Supplemental Table 2. **Validation of all MS_Alignment/InsPecT reported modification sites in 93-year old cataractous lens sample (Grade III)**

Collaboration between Dr. Larry David's group, OHSU and Dr. Pavel Pevzner's group, UCSD
Datasets were the same as described in Searle, et al., J. Proteome Res., 2005, vol 4, pages 546-554.
Validation performed by Phil Wilmarth and Surendra Dasari, OHSU, August 2005.
Confirmation of sites performed using appropriately configured OpenSea and X! Tandem searches

Validation Symbol Key:
yes = valid
no = not valid, ambiguous, or could not localize
yes? = might be valid, generally poorer spectra
no? = lower probability of being correct but some hints of the modification
? = modification identified but no validation possible
dash (-) = modification not reported in that data set
cell with two results: (Phil's opinion) / (Surendra's opinion)

Delta Mass	Protein	Residue	is it an in vitro artifact	manual validation LCQ sol	manual validation LCQ insol	manual validation QTOF sol	manual validation QTOF insol	manually validated site	confirmed SameSite (consensus)	agreement between manual & consensus	Known site	No. of Spectra	Peptide species	PTM Rate	Comments
-18	CRYAA_HUMAN Alpha A	S42	yes?	yes?	yes	-	-	yes				2	2	4.7	
-18	CRYAA_HUMAN Alpha A	T55		-	no	-	-					2	2	1.1	
-18	CRYAA_HUMAN Alpha A	S59	yes?	no?	yes?	yes	-	yes	yes	yes		4	1	1.9	
-18	CRYAA_HUMAN Alpha A	S81	yes?	yes	yes	-	-	yes				2	1	1.2	
-18	CRYAA_HUMAN Alpha A	D84	yes	-	no	-	-					3	2	1.6	
-18	CRYAA_HUMAN Alpha A	D91	yes	-	no?	-	yes?					4	2	1.9	
-18	CRYAA_HUMAN Alpha A	D92	yes	-	no	-	-		yes			2	2	0.9	
-18	CRYAA_HUMAN Alpha A	D105	yes	yes	yes	-	-	yes	yes	yes		7	3	8.6	
-18	CRYAA_HUMAN Alpha A	D106	yes	yes	no	-	-	yes	yes	yes		11	4	13.6	
-18	CRYAA_HUMAN Alpha A	T148	yes?	yes	yes	-	no?	yes	yes	yes		11	5	6.0	
-18	CRYAA_HUMAN Alpha A	D151	yes	no	yes	-	-	yes				3	1	1.6	
-18	CRYAB_HUMAN Alpha B	S59		-	-	no	-					3	3	1.8	
-18	CRYAB_HUMAN Alpha B	D109	yes	?	yes?	-	-					4	1	9.3	
-18	CRBB1_HUMAN Beta 1	S80		no?	-	-	yes?					3	2	3.6	N81 -17 instead?
-18	CRBB1_HUMAN Beta 1	T125	yes?	yes	yes	yes	yes?	yes	yes	yes		8	2	7.8	
-18	CRBB1_HUMAN Beta 1	S137		no?	-	-	-					2	2	2.0	
-18	CRBB1_HUMAN Beta 1	S151		-	-	no	-					7	2	5.3	
-18	CRBB2_HUMAN Beta 2	S174		no?	-	-	yes?					2	2	2.0	
-18	CRBA1_HUMAN Beta A3	D37	yes?	-	-	yes	-	yes	yes	yes		2	1	1.1	
-18	CRBA1_HUMAN Beta A3	D97	yes?	-	yes	-	-	yes	yes	yes		2	1	0.5	
-18	CRBA1_HUMAN Beta A3	S100		no	-	no	no					5	2	1.2	
-18	CRBA1_HUMAN Beta A3	S102		no	no	-	-					4	2	1.0	
-18	CRBA1_HUMAN Beta A3	S200	yes?	yes?	yes?	yes?	yes?	yes	yes	yes		35	9	25.9	
-18	CRBA1_HUMAN Beta A3	T204		no?	no	-	-					6	4	4.3	
-18	CRBA1_HUMAN Beta A3	S205		no	-	-	-					5	3	3.6	
-18	CRBS_HUMAN Beta S	S166		no	no?	-	yes?					13	1	3.9	
-18	CRBA4_HUMAN Beta A4	S180		no	no	yes?	no		yes			16	2	21.3	
-18	CRBA4_HUMAN Beta A4	T184		-	no	-	-					2	1	2.6	
-18	BFSP2_HUMAN Beaded filament structural protein 2	S91	yes?	-	-	-	yes	yes			no	2	1	14.3	
-17	CRYAA_HUMAN Alpha A	Q50	yes	-	yes	-	yes	yes	yes	yes	eamidatio	4	1	36.4	
-17	CRYAA_HUMAN Alpha A	Q90	yes	yes	no?	-	-	yes			deamidate	6	2	3.5	
-17	CRYAA_HUMAN Alpha A	Q104	yes	yes	no	yes	yes	yes	yes	yes	eamidate	52	4	76.5	
-17	CRYAA_HUMAN Alpha A	Q147	yes	?	yes	yes	yes?	yes			deamidate	11	4	7.1	
-17	CRYAB_HUMAN Alpha B	Q108	yes	yes	yes	yes	yes	yes	yes	yes	eamidate	37	2	97.4	
-17	CRYAB_HUMAN Alpha B	R149		no	-	no	no					20	3	8.4	
-17	CRBB1_HUMAN Beta 1	Q69		yes /yes	no/no	-	-	yes			deamidate	7	1	1.5	Not an N-terminal mod
-17	CRBB1_HUMAN Beta 1	Q235	yes	yes	yes	yes	yes	yes	yes	yes	no	225	17	54.9	
-17	CRBB2_HUMAN Beta 2	Q12		no	-	-	-					4	2	4.7	
-17	CRBA1_HUMAN Beta A3	Q203		-	no	-	-					4	3	3.1	
-17	CRBS_HUMAN Beta S	Q106	yes	?	yes	-	yes	yes			no	10	3	4.7	
-17	CRBS_HUMAN Beta S	R157		no	no	-	-					4	2	50.0	
-17	BFSP2_HUMAN Beaded filament structural protein 2	Q299	yes?	yes?	yes?	yes?	yes?	yes	yes	yes	no	10	3	90.9	Q298 N-terminal -17?
