

# Integrative Structure Validation Report

July 22, 2024 - 03:40 PM PDT

The following software was used in the production of this report:

*Python-IHM Version 1.3*

*ATSAS Version 3.2.1 (r14885)*

*Integrative Modeling Validation Version 1.2*

PDB ID	8ZZC
PDB-Dev ID	PDBDEV_00000012
Structure Title	Integrative structure and functional anatomy of eight spokes of a nuclear pore complex
Structure Authors	Kim SJ; Fernandez-Martinez J; Nudelman I; Shi Y; Zhang W; Raveh B; Herricks T; Slaughter BD; Hogan JA; Upla P; Chemmama IE; Pellarin R; Echeverria I; Shivaraju M; Chaudhury AS; Wang J; Williams R; Unruh JR; Greenberg CH; Jacobs EY; Yu Z; de la Cruz MJ; Mironska R; Stokes DL; Aitchison JD; Jarrold MF; Gerton JL; Ludtke SJ; Akey CW; Chait BT; Sali A; Rout MP

*This is a PDB-Dev IM Structure Validation Report for a publicly released PDB-Dev entry.*

*We welcome your comments at [pdb-dev@mail.wwpdb.org](mailto:pdb-dev@mail.wwpdb.org)*

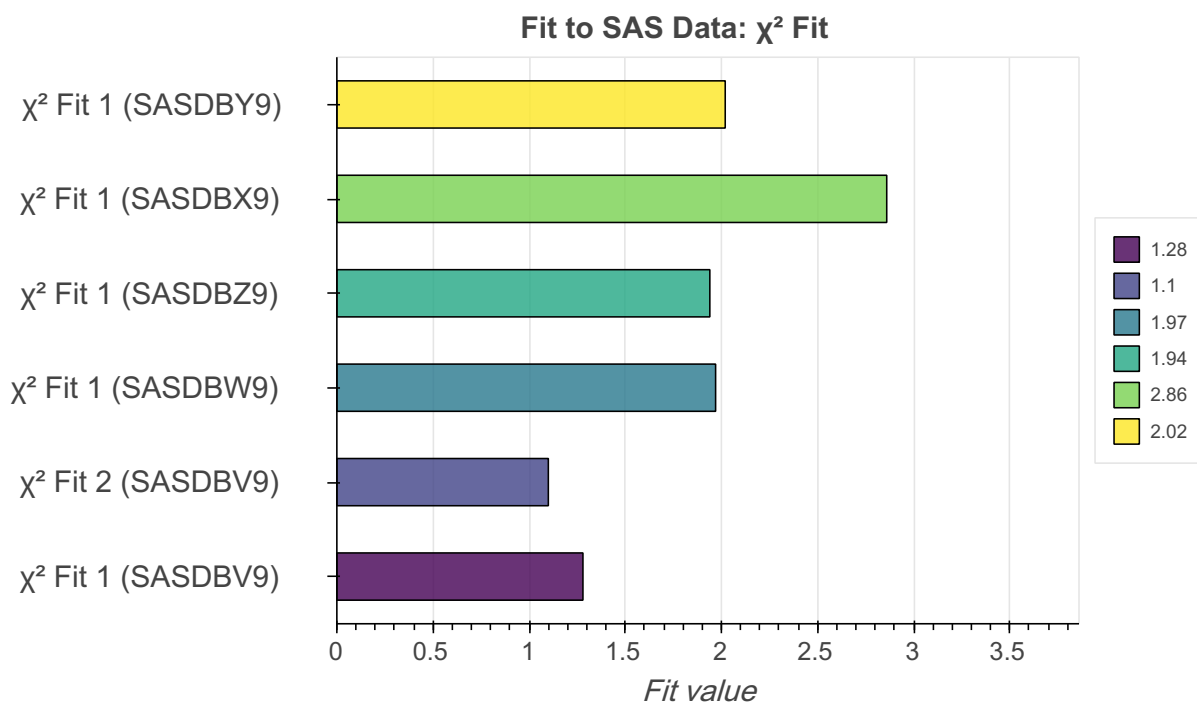
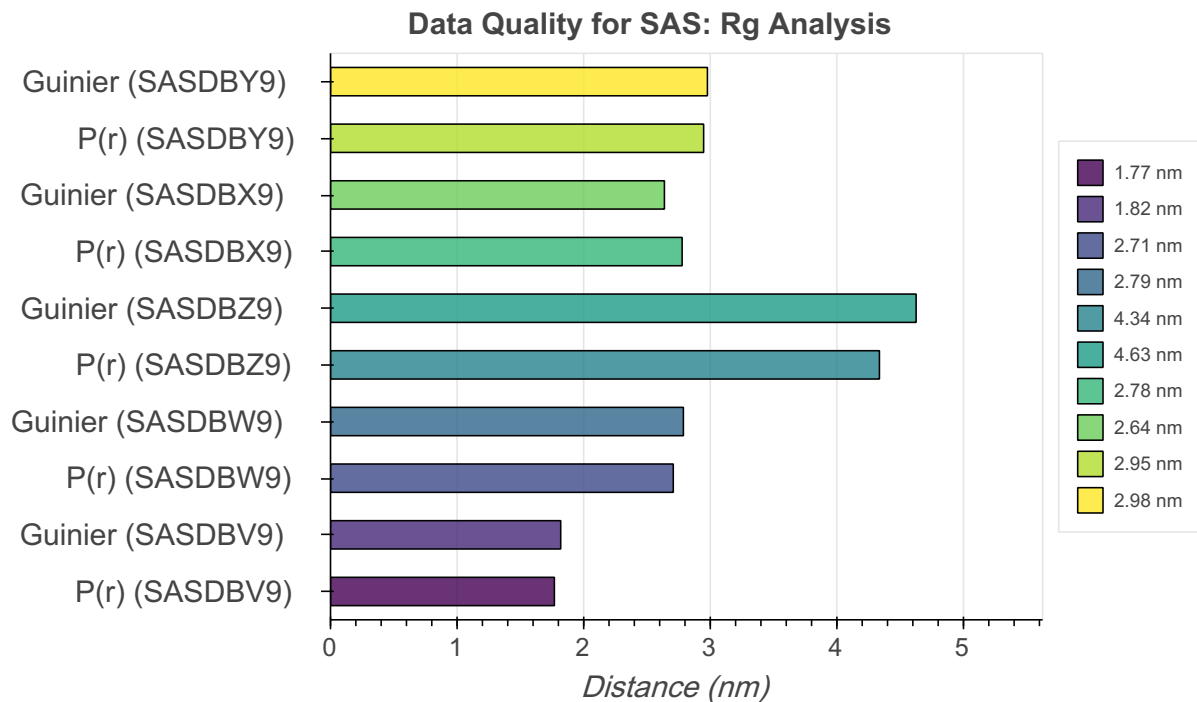
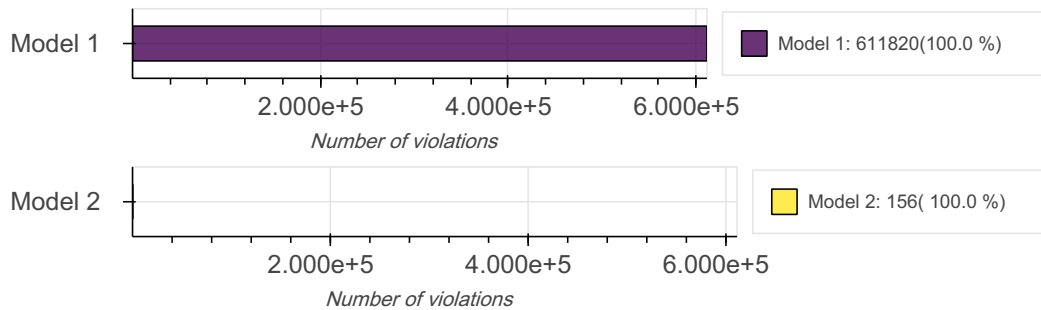
*A user guide is available at [https://pdb-dev.wwpdb.org/validation\\_help.html](https://pdb-dev.wwpdb.org/validation_help.html) with specific help available everywhere you see the  symbol.*

*List of references used to build this report is available [here](#).*

## Overall quality

*This validation report contains model quality assessments for all structures, data quality assessment for SAS datasets and fit to model assessments for SAS datasets. Data quality and fit to model assessments for other datasets and model uncertainty are under development. Number of plots is limited to 256.*

Model Quality: Excluded Volume Analysis



## Ensemble information ?

*This entry consists of 2 distinct ensemble(s).*

## Summary ?

*This entry consists of 2 unique models, with 376 subunits in each model. A total of 65 datasets or restraints were used to build this entry. Each model is represented by 192 rigid bodies and 6728 flexible or non-rigid units.*

## Entry composition ?

*There are 2 unique types of models in this entry. These models are titled Scaffold cluster 1/None, FG ensemble/None respectively.*

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	1	1	Nup84	A	A	726
1	2	1	Nup84	H	H	726
1	3	1	Nup84	BR	BR	726
1	4	1	Nup84	BY	BY	726
1	5	1	Nup84	CF	CF	726
1	6	1	Nup84	CM	CM	726
1	7	1	Nup84	CT	CT	726
1	8	1	Nup84	DA	DA	726
1	9	1	Nup84	DH	DH	726
1	10	1	Nup84	DO	DO	726
1	11	1	Nup84	DV	DV	726
1	12	1	Nup84	EC	EC	726
1	13	1	Nup84	EJ	EJ	726

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	14	1	Nup84	EQ	EQ	726
1	15	1	Nup84	EX	EX	726
1	16	1	Nup84	FE	FE	726
1	17	2	Nup85	B	B	744
1	18	2	Nup85	I	I	744
1	19	2	Nup85	BS	BS	744
1	20	2	Nup85	BZ	BZ	744
1	21	2	Nup85	CG	CG	744
1	22	2	Nup85	CN	CN	744
1	23	2	Nup85	CU	CU	744
1	24	2	Nup85	DB	DB	744
1	25	2	Nup85	DI	DI	744
1	26	2	Nup85	DP	DP	744
1	27	2	Nup85	DW	DW	744
1	28	2	Nup85	ED	ED	744
1	29	2	Nup85	EK	EK	744
1	30	2	Nup85	ER	ER	744
1	31	2	Nup85	EY	EY	744
1	32	2	Nup85	FF	FF	744
1	33	3	Nup120	C	C	1037
1	34	3	Nup120	J	J	1037
1	35	3	Nup120	BT	BT	1037
1	36	3	Nup120	CA	CA	1037

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	37	3	Nup120	CH	CH	1037
1	38	3	Nup120	CO	CO	1037
1	39	3	Nup120	CV	CV	1037
1	40	3	Nup120	DC	DC	1037
1	41	3	Nup120	DJ	DJ	1037
1	42	3	Nup120	DQ	DQ	1037
1	43	3	Nup120	DX	DX	1037
1	44	3	Nup120	EE	EE	1037
1	45	3	Nup120	EL	EL	1037
1	46	3	Nup120	ES	ES	1037
1	47	3	Nup120	EZ	EZ	1037
1	48	3	Nup120	FG	FG	1037
1	49	4	Nup133	D	D	1157
1	50	4	Nup133	K	K	1157
1	51	4	Nup133	BU	BU	1157
1	52	4	Nup133	CB	CB	1157
1	53	4	Nup133	CI	CI	1157
1	54	4	Nup133	CP	CP	1157
1	55	4	Nup133	CW	CW	1157
1	56	4	Nup133	DD	DD	1157
1	57	4	Nup133	DK	DK	1157
1	58	4	Nup133	DR	DR	1157
1	59	4	Nup133	DY	DY	1157

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	60	4	Nup133	EF	EF	1157
1	61	4	Nup133	EM	EM	1157
1	62	4	Nup133	ET	ET	1157
1	63	4	Nup133	FA	FA	1157
1	64	4	Nup133	FH	FH	1157
1	65	5	Nup145c	E	E	712
1	66	5	Nup145c	L	L	712
1	67	5	Nup145c	BV	BV	712
1	68	5	Nup145c	CC	CC	712
1	69	5	Nup145c	CJ	CJ	712
1	70	5	Nup145c	CQ	CQ	712
1	71	5	Nup145c	CX	CX	712
1	72	5	Nup145c	DE	DE	712
1	73	5	Nup145c	DL	DL	712
1	74	5	Nup145c	DS	DS	712
1	75	5	Nup145c	DZ	DZ	712
1	76	5	Nup145c	EG	EG	712
1	77	5	Nup145c	EN	EN	712
1	78	5	Nup145c	EU	EU	712
1	79	5	Nup145c	FB	FB	712
1	80	5	Nup145c	FI	FI	712
1	81	6	Seh1	F	F	349
1	82	6	Seh1	M	M	349

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	83	6	Seh1	BW	BW	349
1	84	6	Seh1	CD	CD	349
1	85	6	Seh1	CK	CK	349
1	86	6	Seh1	CR	CR	349
1	87	6	Seh1	CY	CY	349
1	88	6	Seh1	DF	DF	349
1	89	6	Seh1	DM	DM	349
1	90	6	Seh1	DT	DT	349
1	91	6	Seh1	EA	EA	349
1	92	6	Seh1	EH	EH	349
1	93	6	Seh1	EO	EO	349
1	94	6	Seh1	EV	EV	349
1	95	6	Seh1	FC	FC	349
1	96	6	Seh1	FJ	FJ	349
1	97	7	Sec13	G	G	297
1	98	7	Sec13	N	N	297
1	99	7	Sec13	BX	BX	297
1	100	7	Sec13	CE	CE	297
1	101	7	Sec13	CL	CL	297
1	102	7	Sec13	CS	CS	297
1	103	7	Sec13	CZ	CZ	297
1	104	7	Sec13	DG	DG	297
1	105	7	Sec13	DN	DN	297

