



Suppl. Fig. 1. Peptides recovered by LC-MS/MS. Green indicates peptides observed in both Pulsar and LTQ-Orbitrap datasets. Cyan indicates peptides observed only in LTQ-Orbitrap datasets. Yellow indicates peptides observed only in Pulsar datasets.

Suppl. Table 1: Unique peptides observed by LC-MS/MS (Pulsar + LTQ-Orbitrap)

Residues #	Sequence	Mass	Calculated m/z, with observed peptide ions indicated in Bold						Elution Time
			MH+	2.00	3.00	4.00	5.00	6.00	
-7.8	AHHHHHHAMAQERPTF	1942.89	1943.89	972.45	648.63	486.72			6
9.13	YRQEL	707.37	708.37						4.4
9.39	YRQELNKTIWEVPERYQNLAPVGSGAYGSVC	3526.74	3527.74	1764.37	1176.58	882.69	706.35	588.79	11.5
14.39	NKTIWEVPERYQNLAPVGSGAYGSVC	2837.39	2838.39	1419.70	946.80	710.35	568.48	473.90	11.3
40.71	AAFDTKTGHRVAVKKLSRPFQSIHAKRTYRE	3711.07	3712.07	1856.54	1238.02	928.77	743.21	619.51	7.7
42.71	FDTKTGHRVAVKKLSRPFQSIHAKRTYRE	3568.99	3569.99	1785.50	1190.66	893.25	714.80	595.83	9.5
72.86	LRLMKHMKHENVIGL	1800.06	1801.06	901.03	601.02	451.02			7.7
72.87	LRLMKHMKHENVIGLL	1913.15	1914.15	957.58	638.72	479.29			10.3
75.86	LKHKHMKHENVIGL	1417.79	1418.79	709.90	473.60				6.4
75.87	LKHKHMKHENVIGLL	1530.87	1531.87	766.44	511.29				7.15
75.88	LKHKHMKHENVIGLLD	1645.90	1646.90	823.95	549.63	412.47			9
87.95	LDVFTPARS	1004.53	1005.53	503.26					5.6
87.98	LDVFTPARSLEE	1375.71	1376.71	688.86	459.57				8
87.99	LDVFTPARSLEEF	1522.77	1523.77	762.39	508.59				9.8
87.101	LDVFTPARSLEEFND	1751.84	1752.84	876.92	584.95	438.96			9.4
87.103	LDVFTPARSLEEFNDVY	2013.98	2014.98	1007.99	672.33	504.50	403.80		11.5
88.98	DVFTPARSLEE	1262.61	1263.61	632.31	421.87				7.3
88.103	DVFTPARSLEEFNDVY	1900.88	1901.88	951.44	634.63	476.22			9.7
89.98	VFTPARSLEE	1147.59	1148.59	574.79					6.35
99.103	FNDVY	656.29	657.29						5.9
99.104	FNDVYL	769.36	770.36						7.6
104.108	LVTHL	581.36	582.36						4.5
104.129	LVTHLMGADLNNIVKCQKLTDDHVQF	2951.51	2952.51	1476.76	984.84	738.88	591.30	492.92	9.5
105.115	VTHLMGADLNN	1183.57	1184.57	592.78					6
107.115	HLMGADLNN	983.46	984.46	492.73					4.7
116.129	IVKCQKLTDDHVQF	1672.87	1673.87	837.44	558.62	419.22			6.4
130.135	LIYQIL	761.48	762.48						8
130.145	LIYQILRGLKYIHSAD	1902.08	1903.08	952.04	635.03	476.52			9.7
130.156	LIYQILRGLKYIHSADIIHRDLKPSNL	3188.83	3189.83	1595.42	1063.94	798.21	638.77	532.47	10.5
131.156	IYQILRGLKYIHSADIIHRDLKPSNL	3075.73	3076.73	1538.87	1026.24	769.93	616.15	513.62	9.25
133.145	QILRGLKYIHSAD	1512.84	1513.84	757.42	505.28				6.8
133.156	QILRGLKYIHSADIIHRDLKPSNL	2799.59	2800.59	1400.79	934.20	700.90	560.92	467.60	8.5
134.156	ILRGLKYIHSADIIHRDLKPSNL	2671.53	2672.53	1336.76	891.51	668.88	535.31	446.25	8.5
136.145	RGLKYIHSAD	1158.61	1159.61	580.31					5.1
136.156	RGLKYIHSADIIHRDLKPSNL	2445.37	2446.37	1223.69	816.12	612.34	490.07	408.56	8

146.156	IIHRDLKPSNL	1304.76	1305.76	653.38	435.92					5.6
157.164	AVNEDCEL	891.37	892.37	446.69						8.1
164.178	LKILDFGLARHTDDE	1741.90	1742.90	871.95	581.63	436.47				8.4
164.181	LKILDFGLARHTDDEMTG	2031.01	2032.01	1016.50	678.00	508.75				8.8
164.182	LKILDFGLARHTDDEMTGY	2194.07	2195.07	1098.04	732.36	549.52	439.81			9.3
165.179	KILDFGLARHTDDEM	1759.86	1760.86	880.93	587.62	440.96				8.1
165.181	KILDFGLARHTDDEMTG	1917.91	1918.91	959.96	640.30	480.48				7.8
165.182	KILDFGLARHTDDEMTGY	2080.98	2081.98	1041.49	694.66	521.25	417.20			8.4
165.187	KILDFGLARHTDDEMTGYVATRW	2694.32	2695.32	1348.16	899.11	674.58	539.86	450.05		9.9
165.187	KILDFGLARHTDDEMTGYVATRW	2854.26	2855.26	1428.13	952.42	714.57	571.85	476.71		9.1
169.182	FGLARHTDDEMTGY	1611.70	1612.70	806.85	538.23	403.92				7.5
183.187	VATRW	631.33	632.33							8
183.194	VATRWYRAPEIM	1491.49	1492.49	746.74	498.16					8.5
188.195	YRAPEIML	991.52	992.52	496.76						8
195.202	LNWMHYNQ	1104.48	1105.48	553.24						8
195.205	LNWMHYNQTVD	1419.62	1420.62	710.81	474.21					8.4
195.206	LNWMHYNQTVDI	1532.72	1533.72	767.36	511.91					9.1
195.207	LNWMHYNQTVDIW	1718.79	1719.79	860.39	573.93	430.70				10.4
195.210	LNWMHYNQTVDIWSVG	1961.91	1962.91	981.95	654.97	491.48				10.35
196.210	NWMHYNQTVDIWSVG	1848.83	1849.83	925.41	617.28	463.21				10.4
206-210	IWSVG	560.30	561.30							6.15
211-215	CIMAE	565.23	566.23							6.3
214.231	AELLTGRTLFPGTDHIDQ	1983.01	1984.01	992.50	662.00	496.75				8.25
214.234	AELLTGRTLFPGTDHIDQLKL	2337.27	2338.27	1169.63	780.09	585.32	468.45			9.4
216.234	LLTGRTLFPGTDHIDQLKL	2137.13	2138.13	1069.57	713.38	535.28	428.43			11.1
216.236	LLTGRTLFPGTDHIDQLKLIL	2363.36	2364.36	1182.68	788.79	591.84	473.67			10
217.234	LTGRTLFPGTDHIDQLKL	2024.11	2025.11	1013.06	675.70	507.03	405.82			10.5
217.236	LTGRTLFPGTDHIDQLKLIL	2250.28	2251.28	1126.14	751.09	563.57	451.06			10.1
235.238	ILRL	513.37	514.37							5.5
235.245	ILRLVGTPGAE	1124.66	1125.66	563.33						6.7
235.246	ILRLVGTPGAEL	1237.74	1238.74	619.87						7.8
235.257	ILRLVGTPGAELLKKISSESARN	2451.42	2452.42	1226.71	818.14	613.85	491.28	409.57		8.9
237.246	RLVGTPGAEL	1011.57	1012.57	506.79						6.35
237.257	RLVGTPGAELLKKISSESARN	2225.25	2226.25	1113.62	742.75	557.31	446.05			8.5
239.246	VGTPGAEL	742.39	743.39							4.8
239.257	VGTPGAELLKKISSESARN	1956.06	1957.06	979.03	653.02	490.02				8
239.262	VGTPGAELLKKISSESARNYIQL	2560.39	2561.39	1281.19	854.46	641.10	513.08	427.73		10.2
246.262	LLKKISSESARNYIQL	1949.09	1950.09	975.55	650.70	488.27				8.3
247.257	LKKISSESARN	1231.68	1232.68	616.84	411.56					3.6
247.262	LKKISSESARNYIQL	1836.02	1837.02	919.01	613.01	460.01				8