-17	CRGD_HUMAN Gamma D	Q142	yes	?	yes	yes	yes	yes	yes	yes	no	16	2	48.5	
-17	CRGC_HUMAN Gamma C	Q142	yes	yes	yes	yes	yes	yes	yes	yes	no	20	3	58.8	
-17	CRGC_HUMAN Gamma C	R146		no	no	-	-					5	2	11.9	
-2	CRBB1_HUMAN Beta 1	W236		no	-	no	no					8	2	1.9	
1	CRYAA_HUMAN Alpha A	Q6		yes	yes	yes	yes	yes	yes	yes	yes	41	8	14.8	
1	CRYAA_HUMAN Alpha A	Q50		-	-	no	-				yes	3	3	30.0	
1	CRYAA_HUMAN Alpha A	Q90		no	yes	no	no	yes?	yes	yes	yes	19	5	10.4	
1	CRYAA_HUMAN Alpha A	N123		no	yes	-	yes?	yes			yes	9	7	4.2	
1	CRYAA_HUMAN Alpha A	Q126		no	yes	-	no	yes?	yes	yes	no	27	16	12.7	
1	CRYAA_HUMAN Alpha A	Q147		yes	no	-	-	yes?	yes	yes	yes	14	7	8.8	
1	CRYAB_HUMAN Alpha B	Q26		no	no	-	no				no	6	4	9.8	
1	CRYAB_HUMAN Alpha B	N78		-	yes	-	no	yes?	yes	yes	yes	3	2	7.7	
1	CRYAB_HUMAN Alpha B	N146		yes	yes	yes	yes	yes	yes	yes	yes	59	12	24.9	
1	CRBB1_HUMAN Beta 1	N57		yes?	yes?	-	-	yes?	yes	yes	yes	8	4	13.8	
1	CRBB1_HUMAN Beta 1	N67		no	no	no	yes	yes	yes	yes	yes	49	4	9.8	
1	CRBB1_HUMAN Beta 1	Q69		no	no	no	yes	yes	yes	yes	yes	20	4	4.1	
1	CRBB1_HUMAN Beta 1	N81		yes?/no?	no/no	-	yes/yes	yes	yes	yes	no	8	5	9.4	
1	CRBB1_HUMAN Beta 1	Q105		no	no	-	no				yes	15	3	5.5	
1	CRBB1_HUMAN Beta 1	N107		no	no	no	no				yes	9	2	3.3	
1	CRBB1_HUMAN Beta 1	N124		no	yes	yes?	yes	yes	yes	yes	yes	16	2	15.7	
1	CRBB1_HUMAN Beta 1	N157		yes	no	-	yes	yes	yes	yes	yes	13	6	9.6	
1	CRBB1_HUMAN Beta 1	N161		no?	no	-	yes?	yes?	yes	yes	yes	17	6	11.5	
1	CRBB1_HUMAN Beta 1	Q166		no/no	no/no	-	yes?/yes?	yes?	yes	yes	no	19	5	12.8	
1	CRBB1_HUMAN Beta 1	Q204		no	yes?	no	-	yes?			yes	11	2	7.8	
1	CRBB1_HUMAN Beta 1	N216		yes	yes?	-	no	yes?	yes	yes	yes	25	9	20.8	
1	CRBB1_HUMAN Beta 1	Q222		no	no?	-	no				yes	12	6	10.2	
1	CRBB1_HUMAN Beta 1	Q224		no	yes?	-	no	yes?	yes	yes	yes	21	5	17.5	
1	CRBB1_HUMAN Beta 1	Q226		no	no?	no	no				yes	5	3	4.2	
1	CRBB1_HUMAN Beta 1	Q235		no	no	-	-		yes		no	30	9	14.0	
1	CRBB2_HUMAN Beta 2	Q7		no	no	no	-		yes		yes	10	2	11.4	
1	CRBB2_HUMAN Beta 2	Q12		yes	-	no	-	yes?			yes	5	3	5.8	
1	CRBB2_HUMAN Beta 2	Q54		no	-	no	-				no	5	4	6.5	
1	CRBB2_HUMAN Beta 2	Q63		yes?	-	no	-	yes?			no	13	6	15.9	
1	CRBB2_HUMAN Beta 2	N65		yes?/yes?	no/no	no?/no	-	yes?	yes	yes	no	9	4	11.0	
1	CRBB2_HUMAN Beta 2	Q70		no	no	no	-				no	3	2	6.7	
1	CRBB2_HUMAN Beta 2	N113		yes	no	-	-	yes?	yes	yes	no	13	8	7.6	
1	CRBB2_HUMAN Beta 2	N115		yes?	yes	yes	-	yes	yes	yes	yes	7	4	4.2	
1	CRBB2_HUMAN Beta 2	Q137		no	no	-	no				no	12	2	7.1	
1	CRBB2_HUMAN Beta 2	Q162		no	yes	-	yes	yes	yes	yes	yes	7	2	15.6	
1	CRBB2_HUMAN Beta 2	Q182		no	no	yes	-	yes	yes	yes	yes	7	4	4.9	
1	CRBA1_HUMAN Beta A3	Q38		no	no	no	no		yes		yes	18	5	10.2	
1	CRBA1_HUMAN Beta A3	N40		yes	yes	-	yes?	yes	yes	yes	yes	22	5	12.4	
1	CRBA1_HUMAN Beta A3	Q42		no	yes	no	yes	yes	yes	yes	yes	22	8	12.5	
1	CRBA1_HUMAN Beta A3	N54		yes	yes	no	yes	yes	yes	yes	yes	11	6	20.0	