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	106	7	Sec13	DU	DU	297
1	107	7	Sec13	EB	EB	297
1	108	7	Sec13	EI	EI	297
1	109	7	Sec13	EP	EP	297
1	110	7	Sec13	EW	EW	297
1	111	7	Sec13	FD	FD	297
1	112	7	Sec13	FK	FK	297
1	113	8	Dyn2	O	O	92
1	114	8	Dyn2	P	P	92
1	115	8	Dyn2	FL	FL	92
1	116	8	Dyn2	FM	FM	92
1	117	8	Dyn2	FT	FT	92
1	118	8	Dyn2	FU	FU	92
1	119	8	Dyn2	GB	GB	92
1	120	8	Dyn2	GC	GC	92
1	121	8	Dyn2	GJ	GJ	92
1	122	8	Dyn2	GK	GK	92
1	123	8	Dyn2	GR	GR	92
1	124	8	Dyn2	GS	GS	92
1	125	8	Dyn2	GZ	GZ	92
1	126	8	Dyn2	HA	HA	92
1	127	8	Dyn2	HH	HH	92
1	128	8	Dyn2	HI	HI	92



Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	129	9	Nup82	Q	Q	713
1	130	9	Nup82	R	R	713
1	131	9	Nup82	FN	FN	713
1	132	9	Nup82	FO	FO	713
1	133	9	Nup82	FV	FV	713
1	134	9	Nup82	FW	FW	713
1	135	9	Nup82	GD	GD	713
1	136	9	Nup82	GE	GE	713
1	137	9	Nup82	GL	GL	713
1	138	9	Nup82	GM	GM	713
1	139	9	Nup82	GT	GT	713
1	140	9	Nup82	GU	GU	713
1	141	9	Nup82	HB	HB	713
1	142	9	Nup82	HC	HC	713
1	143	9	Nup82	HJ	HJ	713
1	144	9	Nup82	HK	HK	713
1	145	10	Nup159	S	S	1460
1	146	10	Nup159	T	T	1460
1	147	10	Nup159	FP	FP	1460
1	148	10	Nup159	FQ	FQ	1460
1	149	10	Nup159	FX	FX	1460
1	150	10	Nup159	FY	FY	1460
1	151	10	Nup159	GF	GF	1460

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	152	10	Nup159	GG	GG	1460
1	153	10	Nup159	GN	GN	1460
1	154	10	Nup159	GO	GO	1460
1	155	10	Nup159	GV	GV	1460
1	156	10	Nup159	GW	GW	1460
1	157	10	Nup159	HD	HD	1460
1	158	10	Nup159	HE	HE	1460
1	159	10	Nup159	HL	HL	1460
1	160	10	Nup159	HM	HM	1460
1	161	11	Nsp1	U	U	823
1	162	11	Nsp1	V	V	823
1	163	11	Nsp1	X	X	823
1	164	11	Nsp1	AB	AB	823
1	165	11	Nsp1	AF	AF	823
1	166	11	Nsp1	AJ	AJ	823
1	167	11	Nsp1	FR	FR	823
1	168	11	Nsp1	FS	FS	823
1	169	11	Nsp1	FZ	FZ	823
1	170	11	Nsp1	GA	GA	823
1	171	11	Nsp1	GH	GH	823
1	172	11	Nsp1	GI	GI	823
1	173	11	Nsp1	GP	GP	823
1	174	11	Nsp1	GQ	GQ	823

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	175	11	Nsp1	GX	GX	823
1	176	11	Nsp1	GY	GY	823
1	177	11	Nsp1	HF	HF	823
1	178	11	Nsp1	HG	HG	823
1	179	11	Nsp1	HN	HN	823
1	180	11	Nsp1	HO	HO	823
1	181	11	Nsp1	HR	HR	823
1	182	11	Nsp1	HS	HS	823
1	183	11	Nsp1	HZ	HZ	823
1	184	11	Nsp1	IA	IA	823
1	185	11	Nsp1	IH	IH	823
1	186	11	Nsp1	II	II	823
1	187	11	Nsp1	IP	IP	823
1	188	11	Nsp1	IQ	IQ	823
1	189	11	Nsp1	IX	IX	823
1	190	11	Nsp1	IY	IY	823
1	191	11	Nsp1	JF	JF	823
1	192	11	Nsp1	JG	JG	823
1	193	11	Nsp1	JN	JN	823
1	194	11	Nsp1	JO	JO	823
1	195	11	Nsp1	JV	JV	823
1	196	11	Nsp1	JW	JW	823
1	197	11	Nsp1	KD	KD	823

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	198	11	Nsp1	KE	KE	823
1	199	11	Nsp1	KL	KL	823
1	200	11	Nsp1	KM	KM	823
1	201	11	Nsp1	KT	KT	823
1	202	11	Nsp1	KU	KU	823
1	203	11	Nsp1	LB	LB	823
1	204	11	Nsp1	LC	LC	823
1	205	11	Nsp1	LJ	LJ	823
1	206	11	Nsp1	LK	LK	823
1	207	11	Nsp1	LR	LR	823
1	208	11	Nsp1	LS	LS	823
1	209	12	Nic96	W	W	839
1	210	12	Nic96	AA	AA	839
1	211	12	Nic96	AE	AE	839
1	212	12	Nic96	AI	AI	839
1	213	12	Nic96	HP	HP	839
1	214	12	Nic96	HQ	HQ	839
1	215	12	Nic96	HX	HX	839
1	216	12	Nic96	HY	HY	839
1	217	12	Nic96	IF	IF	839
1	218	12	Nic96	IG	IG	839
1	219	12	Nic96	IN	IN	839
1	220	12	Nic96	IO	IO	839

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	221	12	Nic96	IV	IV	839
1	222	12	Nic96	IW	IW	839
1	223	12	Nic96	JD	JD	839
1	224	12	Nic96	JE	JE	839
1	225	12	Nic96	JL	JL	839
1	226	12	Nic96	JM	JM	839
1	227	12	Nic96	JT	JT	839
1	228	12	Nic96	JU	JU	839
1	229	12	Nic96	KB	KB	839
1	230	12	Nic96	KC	KC	839
1	231	12	Nic96	KJ	KJ	839
1	232	12	Nic96	KK	KK	839
1	233	12	Nic96	KR	KR	839
1	234	12	Nic96	KS	KS	839
1	235	12	Nic96	KZ	KZ	839
1	236	12	Nic96	LA	LA	839
1	237	12	Nic96	LH	LH	839
1	238	12	Nic96	LI	LI	839
1	239	12	Nic96	LP	LP	839
1	240	12	Nic96	LQ	LQ	839
1	241	13	Nup49	Y	Y	472
1	242	13	Nup49	AC	AC	472
1	243	13	Nup49	AG	AG	472

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	244	13	Nup49	AK	AK	472
1	245	13	Nup49	HT	HT	472
1	246	13	Nup49	HU	HU	472
1	247	13	Nup49	IB	IB	472
1	248	13	Nup49	IC	IC	472
1	249	13	Nup49	IJ	IJ	472
1	250	13	Nup49	IK	IK	472
1	251	13	Nup49	IR	IR	472
1	252	13	Nup49	IS	IS	472
1	253	13	Nup49	IZ	IZ	472
1	254	13	Nup49	JA	JA	472
1	255	13	Nup49	JH	JH	472
1	256	13	Nup49	JI	JI	472
1	257	13	Nup49	JP	JP	472
1	258	13	Nup49	JQ	JQ	472
1	259	13	Nup49	JX	JX	472
1	260	13	Nup49	JY	JY	472
1	261	13	Nup49	KF	KF	472
1	262	13	Nup49	KG	KG	472
1	263	13	Nup49	KN	KN	472
1	264	13	Nup49	KO	KO	472
1	265	13	Nup49	KV	KV	472
1	266	13	Nup49	KW	KW	472

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	267	13	Nup49	LD	LD	472
1	268	13	Nup49	LE	LE	472
1	269	13	Nup49	LL	LL	472
1	270	13	Nup49	LM	LM	472
1	271	13	Nup49	LT	LT	472
1	272	13	Nup49	LU	LU	472
1	273	14	Nup57	Z	Z	541
1	274	14	Nup57	AD	AD	541
1	275	14	Nup57	AH	AH	541
1	276	14	Nup57	AL	AL	541
1	277	14	Nup57	HV	HV	541
1	278	14	Nup57	HW	HW	541
1	279	14	Nup57	ID	ID	541
1	280	14	Nup57	IE	IE	541
1	281	14	Nup57	IL	IL	541
1	282	14	Nup57	IM	IM	541
1	283	14	Nup57	IT	IT	541
1	284	14	Nup57	IU	IU	541
1	285	14	Nup57	JB	JB	541
1	286	14	Nup57	JC	JC	541
1	287	14	Nup57	JJ	JJ	541
1	288	14	Nup57	JK	JK	541
1	289	14	Nup57	JR	JR	541

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	290	14	Nup57	JS	JS	541
1	291	14	Nup57	JZ	JZ	541
1	292	14	Nup57	KA	KA	541
1	293	14	Nup57	KH	KH	541
1	294	14	Nup57	KI	KI	541
1	295	14	Nup57	KP	KP	541
1	296	14	Nup57	KQ	KQ	541
1	297	14	Nup57	KX	KX	541
1	298	14	Nup57	KY	KY	541
1	299	14	Nup57	LF	LF	541
1	300	14	Nup57	LG	LG	541
1	301	14	Nup57	LN	LN	541
1	302	14	Nup57	LO	LO	541
1	303	14	Nup57	LV	LV	541
1	304	14	Nup57	LW	LW	541
1	305	15	Nup157	AM	AM	1391
1	306	15	Nup157	AQ	AQ	1391
1	307	15	Nup157	LX	LX	1391
1	308	15	Nup157	MB	MB	1391
1	309	15	Nup157	MF	MF	1391
1	310	15	Nup157	MJ	MJ	1391
1	311	15	Nup157	MN	MN	1391
1	312	15	Nup157	MR	MR	1391



Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	313	15	Nup157	MV	MV	1391
1	314	15	Nup157	MZ	MZ	1391
1	315	15	Nup157	ND	ND	1391
1	316	15	Nup157	NH	NH	1391
1	317	15	Nup157	NL	NL	1391
1	318	15	Nup157	NP	NP	1391
1	319	15	Nup157	NT	NT	1391
1	320	15	Nup157	NX	NX	1391
1	321	16	Nup170	AN	AN	1502
1	322	16	Nup170	AR	AR	1502
1	323	16	Nup170	LY	LY	1502
1	324	16	Nup170	MC	MC	1502
1	325	16	Nup170	MG	MG	1502
1	326	16	Nup170	MK	MK	1502
1	327	16	Nup170	MO	MO	1502
1	328	16	Nup170	MS	MS	1502
1	329	16	Nup170	MW	MW	1502
1	330	16	Nup170	NA	NA	1502
1	331	16	Nup170	NE	NE	1502
1	332	16	Nup170	NI	NI	1502
1	333	16	Nup170	NM	NM	1502
1	334	16	Nup170	NQ	NQ	1502
1	335	16	Nup170	NU	NU	1502

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	336	16	Nup170	NY	NY	1502
1	337	17	Nup188	AO	AO	1655
1	338	17	Nup188	AS	AS	1655
1	339	17	Nup188	LZ	LZ	1655
1	340	17	Nup188	MD	MD	1655
1	341	17	Nup188	MH	MH	1655
1	342	17	Nup188	ML	ML	1655
1	343	17	Nup188	MP	MP	1655
1	344	17	Nup188	MT	MT	1655
1	345	17	Nup188	MX	MX	1655
1	346	17	Nup188	NB	NB	1655
1	347	17	Nup188	NF	NF	1655
1	348	17	Nup188	NJ	NJ	1655
1	349	17	Nup188	NN	NN	1655
1	350	17	Nup188	NR	NR	1655
1	351	17	Nup188	NV	NV	1655
1	352	17	Nup188	NZ	NZ	1655
1	353	18	Nup192	AP	AP	1683
1	354	18	Nup192	AT	AT	1683
1	355	18	Nup192	MA	MA	1683
1	356	18	Nup192	ME	ME	1683
1	357	18	Nup192	MI	MI	1683
1	358	18	Nup192	MM	MM	1683

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	359	18	Nup192	MQ	MQ	1683
1	360	18	Nup192	MU	MU	1683
1	361	18	Nup192	MY	MY	1683
1	362	18	Nup192	NC	NC	1683
1	363	18	Nup192	NG	NG	1683
1	364	18	Nup192	NK	NK	1683
1	365	18	Nup192	NO	NO	1683
1	366	18	Nup192	NS	NS	1683
1	367	18	Nup192	NW	NW	1683
1	368	18	Nup192	OA	OA	1683
1	369	19	Nup53	AU	AU	475
1	370	19	Nup53	AZ	AZ	475
1	371	19	Nup53	OB	OB	475
1	372	19	Nup53	OG	OG	475
1	373	19	Nup53	OL	OL	475
1	374	19	Nup53	OQ	OQ	475
1	375	19	Nup53	OV	OV	475
1	376	19	Nup53	PA	PA	475
1	377	19	Nup53	PF	PF	475
1	378	19	Nup53	PK	PK	475
1	379	19	Nup53	PP	PP	475
1	380	19	Nup53	PU	PU	475
1	381	19	Nup53	PZ	PZ	475