258.262	YIQSL	622.34	623.34						5.2
263.270	AQMPKMNF	965.45	966.45	483.72					7.5
263.273	AQMPKMNFANV	1249.59	1250.59	625.80	417.53				7.95
263.274	AQMPKMNFANVF	1396.66	1397.66	699.33	466.55				9.7
263.284	AQMPKMNFANVFIGANPLAVDL	2360.19	2361.19	1181.10	787.73	591.05	473.04		11.35
271.274	ANVF	449.23	450.23						4.6
275.284	IGANPLAVDL	981.56	982.56	491.78					8.5
275.288	IGANPLAVDLLEKM	1482.81	1483.81	742.41	495.27				10.3
285.307	LEKMLVLDSDKRITAAQALAHAY	2556.37	2557.37	1279.19	853.12	640.09	512.27	427.06	9.1
289.307	LVLDSDKRITAAQALAHAY	2055.12	2056.12	1028.56	686.04	514.78	412.02		10.2
289.308	LVLDSDKRITAAQALAHAYF	2202.19	2203.19	1102.10	735.06	551.55	441.44		11.6
292.307	DSDKRITAAQALAHAY	1729.87	1730.87	865.94	577.62	433.47			7.1
308.327	FAQYHDPDDEPVADPYDQSF	2354.97	2355.97	1178.49	785.99	589.74	471.99		8.8
309.327	AQYHDPDDEPVADPYDQSF	2207.90	2208.90	1104.95	736.97	552.98	442.58		8.4
327.333	FESRDLL	878.45	879.45	440.22					6.75
328.333	ESRDLL	731.39	732.39						7.3
328.336	ESRDLLIDE	1088.54	1089.54	545.27					6.4
332.336	LLIDE	601.33	602.33						5.2
334.341	IDEWKSLT	990.50	991.50	496.25					7.2
334.345	IDEWKSLTYDEV	1496.70	1497.70	749.35	499.90				8.7
337.343	WKSLTYD	911.45	912.45	456.73					6.8
337.344	WKSLTYDE	1040.48	1041.48	521.24					7
337.345	WKSLTYDEV	1139.55	1140.55	570.77					7.8
344.348	EVISF	593.31	594.31						7
344.357	EVISFVPPPLDQEE	1597.80	1598.80	799.90	533.60	400.45			8.5
346.360	ISFVPPPLDQEEMES	1716.79	1717.79	859.40	573.26				8.7
349.360	VPPPLDQEEMES	1369.61	1370.61	685.80	457.54				5.9

Suppl. Table 2: Kinetic parameters for in-exchange, fit by non-linear least squares.