1	CRBA1_HUMAN Beta A3	N103		yes	yes	yes	yes	yes	yes	yes	yes	101	12	23.9	
1	CRBA1_HUMAN Beta A3	N120		yes?	yes?	-	?	yes?	yes	yes	yes	24	7	72.7	
1	CRBA1_HUMAN Beta A3	K131		no?	no	-	no?				no	16	4	5.5	
1	CRBA1_HUMAN Beta A3	N133		yes	yes	yes	yes	yes	yes	yes	yes	50	8	16.6	
1	CRBA1_HUMAN Beta A3	Q149		no	-	-	no				no	11	6	19.6	
1	CRBA1_HUMAN Beta A3	N155		no	yes?	-	no	yes?	yes	yes	no	5	3	7.5	
1	CRBA1_HUMAN Beta A3	N156		no	yes?	-	no	yes?	yes	yes	no	10	5	14.9	
1	CRBA1_HUMAN Beta A3	Q172		no	yes	no	-	yes?	yes	yes	yes	22	2	10.6	
1	CRBA1_HUMAN Beta A3	Q180		no	no	-	-				yes	4	4	4.7	
1	CRBA1_HUMAN Beta A3	Q203		-	yes?	-	no	yes?	yes	yes	no	12	6	8.8	
1	CRBA1_HUMAN Beta A3	Q206		no	no	-	no				no	7	7	5.0	
1	CRBS_HUMAN Beta S	K13		no	no	-	no		yes		no	17	5	8.0	
1	CRBS_HUMAN Beta S	N14		yes	yes	no	yes	yes	yes	yes	yes	69	12	33.5	
1	CRBS_HUMAN Beta S	Q16		no?	yes	no	yes?	yes	yes	yes	yes	37	10	18.0	
1	CRBS_HUMAN Beta S	N53		no	yes?	-	yes	yes			yes	32	6	23.2	
1	CRBS_HUMAN Beta S	Q63		yes	no?	no	yes	yes			yes	26	10	23.0	
1	CRBS_HUMAN Beta S	Q70		yes?	yes?	no	no	yes?	yes	yes	no	15	6	12.9	Why no N76 +1 reported?
1	CRBS_HUMAN Beta S	Q106		no	no?	no	-		yes		no	18	5	8.2	
1	CRBS_HUMAN Beta S	Q120		no?	yes	yes?	yes	yes	yes	yes	yes	158	24	60.1	
1	CRBS_HUMAN Beta S	Q170		no	no?	no?	-		yes		yes	22	3	6.2	
1	CRBA4_HUMAN Beta A4	Q22		no	yes?	-	yes /yes	yes	yes	yes	no	9	1	11.8	
1	CRBA4_HUMAN Beta A4	Q65		-	no	-	no				yes	5	3	5.1	
1	CRBA4_HUMAN Beta A4	N82		yes	yes	yes	yes	yes	yes	yes	yes	26	6	31.7	
1	CRBA4_HUMAN Beta A4	N100		yes	-	no	yes?	yes			no	5	3	22.7	
1	CRBA4_HUMAN Beta A4	N113		no?	yes?	yes	yes?	yes	yes	yes	yes	7	4	8.1	
1	CRBA4_HUMAN Beta A4	Q186		-	-	-	no				no	2	2	2.6	
1	BFSP2_HUMAN Beaded filament structural protein 2	N45		yes	-	yes	-	yes	yes	yes	no	5	2	100.0	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q86		yes	no	-	yes	yes	yes	yes	no	3	1	4.6	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q127		-	-	-	no				no	2	2	3.8	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q130		-	no	-	yes	yes	yes	yes	no	9	4	17.0	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q135		yes?	no	-	yes	yes	yes	yes	no	17	2	32.1	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q162		no	-	yes	-	yes	yes	yes	no	2	1	15.4	
1	BFSP2_HUMAN Beaded filament structural protein 2	N207		yes	-	yes	-	yes	yes	yes	no	5	1	55.6	
1	BFSP2_HUMAN Beaded filament structural protein 2	Q329		no	-	-	no?				no	3	1	23.1	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q45		-	yes	yes	yes	yes	yes	yes	no	6	2	46.2	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q224		no	no	no	yes	yes	yes	yes	no	6	3	18.8	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q236		no	no	-	yes	yes	yes	yes	no	4	2	10.0	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q238		no	no	-	no		yes		no	2	2	5.0	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q243		no	-	-	no				no	6	3	18.8	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q245		yes?	no	yes?	no	yes?	yes	yes	no	10	3	31.3	
1	BFSP1_HUMAN Beaded filament structural protein 1	Q251		-	-	-	no				no	2	2	6.3	
1	BFSP1_HUMAN Beaded filament structural protein 1	N304		yes	yes	-	yes	yes	yes	yes	no	7	2	70.0	
1	CRGD_HUMAN Gamma D	Q12		yes	yes	-	yes	yes	yes	yes	yes	5	1	71.4	
