.2	2	1043.64	822.33	1043.69 TRAQ-PPLVKITRAQ KID	183	189	28.1	2.1	37.3	27.0	34.6	
						54.2	2	1103.70	952.35	1103.73 TRAQ-VTVALKLACKITRAQ KID	33	41	7.0	0.9	32.5	33.1	33.5	
						54.2	2	1043.64	822.32	1043.69 TRAQ-PPLVKITRAQ KID	183	189	24.9	3.2	22.0	37.4	37.4	
						54.2	2	1043.64	822.32	1043.69 TRAQ-PPLVKITRAQ KID	183	189	23.9	2.2	22.0	37.4	37.4	
						54.3	2	1692.54	864.92	1692.72 TRAQ-QMMSHYSYNEER	133	145	19.6	6.4	37.4	31.0	24.7	
						54.3	2	1692.54	864.92	1692.72 TRAQ-QMMSHYSYNEER	137	145	24.7	2.2	24.8	24.8	36.6	
						54.3	2	1015.73	908.37	1015.74 TRAQ-QAQLVAKITRAQ KID	6	12	22.8	0.6	30.8	33.0	35.6	
						54.3	2	1015.73	908.37	1015.74 TRAQ-QAQLVAKITRAQ KID	183	189	22.5	0.6	30.8	33.0	34.4	
						54.3	2	928.07	464.79	928.67 TRAQ-PPLVKITRAQ KID	183	189	22.5	0.6	30.8	33.0	35.2	
						54.3	2	1043.64	822.32	1043.69 TRAQ-PPLVKITRAQ KID	183	189	23.9	2.2	22.0	37.4	37.4	
						54.3	2	1043.64	822.32	1043.69 TRAQ-PPLVKITRAQ KID	183	189	23.9	2.2	22.0	37.4	37.4	
						54.3	2	1693.81	459.03	1693.85 TRAQ-QMMSHYSYNEER YSESR	133	145	19.6	6.4	37.4	31.0	24.7	
						54.3	2	1693.81	459.03	1693.85 TRAQ-QMMSHYSYNEER YSESR	137	145	24.7	2.2	24.8	24.8	36.6	
						54.3	2	1043.64	822.33	1043.69 TRAQ-PPLVKITRAQ KID	183	189	22.5	0.6	30.8	33.0	34.4	
						54.3	2	1158.66	506.35	1158.74 TRAQ-QPPLVKITRAQ KID	146	156	9.0	0.9	32.5	32.5	18.2	
						54.3	2	1093.59	547.29	1093.62 TRAQ-QMAMQPEKTRQ KID	176	182	9.0	0.8	22.4	34.9	41.9	
						54.3	2	1093.59	547.29	1093.62 TRAQ-QMAMQPEKTRQ KID	183	189	22.5	0.6	30.8	33.0	34.4	
						54.3	2	790.50	365.74	790.55 TRAQ-EELK(TRAQ K)PFLR	90	93	11.4	0.4	33.2	30.4	36.0	
						54.3	2	790.50	365.74	790.55 TRAQ-EELK(TRAQ K)PFLR	90	93	11.4	0.4	33.2	30.4	36.0	
										Average	3.1	29.4	31.5	35.9				
										STDEV	2.7	6.3	7.5	5.9				
10 kDa heat shock protein, mitochondrial	IP00263863.7	10.832	152.8		5	50.5	3	124.01	52.84	124.98 TRAQ-QAQLVAVGIVGSG(TRAQ K)	40	53	50.3	25.4	31.6	23.4	20.3	
						50.5	3	162.29	84.44	163.79 TRAQ-QSPPVPRV(TRAQ K)	58	61	31.0	1.1	24.7	24.7	19.9	
						50.5	3	1651.66	526.33	1651.61 TRAQ-QPLFR	8	14	25.4	17.8	40.7	20.0	21.4	
						50.5	3	1132.71	568.66	1136.89 TRAQ-QMAMQPEKTRQ KID	28	35	23.8	22.2	33.7	19.0	24.4	
						50.5	3	1132.71	568.66	1136.89 TRAQ-QMAMQPEKTRQ KID	60	91	19.1	1.1	21.7	21.7	19.2	
										Average	22.0	31.6	23.9	22.4				
										STDEV	2.5	8.4	8.4	8.4				
Tim13	IP00134484.1	10.458	122.2		3	26.0	2	1007.01	686.84	1006.98 TRAQ-YDQANAVGELDLP	20	41	51.6	42.5	23.5	26.6	4.1	
						26.0	2	1488.83	496.05	1488.86 TRAQ-QPQAMPEQV(TRAQ K)	17	27	39.3	46.2	27.8	21.8	10.2	