Sequence ⁽¹⁾	Residues	Calc Mass	Obs. m/z	#EA	% BE	RSS	A ⁽²⁾	B	C	N	k ₁	k ₂	k ₃	
AHHHHHHAMAQERPTF	0P	-7.8	1942.89	972.45	14	25.90	0.52	6.74(.42)	0.66(.38)		7.41(.067)	30.05(19.39)	1.73(1.34)	
	2P						0.61	7.07(.16)	0.46(.13)		7.53(.11)	15.10(1.38)	0.035(.032)	
YRQEL	0P	9.13	707.37	708.37	4	21.20	0.44	1.58(.22)	1.35(.15)		2.93(.12)	22.20(18.88)	.11(.04)	
	2P						1.07	1.47(.25)	1.41(.21)		2.90(.16)	7.18(2.98)	0.085(.047)	
YRQELNKTIVEVPERYQNLAPVGSYGAYGSVC	0P	9.39	3526.74	1176.58	28	30.30	4.57	13.19(.81)	4.62(1.28)	5.36(1.35)	23.17(.40)	28.44(19.04)	0.40(.22)	0.030(.017)
	2P						4.06	12.73(.66)	3.93(.68)	7.40(.62)	24.06(.40)	19.16(4.99)	0.51(.23)	0.022(.0050)
NKTIWEVPERYQNLAPVGSYGAYGSVC	0P	14.39	2837.39	946.8	23	31.80	2.44	10.60(.70)	1.88(.60)	6.76(.50)	19.22(.57)	14.23(2.69)	0.52(.44)	0.015(.0051)
	2P						5.63	10.20(.85)	2.44(.77)	6.65(.68)	19.28(.74)	12.80(3.10)	0.50(.44)	0.014(.0051)
AAFDTKTGHRVAVKKLSRPFQSIHAKRTYRE	0P	40.71	3711.07	928.77	30	30.10	1.92	6.62(.74)	3.07(.70)	2.83(.66)	12.52(.25)	11.40(2.84)	0.62(.35)	0.032(.019)
	2P						2.64	4.11(.71)	5.71(.64)	3.81(.99)	13.62(1.12)	18.50(13.31)	0.92(.20)	0.0079(.0052)
FDTKTGHRVAVKKLSRPFQSIHAKRTYRE ⁽⁷⁾	0P	42.71	3568.99	714.8	28	31.60	3.42	7.17(.83)	3.20(.79)	2.32(.73)	12.70(.33)	13.62(4.29)	0.56(.35)	0.030(.023)
	2P						5.19	5.17(.50)	4.72(.54)	2.52(.51)	12.41(.28)	13.60	0.60	0.03
LRLMKHMKHENVIGL	0P	72.86	1800.06	601.02	14	31.90	5.29		3.53(.37)		3.53(.22)		0.56(.18)	
	2P						1.00		1.49(.26)	2.27(.25)	3.76(.16)		1.20(.43)	0.031(.0098)
LRLMKHMKHENVIGLL	0P	72.87	1913.15	638.72	15	47.00	2.27		1.34(.46)	4.28(.29)	5.62(.24)	9.42(6.83)	0.066(.015)	
	2P						1.16		1.88(.28)	3.33(.28)	5.14(.22)		0.56(.18)	0.019(.0049)
LKHKHENVIGL	0P	75.86	1417.79	473.6	11	29.40	1.48	1.83(.21)	2.20(.19)		4.03(.22)	2.00(.54)	0.011(.0036)	
	2P						0.67	1.29(.18)	2.31(.17)		3.60(.13)	1.87(.63)	0.033(.0074)	
LKHKHENVIGLL ⁽³⁾	0P	75.87	1530.87	511.29	12	26.60	0.41	1.25(.23)	1.66(.31)	1.59(.82)	4.5	13.99(7.41)	0.23(.10)	0.0066(.0091)
	2P						0.83	1.71(.19)	2.04(.18)		3.75(.16)	2.02(.52)	0.023(.0063)	
LKHKHENVIGLLD	0P	75.88	1645.90	549.63	13	16.50	0.92	1.65(.23)		2.53(.75)	4.19(.78)	1.50(.48)		0.0078(.0049)
	2P						5.52		3.08(.32)		3.08(.39)		0.33(.16)	
LDVFTPARS	0P	87.95	1004.53	503.26	7	25.70	6.14		3.31(.34)		3.31(.24)		0.32(.12)	
	2P						1.51	2.06(.37)	1.65(.22)		3.71(.19)	14.89(8.01)	0.032(.015)	
LDVFTPARSLEE	0P	87.98	1375.71	688.86	10	13.90	0.59	3.68(.26)	2.48(.54)	1.52(.45)	7.68(.28)	18.20(5.40)	0.21(.082)	0.016(.016)
	2P						0.84	3.26(.37)	1.56(.33)	3.18(.24)	8.00(.24)	18.19(8.64)	0.76(.37)	0.016(.0040)
LDVFTPARSLEEF	0P	87.99	1522.77	762.39	11	29.00	0.46	4.74(.25)	2.23(.27)	2.27(.24)	9.24(.23)	24.57(9.76)	0.38(.17)	0.016(.0075)
	2P						1.44	4.37(.55)	1.68(.50)	3.14(.32)	9.18(.24)	13.38(4.53)	0.75(.49)	0.021(.0063)
LDVFTPARSLEEFND ⁽⁷⁾	0P	87.101	1751.84	876.92	13	34.90	5.18	6.45(.71)	5.24(.43)		11.67(.34)	13.63(4.20)	0.10(.026)	
	2P						6.73	4.34(.81)	3.65(.63)	5.26(.67)	13.25(.50)	13.60	1.00	0.01
LDVFTPARSLEEFNDVY	0P	87.103	2013.98	1007.99	15	28.90	1.39	6.86(.40)	3.01(.64)	2.65(.62)	12.52(.82)	17.13(3.76)	0.19(.083)	0.010(.010)
	2P						2.14	5.68(.75)	2.31(.68)	4.42(.39)	12.41(.41)	16.99(7.62)	1.10(.57)	0.014(.0042)
DVFTPARSLEE	0P	88.98	1262.61	632.31	9	27.50	0.85	3.91(.27)	3.60(.16)		7.51(.14)	25.86(15.01)	0.078(.011)	
	2P						3.08	4.17(.35)	3.25(.28)		7.44(.24)	10.49(2.55)	0.042(.011)	
DVFTPARSLEEFNDVY	0P	88.103	1900.88	951.44	14	30.20	2.23	6.85(.44)	5.20(.26)		12.05(.21)	18.57(4.96)	0.11(.017)	
	2P						2.84	5.48(.98)	2.42(.90)	4.60(.42)	12.50(.41)	14.70(7.01)	1.16(.72)	0.016(.0049)
VFTPARSLEE ⁽⁷⁾	0P	89.98	1147.59	574.79	8	23.40	2.75	3.75(.49)	3.14(.28)		6.90(.24)	14.8	0.11(.032)	
	2P						3.85	3.37(.40)	3.76(.33)		7.13(.29)	14.80(7.04)	0.043(.011)	
FNDVY	0P	99.103	656.29	657.29	4	27.60	1.50	0.83(.11)			0.83(.22)	1.24(.75)		
	2P						0.51	0.77(.14)		0.83(.33)	1.60(.35)	6.18(2.56)		0.0088(.0081)
FNDVYL	0P	99.104	769.36	770.36	5	25.80	0.52	0.61(.15)			0.61(.058)	2.54(1.29)		
	2P						0.46	0.75(0.00)	0.76(.13)		0.76(.059)	2.16(.85)		
LVTHL	0P	104.108	581.36	582.36	4	46.10	7.70	2.31(.59)	1.75(.30)		4.07(.26)	18.69(15.18)	0.082(.047)	
	2P						4.72	2.12(.48)	1.71(.35)		3.77(.22)	8.26(4.67)	0.14(.092)	
LVTHLMGADLNNIVKQKLTDDHVQF	0P	104.129	2951.51	984.84	25	29.40	1.22	13.13(.76)	6.03(.67)	1.84(.32)	20.99(.24)	14.98(2.25)	1.18(.23)	0.022(.015)
	2P						5.09	9.66(1.38)	8.80(1.27)	3.28(.62)	21.72(.67)	12.53(3.98)	1.06(.25)	0.014(.0087)
VTHLMGADLNN	0P	105.115	1183.57	592.78	10	25.80	0.47	4.68(.41)	2.87(.37)		7.55(.064)	18.38(5.60)	1.34(.24)	
	2P						1.80	4.22(.64)	3.33(.60)		7.55(.11)	9.78(2.98)	.72(.23)	
HLMGADLNN ⁽³⁾	0P	107.115	983.46	492.73	8	22.60	0.46	3.84(.37)	1.66(.33)		5.5	17.03(5.28)	1.10(.33)	
	2P						0.74	3.03(.32)	2.18(.28)		5.21(.073)	11.32(2.99)	0.55(.16)	