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	382	19	Nup53	QE	QE	475
1	383	19	Nup53	QJ	QJ	475
1	384	19	Nup53	QO	QO	475
1	385	20	Nup59	AV	AV	528
1	386	20	Nup59	BA	BA	528
1	387	20	Nup59	OC	OC	528
1	388	20	Nup59	OH	OH	528
1	389	20	Nup59	OM	OM	528
1	390	20	Nup59	OR	OR	528
1	391	20	Nup59	OW	OW	528
1	392	20	Nup59	PB	PB	528
1	393	20	Nup59	PG	PG	528
1	394	20	Nup59	PL	PL	528
1	395	20	Nup59	PQ	PQ	528
1	396	20	Nup59	PV	PV	528
1	397	20	Nup59	QA	QA	528
1	398	20	Nup59	QF	QF	528
1	399	20	Nup59	QK	QK	528
1	400	20	Nup59	QP	QP	528
1	401	21	Ndc1	AW	AW	655
1	402	21	Ndc1	BB	BB	655
1	403	21	Ndc1	OD	OD	655

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	404	21	Ndc1	OI	OI	655
1	405	21	Ndc1	ON	ON	655
1	406	21	Ndc1	OS	OS	655
1	407	21	Ndc1	OX	OX	655
1	408	21	Ndc1	PC	PC	655
1	409	21	Ndc1	PH	PH	655
1	410	21	Ndc1	PM	PM	655
1	411	21	Ndc1	PR	PR	655
1	412	21	Ndc1	PW	PW	655
1	413	21	Ndc1	QB	QB	655
1	414	21	Ndc1	QG	QG	655
1	415	21	Ndc1	QL	QL	655
1	416	21	Ndc1	QQ	QQ	655
1	417	22	Pom34	AX	AX	299
1	418	22	Pom34	BC	BC	299
1	419	22	Pom34	OE	OE	299
1	420	22	Pom34	OJ	OJ	299
1	421	22	Pom34	OO	OO	299
1	422	22	Pom34	OT	OT	299
1	423	22	Pom34	OY	OY	299
1	424	22	Pom34	PD	PD	299
1	425	22	Pom34	PI	PI	299
1	426	22	Pom34	PN	PN	299

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	427	22	Pom34	PS	PS	299
1	428	22	Pom34	PX	PX	299
1	429	22	Pom34	QC	QC	299
1	430	22	Pom34	QH	QH	299
1	431	22	Pom34	QM	QM	299
1	432	22	Pom34	QR	QR	299
1	433	23	Pom152	AY	AY	1337
1	434	23	Pom152	BD	BD	1337
1	435	23	Pom152	OF	OF	1337
1	436	23	Pom152	OK	OK	1337
1	437	23	Pom152	OP	OP	1337
1	438	23	Pom152	OU	OU	1337
1	439	23	Pom152	OZ	OZ	1337
1	440	23	Pom152	PE	PE	1337
1	441	23	Pom152	PJ	PJ	1337
1	442	23	Pom152	PO	PO	1337
1	443	23	Pom152	PT	PT	1337
1	444	23	Pom152	PY	PY	1337
1	445	23	Pom152	QD	QD	1337
1	446	23	Pom152	QI	QI	1337
1	447	23	Pom152	QN	QN	1337
1	448	23	Pom152	QS	QS	1337
1	449	24	Nup100	BE	BE	959

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	450	24	Nup100	BF	BF	959
1	451	24	Nup100	QT	QT	959
1	452	24	Nup100	QU	QU	959
1	453	24	Nup100	QZ	QZ	959
1	454	24	Nup100	RA	RA	959
1	455	24	Nup100	RF	RF	959
1	456	24	Nup100	RG	RG	959
1	457	24	Nup100	RL	RL	959
1	458	24	Nup100	RM	RM	959
1	459	24	Nup100	RR	RR	959
1	460	24	Nup100	RS	RS	959
1	461	24	Nup100	RX	RX	959
1	462	24	Nup100	RY	RY	959
1	463	24	Nup100	SD	SD	959
1	464	24	Nup100	SE	SE	959
1	465	25	Nup116	BG	BG	1113
1	466	25	Nup116	BH	BH	1113
1	467	25	Nup116	QV	QV	1113
1	468	25	Nup116	QW	QW	1113
1	469	25	Nup116	RB	RB	1113
1	470	25	Nup116	RC	RC	1113
1	471	25	Nup116	RH	RH	1113
1	472	25	Nup116	RI	RI	1113

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	473	25	Nup116	RN	RN	1113
1	474	25	Nup116	RO	RO	1113
1	475	25	Nup116	RT	RT	1113
1	476	25	Nup116	RU	RU	1113
1	477	25	Nup116	RZ	RZ	1113
1	478	25	Nup116	SA	SA	1113
1	479	25	Nup116	SF	SF	1113
1	480	25	Nup116	SG	SG	1113
1	481	26	Nup42	BI	BI	430
1	482	26	Nup42	QX	QX	430
1	483	26	Nup42	RD	RD	430
1	484	26	Nup42	RJ	RJ	430
1	485	26	Nup42	RP	RP	430
1	486	26	Nup42	RV	RV	430
1	487	26	Nup42	SB	SB	430
1	488	26	Nup42	SH	SH	430
1	489	27	Gle1	BJ	BJ	538
1	490	27	Gle1	QY	QY	538
1	491	27	Gle1	RE	RE	538
1	492	27	Gle1	RK	RK	538
1	493	27	Gle1	RQ	RQ	538
1	494	27	Gle1	RW	RW	538
1	495	27	Gle1	SC	SC	538



Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	496	27	Gle1	SI	SI	538
1	497	28	Nup145	BK	BK	1317
1	498	28	Nup145	BL	BL	1317
1	499	28	Nup145	SJ	SJ	1317
1	500	28	Nup145	SK	SK	1317
1	501	28	Nup145	SO	SO	1317
1	502	28	Nup145	SP	SP	1317
1	503	28	Nup145	ST	ST	1317
1	504	28	Nup145	SU	SU	1317
1	505	28	Nup145	SY	SY	1317
1	506	28	Nup145	SZ	SZ	1317
1	507	28	Nup145	TD	TD	1317
1	508	28	Nup145	TE	TE	1317
1	509	28	Nup145	TI	TI	1317
1	510	28	Nup145	TJ	TJ	1317
1	511	28	Nup145	TN	TN	1317
1	512	28	Nup145	TO	TO	1317
1	513	29	Nup1	BM	BM	1076
1	514	29	Nup1	SN	SN	1076
1	515	29	Nup1	SS	SS	1076
1	516	29	Nup1	SX	SX	1076
1	517	29	Nup1	TC	TC	1076
1	518	29	Nup1	TH	TH	1076

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	519	29	Nup1	TM	TM	1076
1	520	29	Nup1	TR	TR	1076
1	521	30	Nup60	BN	BN	539
1	522	30	Nup60	BO	BO	539
1	523	30	Nup60	SL	SL	539
1	524	30	Nup60	SM	SM	539
1	525	30	Nup60	SQ	SQ	539
1	526	30	Nup60	SR	SR	539
1	527	30	Nup60	SV	SV	539
1	528	30	Nup60	SW	SW	539
1	529	30	Nup60	TA	TA	539
1	530	30	Nup60	TB	TB	539
1	531	30	Nup60	TF	TF	539
1	532	30	Nup60	TG	TG	539
1	533	30	Nup60	TK	TK	539
1	534	30	Nup60	TL	TL	539
1	535	30	Nup60	TP	TP	539
1	536	30	Nup60	TQ	TQ	539
1	537	31	Mlp1	BP	BP	1875
1	538	31	Mlp1	TS	TS	1875
1	539	31	Mlp1	TU	TU	1875
1	540	31	Mlp1	TW	TW	1875
1	541	31	Mlp1	TY	TY	1875

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	542	31	Mlp1	UA	UA	1875
1	543	31	Mlp1	UC	UC	1875
1	544	31	Mlp1	UE	UE	1875
1	545	32	Mlp2	BQ	BQ	1679
1	546	32	Mlp2	TT	TT	1679
1	547	32	Mlp2	TV	TV	1679
1	548	32	Mlp2	TX	TX	1679
1	549	32	Mlp2	TZ	TZ	1679
1	550	32	Mlp2	UB	UB	1679
1	551	32	Mlp2	UD	UD	1679
1	552	32	Mlp2	UF	UF	1679
2	1	10	Nup159	S	S	600
2	2	10	Nup159	T	T	600
2	3	10	Nup159	FP	FP	600
2	4	10	Nup159	FQ	FQ	600
2	5	10	Nup159	FX	FX	600
2	6	10	Nup159	FY	FY	600
2	7	10	Nup159	GF	GF	600
2	8	10	Nup159	GG	GG	600
2	9	10	Nup159	GN	GN	600
2	10	10	Nup159	GO	GO	600
2	11	10	Nup159	GV	GV	600
2	12	10	Nup159	GW	GW	600

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	13	10	Nup159	HD	HD	600
2	14	10	Nup159	HE	HE	600
2	15	10	Nup159	HL	HL	600
2	16	10	Nup159	HM	HM	600
2	17	11	Nsp1	U	U	600
2	18	11	Nsp1	V	V	600
2	19	11	Nsp1	X	X	600
2	20	11	Nsp1	AB	AB	600
2	21	11	Nsp1	AF	AF	600
2	22	11	Nsp1	AJ	AJ	600
2	23	11	Nsp1	FR	FR	600
2	24	11	Nsp1	FS	FS	600
2	25	11	Nsp1	FZ	FZ	600
2	26	11	Nsp1	GA	GA	600
2	27	11	Nsp1	GH	GH	600
2	28	11	Nsp1	GI	GI	600
2	29	11	Nsp1	GP	GP	600
2	30	11	Nsp1	GQ	GQ	600
2	31	11	Nsp1	GX	GX	600
2	32	11	Nsp1	GY	GY	600
2	33	11	Nsp1	HF	HF	600
2	34	11	Nsp1	HG	HG	600

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	35	11	Nsp1	HN	HN	600
2	36	11	Nsp1	HO	HO	600
2	37	11	Nsp1	HR	HR	600
2	38	11	Nsp1	HS	HS	600
2	39	11	Nsp1	HZ	HZ	600
2	40	11	Nsp1	IA	IA	600
2	41	11	Nsp1	IH	IH	600
2	42	11	Nsp1	II	II	600
2	43	11	Nsp1	IP	IP	600
2	44	11	Nsp1	IQ	IQ	600
2	45	11	Nsp1	IX	IX	600
2	46	11	Nsp1	IY	IY	600
2	47	11	Nsp1	JF	JF	600
2	48	11	Nsp1	JG	JG	600
2	49	11	Nsp1	JN	JN	600
2	50	11	Nsp1	JO	JO	600
2	51	11	Nsp1	JV	JV	600
2	52	11	Nsp1	JW	JW	600
2	53	11	Nsp1	KD	KD	600
2	54	11	Nsp1	KE	KE	600
2	55	11	Nsp1	KL	KL	600
2	56	11	Nsp1	KM	KM	600
2	57	11	Nsp1	KT	KT	600

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	58	11	Nsp1	KU	KU	600
2	59	11	Nsp1	LB	LB	600
2	60	11	Nsp1	LC	LC	600
2	61	11	Nsp1	LJ	LJ	600
2	62	11	Nsp1	LK	LK	600
2	63	11	Nsp1	LR	LR	600
2	64	11	Nsp1	LS	LS	600
2	65	13	Nup49	Y	Y	200
2	66	13	Nup49	AC	AC	200
2	67	13	Nup49	AG	AG	200
2	68	13	Nup49	AK	AK	200
2	69	13	Nup49	HT	HT	200
2	70	13	Nup49	HU	HU	200
2	71	13	Nup49	IB	IB	200
2	72	13	Nup49	IC	IC	200
2	73	13	Nup49	IJ	IJ	200
2	74	13	Nup49	IK	IK	200
2	75	13	Nup49	IR	IR	200
2	76	13	Nup49	IS	IS	200
2	77	13	Nup49	IZ	IZ	200
2	78	13	Nup49	JA	JA	200
2	79	13	Nup49	JH	JH	200
2	80	13	Nup49	JI	JI	200

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	81	13	Nup49	JP	JP	200
2	82	13	Nup49	JQ	JQ	200
2	83	13	Nup49	JX	JX	200
2	84	13	Nup49	JY	JY	200
2	85	13	Nup49	KF	KF	200
2	86	13	Nup49	KG	KG	200
2	87	13	Nup49	KN	KN	200
2	88	13	Nup49	KO	KO	200
2	89	13	Nup49	KV	KV	200
2	90	13	Nup49	KW	KW	200
2	91	13	Nup49	LD	LD	200
2	92	13	Nup49	LE	LE	200
2	93	13	Nup49	LL	LL	200
2	94	13	Nup49	LM	LM	200
2	95	13	Nup49	LT	LT	200
2	96	13	Nup49	LU	LU	200
2	97	14	Nup57	Z	Z	200
2	98	14	Nup57	AD	AD	200
2	99	14	Nup57	AH	AH	200
2	100	14	Nup57	AL	AL	200
2	101	14	Nup57	HV	HV	200
2	102	14	Nup57	HW	HW	200
2	103	14	Nup57	ID	ID	200