						26.0	2	1386.66	693.92	1386.66 TRAQ-YDQAMWVTPS	73	82	31.1	48.1	21.6	15.2	14.1	
						26.0	2	1488.83	496.05	1488.86 TRAQ-QPQAMPEQV(TRAQ K)	17	27	39.3	46.2	27.8	21.8	10.2	
										Average	43.9	27.3	19.3	9.5				
										STDEV	2.5	8.4	8.4	8.4				
GAPDH	IP00474610.3	35.679	329.1		11	27.1	3	1748.01	683.84	1748.95 TRAQ-PTPPVNSVDTOR	223	245	42.5	19.0	28.5	31.1	21.0	
						27.1	3	1748.01	683.84	1748.95 TRAQ-PTPPVNSVDTOR	223	245	44.6	12.2	33.2	23.3	30.9	
						27.1	3	1658.01	533.53	1657.97 TRAQ-QAQNIPNASTK(TRAQ K)	198	212	34.4	14.6	26.6	38.1	2.1	
						27.1	3	1658.01	505.37	1658.94 TRAQ-VOLVMMASV(TRAQ K)	174	184	34.4	1.1	32.7	32.7	1.5	
						27.1	3	1515.93	505.37	1515.94 TRAQ-VOLVMMASV(TRAQ K)	321	331	23.4					
						27.1	3	1157.74	579.37	1157.74 TRAQ-VPLENQK(TRAQ K)	217	224	30.1	12.2	34.0	24.9	28.8	
						27.1	3	949.53	475.27	955.59 TRAQ-PNTQV(TRAQ K)	281	301	11.7	13.4	34.8	29.8	22.2	
						27.1	3	949.53	475.27	949.53 TRAQ-YVNGFGR	4	11	13.8	11.5	25.2	31.8	31.5	
						27.1	3	949.53	475.27	949.53 TRAQ-YVNGFGR	24	26	11.1	1.1	32.9	20.7	21.1	
										Average	12.5	31.0	27.7	28.8				
										STDEV	2.5	8.4	8.4	8.4				
Tubulin, beta	IP00166463.1	49.832	379.4		11	27.1	3	1748.01	683.84	1748.95 TRAQ-QMMSHYSYNEER	205	236	41.6	21.3	22.2	22.2	21.9	
						27.1	3	1287.73	64.37	1287.74 TRAQ-LAVINNPYPR	253	262	35.0	23.2	18.2	32.3	2.3	
						27.1	3	1607.01	636.64	1607.93 TRAQ-QNNTVSPPSK(TRAQ K)	183	189	31.1	17.2	23.0	25.5	24.3	
						27.1	3	1616.91	639.64	1616.88 TRAQ-QVNVYNEATGK(TRAQ K)	47	58	24.4	13.2	32.7	28.9	24.5	
						27.1	3	1373.69	687.24	1373.70 TRAQ-QEQTAMPR	281	300	21.7	18.3	30.7	32.7	2.7	
						27.1	3	1698.14	663.76	1698.04 TRAQ-QVSYEYK(TRAQ K)	47	57	17.5	36.1	34.8	20.4	20.4	
						27.1	3	1220.07	407.50	1220.66 TRAQ-QVCPDPPI(TRAQ K)	263	262	14.4	14.5	31.5	24.9	24.2	
						27.1	3	1230.73	63.25	1230.55 TRAQ-LAK(TRAQ K)	351	356	16.8	22.1	24.5	16.6	16.6	
						27.1	3	1295.74	419.75	1295.77 TRAQ-QMAMACDPR	296	308	13.1	1.1	21.7	21.7	2.7	
										Average	21.2	29.8	24.8	24.5				
										STDEV	7.2	8.1	8.1	8.4				
Tim8 A	IP00125776.1	11.043	67.4		2	22.7	2	1483.81	742.41	1483.81 TRAQ-SKJ(TRAQ K)PVFSLSLSD	87	97	31.4	5.1	19.8	13.5	15.2	
						22.7	2	1497.84	499.85	1497.84 TRAQ-TK(TRAQ K)TFSLNLRL	70	80	50.2	50.2	50.2	50.2	50.2	
Ribosomal protein L21	IP00376437.3	18.503	76.0		76	4	22.5	3	1587.75	465.25	1587.76 TRAQ-KVPLAYTMMR	22	32	40.1	27.8	25.7	32.8	15.7
						22.5	3	1887.73	463.25	1887.76 TRAQ-KVPLAYTMMR	22	32	40.1	27.8	25.7	32.8	20.4	