IVKQLTDDHVQF	OP	116.129	1672.87	558.62	12	29.70	0.90	6.95(.27)	1.77(.17)		8.74(.15)	12.47(1.27)	0.053(.016)	
	2P						2.32	6.62(.30)	2.12(.27)		8.76(.25)	8.55(1.00)	0.025(.0092)	
LIYQIL ⁽⁴⁾	OP	130.135	761.48	762.48	5	21.30	No Fit	0	0	0				
	2P						No Fit	0	0	0				
LIYQILRGLKYIHSAD	OP	130.145	1902.08	635.03	15	31.20	0.00	0.34(0.0)		3.21(.0001)	3.55(.0001)	1.21(.0002)		0.0036(0.0)
	2P						0.06			2.69(.81)	2.72(.82)			.0025(.0010)
LIYQILRGLKYIHSADIIHRDLKPSNL ⁽³⁾	OP	130.156	3188.83	798.21	25	31.30	1.76		0.84(.24)	3.04(.19)	4.5	0.72(.47)	0.016(.0036)	
	2P						2.08	1.37(.29)	3.54(.45)		4.93(.48)	3.26(1.65)	0.016(.0056)	
IYQILRGLKYIHSADIIHRDLKPSNL ⁽³⁾	OP	131.156	3075.73	769.93	24	29.80	7.45		2.67(.42)		2.67(.27)		0.45(.23)	
	2P						1.23	1.16(.27)	3.34(.77)		4.5	1.91(1.08)	0.015(.0088)	
QILRGLKYIHSAD	OP	133.145	1512.84	757.42	12	25.70	2.12		1.39(.18)		1.39(.21)		0.19(.099)	
	2P						1.06		1.29(.15)				0.014(.0056)	
QILRGLKYIHSADIIHRDLKPSNL ⁽³⁾	OP	133.156	2799.59	934.2	22	30.20	0.62	1.17(.24)	3.29(.26)		4.47(.26)	14.31(8.80)	0.033(.0065)	
	2P						1.07	1.31(.23)	2.69(.53)		4	1.90(.77)	0.018(.0085)	
ILRGLKYIHSADIIHRDLKPSNL	OP	134.156	2671.53	891.51	21	28.60	0.52	1.34(.21)	3.46(.18)		4.80(.18)	13.15(5.65)	0.017(.0032)	
	2P						0.95	0.98(.20)	3.38(.24)		4.36(.24)	7.57(3.94)	0.016(.0034)	
RGLKYIHSAD	OP	136.145	1158.61	580.31	9	28.20	4.12	1.58(.42)			1.58(.13)	3.23(1.57)		
	2P						1.37			3.57(2.41)	3.73(2.43)			0.0034(.0034)
RGLKYIHSADIIHRDLKPSNL	OP	136.156	2445.37	816.12	19	29.50	7.23		3.15(.54)		3.15(.35)		0.75(.34)	
	2P						0.68	1.35(.18)		4.36(2.20)	5.70(2.29)	1.39(.42)		0.0072(.0059)
IIHRDLKPSNL ⁽³⁾	OP	146.156	1304.76	435.92	9	31.20	2.51	1.30(.29)		1.38(.17)	3.5	1.94(.90)	0.0063(.0029)	
	2P						0.85	1.38(.16)		1.59(.077)	3.0	4.97(1.37)	0.0054(.0012)	
AVNEDCEL ⁽³⁾	OP	157.164	891.37	892.37	7	30.10	0.13	1.18(.11)	1.57(.084)	4.25(.082)	7.0	27.39(26.44)	0.27(.046)	0.0033(.00018)
	2P						0.34	1.16(.12)	1.39(.099)	2.45(.081)	5.0	24.42(23.91)	0.30(.071)	0.0048(.00039)
LKILDFGLARHTDDE ⁽⁵⁾	OP	164.178	1741.90	581.63	14	30.80	1.54	5.69(.40)	1.50(.24)		7.19(.17)	22.98(10.50)	0.25(.13)	
LKILDFGLARHTDDEMTG ⁽⁵⁾	OP	164.181	2031.01	1016.5	17	28.40	1.29	9.39(.43)	1.09(.31)		10.47(.12)	23.87(7.64)	0.55(.40)	
LKILDFGLARHTDDEMTGY ^(3,5)	OP	164.182	2194.07	732.36	18	29.30	2.26	11.52(.40)		0.96(.12)	12.5	17.07(2.16)		0.0033(.0025)
KILDFGLARHTDDEM ⁽⁵⁾	OP	173.179	1759.86	587.62	14	26.70	0.45	7.39(.22)	0.40(.13)		7.78(.092)	32.14(15.45)	0.21(.19)	
KILDFGLARHTDDEMTG ⁽⁵⁾	OP	173.181	1917.91	959.96	16	28.20	0.77	9.26(.31)	0.84(.20)		10.09(.094)	23.83(5.48)	0.44(.31)	
KILDFGLARHTDDEMTGY ⁽⁵⁾	OP	173.182	2080.98	1041.49	17	28.20	0.80	10.04(.39)	0.79(.31)		10.84(.094)	28.85(11.86)	0.94(.69)	
KILDFGLARHTDDEMTGYVATRW ⁽⁶⁾	OP	173.187	2694.32				1.73	15.11(.39)	0.86(.23)		15.97(.18)	25.02(5.06)	0.14(.12)	
KILDFGLARHTDDEMTGYVATRW ⁽⁶⁾	2P	173.187	2854.26	952.42	22	28.70	3.74	13.86(.37)	1.58(.35)		15.44(.33)	12.74(1.18)	0.023(.015)	
FGLARHTDDEMTGY ⁽⁵⁾	OP	169.182	1611.70	806.85	13	26.60	1.09	7.74(.27)			7.74(.065)	25.45(7.01)		
VATRW ⁽⁵⁾	OP	183.187	1494.64	632.33	4	36.30	0.74	4.88(.21)			4.88(.049)	24.75(7.81)		
VATRWYRAPEIM ⁽⁵⁾	OP	183.194	631.33	498.16	10	30.30	1.37	4.41(.35)	6.13(.22)		10.55(.18)	14.39(3.31)	0.066(.0068)	
YRAPEIML ⁽³⁾	OP	188.195	1491.49	496.76	6	29.60	0.61	1.97(.25)	2.36(.47)	1.61(.51)	6.0	5.74(1.46)	0.14(.052)	0.012(.0051)
	2P						1.27	2.22(.21)		2.60(.16)	5.0	1.11(.24)		0.011(.002)
LNWMHYNQ ⁽³⁾	OP	195.202	991.52	553.24	7	27.10	1.85	6.50(3.51)		1.34(.11)	7.0	24.35(11.77)		0.0021(.0014)
	2P						1.68	5.74(.26)		1.26(.11)	7.0	13.84(2.33)		0.0027(.0015)
LNWMHYNQTV ⁽³⁾	OP	195.205	1104.48	710.81	10	31.00	0.49	5.16(.25)	1.61(.17)	1.22(.14)	8.0	22.25(6.42)	0.38(.13)	0.0050(.0016)
	2P						0.66	5.07(.22)	1.41(.19)	1.69(.14)	8.0	15.33(2.59)	0.35(.15)	0.0060(.0014)
LNWMHYNQTV ⁽³⁾	OP	195.206	1419.62	767.36	11	30.20	0.71	5.76(.35)	1.35(.29)	1.29(.29)	8.39(.35)	26.21(13.54)	0.58(.32)	0.013(.013)
	2P						1.06	5.35(.35)	1.46(.31)	1.89(.71)	8.7	14.89(3.49)	0.49(.30)	0.0074(.0071)
LNWMHYNQTV ⁽³⁾	OP	195.207	1532.72	860.39	12	33.10	2.80	6.63(.50)	1.93(.35)		8.57(.31)	14.82(3.49)	0.068(.035)	
	2P						4.68	6.59(.47)	2.32(.37)		8.92(.31)	11.19(2.43)	0.046(.023)	
LNWMHYNQTV ⁽³⁾	OP	195.210	1718.79	981.95	15	30.10	4.83	6.52(.59)		3.48(.18)	10.0	13.90(3.52)		0.0051(.0014)
	2P						4.51	6.14(.41)	2.21(.38)		8.36(.36)	9.20(1.67)	0.023(.012)	
NWMHYNQTV ⁽³⁾	OP	196.210	1961.91	925.41	14	30.10	1.34	4.13(.60)	1.04(.49)	1.84(.19)	7.0	17.99(9.49)	0.92(.83)	0.0077(.0025)
	2P						0.81	3.76(.41)	1.20(.36)	1.84(.74)	6.79(.82)	20.97(11.88)	0.77(.49)	0.0069(.0064)
IWSVG	OP	206.210	1848.83	561.30	4	21.30	No Fit	0	0	0				
	2P						No Fit	0	0	0				
CIMAE	OP	211.215	560.30	566.23	4	25.10	No Fit	0	0	0				
	2P						No Fit	0	0	0				
AELLTGRTLFPGTDHIDQ	OP	214.231	565.23	662.00	16	33.40	3.12	3.09(.51)	5.31(.32)		8.41(.26)	16.24(9.38)	0.077(.014)	
	2P						2.10	2.39(.37)	2.39(.47)	5.40(1.39)	10.16(1.71)	11.03(4.94)	0.22(.12)	0.0065(.0044)