<b>Model ID</b>	<b>Subunit number</b>	<b>Subunit ID</b>	<b>Subunit name</b>	<b>Chain ID</b>	<b>Chain ID [auth]</b>	<b>Total residues</b>
2	104	14	Nup57	IE	IE	200
2	105	14	Nup57	IL	IL	200
2	106	14	Nup57	IM	IM	200
2	107	14	Nup57	IT	IT	200
2	108	14	Nup57	IU	IU	200
2	109	14	Nup57	JB	JB	200
2	110	14	Nup57	JC	JC	200
2	111	14	Nup57	JJ	JJ	200
2	112	14	Nup57	JK	JK	200
2	113	14	Nup57	JR	JR	200
2	114	14	Nup57	JS	JS	200
2	115	14	Nup57	JZ	JZ	200
2	116	14	Nup57	KA	KA	200
2	117	14	Nup57	KH	KH	200
2	118	14	Nup57	KI	KI	200
2	119	14	Nup57	KP	KP	200
2	120	14	Nup57	KQ	KQ	200
2	121	14	Nup57	KX	KX	200
2	122	14	Nup57	KY	KY	200
2	123	14	Nup57	LF	LF	200
2	124	14	Nup57	LG	LG	200
2	125	14	Nup57	LN	LN	200
2	126	14	Nup57	LO	LO	200



Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	127	14	Nup57	LV	LV	200
2	128	14	Nup57	LW	LW	200
2	129	24	Nup100	BE	BE	540
2	130	24	Nup100	BF	BF	540
2	131	24	Nup100	QT	QT	540
2	132	24	Nup100	QU	QU	540
2	133	24	Nup100	QZ	QZ	540
2	134	24	Nup100	RA	RA	540
2	135	24	Nup100	RF	RF	540
2	136	24	Nup100	RG	RG	540
2	137	24	Nup100	RL	RL	540
2	138	24	Nup100	RM	RM	540
2	139	24	Nup100	RR	RR	540
2	140	24	Nup100	RS	RS	540
2	141	24	Nup100	RX	RX	540
2	142	24	Nup100	RY	RY	540
2	143	24	Nup100	SD	SD	540
2	144	24	Nup100	SE	SE	540
2	145	25	Nup116	BG	BG	740
2	146	25	Nup116	BH	BH	740
2	147	25	Nup116	QV	QV	740
2	148	25	Nup116	QW	QW	740
2	149	25	Nup116	RB	RB	740

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	150	25	Nup116	RC	RC	740
2	151	25	Nup116	RH	RH	740
2	152	25	Nup116	RI	RI	740
2	153	25	Nup116	RN	RN	740
2	154	25	Nup116	RO	RO	740
2	155	25	Nup116	RT	RT	740
2	156	25	Nup116	RU	RU	740
2	157	25	Nup116	RZ	RZ	740
2	158	25	Nup116	SA	SA	740
2	159	25	Nup116	SF	SF	740
2	160	25	Nup116	SG	SG	740
2	161	28	Nup145	BK	BK	200
2	162	28	Nup145	BL	BL	200
2	163	28	Nup145	SJ	SJ	200
2	164	28	Nup145	SK	SK	200
2	165	28	Nup145	SO	SO	200
2	166	28	Nup145	SP	SP	200
2	167	28	Nup145	ST	ST	200
2	168	28	Nup145	SU	SU	200
2	169	28	Nup145	SY	SY	200
2	170	28	Nup145	SZ	SZ	200
2	171	28	Nup145	TD	TD	200
2	172	28	Nup145	TE	TE	200

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	173	28	Nup145	TI	TI	200
2	174	28	Nup145	TJ	TJ	200
2	175	28	Nup145	TN	TN	200
2	176	28	Nup145	TO	TO	200
2	177	29	Nup1	BM	BM	698
2	178	29	Nup1	SN	SN	698
2	179	29	Nup1	SS	SS	698
2	180	29	Nup1	SX	SX	698
2	181	29	Nup1	TC	TC	698
2	182	29	Nup1	TH	TH	698
2	183	29	Nup1	TM	TM	698
2	184	29	Nup1	TR	TR	698
2	185	30	Nup60	BN	BN	100
2	186	30	Nup60	BO	BO	100
2	187	30	Nup60	SL	SL	100
2	188	30	Nup60	SM	SM	100
2	189	30	Nup60	SQ	SQ	100
2	190	30	Nup60	SR	SR	100
2	191	30	Nup60	SV	SV	100
2	192	30	Nup60	SW	SW	100
2	193	30	Nup60	TA	TA	100
2	194	30	Nup60	TB	TB	100
2	195	30	Nup60	TF	TF	100

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
2	196	30	Nup60	TG	TG	100
2	197	30	Nup60	TK	TK	100
2	198	30	Nup60	TL	TL	100
2	199	30	Nup60	TP	TP	100
2	200	30	Nup60	TQ	TQ	100

### Datasets used for modeling

*There are 65 unique datasets used to build the models in this entry.*

ID	Dataset type	Database name	Data access code
1	Integrative model	File	10.1016/j.cell.2016.10.028
2	Integrative model	File	10.5281/zenodo.1194547
3	Experimental model	PDB	5CWS
4	Comparative model	File	10.5281/zenodo.1194547
5	Experimental model	PDB	2QX5
6	Experimental model	File	10.5281/zenodo.1194547
7	Experimental model	File	10.5281/zenodo.1194547
8	Comparative model	File	10.5281/zenodo.1194547
9	Comparative model	File	10.5281/zenodo.1194547
10	Comparative model	File	10.5281/zenodo.1194547
11	Comparative model	File	10.5281/zenodo.1194547
12	Comparative model	File	10.5281/zenodo.1194547
13	Comparative model	File	10.5281/zenodo.1194547
14	Integrative model	File	10.1016/j.str.2017.01.006

<b>ID</b>	<b>Dataset type</b>	<b>Database name</b>	<b>Data access code</b>
15	Integrative model	File	10.5281/zenodo.1194547
16	Experimental model	PDB	3NF5
17	Comparative model	File	10.5281/zenodo.1194547
18	Comparative model	File	10.5281/zenodo.1194547
19	Experimental model	PDB	3KEP
20	Experimental model	File	10.5281/zenodo.1194547
21	Mass Spectrometry data	File	10.5281/zenodo.1149746
22	Crosslinking-MS data	File	10.5281/zenodo.1194547
23	Crosslinking-MS data	File	10.5281/zenodo.1194547
24	EM raw micrographs	EMPIAR	EMPIAR-10155
25	3DEM volume	EMDB	EMD-7321
26	3DEM volume	File	10.5281/zenodo.1194547
27	SAS data	File	10.5281/zenodo.1194547
28	SAS data	File	10.5281/zenodo.1194547
29	SAS data	File	10.5281/zenodo.1194547
30	SAS data	File	10.5281/zenodo.1194547
31	SAS data	File	10.5281/zenodo.1194547
32	SAS data	File	10.5281/zenodo.1194547
33	SAS data	File	10.5281/zenodo.1194547
34	SAS data	File	10.5281/zenodo.1194547
35	SAS data	File	10.5281/zenodo.1194547
36	SAS data	File	10.5281/zenodo.1194547
37	SAS data	File	10.5281/zenodo.1194547

ID	Dataset type	Database name	Data access code
38	SAS data	File	10.5281/zenodo.1194547
39	SAS data	File	10.5281/zenodo.1194547
40	SAS data	File	10.5281/zenodo.1194547
41	SAS data	File	10.5281/zenodo.1194547
42	SAS data	File	10.5281/zenodo.1194547
43	SAS data	File	10.5281/zenodo.1194547
44	SAS data	File	10.5281/zenodo.1194547
45	SAS data	File	10.5281/zenodo.1194547
46	SAS data	File	10.5281/zenodo.1194547
47	SAS data	File	10.5281/zenodo.1194547
48	SAS data	SASBDB	SASDBV9
49	SAS data	SASBDB	SASDBW9
50	SAS data	SASBDB	SASDBZ9
51	SAS data	SASBDB	SASDBX9
52	SAS data	SASBDB	SASDBY9
53	SAS data	File	10.5281/zenodo.1194547
54	SAS data	File	10.5281/zenodo.1194547
55	SAS data	File	10.5281/zenodo.1194547
56	SAS data	File	10.5281/zenodo.1194547
57	SAS data	File	10.5281/zenodo.1194547
58	SAS data	File	10.5281/zenodo.1194547
59	SAS data	File	10.5281/zenodo.1194547
60	SAS data	File	10.5281/zenodo.1194547

ID	Dataset type	Database name	Data access code
61	SAS data	File	10.5281/zenodo.1194547
62	SAS data	File	10.5281/zenodo.1194547
63	EM raw micrographs	EMPIAR	EMPIAR-10162
64	2DEM class average	File	10.5281/zenodo.1194547
65	2DEM class average	File	10.5281/zenodo.1194547

## Representation

*This entry has only one representation and includes 192 rigid bodies and 6728 flexible units*

Chain ID	Rigid bodies	Non-rigid segments
A	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
B	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
C	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
D	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
E	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
F	-	1-248, 249-287, 288-346, 347-349
G	-	1-9, 10-158, 159-165, 166-296, 297-297

Chain ID	Rigid bodies	Non-rigid segments
H	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
I	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
J	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
K	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
L	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
M	-	1-248, 249-287, 288-346, 347-349
N	-	1-9, 10-158, 159-165, 166-296, 297-297
O	-	1-6, 7-92
P	-	1-6, 7-92
Q	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
R	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
S	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
T	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081



Chain ID	Rigid bodies	Non-rigid segments
U	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
V	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
W	20-5620-5620-5620-5620-5620-5620-56	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
X	637-727, 742-778, 788-823 637-727, 742-778, 788-823 637-727, 742-778, 788-823 637-727, 742-778, 788-823 637-727, 742-778, 788-823 637-727, 742-778, 788-823 637-727, 742-778, 788-823	601-636, 728-741, 779-787, 1-600
Y	270-359, 369-407, 433-472 270-359, 369-407, 433-472 270-359, 369-407, 433-472 270-359, 369-407, 433-472 270-359, 369-407, 433-472 270-359, 369-407, 433-472 270-359, 369-407, 433-472	201-269, 360-368, 408-432, 1-200
Z	287-423, 433-476, 505-540 287-423, 433-476, 505-540 287-423, 433-476, 505-540 287-423, 433-476, 505-540 287-423, 433-476, 505-540 287-423, 433-476, 505-540 287-423, 433-476, 505-540	201-286, 424-432, 477-504, 541-541, 1-200
AA	20-5620-5620-5620-5620-5620-5620-56	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839

Chain ID	Rigid bodies	Non-rigid segments
AB	637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823637-727, 742-778, 788-823	601-636, 728-741, 779-787, 1-600
AC	270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472270-359, 369-407, 433-472	201-269, 360-368, 408-432, 1-200
AD	287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540287-423, 433-476, 505-540	201-286, 424-432, 477-504, 541-541, 1-200
AE	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
AF	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
AG	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
AH	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
AI	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
AJ	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
AK	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200

Chain ID	Rigid bodies	Non-rigid segments
AL	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
AM	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
AN	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
AO	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
AP	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
AQ	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
AR	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502

Chain ID	Rigid bodies	Non-rigid segments
AS	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
AT	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
AU	-	1-247, 248-284, 285-303, 304-360, 361-475
AV	-	1-265, 266-302, 303-345, 346-402, 403-528
AW	-	1-655
AX	-	1-299
AY	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
AZ	-	1-247, 248-284, 285-303, 304-360, 361-475
BA	-	1-265, 266-302, 303-345, 346-402, 403-528
BB	-	1-655
BC	-	1-299
BD	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
BE	816-958816-958816-958816-958816-958816-958816-958	551-815, 959-959, 11-550

Chain ID	Rigid bodies	Non-rigid segments
BF	816-958816-958816- 958816-958816-958816- 958816-958816-958	551-815, 959-959, 11-550
BG	-	751-965, 966-1111, 1112-1113, 11-750
BH	-	751-965, 966-1111, 1112-1113, 11-750
BI	-	-
BJ	-	1-120
BK	459-605459-605459- 605459-605459-605459- 605459-605459-605	201-458, 1-200
BL	459-605459-605459- 605459-605459-605459- 605459-605459-605	201-458, 1-200
BM	-	1-351, 352-1049
BN	-	1-398, 399-498
BO	-	1-398, 399-498
BP	-	238-716
BQ	-	215-690
BR	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
BS	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
BT	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037

Chain ID	Rigid bodies	Non-rigid segments
BU	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
BV	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
BW	-	1-248, 249-287, 288-346, 347-349
BX	-	1-9, 10-158, 159-165, 166-296, 297-297
BY	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
BZ	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
CA	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
CB	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
CC	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
CD	-	1-248, 249-287, 288-346, 347-349
CE	-	1-9, 10-158, 159-165, 166-296, 297-297
CF	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726

Chain ID	Rigid bodies	Non-rigid segments
CG	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
CH	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
CI	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
CJ	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
CK	-	1-248, 249-287, 288-346, 347-349
CL	-	1-9, 10-158, 159-165, 166-296, 297-297
CM	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
CN	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
CO	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
CP	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157

Chain ID	Rigid bodies	Non-rigid segments
CQ	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
CR	-	1-248, 249-287, 288-346, 347-349
CS	-	1-9, 10-158, 159-165, 166-296, 297-297
CT	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
CU	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
CV	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
CW	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
CX	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
CY	-	1-248, 249-287, 288-346, 347-349
CZ	-	1-9, 10-158, 159-165, 166-296, 297-297
DA	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
DB	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744



Chain ID	Rigid bodies	Non-rigid segments
DC	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
DD	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
DE	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
DF	-	1-248, 249-287, 288-346, 347-349
DG	-	1-9, 10-158, 159-165, 166-296, 297-297
DH	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
DI	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
DJ	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
DK	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
DL	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
DM	-	1-248, 249-287, 288-346, 347-349
DN	-	1-9, 10-158, 159-165, 166-296, 297-297

Chain ID	Rigid bodies	Non-rigid segments
DO	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
DP	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
DQ	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
DR	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
DS	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
DT	-	1-248, 249-287, 288-346, 347-349
DU	-	1-9, 10-158, 159-165, 166-296, 297-297
DV	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
DW	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
DX	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
DY	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157