						22.5	3	1731.07	577.66	1731.07 GEQD(TRAQ K)Q(IGTVQK(TRAQ K)	37	50	19.4					
						22.5	3	1000.59	500.80	1000.59 TRAQ-QAVNARV	1	1	1.7					
						22.5	3	961.60	481.30	961.62 TRAQ-QAQLVQK(TRAQ K)	406	411	18.1	18.4	37.7	20.8	23.1	
						22.5	3	1249.70	457.28	1249.80 TRAQ-QDQFLNFSK(TRAQ K)	412	419	16.6	16.1	32.2	22.8	29.0	
						22.5	3	1249.70	457.28	1249.80 TRAQ-QDQFLNFSK(TRAQ K)	207	217	30.8	37.1	24.4	35.0	35.0	
						22.5	3	1134.68	487.24	1134.69 TRAQ-QEGLK(TRAQ K)	269	275	16.1	21.4	27.1	23.2	23.2	
						22.5	3	967.48	484.24	967.46 TRAQ-QAEQDFR	133	139	15.2	30.6	21.7	26.7	21.0	
						22.5	3	1266.72	633.82	1266.72 TRAQ-QPOVTVKE(TRAQ K)	73	81	12.1	25.1	28.1	25.0	21.2	
						22.5	3	1164.63	544.81	1164.62 TRAQ-QLTLVKT(TRAQ K)	268	269	5.5	24.9	28.1	25.5	5.5	
						22.5	3	1286.78	643.88	1286.71 TRAQ-QDLYTMK(TRAQ K)	24	29	14.1	38.3	26.6	20.9		
										Average	24.7	25.8	26.8	26				

Interleukin-2 precursor	IP00115183.1	19.400	168.7	6	14.2	4	2885.30	747.98	2985.41	TRAQ-LKGSNTFCOFTDESEATVDFLR	131 154	32.2	19.9	29.8	25.2	25.0
					14.2	4	2175.86	588.34	1175.66	TRAQ-DLMYAKTRKTRQ K	395 401	22.6	23.9	28.9	23.1	24.1
					14.2	4	2885.30	747.98	2985.41	TRAQ-LKGSNTFCOFTDESEATVDFLR	131 154	31.3	25.7	30.1	19.9	24.8
					14.2	4	2885.33	747.09	2985.41	TRAQ-LKGSNTFCOFTDESEATVDFLR	131 154	20.8				
					14.2	4	2175.86	588.34	1175.66	TRAQ-DLMYAKTRKTRQ K	131 154	21.4				
					14.2	4	2189.69	747.18	2885.41	TRAQ-LKGSNTFCOFTDESEATVDFLR	131 154	18.2				
Tubulin, alpha	IP00117350.1	49.925	150.4	6	14.2	3	1860.08	620.70	1860.02	TRAQ-LPVFDPELVTFVDFR	65 79	39.1				
					14.2	2	1175.86	588.34	1175.66	TRAQ-DLMYAKTRKTRQ K	395 401	22.6	23.9	28.9	23.1	24.1
					14.2	3	2057.03	686.33	2057.04	TRAQ-VCMLSNTAAEAWAR	374 390	26.1				
					14.2	2	1187.58	584.28	1187.55	TRAQ-DAANNYAR	97 100	17.3	23.1	22.7	25.5	26.8
					14.2	3	2057.05	686.33	2057.04	TRAQ-VCMLSNTAAEAWAR	374 390	16.0	19.2	17.4	31.2	32.2
YME1L1	IP00136555.1	80.029	385.4	11	14.0	3	1396.83	468.28	1886.80	TRAQ-CILLGPPPTGKTRQ K	316 327	43.1	36.2	7.0	17.7	39.0
					14.0	2	1396.93	468.31	1396.90	TRAQ-CILLGPPPTGKTRQ K	316 327	36.7	37.7	25.1	23.1	
					14.0	3	2306.24	769.74	2306.28	TRAQ-CTVGSGAELNLNDAALKTRQ K	479 498	40.1				
					14.0	2	1396.93	468.31	1396.90	TRAQ-CILLGPPPTGKTRQ K	301 311	36.3	29.1	29.2	23.4	18.3
					14.0	3	1557.79	519.17	1557.85	TRAQ-HPKEHQDHFTRQ K	201 211	34.7	24.7	32.1	25.9	17.1
					14.0	2	1009.65	505.33	1009.65	TRAQ-TVLDGKTRQ K	306 312	23.9	34.4	28.9	23.4	13.3
					14.0	3	1599.54	489.27	1599.55	TRAQ-SPHMFYTRQ K	309 315	17.4	28.2	33.9	27.5	21.6