AELLTGRTLFPGTDHIDQLKL ⁽³⁾	0P	214.234	1983.01	585.32	19	28.30	1.41	2.49(.43)	3.45(.62)	5.06(.54)	11	20.96(19.39)	0.29(.12)	0.017(.0070)
	2P						3.80	3.63(.38)		6.83(.53)	10.47(.55)	2.98(.77)		0.014(.0033)
LLTGRTLFPGTDHIDQLKL ⁽³⁾	0P	216.234	2337.27	713.38	17	30.20	3.27	2.65(.54)	4.56(.76)	3.79(.72)	11.0	19.21(17.71)	0.20(.073)	0.010(.0073)
	2P						4.74	3.49(.41)	7.38(.60)		10.87(.65)	2.72(.79)	0.013(.0030)	
LLTGRTLFPGTDHIDQLKLIL	0P	216.236	2137.13	788.79	19	28.10	4.47	3.32(.61)	7.13(.39)		10.45(.33)	10.08(4.03)	0.049(.0081)	
	2P						2.87	3.12(.33)	7.00(.39)		10.13(.39)	4.20(1.08)	0.016(.0029)	
LTGRTLFPGTDHIDQLKL	0P	217.234	2363.36	675.70	16	30.70	1.30	2.49(.45)	2.82(.67)	4.66(.70)	9.97(.23)	16.96(11.32)	0.38(.20)	0.027(.010)
	2P						0.88	1.84(.33)	2.38(.29)	6.25(.49)	10.47(.57)	18.96(16.35)	0.62(.19)	0.0086(.0019)
LTGRTLFPGTDHIDQLKLIL	0P	217.236	2024.11	751.09	18	28.40	2.89	3.02(.49)	6.25(.31)		9.30(.26)	10.76(4.06)	0.061(.0091)	
	2P						3.61	2.89(.36)	6.00(.39)		9.05(.38)	4.39(1.32)	0.018(.0035)	
ILRL ⁽⁴⁾	0P	235.238	2250.28	514.37	3	31.20	No Fit	0	0	0				
	2P						No Fit	0	0	0				
ILRLVGTPGAE	0P	235.245	513.37	563.33	9	24.80	0.25	3.61(.19)	0.73(.15)	1.62(.65)	5.96(.72)	23.03(7.82)	0.44(.26)	0.0063(.0055)
	2P						1.29	3.74(.21)		2.55(1.10)	6.30(1.13)	15.70(3.91)		.0058(.0044)
ILRLVGTPGAEL ⁽³⁾	0P	235.246	1124.66	619.87	10	27.40	0.20	4.43(.17)	1.37(.15)	1.13(.21)	6.93(.26)	20.67(4.04)	0.40(.12)	0.011(.0079)
	2P						0.67	4.29(.19)	1.25(.20)	1.47(.20)	7.0	14.47(2.40)	0.17(.078)	0.0060(.0018)
ILRLVGTPGAELKKISSESARN	0P	235.257	1237.74	818.14	21	27.10	4.04	13.71(.76)	5.36(.54)		19.06(.21)	24.86(10.02)	0.58(.15)	
	2P						7.68	14.90(.77)	4.55(.61)		19.46(.26)	15.62(3.14)	0.39(.15)	
RLVGTPGAEL	0P	237.246	2451.42	506.79	8	24.40	0.41	4.85(.19)	1.67(.11)		6.51(.10)	17.79(2.68)	0.063(.013)	
	2P						0.77	4.68(.17)	1.65(.14)		6.33(.12)	14.90(2.22)	0.045(.011)	
RLVGTPGAELKKISSESARN	0P	237.257	1011.57	742.75	19	27.60	4.04	13.70(.76)	5.36(.54)		19.06(.21)	24.90(10.42)	0.59(.15)	
	2P						3.93	13.96(.90)	4.38(.82)	2.00(.52)	20.33(.47)	19.13(5.41)	0.93(.36)	0.018(.018)
VGTPGAEL	0P	239.246	2225.25	743.39	6	24.40	0.58	4.19(.22)	0.59(.13)		4.77(.11)	20.65(5.70)	0.12(.086)	
	2P						1.03	4.11(.20)	0.59(.15)		4.69(.12)	16.55(3.84)	0.080(.065)	
VGTPGAELKKISSESARN	0P	239.257	742.39	653.02	17	27.00	0.85	13.97(.67)	3.20(.63)	1.05(.62)	18.21(.14)	21.69(4.49)	1.47(.64)	0.12(.11)
	2P						2.25	13.78(.86)	3.30(.78)	1.30(.41)	18.37(.23)	17.99(3.90)	1.31(.56)	0.037(.029)
VGTPGAELKKISSESARNYIQL ⁽⁷⁾	0P	239.262	1956.06	854.46	22	32.20	8.52	7.31(.84)	8.41(.53)		15.71(.45)	16.15(6.23)	0.045(.0087)	
	2P						6.99	8.12(.17)	7.81(.044)		15.93(.048)	16.20(0.00)	0.011(.0002)	
LLKKISSESARNYIQL	0P	246.262	2560.39	975.55	16	22.10	9.80	15.86(.83)			15.98(.22)	12.00(1.51)		
	2P						5.86	14.46(.78)	2.41(.63)		16.86(.31)	11.59(1.74)	0.33(.25)	
LKKISSESARN ⁽³⁾	0P	247.257	1949.09	616.84	10	23.10	1.82	7.77(.43)	1.22(.14)		9.0	16.12(4.70)	0.013(.0095)	
	2P						2.19	6.92(.76)	1.77(.70)		8.69(.15)	19.31(9.84)	0.96(.59)	
LKKISSESARNYIQL	0P	247.262	1231.68	919.01	15	26.90	0.89	12.96(.57)	2.56(.50)		15.52(.088)	18.85(2.97)	1.35(.37)	
	2P						3.47	12.80(.78)	2.92(.70)		15.71(.15)	13.18(2.18)	0.73(.34)	
YIQL ⁽³⁾	0P	258.262	622.34	623.34	4	22.90	0.24	2.27(.14)	0.36(.089)		2.63(.076)	15.71(3.21)	0.046(.034)	
	2P						0.63	2.24(.14)		0.77(.058)	3.0	8.68(1.44)		0.0032(.0015)
AQMPKMN	0P	263.270	965.45	483.72	6	33.10	0.63	4.87(.32)	1.41(.25)		6.28(.072)	20.29(6.37)	0.71(.26)	
	2P						1.03	5.11(.30)	1.26(.24)		6.35(.089)	10.50(1.57)	0.38(.20)	
AQMPKMNANV	0P	263.273	1249.59	625.80	9	28.90	0.66	7.02(.30)	2.24(.21)		9.35(.088)	14.92(1.95)	0.42(.11)	
	2P						1.36	7.02(.31)	2.42(.24)		9.43(.12)	10.95(1.36)	0.30(.092)	
AQMPKMNANVNF	0P	263.274	1396.66	699.33	10	31.00	0.47	6.85(.27)	3.75(.19)		10.60(.070)	21.56(4.58)	0.60(.074)	
	2P						1.70	6.36(.62)	3.34(.59)	1.35(.46)	11.05(.20)	14.28(3.95)	0.82(.32)	0.041(.029)
AQMPKMNANVFIGANPLAVDL	0P	263.284	2360.19	1181.10	19	29.80	1.33	9.54(1.01)	6.45(.93)		15.98(.14)	18.66(7.49)	0.66(.19)	
	2P						8.31	7.81(1.52)	7.96(1.35)		15.76(.41)	16.52(11.72)	0.67(.25)	
ANV	0P	271.274	449.23	450.23	3	20.60	1.32		2.33(.11)		2.33(.20)		0.65(.15)	
	2P						0.58	1.56(.35)	0.75(.31)		2.37(.09)	0.94(.33)	0.074(.060)	
IGANPLAVDL	0P	275.284	981.56	982.56	8	26.00	0.23	1.36(.19)	1.56(.13)		2.93(.05)	14.07(5.55)	0.47(.11)	
	2P						0.57	1.07(.27)	1.93(.24)		2.99(.06)	10.39(6.23)	0.53(.15)	
IGANPLAVDLLEKM	0P	275.288	1482.81	742.41	12	31.00	0.75		2.15(.15)		2.15(.078)		0.87(.15)	
	2P						1.02		2.54(.14)		2.54(.082)		0.80(.12)	
LEKMLVLDSDKRITAAQALAHAY	0P	285.307	2556.37	853.12	22	26.10	0.42	3.60(.26)	3.69(.50)	3.45(.54)	10.73(.11)	18.67(5.71)	0.40(.098)	0.041(.011)
	2P						5.53	4.53(.50)	6.27(.39)		10.84(.30)	7.21(1.95)	0.067(.013)	