1	CRGD_HUMAN Gamma D	N24		yes?/yes	yes?/yes	-	yes/yes	yes			no	16	8	53.3	
1	CRGD_HUMAN Gamma D	Q26		-	no	-	no				no	2	2	6.5	
1	CRGD_HUMAN Gamma D	Q47		yes?	no?	-	no	yes?			no	15	4	16.3	
1	CRGD_HUMAN Gamma D	N49		yes?	yes?	no	yes	yes	yes	yes	yes	37	8	39.4	
1	CRGD_HUMAN Gamma D	Q154		-	no	-	no				no	2	2	13.3	
1	CRGC_HUMAN Gamma C	N24		yes	yes	no	no	yes?	yes	yes	yes	14	6	50.0	
1	CRGC_HUMAN Gamma C	Q26		-	yes	no	no	yes?			no	6	3	22.2	
1	CRGC_HUMAN Gamma C	Q66		no	yes?	-	no	yes?	yes	yes	yes	17	4	30.4	
1	CRGC_HUMAN Gamma C	Q67		-	yes?	-	no	yes?	yes	yes	no	12	3	21.4	
1	CRGC_HUMAN Gamma C	Q83		no	yes	?	-	yes?	yes	yes	no	16	3	45.7	
1	gi:4503065 mu crystallin	K280		-	-	-	-				no	2	1	100.0	
14	CRYAA_HUMAN Alpha A	H100		no	-	-	-				no	3	2	25.0	
14	CRYAA_HUMAN Alpha A	H154		yes?/yes?	yes?/yes	-	-	yes?	yes	yes	no	3	1	1.7	
14	CRBB1_HUMAN Beta 1	H237		yes?	-	-	no	yes?			no	3	1	0.7	
14	CRBA1_HUMAN Beta A3	C82		yes	yes	?	yes?	yes			yes	37	10	52.9	
14	CRBA1_HUMAN Beta A3	C117		?	yes	?	yes?	yes	yes	yes	yes	21	6	55.3	
14	CRBA1_HUMAN Beta A3	C185		yes	yes	-	yes	yes	yes	yes	yes	41	9	43.6	
14	CRBA1_HUMAN Beta A3	H106		yes/yes	yes/yes	-	yes/yes	yes	yes	yes	no	17	3	4.0	
14	CRBS_HUMAN Beta S	C24		yes	yes	yes	yes	yes	yes	yes	yes	79	5	33.8	
14	CRBS_HUMAN Beta S	C26		yes	yes	yes	yes	yes	yes	yes	yes	117	7	49.2	
14	CRGC_HUMAN Gamma C	C22		yes	yes	-	yes	yes	yes	yes	yes				Not report by InsPecT
14	CRGD_HUMAN Gamma D	C110		yes	yes	-	yes?	yes	yes	yes	yes	5	2	55.6	
16	CRYAA_HUMAN Alpha A	M1		yes	yes	yes	yes	yes	yes	yes	yes	21	1	100.0	
16	CRYAA_HUMAN Alpha A	W9		yes	-	-	-	yes	yes	yes	yes	4	2	1.4	
16	CRYAA_HUMAN Alpha A	M138		yes	yes	no?	yes?	yes	yes	yes	yes	32	7	16.2	
16	CRYAB_HUMAN Alpha B	M1		yes	yes	yes	-	yes	yes	yes	yes	42	2	100.0	
16	CRYAB_HUMAN Alpha B	W9		yes	-	yes	-	yes	yes	yes	yes	7	2	1.8	
16	CRYAB_HUMAN Alpha B	W60		yes	-	yes	-	yes	yes	yes	yes	2	1	1.1	
16	CRYAB_HUMAN Alpha B	M68		yes	yes	yes	yes?	yes	yes	yes	yes	13	3	7.7	
16	CRBB1_HUMAN Beta 1	W100		-	-	-	yes	yes	yes	yes	yes	6	1	2.2	
16	CRBB1_HUMAN Beta 1	M112		yes	yes	-	-	yes	yes	yes	yes	10	1	9.4	
16	CRBB1_HUMAN Beta 1	W126		-	no?	-	yes?	yes?			yes	3	1	3.0	
16	CRBB1_HUMAN Beta 1	M136		yes	yes	yes	yes	yes	yes	yes	yes	16	1	16.3	
16	CRBB1_HUMAN Beta 1	W174		yes/yes	yes/yes?	-	-	yes	yes	yes	no	3	2	1.5	
16	CRBB1_HUMAN Beta 1	W192		yes	yes	yes	yes	yes	yes	yes	yes	10	2	5.6	
16	CRBB1_HUMAN Beta 1	M225		yes	yes	-	-	yes	yes	yes	yes	27	6	22.7	
16	CRBB2_HUMAN Beta 2	W58		yes	-	-	-	yes	yes	yes	yes	2	1	2.5	
16	CRBB2_HUMAN Beta 2	M121		yes	-	-	yes?	yes	yes	yes	yes	23	2	21.9	
16	CRBB2_HUMAN Beta 2	W150		yes	yes	-	yes	yes	yes	yes	yes	6	2	5.3	
16	CRBA1_HUMAN Beta A3	M46		yes	yes	yes	yes	yes	yes	yes	yes	5	3	13.2	
16	CRBA1_HUMAN Beta A3	W96		yes	-	yes	yes?	yes	yes	yes	yes	9	5	2.7	
16	CRBA1_HUMAN Beta A3	W99		?	yes?	-	-	yes?	yes	yes	yes	6	2	1.5	
16	CRBA1_HUMAN Beta A3	M161		-	-	no	yes	yes			yes	5	2	7.5	
16	CRBA1_HUMAN Beta A3	W168		yes	yes	yes	yes	yes	yes	yes	yes	7	1	3.4	
16	CRBS_HUMAN Beta S	M58		yes	yes	yes?	yes	yes			yes	18	8	12.2	
16	CRBS_HUMAN Beta S	W72		?	no	-	-				no	2	2	3.9	
16	CRBS_HUMAN Beta S	M73		yes	yes	-	-	yes	yes	yes	yes	7	2	13.5	
16	CRBS_HUMAN Beta S	M107		-	no	no	-				no	7	3	3.1	
16	CRBS_HUMAN Beta S	M123		no	no	-	-				yes	3	3	1.1	
16	CRBS_HUMAN Beta S	W162		yes	yes	-	yes	yes	yes	yes	yes	11	2	3.1	