Chain ID	Rigid bodies	Non-rigid segments
DZ	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
EA	-	1-248, 249-287, 288-346, 347-349
EB	-	1-9, 10-158, 159-165, 166-296, 297-297
EC	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
ED	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
EE	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
EF	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
EG	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
EH	-	1-248, 249-287, 288-346, 347-349
EI	-	1-9, 10-158, 159-165, 166-296, 297-297
EJ	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
EK	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744

Chain ID	Rigid bodies	Non-rigid segments
EL	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
EM	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
EN	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
EO	-	1-248, 249-287, 288-346, 347-349
EP	-	1-9, 10-158, 159-165, 166-296, 297-297
EQ	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
ER	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
ES	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
ET	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
EU	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
EV	-	1-248, 249-287, 288-346, 347-349
EW	-	1-9, 10-158, 159-165, 166-296, 297-297

Chain ID	Rigid bodies	Non-rigid segments
EX	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
EY	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
EZ	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
FA	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157
FB	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
FC	-	1-248, 249-287, 288-346, 347-349
FD	-	1-9, 10-158, 159-165, 166-296, 297-297
FE	-	1-6, 7-20, 21-26, 27-80, 81-95, 96-126, 127-135, 136-364, 365-371, 372-483, 484-505, 506-562, 563-574, 575-726
FF	-	1-46, 47-126, 127-131, 132-230, 231-234, 235-436, 437-450, 451-492, 493-495, 496-544, 545-552, 553-560, 561-566, 567-585, 586-589, 590-597, 598-602, 603-612, 613-615, 616-634, 635-637, 638-655, 656-660, 661-675, 676-684, 685-699, 700-706, 707-719, 720-724, 725-744
FG	-	1-1, 2-29, 30-52, 53-305, 306-310, 311-711, 712-714, 715-726, 727-732, 733-746, 747-753, 754-766, 767-769, 770-781, 782-806, 807-818, 819-820, 821-833, 834-837, 838-853, 854-861, 862-879, 880-883, 884-895, 896-900, 901-913, 914-916, 917-931, 932-942, 943-955, 956-959, 960-971, 972-975, 976-987, 988-993, 994-1008, 1009-1024, 1025-1036, 1037-1037
FH	-	1-55, 56-78, 79-85, 86-125, 126-132, 133-144, 145-161, 162-184, 185-192, 193-200, 201-205, 206-249, 250-257, 258-480, 481-489, 490-763, 764-771, 772-1155, 1156-1157

Chain ID	Rigid bodies	Non-rigid segments
FI	-	1-91, 92-99, 100-125, 126-144, 145-148, 149-550, 551-553, 554-560, 561-565, 566-576, 577-586, 587-602, 603-611, 612-624, 625-630, 631-645, 646-653, 654-673, 674-680, 681-689, 690-702, 703-712
FJ	-	1-248, 249-287, 288-346, 347-349
FK	-	1-9, 10-158, 159-165, 166-296, 297-297
FL	-	1-6, 7-92
FM	-	1-6, 7-92
FN	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
FO	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
FP	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
FQ	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
FR	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
FS	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
FT	-	1-6, 7-92
FU	-	1-6, 7-92
FV	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
FW	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
FX	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081

Chain ID	Rigid bodies	Non-rigid segments
FY	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
FZ	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GA	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GB	-	1-6, 7-92
GC	-	1-6, 7-92
GD	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GE	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GF	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
GG	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
GH	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GI	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GJ	-	1-6, 7-92
GK	-	1-6, 7-92
GL	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GM	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GN	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081

Chain ID	Rigid bodies	Non-rigid segments
GO	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
GP	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GQ	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GR	-	1-6, 7-92
GS	-	1-6, 7-92
GT	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GU	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
GV	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
GW	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
GX	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GY	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
GZ	-	1-6, 7-92
HA	-	1-6, 7-92
HB	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
HC	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
HD	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081



Chain ID	Rigid bodies	Non-rigid segments
HE	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
HF	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
HG	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
HH	-	1-6, 7-92
HI	-	1-6, 7-92
HJ	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
HK	-	1-6, 7-16, 17-22, 23-120, 121-122, 123-452, 453-521, 522-612, 613-624, 625-669, 670-677, 678-713
HL	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
HM	-	1082-1116, 1117-1126, 1127-1210, 1211-1239, 1240-1265, 1266-1321, 1322-1331, 1332-1372, 1373-1381, 1382-1412, 1413-1428, 1429-1456, 1457-1460, 482-1081
HN	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
HO	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
HP	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
HQ	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
HR	-	601-636, 728-741, 779-787, 1-600
HS	-	601-636, 728-741, 779-787, 1-600
HT	-	201-269, 360-368, 408-432, 1-200
HU	-	201-269, 360-368, 408-432, 1-200

Chain ID	Rigid bodies	Non-rigid segments
HV	-	201-286, 424-432, 477-504, 541-541, 1-200
HW	-	201-286, 424-432, 477-504, 541-541, 1-200
HX	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
HY	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
HZ	-	601-636, 728-741, 779-787, 1-600
IA	-	601-636, 728-741, 779-787, 1-600
IB	-	201-269, 360-368, 408-432, 1-200
IC	-	201-269, 360-368, 408-432, 1-200
ID	-	201-286, 424-432, 477-504, 541-541, 1-200
IE	-	201-286, 424-432, 477-504, 541-541, 1-200
IF	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
IG	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
IH	-	601-636, 728-741, 779-787, 1-600
II	-	601-636, 728-741, 779-787, 1-600
IJ	-	201-269, 360-368, 408-432, 1-200
IK	-	201-269, 360-368, 408-432, 1-200
IL	-	201-286, 424-432, 477-504, 541-541, 1-200
IM	-	201-286, 424-432, 477-504, 541-541, 1-200
IN	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839

Chain ID	Rigid bodies	Non-rigid segments
IO	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
IP	-	601-636, 728-741, 779-787, 1-600
IQ	-	601-636, 728-741, 779-787, 1-600
IR	-	201-269, 360-368, 408-432, 1-200
IS	-	201-269, 360-368, 408-432, 1-200
IT	-	201-286, 424-432, 477-504, 541-541, 1-200
IU	-	201-286, 424-432, 477-504, 541-541, 1-200
IV	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
IW	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
IX	-	601-636, 728-741, 779-787, 1-600
IY	-	601-636, 728-741, 779-787, 1-600
IZ	-	201-269, 360-368, 408-432, 1-200
JA	-	201-269, 360-368, 408-432, 1-200
JB	-	201-286, 424-432, 477-504, 541-541, 1-200
JC	-	201-286, 424-432, 477-504, 541-541, 1-200
JD	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JE	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JF	-	601-636, 728-741, 779-787, 1-600
JG	-	601-636, 728-741, 779-787, 1-600
JH	-	201-269, 360-368, 408-432, 1-200

Chain ID	Rigid bodies	Non-rigid segments
JI	-	201-269, 360-368, 408-432, 1-200
JJ	-	201-286, 424-432, 477-504, 541-541, 1-200
JK	-	201-286, 424-432, 477-504, 541-541, 1-200
JL	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JM	-	1-19, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JN	-	601-636, 728-741, 779-787, 1-600
JO	-	601-636, 728-741, 779-787, 1-600
JP	-	201-269, 360-368, 408-432, 1-200
JQ	-	201-269, 360-368, 408-432, 1-200
JR	-	201-286, 424-432, 477-504, 541-541, 1-200
JS	-	201-286, 424-432, 477-504, 541-541, 1-200
JT	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JU	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
JV	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
JW	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
JX	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
JY	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
JZ	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KA	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KB	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839

Chain ID	Rigid bodies	Non-rigid segments
KC	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
KD	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KE	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KF	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
KG	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
KH	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KI	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KJ	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
KK	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
KL	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KM	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KN	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
KO	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
KP	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KQ	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KR	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
KS	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
KT	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KU	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
KV	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200

Chain ID	Rigid bodies	Non-rigid segments
KW	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
KX	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KY	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
KZ	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
LA	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
LB	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LC	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LD	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LE	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LF	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LG	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LH	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
LI	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
LJ	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LK	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LL	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LM	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LN	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LO	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LP	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839

Chain ID	Rigid bodies	Non-rigid segments
LQ	-	1-19, 20-56, 57-204, 205-360, 361-365, 366-374, 375-404, 405-444, 445-454, 455-515, 516-532, 533-747, 748-752, 753-835, 836-839
LR	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LS	-	601-636, 637-727, 728-741, 742-778, 779-787, 788-823, 1-600
LT	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LU	-	201-269, 270-359, 360-368, 369-407, 408-432, 433-472, 1-200
LV	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LW	-	201-286, 287-423, 424-432, 433-476, 477-504, 505-540, 541-541, 1-200
LX	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
LY	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
LZ	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
MA	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MB	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391

Chain ID	Rigid bodies	Non-rigid segments
MC	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
MD	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
ME	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MF	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
MG	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
MH	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655



Chain ID	Rigid bodies	Non-rigid segments
MI	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MJ	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
MK	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
ML	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
MM	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MN	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
MO	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502

Chain ID	Rigid bodies	Non-rigid segments
MP	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
MQ	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MR	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
MS	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
MT	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
MU	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MV	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391

Chain ID	Rigid bodies	Non-rigid segments
MW	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
MX	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
MY	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
MZ	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NA	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NB	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655

Chain ID	Rigid bodies	Non-rigid segments
NC	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
ND	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NE	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NF	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
NG	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
NH	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NI	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502

Chain ID	Rigid bodies	Non-rigid segments
NJ	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
NK	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
NL	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NM	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NN	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
NO	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
NP	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391

Chain ID	Rigid bodies	Non-rigid segments
NQ	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NR	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
NS	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
NT	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NU	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NV	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
NW	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683

Chain ID	Rigid bodies	Non-rigid segments
NX	-	1-87, 88-289, 290-300, 301-309, 310-338, 339-457, 458-480, 481-515, 516-534, 535-679, 680-703, 704-730, 731-743, 744-775, 776-785, 786-830, 831-835, 836-892, 893-899, 900-916, 917-920, 921-933, 934-943, 944-1016, 1017-1038, 1039-1141, 1142-1154, 1155-1390, 1391-1391
NY	-	1-97, 98-299, 300-310, 311-319, 320-352, 353-471, 472-504, 505-537, 538-573, 574-717, 718-764, 765-791, 792-830, 831-862, 863-883, 884-916, 917-918, 919-930, 931-935, 936-992, 993-999, 1000-1016, 1017-1020, 1021-1033, 1034-1043, 1044-1116, 1117-1140, 1141-1191, 1192-1194, 1195-1243, 1244-1256, 1257-1502
NZ	-	1-11, 12-34, 35-39, 40-91, 92-100, 101-123, 124-130, 131-166, 167-173, 174-224, 225-255, 256-282, 283-287, 288-304, 305-317, 318-434, 435-438, 439-479, 480-492, 493-508, 509-514, 515-530, 531-550, 551-577, 578-583, 584-605, 606-607, 608-619, 620-631, 632-785, 786-792, 793-889, 890-891, 892-1100, 1101-1118, 1119-1133, 1134-1156, 1157-1241, 1242-1246, 1247-1265, 1266-1275, 1276-1292, 1293-1302, 1303-1322, 1323-1331, 1332-1354, 1355-1382, 1383-1567, 1568-1592, 1593-1628, 1629-1632, 1633-1652, 1653-1655
OA	-	1-362, 363-416, 417-574, 575-601, 602-798, 799-813, 814-849, 850-856, 857-953, 954-960, 961-1126, 1127-1136, 1137-1226, 1227-1233, 1234-1258, 1259-1271, 1272-1366, 1367-1370, 1371-1418, 1419-1420, 1421-1502, 1503-1510, 1511-1559, 1560-1583, 1584-1590, 1591-1596, 1597-1619, 1620-1622, 1623-1644, 1645-1650, 1651-1683
OB	-	1-247, 248-284, 285-303, 304-360, 361-475
OC	-	1-265, 266-302, 303-345, 346-402, 403-528
OD	-	1-655
OE	-	1-299
OF	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
OG	-	1-247, 248-284, 285-303, 304-360, 361-475
OH	-	1-265, 266-302, 303-345, 346-402, 403-528
OI	-	1-655
OJ	-	1-299

Chain ID	Rigid bodies	Non-rigid segments
OK	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
OL	-	1-247, 248-284, 285-303, 304-360, 361-475
OM	-	1-265, 266-302, 303-345, 346-402, 403-528
ON	-	1-655
OO	-	1-299
OP	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
OQ	-	1-247, 248-284, 285-303, 304-360, 361-475
OR	-	1-265, 266-302, 303-345, 346-402, 403-528
OS	-	1-655
OT	-	1-299
OU	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
OV	-	1-247, 248-284, 285-303, 304-360, 361-475
OW	-	1-265, 266-302, 303-345, 346-402, 403-528
OX	-	1-655
OY	-	1-299
OZ	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PA	-	1-247, 248-284, 285-303, 304-360, 361-475
PB	-	1-265, 266-302, 303-345, 346-402, 403-528
PC	-	1-655



Chain ID	Rigid bodies	Non-rigid segments
PD	-	1-299
PE	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PF	-	1-247, 248-284, 285-303, 304-360, 361-475
PG	-	1-265, 266-302, 303-345, 346-402, 403-528
PH	-	1-655
PI	-	1-299
PJ	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PK	-	1-247, 248-284, 285-303, 304-360, 361-475
PL	-	1-265, 266-302, 303-345, 346-402, 403-528
PM	-	1-655
PN	-	1-299
PO	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PP	-	1-247, 248-284, 285-303, 304-360, 361-475
PQ	-	1-265, 266-302, 303-345, 346-402, 403-528
PR	-	1-655
PS	-	1-299
PT	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PU	-	1-247, 248-284, 285-303, 304-360, 361-475
PV	-	1-265, 266-302, 303-345, 346-402, 403-528