LVLDSDKRITAAQALAHAY ⁽³⁾	0P	289.307	2055.12	1028.56	18	27.30	0.47	3.38(.26)	3.60(.76)	3.11(.81)	10.09(.12)	19.66(6.94)	0.33(.10)	0.044(.016)
	2P						1.47	2.86(.42)	3.84(.39)	4.30(.35)	11.0	21.10(17.79)	0.56(.15)	0.017(.0047)
LVLDSDKRITAAQALAHAYF	0P	289.308	2202.19	735.06	19	28.80	2.46	3.68(.46)	6.18(.28)		9.87(.22)	16.74(7.67)	0.11(.015)	
	2P						1.42	2.85(.42)	3.41(.36)	4.57(.31)	10.83(.21)	21.46(18.71)	0.71(.21)	0.025(.0051)
DSDKRITAAQALAHAY	0P	292.307	1729.87	865.94	15	21.80	0.76	2.09(.27)	4.36(.16)		6.46(.12)	9.30(2.47)	0.10(.011)	
	2P						2.93	3.09(.37)	3.62(.39)		7.09(.34)	1.11(.29)	0.019(.0063)	
FAQYHDPDDEPVADPYDQSF	0P	308.327	2354.97	1178.49	16	30.00	2.15	6.73(.46)	3.81(.27)		10.54(.18)	19.44(6.14)	0.23(.054)	
	2P						6.16	7.24(.51)	3.82(.38)		11.06(.29)	10.14(2.03)	0.079(.025)	
AQYHDPDDEPVADPYDQSF ⁽³⁾	0P	309.327	2207.90	1104.95	15	30.80	1.58	6.14(.38)	3.50(.22)		9.64(.14)	16.89(3.91)	0.23(.048)	
	2P						2.62	3.36(.59)	2.28(.52)		10.5	0.83(.34)	0.026(.012)	
FESRDLL ⁽³⁾	0P	327.333	878.45	879.45	6	27.60	0.57	0.73(.27)	2.61(.21)	2.18(.20)	5.5	7.80(5.78)	0.26(.070)	0.0052(.0011)
	2P						0.80		1.45(.17)	3.67(1.55)	5.13(1.63)		0.78(.22)	0.0045(.0033)
ESRDLL	0P	328.333	731.39	732.39	5	29.80	0.65	2.45(.25)	1.30(.16)		3.77(.12)	9.70(2.20)	0.082(.030)	
	2P						1.19	1.97(.25)	1.50(.19)		3.47(.12)	8.46(2.71)	0.16(.064)	
ESRDLLIDE	0P	328.336	1088.54	545.27	8	26.10	0.63	3.18(.26)	1.66(.16)		4.84(.098)	9.81(1.75)	0.23(.071)	
	2P						2.28	3.25(.34)	1.82(.30)		5.06(.18)	4.31(1.07)	0.090(.040)	
LLIDE ⁽³⁾	0P	332.336	601.33	602.33	4	23.90	1.08	1.48(.26)		0.64(.086)	2.25	5.66(1.89)		0.0032(.0025)
	2P						1.94	1.67(.22)		1.07(.12)	2.75	2.72(.85)		0.0042(.0017)
IDEWKSLT ⁽³⁾	0P	334.341	990.50	496.25	7	25.60	0.30	0.26(.13)	0.92(.22)		1.19(.25)	1.98(2.11)	0.011(.0078)	
	2P						0.24	0.30(.085)		1.28(.065)	1.5	0.97(.66)		0.0052(.00068)
IDEWKSPTYDEV	0P	334.345	1496.70	749.35	11	28.30	0.393		1.55(.11)		1.28(.11)		0.025(.0066)	
	2P						0.83		1.29(.26)		.98(.26)		0.013(.0072)	
WKSPTYD ⁽⁴⁾	0P	337.343	911.45	456.73	6	25.00	No Fit	0	0	0				
	2P						No Fit	0	0	0				
WKSPTYDE ⁽⁴⁾	0P	337.344	1040.48	521.24	7	24.50	No Fit	0	0	0				
	2P						No Fit	0	0	0				
WKSPTYDEV ⁽⁴⁾	0P	337.345	1139.55	570.77	8	27.20	No Fit	0	0	0				
	2P						No Fit	0	0	0				
EVSIF	0P	344.348	593.31	594.31	4	20.40	0.27	0.53(.20)	1.14(.20)		1.68(.07)	2.33(1.87)	0.13(.045)	
	2P						0.62	0.54(.24)	1.15(.23)		1.59(.12)	0.95(.80)	0.036(.019)	
EVSIFVPPPLDQEE	0P	344.357	1597.80	799.90	10	29.00	0.69	5.40(.23)	2.76(.125)		8.16(.10)	25.08(8.35)	0.11(.016)	
	2P						3.58	5.69(.34)	2.52(.23)		8.24(.17)	14.20(3.30)	0.051(.015)	
ISFVPPPLDQEEMES	0P	346.360	1716.79	859.40	11	29.90	0.67	8.00(.30)	2.60(.21)		10.60(.085)	24.35(6.64)	0.54(.11)	
	2P						2.11	8.26(.36)	2.60(.26)		10.87(.15)	14.80(2.45)	0.27(.086)	
VPPPLDQEEMES	0P	349.360	1369.61	685.80	8	27.20	2.12	8.56(.36)			8.57(.087)	15.76(2.13)		
	2P						1.86	8.29(.25)			8.29(.085)	15.96(2.12)		