					14.0	2	1764.49	392.75	1658.78	TRAQ-VLASSAVGNSDEAR	519 525	19.9	28.2	27.9	27.5	21.6
					14.0	2	1018.59	509.08	1018.59	TRAQ-Q2GLSELK	62 69	14.5	4.7	21.4	31.0	42.9
T-complex protein 1 subunit beta	IP00320217.8	57.347	159.1	7	13.7	3	1451.79	484.50	1451.82	TRAQ-IRHRRHSDWLR	Average 316 327	21.7	30.5	20.8	27.0	
					13.7	3	1526.35	509.20	1526.35	TRAQ-ALVYQGEEATTPHPLVKTRQ K	120 130	34.5	44.4	19.0	20.6	15.9
					13.7	3	2203.51	628.28	2203.55	TRAQ-ALVYQGEEATTPHPLVKTRQ K	141 202	31.2	37.5	23.0	20.7	
					13.7	2	1014.68	507.84	1014.64	TRAQ-LQAEVLR	181 186	24.9	25.3	19.3	27.5	
					13.7	3	1530.65	483.80	1530.67	TRAQ-QHEDKTRQ K	139 143	23.2	16.9	28.7	23.6	20.4
					13.7	2	1660.72	508.77	1660.76	EGLELEDEEDEKTRQ K	138 143	10.4				
					13.7	3	1512.65	483.22	1512.67	TRAQ-QHEDKTRQ K	147 153	10.4				
					13.7	2	1666.48	528.74	1658.78	TRAQ-YOSTAK	257 262	3.3				
60S ribosomal protein L27a	IP00536122.2	16.458	54.5	2	12.9	2	1283.69	642.59	1285.78	TRAQ-TQAVDIFVR	Average 94 104	24.8	25.8	25.0	24.5	
					12.9	3	1256.69	419.57	1256.69	TRAQ-HPFIYQKTRQ K	47 54	33.5	23.2	32.0	22.4	
					12.9	2	1283.69	642.59	1285.78	TRAQ-TQAVDIFVR	Average 94 104	23.9	20.9	32.2	23.0	
Hsp 90, alpha	IP00330804.3	84.657	292.3	10	12.4	3	1635.01	546.58	1637.86	TRAQ-LTIVDQGKFTRQ K	87 99	39.2	10.1	41.0	26.1	22.7
					12.4	3	1826.05	509.20	1826.09	TRAQ-ALNQWHLAVKTRQ K	313 327	35.7	34.3	29.1	26.6	
					12.4	3	1629.95	510.65	1629.99	TRAQ-ALNQWHLAVKTRQ K	313 327	36.4	8.4	25.5	30.7	
					12.4	2	1530.55	765.80	1530.93	TRAQ-ALNQWHLAVKTRQ K	100 111	31.4	23.7	37.7	30.7	
					12.4	3	1312.66	438.76	1312.67	TRAQ-QHEDKTRQ K	447 456	18.5				
					12.4	2	1560.72	508.77	1560.76	EGLELEDEEDEKTRQ K	547 560	20.1	14.7	23.6	27.5	34.2
					12.4	3	1512.65	483.22	1512.67	TRAQ-QHEDKTRQ K	74 76	17.3				
					12.4	3	1607.65	603.22	1608.06	LDIGKELHNLPKTRQ K	496 498	10.4				
					12.4	2	1607.65	603.22	1608.06	LDIGKELHNLPKTRQ K	69 83	11.1				
Myozin-3	IP00153879.1	26.982	158.1	7	11.8	3	2406.24	807.75	2406.33	EPMAHPLDQEPHPSLSDLGKTRQ K	8 29	29.6				
					11.8	3	1622.01	541.34	1621.96	TRAQ-AQFIVYDLTRQ K	45 46	22.4	13.6	25.5	25.0	
					11.8	3	2406.33	807.75	2406.33	EPMAHPLDQEPHPSLSDLGKTRQ K	8 29	24.1	31.3	36.8	20.5	
					11.8	3	1622.01	541.34	1621.96	TRAQ-AQFIVYDLTRQ K	304 313	19.4	23.4	24.1	30.4	
					11.8	3	2406.33	807.75	2406.33	EPMAHPLDQEPHPSLSDLGKTRQ K	8 29	19.8				
					11.8	3	2560.47	650.70	2560.46	EPMAHPLDQEPHPSLSDLGKTRQ K	8 29	14.7	23.7	29.1	16.9	
					11.8	3	2550.34	650.70	2550.46	EPMAHPLDQEPHPSLSDLGKTRQ K	8 29	12.1	23.7	29.1	20.4	