Chain ID	Rigid bodies	Non-rigid segments
PW	-	1-655
PX	-	1-299
PY	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
PZ	-	1-247, 248-284, 285-303, 304-360, 361-475
QA	-	1-265, 266-302, 303-345, 346-402, 403-528
QB	-	1-655
QC	-	1-299
QD	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
QE	-	1-247, 248-284, 285-303, 304-360, 361-475
QF	-	1-265, 266-302, 303-345, 346-402, 403-528
QG	-	1-655
QH	-	1-299
QI	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
QJ	-	1-247, 248-284, 285-303, 304-360, 361-475
QK	-	1-265, 266-302, 303-345, 346-402, 403-528
QL	-	1-655
QM	-	1-299
QN	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
QO	-	1-247, 248-284, 285-303, 304-360, 361-475

Chain ID	Rigid bodies	Non-rigid segments
QP	-	1-265, 266-302, 303-345, 346-402, 403-528
QQ	-	1-655
QR	-	1-299
QS	-	1-378, 379-472, 473-519, 520-611, 612-615, 616-714, 715-721, 722-818, 819-823, 824-918, 919-930, 931-1026, 1027-1035, 1036-1141, 1142-1149, 1150-1229, 1230-1243, 1244-1337
QT	-	551-815, 959-959, 11-550
QU	-	551-815, 959-959, 11-550
QV	-	751-965, 966-1111, 1112-1113, 11-750
QW	-	751-965, 966-1111, 1112-1113, 11-750
QX	-	-
QY	-	1-120
QZ	-	551-815, 959-959, 11-550
RA	-	551-815, 959-959, 11-550
RB	-	751-965, 966-1111, 1112-1113, 11-750
RC	-	751-965, 966-1111, 1112-1113, 11-750
RD	-	-
RE	-	1-120
RF	-	551-815, 959-959, 11-550
RG	-	551-815, 959-959, 11-550
RH	-	751-965, 966-1111, 1112-1113, 11-750
RI	-	751-965, 966-1111, 1112-1113, 11-750
RJ	-	-
RK	-	1-120

Chain ID	Rigid bodies	Non-rigid segments
RL	-	551-815, 959-959, 11-550
RM	-	551-815, 959-959, 11-550
RN	-	751-965, 966-1111, 1112-1113, 11-750
RO	-	751-965, 966-1111, 1112-1113, 11-750
RP	-	-
RQ	-	1-120
RR	-	551-815, 959-959, 11-550
RS	-	551-815, 959-959, 11-550
RT	-	751-965, 966-1111, 1112-1113, 11-750
RU	-	751-965, 966-1111, 1112-1113, 11-750
RV	-	-
RW	-	1-120
RX	-	551-815, 959-959, 11-550
RY	-	551-815, 959-959, 11-550
RZ	-	751-965, 966-1111, 1112-1113, 11-750
SA	-	751-965, 966-1111, 1112-1113, 11-750
SB	-	-
SC	-	1-120
SD	-	551-815, 959-959, 11-550
SE	-	551-815, 959-959, 11-550
SF	-	751-965, 966-1111, 1112-1113, 11-750
SG	-	751-965, 966-1111, 1112-1113, 11-750

Chain ID	Rigid bodies	Non-rigid segments
SH	-	-
SI	-	1-120
SJ	-	201-458, 1-200
SK	-	201-458, 1-200
SL	-	1-398, 399-498
SM	-	1-398, 399-498
SN	-	1-351, 352-1049
SO	-	201-458, 1-200
SP	-	201-458, 1-200
SQ	-	1-398, 399-498
SR	-	1-398, 399-498
SS	-	1-351, 352-1049
ST	-	201-458, 1-200
SU	-	201-458, 1-200
SV	-	1-398, 399-498
SW	-	1-398, 399-498
SX	-	1-351, 352-1049
SY	-	201-458, 1-200
SZ	-	201-458, 1-200
TA	-	1-398, 399-498
TB	-	1-398, 399-498
TC	-	1-351, 352-1049
TD	-	201-458, 1-200

<b>Chain ID</b>	<b>Rigid bodies</b>	<b>Non-rigid segments</b>
TE	-	201-458, 1-200
TF	-	1-398, 399-498
TG	-	1-398, 399-498
TH	-	1-351, 352-1049
TI	-	201-458, 1-200
TJ	-	201-458, 1-200
TK	-	1-398, 399-498
TL	-	1-398, 399-498
TM	-	1-351, 352-1049
TN	-	201-458, 1-200
TO	-	201-458, 1-200
TP	-	1-398, 399-498
TQ	-	1-398, 399-498
TR	-	1-351, 352-1049
TS	-	238-716
TT	-	215-690
TU	-	238-716
TV	-	215-690
TW	-	238-716
TX	-	215-690
TY	-	238-716
TZ	-	215-690
UA	-	238-716

Chain ID	Rigid bodies	Non-rigid segments
UB	-	215-690
UC	-	238-716
UD	-	215-690
UE	-	238-716
UF	-	215-690

## Methodology and software

*This entry is a result of 2 distinct protocol(s).*

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
1	1	Replica exchange monte carlo	Sampling	None	500	False	True
2	1	Replica exchange monte carlo	Sampling	None	3000	False	True
3	1	Replica exchange monte carlo	Sampling	None	1000	False	True
1	2	Brownian dynamics	Sampling	None	1000	False	True

*There are 13 software packages reported in this entry.*

ID	Software name	Software version	Software classification	Software location
1	<a href="https://integrativemodeling.org">Integrative Modeling Platform (IMP)</a>	develop-0a5706e202	integrative model building	<a href="https://integrativemodeling.org">https://integrativemodeling.org</a>

ID	Software name	Software version	Software classification	Software location
2	<a href="#">IMP PMI module</a>	67456c0	integrative model building	<a href="https://integrativemodeling.org">https://integrativemodeling.org</a>
3	<a href="#">HHpred</a>	2.0.16	protein homology detection	<a href="https://toolkit.tuebingen.mpg.de/hhpred">https://toolkit.tuebingen.mpg.de/hhpred</a>
4	<a href="#">PSIPRED</a>	4.0	secondary structure prediction	<a href="http://bioinf.cs.ucl.ac.uk/psipred/">http://bioinf.cs.ucl.ac.uk/psipred/</a>
5	<a href="#">DISOPRED</a>	3	disorder prediction	<a href="http://bioinf.cs.ucl.ac.uk/psipred/?disopred=1">http://bioinf.cs.ucl.ac.uk/psipred/?disopred=1</a>
6	<a href="#">DomPred</a>	Not available	domain boundary prediction	<a href="http://bioinf.cs.ucl.ac.uk/dompred">http://bioinf.cs.ucl.ac.uk/dompred</a>
7	<a href="#">COILS/PCOILS</a>	Not available	coiled-coil prediction	<a href="https://toolkit.tuebingen.mpg.de/#/tools/pcoils">https://toolkit.tuebingen.mpg.de/#/tools/pcoils</a>
8	<a href="#">EMAN2</a>	2.2	image processing	<a href="http://blake.bcm.edu/emanwiki/EMAN2">http://blake.bcm.edu/emanwiki/EMAN2</a>
9	<a href="#">RELION</a>	1.4	image processing	<a href="https://www2.mrc-lmb.cam.ac.uk/relicon/">https://www2.mrc-lmb.cam.ac.uk/relicon/</a>
10	<a href="#">SGD</a>	Not available	database	<a href="https://www.yeastgenome.org/">https://www.yeastgenome.org/</a>
11	<a href="#">HeliQuest</a>	Not available	helix prediction	<a href="http://heliquet.ipmc.cnrs.fr/">http://heliquet.ipmc.cnrs.fr/</a>
12	<a href="#">MODELLER</a>	9.15	comparative modeling	<a href="https://salilab.org/modeller/">https://salilab.org/modeller/</a>
13	<a href="#">MODELLER</a>	9.13	comparative modeling	<a href="https://salilab.org/modeller/">https://salilab.org/modeller/</a>

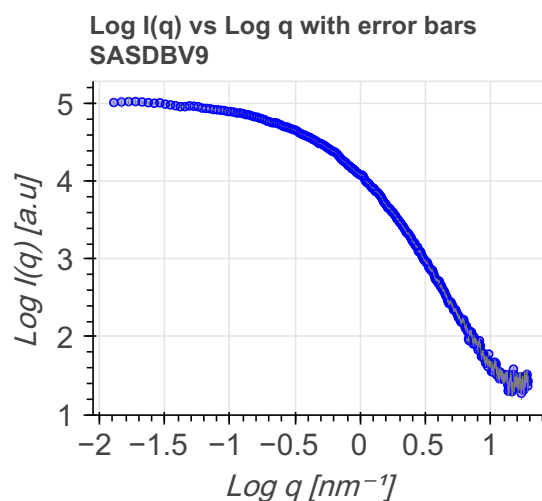
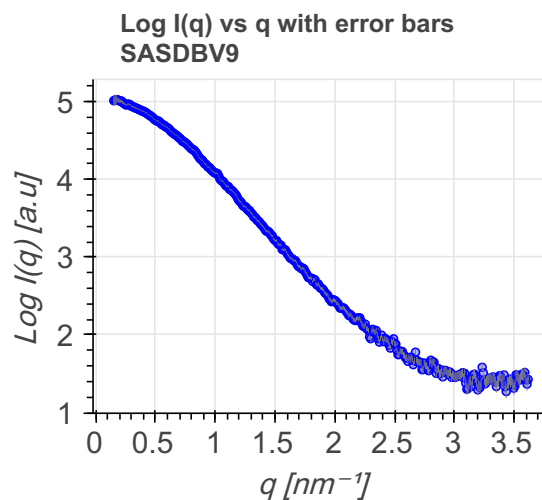
### Data quality

### Scattering profile

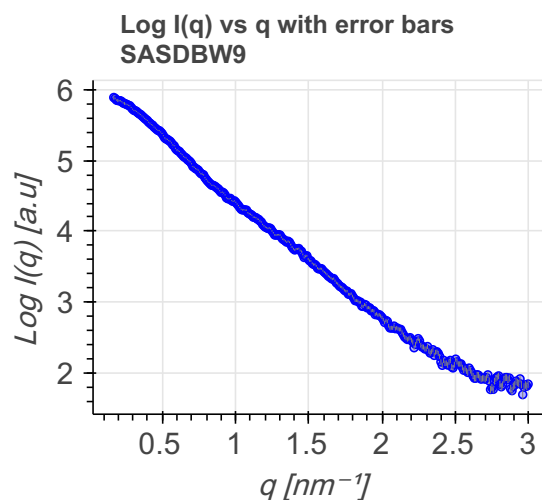
SAS data used in this integrative model was obtained from 5 deposited SASBDB entry (entries).

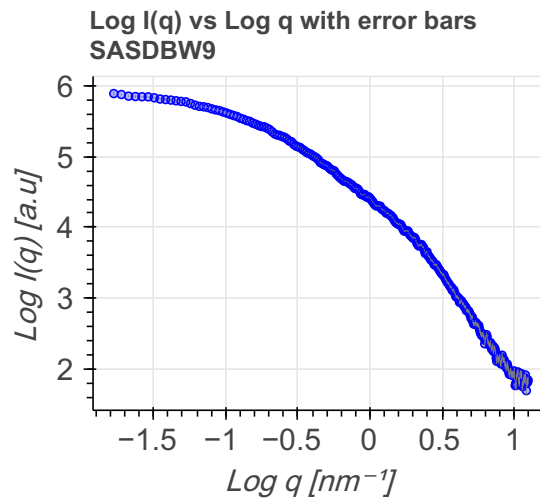
Scattering profile for SASDBV9: data from solutions of biological macromolecules are presented as both  $\log I(q)$  vs  $q$  and  $\log I(q)$  vs  $\log(q)$  based on [SAS validation task force \(SASvtf\) recommendations](#).  $I(q)$  is the intensity (in arbitrary units) and  $q$  is the modulus of the scattering vector.



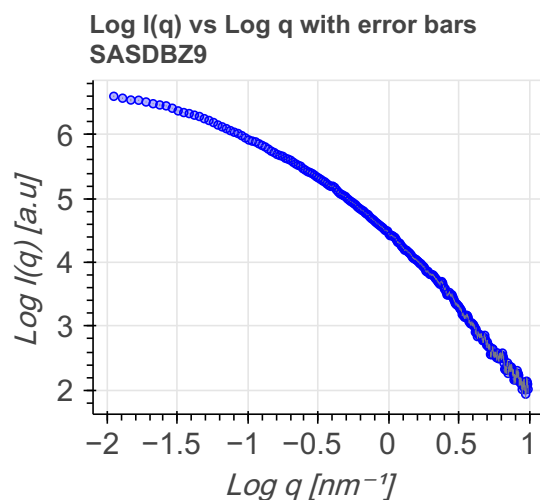
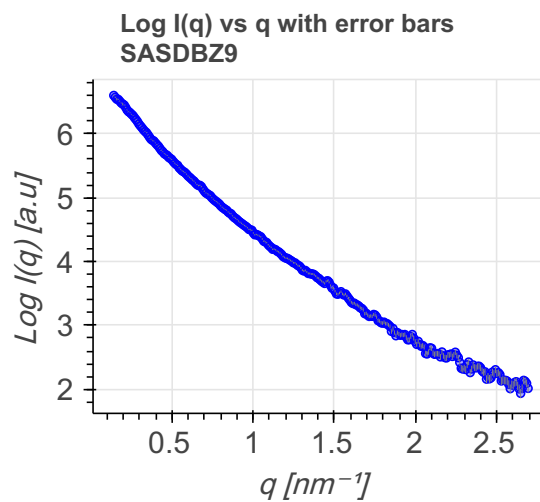


Scattering profile for [SASDBW9](#): data from solutions of biological macromolecules are presented as both log I(q) vs q and log I(q) vs log (q) based on [SAS validation task force \(SASvtf\)](#) recommendations. I(q) is the intensity (in arbitrary units) and q is the modulus of the scattering vector.