Footnotes:

- (1) Information for each peptide includes Amino acid sequence, Residue numbers, Calculated mass, Observed mass/charge, Number of exchangeable amides (#EA), Percent back-exchange (%BE), and Residual sum of squares for best NLSQ fit (RSS)
- (2) A, B, and C equal the number of amides exchanging with rates k_1 , k_2 , and k_3 respectively. N equals A+B+C.
Values are corrected for artifactual in-exchange, back-exchange, and percentage D2O during the incubation.
- (3) Fitting constrained N to equal deuteration at 4hrs.
- (4) Peptides with "No Fit" -- Fitting failed to converge because no measurable hydrogen exchange could be observed over the 4 h time course.
- (5) In nine peptides around the activation lip, differential proteolysis was observed between 0P-p38 and 2P-p38 (See Figure 2).
For these peptides, only one activation state is listed. Peptide 173-187 is the only peptide observed in 2P-p38.
- (6) Peptide 173-187 was not observed in 0P-p38. Instead the fit represents deuteration vs time summed over peptides 173-182 and 183-187 in 0p-p38.
- (7) Rates were fixed to predicted values to better allow model convergence.

Suppl. Table 3: Hydrogen exchange error measurements.

Standard deviations of weighted average mass and number of
were quantified at the 1 min time point in three replicate runs,

	0p-p38α	2p-p38α
Avg Std Dev of the Weighted Average Mass (WAM)	0.0400	0.0482
Lowest value	0.0075	0.0004
Highest value	0.0985	0.1329
Avg Std Dev of the Number of Deuterons Incorporated (#DI)	0.1611	0.1856
Lowest value	0.0292	0.0025
Highest value	0.3318	0.4175

Peptide Name (Starting Residue.Final Residue)	0p-p38α WAM	#DI	WAM Avg	WAM Stdev	#DI Avg
-7.8	975.5114 975.6326 975.5112	6.8661 7.2467 6.8656	975.5517	0.0701	6.9928
9.39	1181.6976 1181.7701 1181.7048	19.9505 20.3082 19.9861	1181.7338	0.0513	20.0816
40.71	931.0292 931.0452 930.9977	7.9017 8.0108 7.6861	931.0240	0.0241	7.8662
72.86	601.9295 602.0059 602.0420	0.7850 1.1965 1.3907	601.9925	0.0575	1.1241
72.87	639.6334 639.6806 639.7200	1.1305 1.4510 1.7182	639.6780	0.0433	1.4332
75.87	512.0194 512.0908 512.0607	1.1601 1.4972 1.3551	512.0570	0.0359	1.3375
83.94	474.4170 474.3914 474.4678	1.3315 1.2004 1.5911	474.4254	0.0389	1.3743
83.96	550.3859 550.4467	0.7768 1.0866	550.4163	0.0430	0.9317
87.103	1011.2675 1011.1381	7.5772 7.2779	1011.2019	0.0647	7.4255

	1011.2002	7.4214			
87.98	690.7697	4.1878	690.7432	0.0278	4.1045
	690.7142	4.0133			
	690.7457	4.1124			
88.98	634.2042	4.2581	634.1481	0.0780	4.0778
	634.1811	4.1838			
	634.0589	3.7916			
88.103	954.6470	7.6866	954.6292	0.0382	7.6269
	954.5853	7.4800			
	954.6552	7.7141			
87.99	764.7014	5.3980	764.6906	0.0183	5.3629
	764.6695	5.2944			
	764.7009	5.3963			
87.101	879.8378	6.7894	879.8822	0.0599	6.9585
	879.8584	6.8677			
	879.9503	7.2184			
89.98	576.3927	3.5194	576.4166	0.0214	3.5901
	576.4233	3.6099			
	576.4338	3.6410			
99.104	771.2564	0.5270	771.2529	0.0320	0.5217
	771.2193	0.4701			
	771.2831	0.5679			
104.129	989.3288	17.0222	989.3628	0.0426	17.1898
	989.3490	17.1216			
	989.4106	17.4255			
130.156	799.2060	1.1222	799.1963	0.0205	1.0560
	799.1729	0.8954			
	799.1755	0.9134			
	799.2131	1.1706			
	799.2143	1.1785			
130.145	635.6696	0.1323	635.6768	0.0075	0.1678
	635.6762	0.1649			
	635.6846	0.2062			
131.156	770.8719	1.0027	770.8583	0.0163	0.9115
	770.8402	0.7913			
	770.8626	0.9406			
133.145	758.1533	0.1180	758.2295	0.0709	0.3533
	758.2417	0.3910			
	758.2935	0.5509			

133.156	935.3501 935.3937 935.3887	0.8247 1.0473 1.0215	935.3775	0.0238	0.9645
134.156	892.5834 892.6032 892.6475	0.9077 1.0045 1.2213	892.6113	0.0328	1.0445
136.156	817.2136 817.2742 817.2850	1.0455 1.3505 1.4051	817.2576	0.0385	1.2670
157.164	894.2474 894.2404 894.2935	1.4788 1.4670 1.5574	894.2604	0.0288	1.5011
164.182	735.2982 735.3815 735.4271	10.7872 11.2016 11.4288	735.3689	0.0654	11.1392
165.187					
183.194	499.5577 499.6129	4.7043 4.9864	499.5853	0.0390	4.8453
188.195	497.8511 497.9184	2.2556 2.4821	497.8848	0.0476	2.3688
195.210	984.9019 984.7267 984.7955	6.6966 6.1154 6.3439	984.8080	0.0883	6.3853
211.215	566.7938 566.7948 566.7613	0.1558 0.1574 0.1061	566.7833	0.0190	0.1398
214.231	663.3316 663.3425 663.3810	3.2657 3.3177 3.5024	663.3517	0.0259	3.3620
214.234	586.3834 586.3903 586.4037	3.2904 3.3346 3.4207	586.3924	0.0103	3.3486
216.234	714.7342 714.7819	3.4077 3.6434	714.7760	0.0391	3.6141