16	CRBA4_HUMAN Beta A4	M13		yes	-	yes	-	yes	yes	yes	yes	3	1	4.3	
16	BFSP2_HUMAN Beaded filament structural protein 2	M18		yes	yes	-	-	yes	yes	yes	no	2	1	50.0	
16	BFSP2_HUMAN Beaded filament structural protein 2	M47		yes	-	-	-	yes			no	3	1	60.0	
16	BFSP2_HUMAN Beaded filament structural protein 2	M305		no	yes	-	-	yes	yes	yes	no	4	2	36.4	
16	CRGD_HUMAN Gamma D	M43		yes	no	-	yes?	yes	yes	yes	no	16	3	17.6	
16	CRGD_HUMAN Gamma D	M69		no	yes?	-	-	yes?			no	10	3	13.7	
16	CRGD_HUMAN Gamma D	M146		-	yes/yes	-	yes/yes	yes	yes	yes	no	2	1	5.4	
16	CRGD_HUMAN Gamma D	W156		-	yes	-	yes	yes	yes	yes	yes	2	1	13.3	
16	CRGC_HUMAN Gamma C	M102		yes	yes?	-	yes	yes	yes	yes	yes	3	1	11.1	Two adjacent M residues.
28	CRYAA_HUMAN Alpha A	S20		-	no?	yes	yes	yes	yes	yes	yes	3	1	2.6	
28	CRYAA_HUMAN Alpha A	S59		-	-	yes?/yes?	yes/yes	yes	yes	yes	no	3	1	1.4	
28	CRYAA_HUMAN Alpha A	S62		yes/yes	-	-	-	yes			no	2	1	1.0	
28	CRYAA_HUMAN Alpha A	H79		-	yes	yes	-	yes	yes	yes	yes	2	1	1.2	N-terminal mod
28	CRYAA_HUMAN Alpha A	H100		-	-	-	-					2	1	18.2	
28	CRYAB_HUMAN Alpha B	H83		-	yes	-	-	yes	yes	yes	yes	2	1	2.3	N-terminal mod
28	CRYAB_HUMAN Alpha B	S138		no?	-	-	no					2	2	0.9	
28	CRYAB_HUMAN Alpha B	S139		-	-	-	no					3	2	1.3	
28	CRBB2_HUMAN Beta 2	S174		no	yes?	-	-	yes?			no	3	2	2.9	
28	CRBA1_HUMAN Beta A3	S205		-	-	-	-					2	1	1.5	
28	CRBS_HUMAN Beta S	S166		yes/yes	yes/yes	-	-	yes	yes	yes	no	3	1	0.9	
38	CRYAA_HUMAN Alpha A	I5	yes	-	-	?	-					2	1	0.7	Potassium adduct
38	CRYAA_HUMAN Alpha A	Q6	yes	-	-	?	-					7	1	2.9	Potassium adduct
38	CRYAA_HUMAN Alpha A	G28	yes	-	-	-	?					2	2	20.0	Potassium adduct
38	CRYAA_HUMAN Alpha A	G30	yes	-	-	-	?					2	2	20.0	Potassium adduct
38	CRYAA_HUMAN Alpha A	V56	yes	-	-	?	?					13	2	6.8	Potassium adduct
38	CRYAA_HUMAN Alpha A	S62	yes	-	-	?	-					3	1	1.4	Potassium adduct
38	CRYAA_HUMAN Alpha A	K88	yes	-	-	?	?					6	1	3.4	Potassium adduct
38	CRYAA_HUMAN Alpha A	F93	yes	?	-	-	-					2	1	0.9	Potassium adduct
38	CRYAA_HUMAN Alpha A	K99	yes	-	-	?	-					2	1	0.9	Potassium adduct
38	CRYAA_HUMAN Alpha A	L129	yes	-	-	?	-					3	3	1.4	Potassium adduct
38	CRYAA_HUMAN Alpha A	S130	yes	-	-	?	?					4	3	1.9	Potassium adduct
38	CRYAA_HUMAN Alpha A	C131	yes	-	-	?	-					3	2	1.4	Potassium adduct
38	CRYAA_HUMAN Alpha A	S132	yes	-	-	?	?					7	5	3.5	Potassium adduct
38	CRYAA_HUMAN Alpha A	G137	yes	-	-	-	?					2	2	1.0	Potassium adduct
38	CRYAA_HUMAN Alpha A	I146	yes	?	-	?	-					2	1	1.4	Potassium adduct
38	CRYAB_HUMAN Alpha B	L37	yes	-	-	-	?					7	1	12.1	Potassium adduct
38	CRYAB_HUMAN Alpha B	F38	yes	?	-	-	?					3	2	5.2	Potassium adduct
38	CRYAB_HUMAN Alpha B	S43	yes	-	-	?	-					3	2	15.8	Potassium adduct
38	CRYAB_HUMAN Alpha B	L44	yes	-	-	?	-					2	2	10.5	Potassium adduct
38	CRYAB_HUMAN Alpha B	W60	yes	-	-	-	?					2	1	1.1	Potassium adduct
38	CRYAB_HUMAN Alpha B	E164	yes	?	?	-	-					2	1	16.7	Potassium adduct
38	CRBB1_HUMAN Beta 1	S31	yes	-	-	?	-					3	2	4.4	Potassium adduct
38	CRBB1_HUMAN Beta 1	A39	yes	-	-	?	-					2	2	1.5	Potassium adduct
38	CRBB1_HUMAN Beta 1	T41	yes	-	-	-	-					2	2	1.3	Potassium adduct
38	CRBB1_HUMAN Beta 1	T42	yes	-	-	?	?					9	6	5.8	Potassium adduct
38	CRBB1_HUMAN Beta 1	V43	yes	-	-	?	-					2	2	1.3	Potassium adduct
38	CRBB1_HUMAN Beta 1	I45	yes	-	-	?	?					6	5	3.8	Potassium adduct
38	CRBB1_HUMAN Beta 1	V101	yes	-	-	-	?					2	1	0.7	Potassium adduct
38	CRBB1_HUMAN Beta 1	E147	yes	-	-	?	?					5	2	71.4	Potassium adduct
38	CRBB1_HUMAN Beta 1	I165	yes	-	-	?	?					2	1	1.3	Potassium adduct
38	CRBB1_HUMAN Beta 1	Q166	yes	-	-	-	?					3	2	2.3	Potassium adduct
38	CRBB1_HUMAN Beta 1	L207	yes	-	-	?	?					2	1	1.4	Potassium adduct