ATP synthase beta chain, mitochondrial	IP00468481.2	56.301	134.1	5	11.3	3	2311.54	771.12	2311.24	TRAQ-LSDPQVAEVYFTQHMKGTRQ K	460 480	38.1	25.5	25.2	25.5	
					11.3	2	1529.82	565.41	1528.81	TRAQ-ANVGEEDP	144 155	15.4	16.5	30.5	33.9	
					11.3	3	1529.82	565.41	1528.81	TRAQ-ANVGEEDP	311 324	31.0				
					11.3	2	1529.82	565.41	1528.81	TRAQ-ANVGEEDP	411 485	14.2				
Lactate dehydrogenase A chain	IP00319994.5	36.368	69.2	6	10.8	3	1504.04	655.35	1504.48	TRAQ-LQADLAIVVQDNKEDKTRQ K	42 56	30.7				
					10.8	3	1622.01	541.34	1621.96	TRAQ-AQFIVYDLTRQ K	120 131	20.8	26.9	18.4	25.0	
					10.8	3	1437.76	479.92	1437.78	TRAQ-HYDPEVKTRQ K	127 135	21.9	14.7	28.4	43.7	
					10.8	3	1591.51	446.71	1591.51	TRAQ-NVYTRKTRQ K	153 163	16.4	23.4	31.6	23.8	
					10.8	2	1692.52	446.76	1692.57	TRAQ-NVYTRKTRQ K	301 307	17.4	15.0	22.4	31.4	
					10.8	3	1692.52	446.76	1692.57	TRAQ-NVYTRKTRQ K	139 143	14.1	18.4	35.8	27.9	
					10.8	3	2050.31	850.78	2050.33	AMQDAEVSKTRQ K	492 498	9.5				
					10.8	2	1600.64	847.41	1600.64	TRAQ-QMQLKLLTRQ K	369 391	15.3				
Hsp90	IP00309001.1	73.529	222.1	21	10.3	3	2406.24	807.75	2406.32	TRAQ-VQDFTVQVDFTRQ K	395 405	43.0	16.2	28.1	36.0	
					10.3	3	1622.01	541.34	1621.96	TRAQ-AQFIVYDLTRQ K	349 360	26.7				
					10.3	3	1437.76	479.92	1437.78	TRAQ-HYDPEVKTRQ K	379 387	23.1				
					10.3	2	1591.51	446.71	1591.51	TRAQ-NVYTRKTRQ K	102 111	21.4	23.8	31.1	21.8	
					10.3	3	1127.07	564.32	1127.08	TRAQ-EVSTVYKTRQ K	250 257	22.4	12.8	34.2	23.0	
					10.3	2	1104.60	562.80	1104.61	TRAQ-QDMLNATRQ K	175 181	21.4	11.8	33.1	33.4	
					10.3	2	1607.73	537.57	1607.74	TRAQ-QHEDKTRQ K	258 268	14.8	23.1	34.7	34.7	
					10.3	2	914.62	457.81	914.57	TRAQ-QTAVKTRQ K	433 441	1.1				
					10.3	2	1938.09	446.70	1938.09	TRAQ-QDMLNATRQ K	34 42	31.5				
					10.3	3	2405.26	747.07	2405.51	TAQRPRTSTVQDTQSHNSHNDQDPPLR	34 62	31.6				
					10.3	4	2984.93	846.46	2985.57	FRSH-LQDQVADLQDQGKTRQ K	210 239	33.3				
					10.3	4	2985.57	847.07	2985.51	TAQRPRTSTVQDTQSHNSHNDQDPPLR	34 62	26.9				
					10.3	4	2985.78	747.42	2985.51	TAQRPRTSTVQDTQSHNSHNDQDPPLR	34 62	27.7				
					10.3	4	1986.50	598.33	1986.08	TRAQ-SVYTMNLNSKHDYVPSK	183 207	19.3	26.3	16.8	17.3	
					10.3	4	2985.78	747.42	2985.51	TAQRPRTSTVQDTQSHNSHNDQDPPLR	34 62	22.3				
					10.3	4	3075.67	749.67	3075.55	TAQRPRTSTVQDTQSHNSHNDQDPPLR	669 693	1.1				
Kininogen-1	IP00114958.1	73.103	106.9	5	9.6	3	1504.04	655.35	1504.48	TAQ-LQADLAIVVQDNKEDKTRQ K	33 43	29.6	12.3	30.4	26.5	
					9.6	3	1622.01	541.34	1621.96	TAQ-AQFIVYDLTRQ K	240 251	37.7	26.6	25.9	11.2	
					9.6											