	714.8118	3.7913			
216.236	790.2317	3.5639	790.2200	0.0103	3.5083
	790.2123	3.4716			
	790.2160	3.4893			
217.234	677.0511	3.3576	677.0785	0.0298	3.4957
	677.0740	3.4733			
	677.1102	3.6560			
217.236	752.4612	3.3664	752.4476	0.0354	3.3016
	752.4075	3.1099			
	752.4742	3.4285			
235.257	822.3861	16.3017	822.3929	0.0291	16.3336
	822.3678	16.2161			
	822.4248	16.4831			
275.288	743.4816	0.9562	743.5069	0.0220	1.0425
	743.5205	1.0886			
	743.5187	1.0826			
285.307	854.9129	4.8517	854.9181	0.0183	4.8752
	854.9030	4.8062			
	854.9384	4.9676			
289.308	736.5762	4.1568	736.5969	0.0462	4.2549
	736.6498	4.5059			
	736.5646	4.1019			
308.327	1181.7384	7.2754	1181.7690	0.0985	7.3782
	1181.6894	7.1101			
	1181.8791	7.7492			
327.333	881.0849	1.3532	881.0361	0.0423	1.2742
	881.0103	1.2323			
	881.0132	1.2370			
346.360	862.7988	8.9223	862.8112	0.0670	8.9639
	862.7512	8.7619			
	862.8835	9.2073			

deuterons incorporated
performed for 0P-p38 and 2P-p38.

#DI StDev	2p-p38α WAM	#DI	WAM Avg	WAM Stdev	#DI Avg	#DI StDev
0.2199	975.6623 975.6760 975.6319	7.2881 7.3313 7.1921	975.6567	0.0226	7.2705	0.0713
0.1970	1181.9660 1181.9635 1181.9297	21.2151 21.2024 21.0352	1181.9647	0.0018	21.1509	0.1004
0.1652	930.9845 930.9587 930.9422	7.5647 7.3881 7.2750	930.9618	0.0213	7.4093	0.1460
0.3093	601.9860 601.9841 601.9388	1.0103 1.0001 0.7552	601.9696	0.0267	0.9219	0.1444
0.2943	639.6694 639.6004 639.6893	0.8936 0.4153 1.0308	639.6530	0.0467	0.7799	0.3232
0.1693	512.0706 512.0278 512.1320	1.3252 1.1221 1.6168	512.0768	0.0524	1.3547	0.2487
0.1988	474.3857 474.4271 474.4251	1.1712 1.3828 1.3728	474.4126	0.0233	1.3089	0.1194
0.2191	550.4448 550.4008 550.4467	1.2778 1.0565 1.2871	550.4308	0.0259	1.2071	0.1305
0.1497	1011.2070 1011.2904	7.4775 7.6714	1011.1836	0.1202	7.4231	0.2795

	1011.0533	7.1204				
0.0876	690.7092 690.6380 690.6528	4.0439 3.8210 3.8674	690.6666	0.0376	3.9108	0.1176
0.2507	634.1769 634.1089 634.1697	4.0884 3.8676 4.0651	634.1518	0.0373	4.0070	0.1213
0.1279	954.4921 954.4579 954.4623	7.1638 7.0495 7.0642	954.4708	0.0186	7.0925	0.0622
0.0593	764.6694 764.6692 764.6006	5.2931 5.2924 5.0699	764.6464	0.0397	5.2185	0.1287
0.2285	879.8668 879.9132 879.7422	6.9483 7.1243 6.4753	879.8407	0.0884	6.8493	0.3356
0.0632	576.3813 576.5421 576.4797	3.2258 3.7222 3.5295	576.4677	0.0810	3.4925	0.2502
0.0492	771.3169 771.2671 771.2180	0.7048 0.6296 0.5553	771.2673	0.0495	0.6299	0.0748
0.2101	989.1552 989.1199 988.9937	16.2054 16.0319 15.4113	989.0896	0.0849	15.8829	0.4175
0.1402	799.3311 799.2590 799.2507	1.8397 1.3440 1.2868	799.2803	0.0443	1.4902	0.3041
0.0371	635.6646 635.6615 635.6848	0.0411 0.0255 0.1412	635.6703	0.0127	0.0692	0.0628
0.1087	770.8980 770.9212 770.8667	1.1977 1.3522 0.9886	770.8953	0.0274	1.1795	0.1825
0.2189	758.2012 758.1908 758.2141	0.0331 0.0004 0.0734	758.2021	0.0117	0.0356	0.0366

0.1217	935.4232 935.4050 935.4084	1.0149 0.9216 0.9389	935.4122	0.0097	0.9585	0.0496
0.1606	892.6682 892.5742 892.6551	1.1426 0.6795 1.0777	892.6325	0.0509	0.9666	0.2507
0.1938	817.2413 817.1907 817.2332	0.8967 0.6391 0.8559	817.2217	0.0272	0.7972	0.1384
0.0491	894.2446 894.2800 894.2958	1.5211 1.5811 1.6079	894.2735	0.0262	1.5700	0.0445
0.3253						
	956.2982 956.2609 956.2054	14.4662 14.2890 14.0252	956.2548	0.0467	14.2601	0.2219
0.1995						
0.1601	497.6174 497.6345	1.5020 1.5589	497.6259	0.0120	1.5304	0.0403
0.2928	985.0036 985.1256	6.9274 7.3357	985.0646	0.0863	7.1316	0.2887
0.0292	567.0162 566.8553 566.7526	0.5454 0.3017 0.1461	566.8747	0.1329	0.3310	0.2013
0.1244	663.2650 663.1732 663.1878	2.8968 2.4551 2.5253	663.2087	0.0493	2.6257	0.2373
0.0662	586.3583 586.3578	3.1453 3.1418	586.3580	0.0004	3.1435	0.0025
0.1935	714.6492 714.6686	2.8975 2.9942	714.6394	0.0352	2.8488	0.1749

	714.6004	2.6547				
0.0490	790.1954	3.2952	790.1735	0.0559	3.1903	0.2676
	790.2151	3.3895				
	790.1099	2.8861				
0.1505	676.9801	2.9418	676.9779	0.0122	2.9308	0.0616
	676.9648	2.8644				
	676.9888	2.9861				
0.1689	752.3919	2.8869	752.3671	0.0554	2.7676	0.2664
	752.4057	2.9535				
	752.3036	2.4624				
0.1363	822.4691	16.6695	822.4268	0.0520	16.4705	0.2440
	822.4424	16.5438				
	822.3688	16.1982				
0.0748	743.6893	1.7526	743.5843	0.1204	1.3976	0.4069
	743.6106	1.4865				
	743.4529	0.9536				
0.0832	854.9824	5.1637	854.9263	0.0542	4.9078	0.2475
	854.9224	4.8899				
	854.8742	4.6697				
0.2191	736.7041	4.7846	736.6670	0.0670	4.6092	0.3172
	736.7073	4.8000				
	736.5897	4.2430				
0.3318	1181.9674	8.0605	1181.9095	0.0666	7.8657	0.2241
	1181.9244	7.9157				
	1181.8367	7.6207				
0.0685	880.8066	0.9476	880.6988	0.1076	0.7740	0.1732
	880.5914	0.6011				
	880.6983	0.7732				
0.2256	862.9902	9.5628	862.8950	0.0826	9.2420	0.2782
	862.8515	9.0953				
	862.8433	9.0678				