38	CRBB1_HUMAN Beta 1	E208	yes	-	-	?	?					8	2	5.5	Potassium adduct
38	CRBB1_HUMAN Beta 1	S241	yes	-	-	?	-					3	1	0.7	Potassium adduct
38	CRBB1_HUMAN Beta 1	F242	yes	-	-	-	?					6	4	1.4	Potassium adduct
38	CRBB1_HUMAN Beta 1	L245	yes	-	-	?	?					14	3	3.2	Potassium adduct
38	CRBB1_HUMAN Beta 1	A246	yes	-	-	?	?					14	4	3.2	Potassium adduct
38	CRBB1_HUMAN Beta 1	T247	yes	-	-	-	?					3	3	0.8	Potassium adduct
38	CRBB1_HUMAN Beta 1	E248	yes	-	-	?	-					7	3	1.8	Potassium adduct
38	CRBB2_HUMAN Beta 2	G9	yes	?	-	-	?					3	1	3.3	Potassium adduct
38	CRBB2_HUMAN Beta 2	A55	yes	-	-	?	-					3	3	3.8	Potassium adduct
38	CRBB2_HUMAN Beta 2	G56	yes	?	-	?	?					7	3	8.8	Potassium adduct
38	CRBB2_HUMAN Beta 2	Y111	yes	-	-	?	-		yes			3	2	1.7	Potassium adduct
38	CRBB2_HUMAN Beta 2	E112	yes	-	-	?	?		yes			24	5	13.7	Potassium adduct
38	CRBB2_HUMAN Beta 2	N113	yes	?	-	?	?		yes			5	2	3.1	Potassium adduct
38	CRBB2_HUMAN Beta 2	N115	yes	-	-	?	-					3	3	1.8	Potassium adduct
38	CRBB2_HUMAN Beta 2	I124	yes	-	-	-	?					2	1	1.7	Potassium adduct
38	CRBB2_HUMAN Beta 2	V128	yes	?	-	?	-					2	2	1.7	Potassium adduct
38	CRBA1_HUMAN Beta A3	L10	yes	-	-	?	-		yes			2	1	22.2	Potassium adduct
38	CRBA1_HUMAN Beta A3	G26	yes	?	-	?	-					3	3	14.3	Potassium adduct
38	CRBA1_HUMAN Beta A3	I74	yes	-	-	-	-					2	1	2.7	Potassium adduct
38	CRBA1_HUMAN Beta A3	Y145	yes	-	-	?	-					2	1	3.6	Potassium adduct
38	CRBA1_HUMAN Beta A3	L183	yes	-	-	-	?					2	2	2.1	Potassium adduct
38	CRBA1_HUMAN Beta A3	E184	yes	?	-	-	?					2	2	2.1	Potassium adduct
38	CRBA1_HUMAN Beta A3	I210	yes	-	-	-	?					2	1	1.5	Potassium adduct
38	CRBS_HUMAN Beta S	K94	yes	?	-	?	?					3	2	4.1	Potassium adduct
38	CRBS_HUMAN Beta S	S104	yes	?	-	?	-					2	2	0.9	Potassium adduct
38	CRBS_HUMAN Beta S	M107	yes	-	-	?	-					2	2	0.9	Potassium adduct
38	CRBS_HUMAN Beta S	E109	yes	-	-	?	?		yes			21	5	9.1	Potassium adduct
38	CRBS_HUMAN Beta S	T111	yes	-	-	?	?					4	2	1.7	Potassium adduct
38	CRBS_HUMAN Beta S	R157	yes	no	-	-	-					3	1	42.9	Potassium adduct
38	CRBS_HUMAN Beta S	K158	yes	?	-	-	-					3	2	1.0	Potassium adduct
38	CRBS_HUMAN Beta S	P159	yes	-	?	-	?					2	2	0.6	Potassium adduct
38	CRBA4_HUMAN Beta A4	G55	yes	-	-	?	?					2	1	2.0	Potassium adduct
38	CRBA4_HUMAN Beta A4	Q65	yes	-	-	-	?					2	2	2.1	Potassium adduct
38	CRBA4_HUMAN Beta A4	Q111	yes	-	-	?	-					3	1	3.7	Potassium adduct
38	BFSP1_HUMAN Beaded filament structural protein 1	Q166	yes	-	-	?	?					2	1	8.0	Potassium adduct
38	BFSP1_HUMAN Beaded filament structural protein 1	P328	yes	-	-	-	?					2	2	14.3	Potassium adduct
38	CRGD_HUMAN Gamma D	Y45	yes	-	-	-	?					3	1	3.2	Potassium adduct
38	CRGD_HUMAN Gamma D	N49	yes	-	-	?	-					2	2	3.4	Potassium adduct
38	gi:4503065 mu crystallin	V46	yes	-	-	-	-					2	1	100.0	Potassium adduct
42	CRYAA_HUMAN Alpha A	M1		yes	yes	yes	yes	yes	yes	yes	yes	219	17	100.0	
42	CRYAB_HUMAN Alpha B	M1		yes	yes	yes	yes	yes	yes	yes	yes	283	5	100.0	
42	CRBB2_HUMAN Beta 2	A1		yes	yes	yes	yes	yes	yes	yes	yes	72	16	100.0	
42	CRBA1_HUMAN Beta A3	M1		yes	-	yes	yes	yes	yes	yes	yes	9	4	100.0	
42	CRBA1_HUMAN Beta A3	A19		-	-	yes	-	yes	yes	yes	yes	4	3	40.0	
43	CRYAA_HUMAN Alpha A	V3	yes	yes	yes	-	yes	yes				8	2	2.9	
43	CRYAA_HUMAN Alpha A	K11		yes/no?	yes/no?	-	-	yes	yes	yes	no	9	1	3.3	
43	CRYAA_HUMAN Alpha A	R12	yes?	yes/yes	-	yes/yes	-	yes	yes	yes	no	2	1	4.9	
43	CRYAA_HUMAN Alpha A	T13	yes	-	yes	yes	yes	yes	yes	yes		4	1	4.4	
43	CRYAA_HUMAN Alpha A	T55	yes	yes	no	yes	yes	yes	yes	yes		11	1	5.9	
43	CRYAA_HUMAN Alpha A	H79	yes	yes	-	-	-	yes	yes	yes		4	2	2.4	
43	CRYAA_HUMAN Alpha A	V89	yes	yes	yes	yes	yes	yes	yes	yes		14	2	7.8	
43	CRYAA_HUMAN Alpha A	K99		?	-	-	-		yes		no	2	1	0.9	