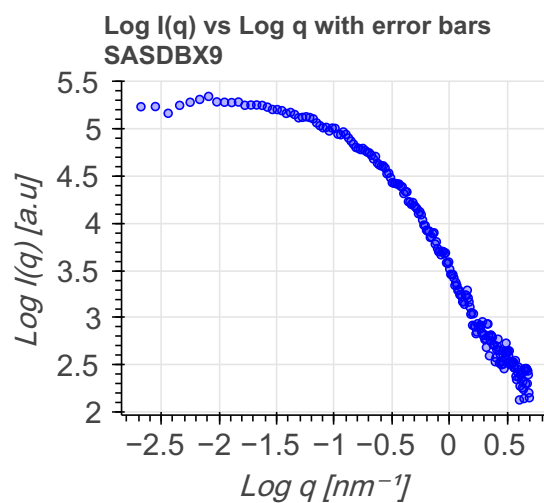
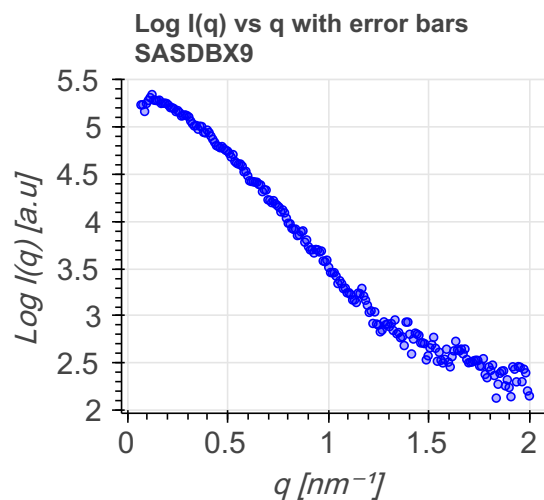




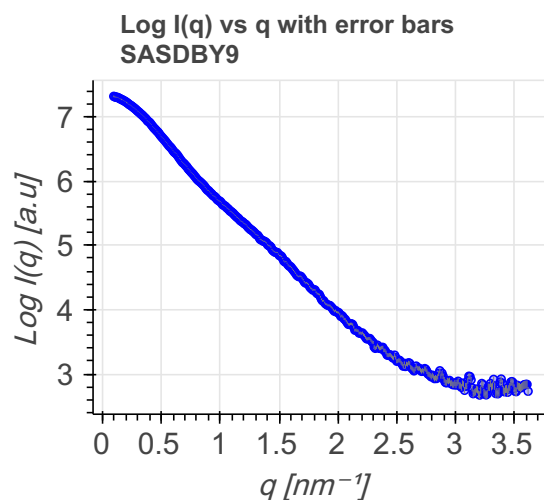
Scattering profile for [SASDBZ9](#): data from solutions of biological macromolecules are presented as both log I(q) vs q and log I(q) vs log (q) based on [SAS validation task force \(SASvtf\) recommendations](#). I(q) is the intensity (in arbitrary units) and q is the modulus of the scattering vector.

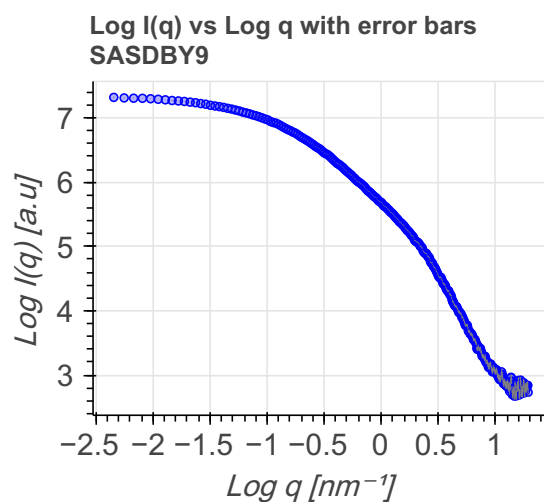


Scattering profile for [SASDBX9](#): data from solutions of biological macromolecules are presented as both log I(q) vs q and log I(q) vs log (q) based on [SAS validation task force \(SASvtf\) recommendations](#). I(q) is the intensity (in arbitrary units) and q is the modulus of the scattering vector.



Scattering profile for [SASDBY9](#): data from solutions of biological macromolecules are presented as both  $\log I(q)$  vs  $q$  and  $\log I(q)$  vs  $\log(q)$  based on [SAS validation task force \(SASvtf\) recommendations](#).  $I(q)$  is the intensity (in arbitrary units) and  $q$  is the modulus of the scattering vector.





Molecular weight (MW) estimates from experiments and analysis: true molecular weight can be compared to the Porod estimate from scattering profiles.

SASDB ID	Chemical composition MW	Standard MW	Porod Volume/MW
SASDBV9	12.6 kDa	12.2 kDa	N/A
SASDBW9	24.1 kDa	25.2 kDa	N/A
SASDBZ9	49.4 kDa	48.3 kDa	N/A
SASDBX9	12.5 kDa	14.7 kDa	N/A
SASDBY9	25.9 kDa	25.2 kDa	N/A

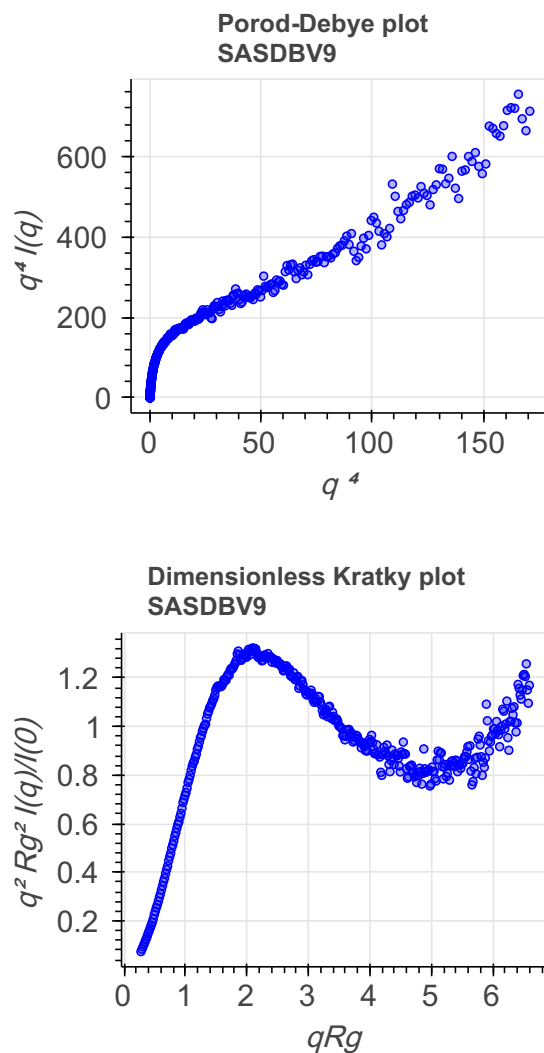
Volume estimates from experiments and analysis: estimated volume can be compared to Porod volume obtained from scattering profiles.

SASDB ID	Estimated Volume	Porod Volume	Specific Volume	Sample Contrast	Sample Concentration
SASDBV9	N/A	17.94 nm <sup>3</sup>	N/A	N/A	N/A
SASDBW9	N/A	22.50 nm <sup>3</sup>	N/A	N/A	N/A
SASDBZ9	N/A	66.59 nm <sup>3</sup>	N/A	N/A	N/A
SASDBX9	N/A	56.68 nm <sup>3</sup>	N/A	N/A	N/A
SASDBY9	N/A	27.97 nm <sup>3</sup>	N/A	N/A	N/A

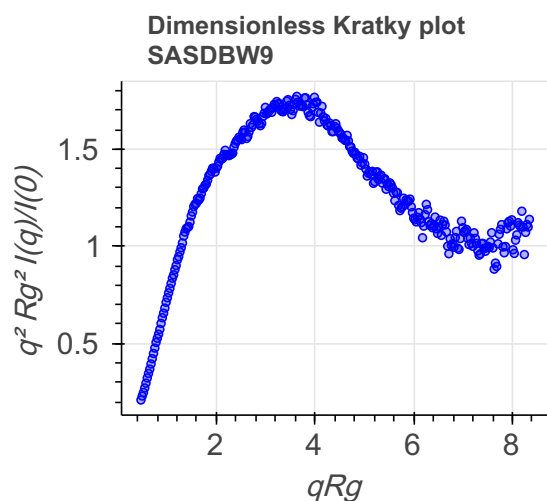
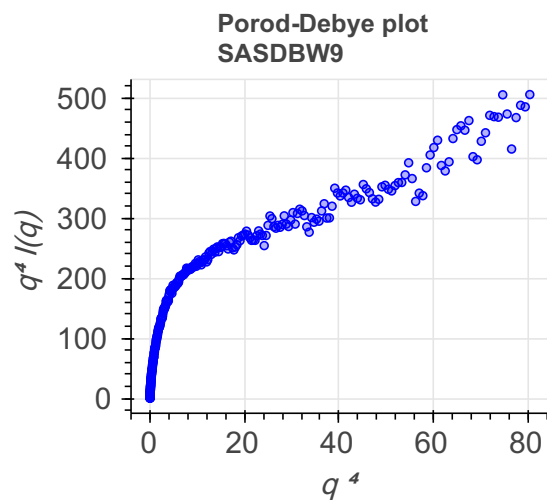
### Flexibility analysis ?

Flexibility analysis for SASDBV9: In a Porod-Debye plot, a clear plateau is observed for globular (partial or fully folded)

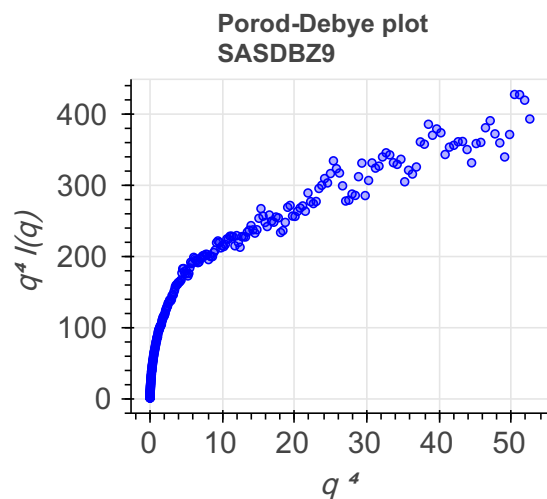
domains, whereas, fully unfolded domains are devoid of any discernable plateau. For details, refer to Figure 5 in [Rambo and Tainer, 2011](#) . In a Kratky plot, a parabolic shape is observed for globular (partial or fully folded) domains and a hyperbolic shape is observed for fully unfolded domains.

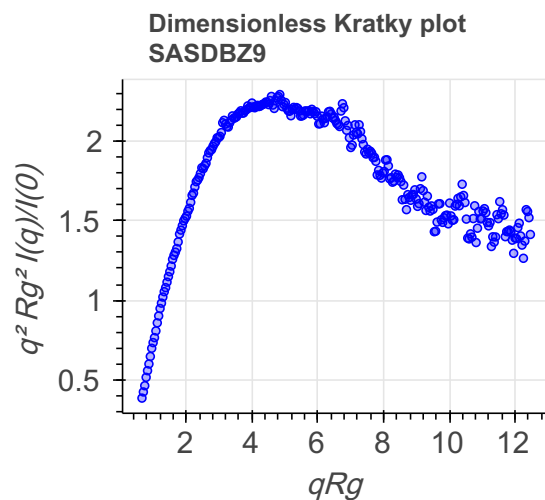


Flexibility analysis for SASDBW9: In a Porod-Debye plot, a clear plateau is observed for globular (partial or fully folded) domains, whereas, fully unfolded domains are devoid of any discernable plateau. For details, refer to Figure 5 in [Rambo and Tainer, 2011](#) . In a Kratky plot, a parabolic shape is observed for globular (partial or fully folded) domains and a hyperbolic shape is observed for fully unfolded domains.

