

**Table S1.  $\beta_2$ AR/GRK5 inter-chain BS<sup>3</sup> and zero-length cross-links, Related to Figures 5 and 6**

Validated cross-linked peptides between  $\beta_2$ AR and GRK5 are listed and grouped based on the interface. Cross-linked residue in peptide sequence is highlighted in bold.

Domains ( $\beta_2$ AR/GRK5)	Cross-linker type	Charge (z)	Obs. MH+ (Da)	Mass error (ppm)	$\beta_2$ AR sequence	GRK5 sequence	Cross-linked residues ( $\beta_2$ AR-GRK5)	C $\alpha$ -C $\alpha$ distances in 1 <sup>st</sup> model (Å)	C $\alpha$ -C $\alpha$ distances in 2 <sup>nd</sup> model (Å)	C $\alpha$ -C $\alpha$ distances in 3 <sup>rd</sup> model (Å)
<b>Cluster 1</b>										
ICL3/NLBD	BS <sup>3</sup>	4	1674.89	0.70	VFQEAKR	EGGGGKR	227-22	10.5	12.7	13.8
ICL3/NLBD	BS <sup>3</sup>	3	1669.92	-0.03	QLQKIDK	EGGGGKR	232-22	13.5	13.2	15.1
ICL3/NLBD	BS <sup>3</sup>	4	1798.02	1.31	QLQKIDK	EGGGGKRK	232-22	13.5	13.2	15.1
ICL3/NLBD	BS <sup>3</sup>	3	1273.71	0.69	QLQKIDK	<b>KGK</b>	232-24	14.2	8.3	9.1
ICL3/NLBD	BS <sup>3</sup>	3	1497.91	0.84	QLQKIDK	<b>RKGK</b>	232-24	14.2	8.3	9.1
ICL3/NLBD	BS <sup>3</sup>	4	1601.83	0.53	IDKSEGR	EGGGGKR	235-22	15.7	13.5	15.8
ICL3/NLBD	BS <sup>3</sup>	3	1273.71	0.69	IDKSEGR	<b>KGK</b>	235-24	15.7	10	10.6
ICL3/NLBD	BS <sup>3</sup>	4	1655.94	-0.27	IDKSEGR	<b>KGLLQR</b>	235-548	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
ICL3/CLBD	zero-length	4	2352.25	0.45	.NLSQVEQDGR	<b>KGLLQR</b>	249-547	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
<b>Cluster 2</b>										
ICL2/RH-bundle	BS <sup>3</sup>	4	3138.72	-1.54	YFAITSPFKYQSLLTK	IMTKYLTPK	140-108	61.7	29.6	15.9
ICL2/RH-bundle	BS <sup>3</sup>	4	2326.31	-1.15	YQSLLTKNK	IMTKYLTPK	147-108	70.1	37.2	29.3
<b>Cluster 3</b>										
C-term/Cat. domain	BS <sup>3</sup>	6	5226.47	2.56	SSLKAYGNGY.	MYACKR	348-215	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/Cat. domain	BS <sup>3</sup>	6	7895.83	8.85	.EKENKLLAED.	QYRVLGK	375-194	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/Cat. domain	BS <sup>3</sup>	5	5060.39	-1.86	.YHVEQEKENK	QPVTKNTFR	372-183	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/Cat. domain	BS <sup>3</sup>	5	4534.15	1.48	.QGPYHVEQEK	MLLTKDAK	372-426	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/Cat. domain	zero-length	4	4646.03	-2.99	.SNGNTGEQSG	.FSTVKGVNLD.	362-487	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
<b>Others</b>										
ICL2/Cat. domain	BS <sup>3</sup>	4	2322.28	1.60	YQSLLTKNK	QPVTKNTFR	147-183	15.2	25.9	26.4
ICL3/Cat. domain	BS <sup>3</sup>	5	4015.97	1.44	VFQEAKR	.FSTVKGVNLD.	227-487	43.2	48.2	48.9
ICL3/Cat. domain	BS <sup>3</sup>	5	4011.96	-5.05	QLQKIDK	.FSTVKGVNLD.	232-487	40.2	46.6	47.5
ICL3/Cat. domain	BS <sup>3</sup>	3	2048.04	2.04	IDKSEGR	<b>KGESMALNEK</b>	235-226	52.6	45.8	45
ICL3/RH-bundle	BS <sup>3</sup>	4	2036.11	-0.15	IDKSEGR	IMTKYLTPK	235-108	43.1	43	31.2
C-term/CLBD	BS <sup>3</sup>	5	5181.51	7.30	SSLKAYGNGY.	RQHQNNSK	348-564	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/RH-bundle	BS <sup>3</sup>	5	4669.34	2.26	ENKLLAEDLP.	IMTKYLTPK	375-108	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>
C-term/NLBD	zero-length	3	2304.98	1.95	.SNGNTGEQSG	EGGGGKR	362-22	+ <sup>ND</sup>	+ <sup>ND</sup>	+ <sup>ND</sup>

+<sup>ND</sup> C $\alpha$ -C $\alpha$  distance is not determined (ND) due to absence of atomic coordinates of one or two cross-linked domains, but the cross-link is plausible based on structural proximity of cross-linked domains in the model.