43	CRYAA_HUMAN Alpha A	Q104	yes	-	yes	yes?	-	yes	yes	yes		4	2	20.0	
43	CRYAA_HUMAN Alpha A	I146	yes	yes	yes	yes	yes?	yes	yes	yes		15	5	9.6	
43	CRYAB_HUMAN Alpha B	R12	yes	-	yes	yes	-	yes	yes	yes		11	2	13.4	N-terminal mod
43	CRYAB_HUMAN Alpha B	T42	yes	-	-	-	yes	yes				2	1	6.3	
43	CRYAB_HUMAN Alpha B	F47	yes	-	-	-	yes	yes				6	1	28.6	
43	CRYAB_HUMAN Alpha B	A57	yes	yes	yes	yes	yes	yes	yes	yes		9	4	5.3	
43	CRYAB_HUMAN Alpha B	K92		yes?	no	no	-	yes?			yes	3	2	15.0	
43	CRYAB_HUMAN Alpha B	V93	yes	yes	yes	yes	yes	yes	yes	yes		12	1	10.8	
43	CRYAB_HUMAN Alpha B	P130	yes	-	-	-	yes	yes				2	1	0.8	
43	CRYAB_HUMAN Alpha B	E164	yes	yes	yes	-	-	yes				3	2	23.1	
43	CRBB1_HUMAN Beta 1	P34	yes	yes	-	yes	-	yes	yes	yes		7	3	8.4	
43	CRBB1_HUMAN Beta 1	T36	yes	-	-	?	-					4	2	3.9	
43	CRBB1_HUMAN Beta 1	T37	yes	-	-	yes	yes	yes				4	4	3.3	
43	CRBB1_HUMAN Beta 1	L60	yes	yes	-	-	yes	yes	yes	yes		10	2	2.0	
43	CRBB1_HUMAN Beta 1	R72	yes	no	-	yes	yes	yes	yes	yes		4	2	7.0	
43	CRBB1_HUMAN Beta 1	A73	yes	yes	-	yes	-	yes	yes	yes		3	1	3.9	
43	CRBB1_HUMAN Beta 1	S92	yes	no?	no	yes?	yes	yes	yes	yes		16	2	5.8	
43	CRBB1_HUMAN Beta 1	L135	yes	yes	yes	yes	yes	yes	yes	yes		11	1	12.8	
43	CRBB1_HUMAN Beta 1	I150	yes	yes	yes	yes	yes	yes	yes	yes		7	2	5.3	
43	CRBB1_HUMAN Beta 1	G160	yes	-	-	yes?	yes	yes	yes	yes		2	1	1.4	
43	CRBB1_HUMAN Beta 1	S172	yes	-	-	-	yes	yes				2	1	1.0	
43	CRBB1_HUMAN Beta 1	S179	yes	-	-	?	-					2	1	1.0	
43	CRBB1_HUMAN Beta 1	K186		no?/yes?	?/no	yes/yes	-	yes?			no	5	2	100.0	
43	CRBB1_HUMAN Beta 1	V187	yes	-	-	yes	yes	yes	yes	yes		5	2	2.8	
43	CRBB1_HUMAN Beta 1	G202	yes	yes	yes?	yes	yes	yes	yes	yes		21	3	14.9	
43	CRBB1_HUMAN Beta 1	H214	yes	yes	yes	yes	yes	yes	yes	yes		18	3	15.7	
43	CRBB1_HUMAN Beta 1	K234	yes	no	?	no	no?				no	10	1	10.3	
43	CRBB1_HUMAN Beta 1	Q235	yes	yes	yes	yes	yes	yes	yes	yes		11	3	5.6	
43	CRBB2_HUMAN Beta 2	A1		no	-	-	-					3	2	100.0	
43	CRBB2_HUMAN Beta 2	K10		yes/yes	yes/yes	-	-	yes			no	3	1	3.5	
43	CRBB2_HUMAN Beta 2	A48	yes	yes	-	yes	yes	yes				8	4	10.3	
43	CRBB2_HUMAN Beta 2	G68	yes	yes	-	-	-	yes	yes	yes		3	3	6.7	
43	CRBB2_HUMAN Beta 2	I108	yes	yes	yes	yes	yes	yes	yes	yes		26	10	17.2	
43	CRBB2_HUMAN Beta 2	K119		yes/yes	-	-	-	yes			yes?	3	2	1.8	Mac2002 saw K120 +42.
43	CRBB2_HUMAN Beta 2	V145	yes	no	-	yes?	yes?	yes?	yes	yes		6	1	5.3	
43	CRBB2_HUMAN Beta 2	G168	yes	yes	yes	yes	-	yes	yes	yes		5	1	8.8	
43	CRBA1_HUMAN Beta A3	P23	yes	-	-	?	-					2	2	11.1	
43	CRBA1_HUMAN Beta A3	I33	yes	yes	-	yes	yes	yes	yes	yes		9	4	5.4	
43	CRBA1_HUMAN Beta A3	K44		yes/yes	yes/yes	-	-	yes	yes	yes	no	4	1	2.3	
43	CRBA1_HUMAN Beta A3	W96	yes	yes	yes	yes?	yes	yes	yes	yes		39	6	10.8	
43	CRBA1_HUMAN Beta A3	K131		yes	yes	-	yes	yes	yes	yes	yes?	2	1	0.7	Mac2002 saw K131 +42.
43	CRBA1_HUMAN Beta A3	I163	yes	-	no	yes	yes	yes				6	1	2.9	
43	CRBA1_HUMAN Beta A3	G178	yes	yes	yes	-	-	yes	yes	yes		11	4	12.8	
43	CRBA1_HUMAN Beta A3	E197	yes	yes	-	no?	yes	yes	yes	yes		10	5	8.1	
43	CRBS_HUMAN Beta S	I7	yes	yes	yes	yes	yes	yes	yes	yes		12	3	8.0	
43	CRBS_HUMAN Beta S	K13		no?/no	-/-	-	-		yes		no	3	3	1.5	Maybe a +42 on K13?
43	CRBS_HUMAN Beta S	R19	yes?	no	-	-	?					3	2	1.7	
43	CRBS_HUMAN Beta S	V41	yes	-	-	-	yes	yes				3	1	2.3	
43	CRBS_HUMAN Beta S	F54	yes	-	?	-	yes	yes				4	2	2.7	
43	CRBS_HUMAN Beta S	G56	yes	-	-	-	yes	yes				2	2	1.3	
43	CRBS_HUMAN Beta S	A84	yes	yes	yes	-	yes	yes	yes	yes		7	1	10.5	
43	CRBS_HUMAN Beta S	K100	yes	no	no	-	-		yes		no	2	2	4.4	
43	CRBS_HUMAN Beta S	G101	yes	no	?	-	yes	yes	yes	yes		12	3	5.5	
43	CRBS_HUMAN Beta S	S116	yes	-	yes	-	yes	yes				11	2	4.2	
43	CRBS_HUMAN Beta S	Q148	yes	yes	yes	-	-	yes	yes	yes		6	3	42.9	
43	CRBS_HUMAN Beta S	K158	yes	yes	yes	no	yes	yes	yes	yes	no	24	9	7.2	
43	CRBA4_HUMAN Beta A4	V48	yes	?	-	?	yes	yes				11	7	11.1	
43	CRBA4_HUMAN Beta A4	G71	yes	-	-	yes	yes	yes	yes	yes		3	1	3.8	
43	CRBA4_HUMAN Beta A4	L106	yes	yes	-	yes	yes	yes	yes	yes		10	4	11.6	
43	CRBA4_HUMAN Beta A4	G158	yes	yes	yes	-	yes	yes	yes	yes		4	2	25.0	
43	CRBA4_HUMAN Beta A4	E177	yes	yes?	-	?	-	yes?	yes	yes		2	2	2.7	
43	BFSP2_HUMAN Beaded filament structural protein 2	A77	yes	-	-	yes	yes	yes	yes	yes		7	1	10.8	
43	BFSP2_HUMAN Beaded filament structural protein 2	L174	yes	yes	-	yes	yes?	yes	yes	yes		3	2	30.0	
43	BFSP1_HUMAN Beaded filament structural protein 1	S223	yes	yes?	no?	yes?	yes	yes	yes	yes		4	1	12.5	
43	BFSP1_HUMAN Beaded filament structural protein 1	Q294	yes	yes?	-	no?	-	yes?	yes	yes		4	4	44.4	
43	CRGD_HUMAN Gamma D	G99	yes	-	-	-	yes	yes				2	2	22.2	
43	CRGD_HUMAN Gamma D	Q142	yes	-	yes	-	yes	yes	yes	yes		3	2	15.0	
44	CRYAA_HUMAN Alpha A	W9		yes/no	-	yes/yes	-	yes?			no	3	1	1.1	
44	CRYAB_HUMAN Alpha B	W60		-	-	-	-				no	2	1	1.1	
44	CRBB1_HUMAN Beta 1	W100		-	yes/no?	-	yes?/yes?	yes	yes	yes	no	4	1	1.5	
44	CRBB1_HUMAN Beta 1	W192		yes?/yes	yes?/yes?	yes/yes	yes/yes	yes	yes	yes	no	6	1	3.4	
44	CRBB2_HUMAN Beta 2	W150		yes?/yes	yes/yes	-	-	yes	yes	yes	no	2	1	1.8	
44	CRBA1_HUMAN Beta A3	W96		no	no	-	-				no	3	3	0.9	
44	CRBA1_HUMAN Beta A3	W168		- / -	yes/yes	no/no	yes/ no?	yes	yes	yes	no	4	1	2.0	
55	CRYAA_HUMAN Alpha A	R103		-	no	-	-				no	2	2	11.8	
55	CRYAB_HUMAN Alpha B	R163		?	-	no	-				no	3	2	60.0	
55	CRBB1_HUMAN Beta 1	R72		-	-	-	no?	R71?	R71 yes	yes	no	3	1	5.4	Wrong site?
55	CRBB1_HUMAN Beta 1	R85		yes?/yes	yes/yes?	-	-	yes?			no	3	2	3.4	
55	CRBB1_HUMAN Beta 1	R134		-	no	-	yes?	yes?	yes	yes	no	4	1	80.0	
55	CRBA1_HUMAN Beta A3	R58		yes/yes	yes/yes	-	-	yes			no	3	1	5.1	
58	CRYAA_HUMAN Alpha A	K11		no?/no	yes/no	-	-	yes?	yes	yes	no	3	1	1.1	
58	CRBB1_HUMAN Beta 1	K117		yes/yes	yes/yes	yes/yes	-	yes	yes	yes	no	7	2	6.4	
58	CRBB1_HUMAN Beta 1	K149		-	-	no	-					2	1	14.3	
58	CRBB1_HUMAN Beta 1	K186		no?/yes?	yes?/yes?	-	yes/yes	yes	yes	yes	no	12	3	100.0	
58	CRBA1_HUMAN Beta A3	K44		yes/yes	-	-	yes/yes	yes	yes	yes	no	2	1	1.2	
58	CRBA1_HUMAN Beta A3	K131		yes?/yes?	yes/yes	yes/yes	yes/yes	yes	yes	yes	no	11	2	3.8	
58	CRBS_HUMAN Beta S	K6		no?/no?	-	-	-				no	3	3	75.0	
58	CRBS_HUMAN Beta S	K154		-	no	-	no	K153?	K153 yes	yes	no	2	2	4.9	Two adjacent K residues.
58	CRBS_HUMAN Beta S	K158		no	-	-	?				no	4	3	1.3	
72	CRYAA_HUMAN Alpha A	K11		no	no	no	-				no	6	3	2.2	
80	CRYAA_HUMAN Alpha A	S122		yes	yes?	yes	no	yes	yes	yes	yes	13	5	6.1	
80	CRYAA_HUMAN Alpha A	T148		-	-	no	-		yes		no	2	2	1.1	
80	CRYAB_HUMAN Alpha B	S19		yes?	-	-	-	yes?			yes	2	1	3.9	
80	CRYAB_HUMAN Alpha B	S59		yes	yes	yes	yes	yes	yes	yes	yes	8	2	4.8	
80	CRBB1_HUMAN Beta 1	Y205		-	-	no	-				no	2	1	1.4	
80	CRBA1_HUMAN Beta A3	S160		-	-	no	no				yes	6	2	9.0	
	379 site tota		**162**	in vitro				**228**	**196**	**178**					
			217	in vivo											
					InsPecT	**Manual**	**Consensus**	**Both (Manual & Consensus)**							
				Total	**379**	**228**	**196**	**178**							
				in vivo	**219**	**149**	**130**	**119**							

	Manually Validated in vivo InsPecT Sites				149 of 219	**68%**									
	in vivo InsPecT sites with Consensus				130 of 219	**59%**									
	Manually Validated in vivo Consensus Sites				119 of 130	**92%**									
	Manually Validated in vivo Sites with Consensus				119 of 149	**80%**									
					85	**<= known sites seen with InsPecT passing validation**									
					12	**<= known sites seen with InsPecT NOT passing validation**									
					63	**<= sites seen with InsPecT passing validation that were NOT previously known**									