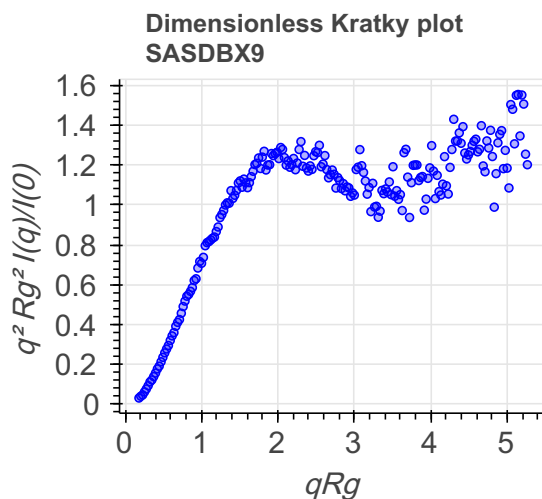
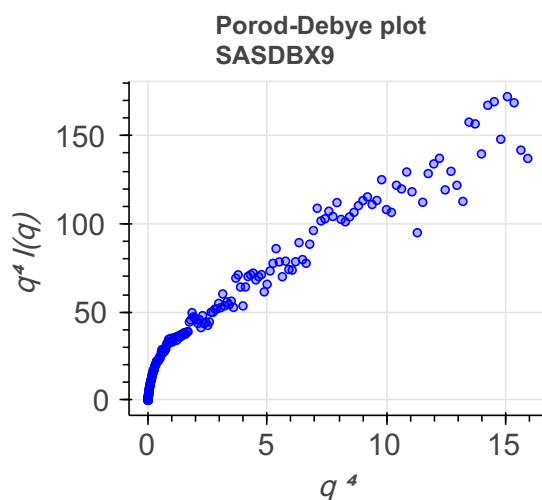


Flexibility analysis for SASDBZ9: In a Porod-Debye plot, a clear plateau is observed for globular (partial or fully folded) domains, whereas, fully unfolded domains are devoid of any discernable plateau. For details, refer to Figure 5 in [Rambo and Tainer, 2011](#). In a Kratky plot, a parabolic shape is observed for globular (partial or fully folded) domains and a hyperbolic shape is observed for fully unfolded domains.



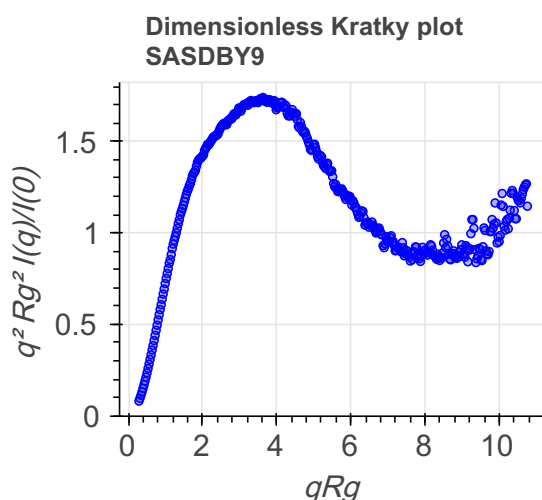
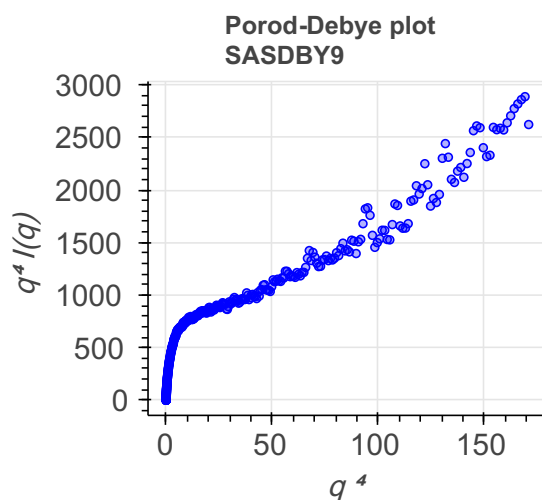


Flexibility analysis for SASDBX9: In a Porod-Debye plot, a clear plateau is observed for globular (partial or fully folded) domains, whereas, fully unfolded domains are devoid of any discernable plateau. For details, refer to Figure 5 in [Rambo and Tainer, 2011](#). In a Kratky plot, a parabolic shape is observed for globular (partial or fully folded) domains and a hyperbolic shape is observed for fully unfolded domains.



Flexibility analysis for SASDBY9: In a Porod-Debye plot, a clear plateau is observed for globular (partial or fully folded) domains, whereas, fully unfolded domains are devoid of any discernable plateau. For details, refer to Figure 5 in [Rambo](#)

and Tainer, 2011 . In a Kratky plot, a parabolic shape is observed for globular (partial or fully folded) domains and a hyperbolic shape is observed for fully unfolded domains.



### Pair-distance distribution analysis

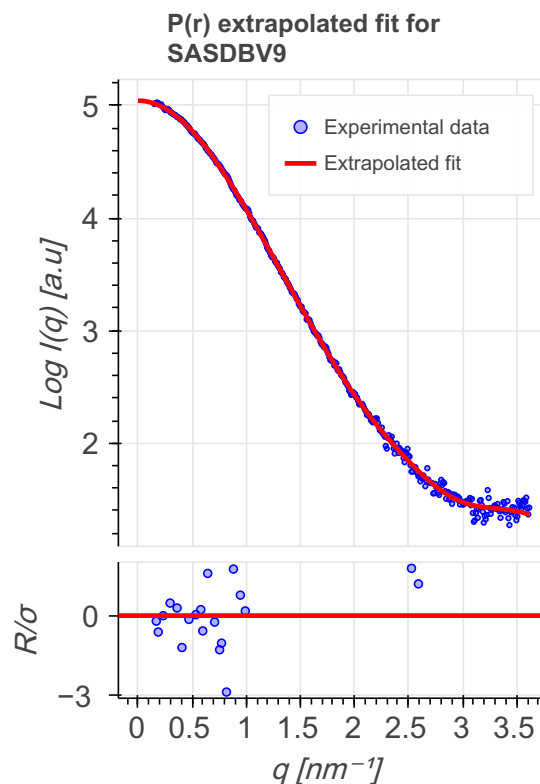
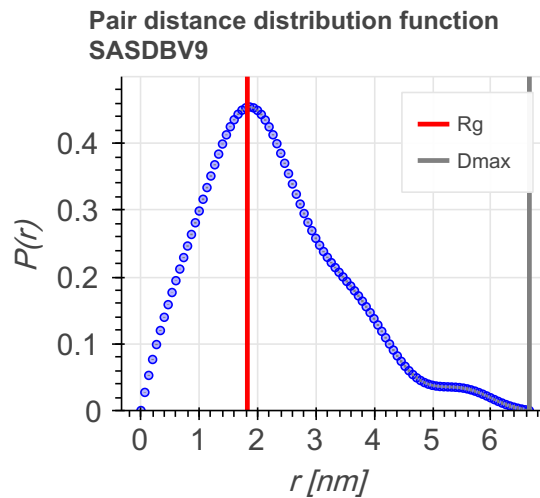
P(r) analysis: P(r) represents the distribution of distances between all pairs of atoms within the particle weighted by the respective electron densities. P(r) is the Fourier transform of I(s) (and vice versa).  $R_g$  can be estimated from integrating the P(r) function. Agreement between the P(r) and Guinier-determined  $R_g$  (table below) is a good measure of the self-consistency of the SAS profile.  $R_g$  is a measure for the overall size of a macromolecule; e.g. a protein with a smaller  $R_g$  is more compact than a protein with a larger  $R_g$ , provided both have the same molecular weight (MW). The point where P(r) is decaying to zero is called  $D_{max}$  and represents the maximum size of the particle.

SASDB ID	Software used	Dmax	Dmax error	Rg	Rg error
SASDBV9	GNOM 4.5a	6.660 nm	N/A	1.824 nm	0.006 nm
SASDBW9	GNOM 4.5a	9.370 nm	N/A	2.787 nm	0.007 nm
SASDBZ9	GNOM 4.5a	15.430 nm	N/A	4.629 nm	0.011 nm
SASDBX9	GNOM 4.5a	7.930 nm	N/A	2.636 nm	0.008 nm

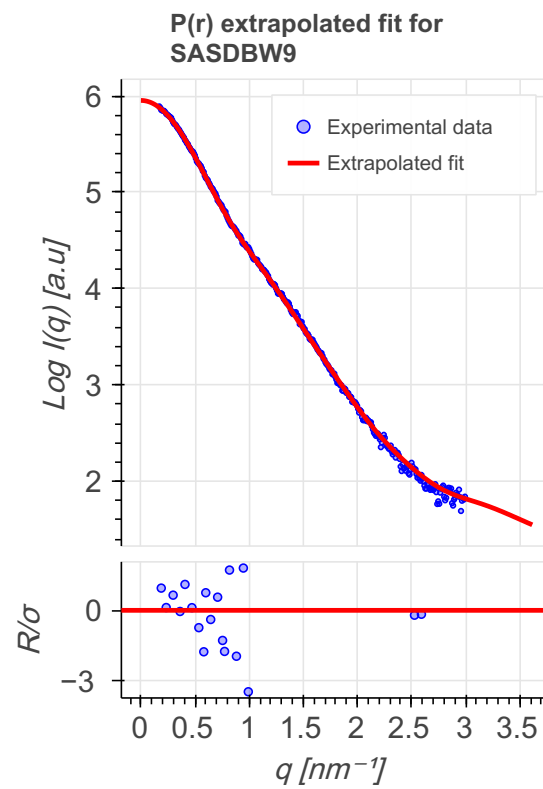
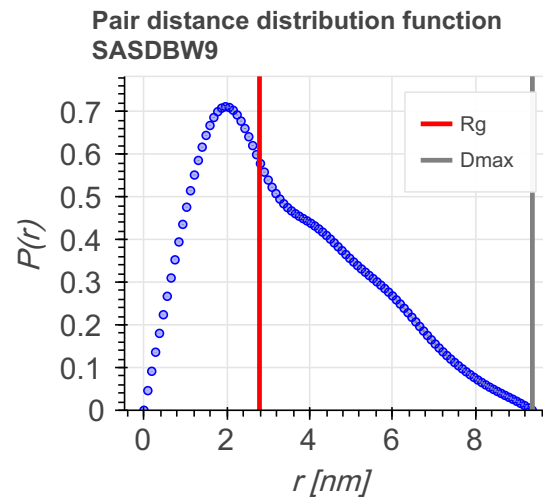


SASDB ID	Software used	Dmax	Dmax error	Rg	Rg error
SASDBV9	GNOM 4.5a	10.450 nm	N/A	2.976 nm	0.005 nm

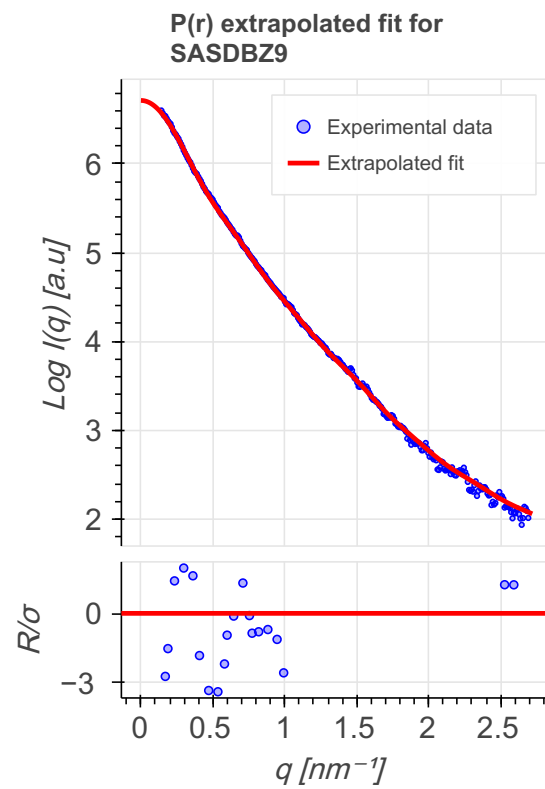
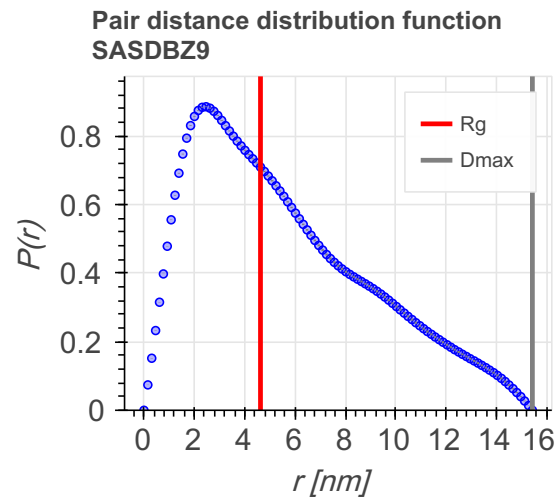
P(r) for SASDBV9: The value of P(r) should be zero beyond  $r=D_{\max}$ .



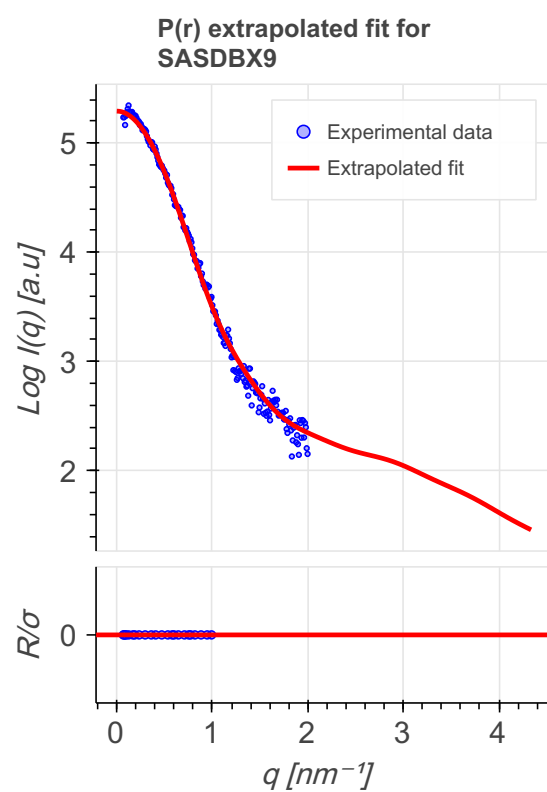
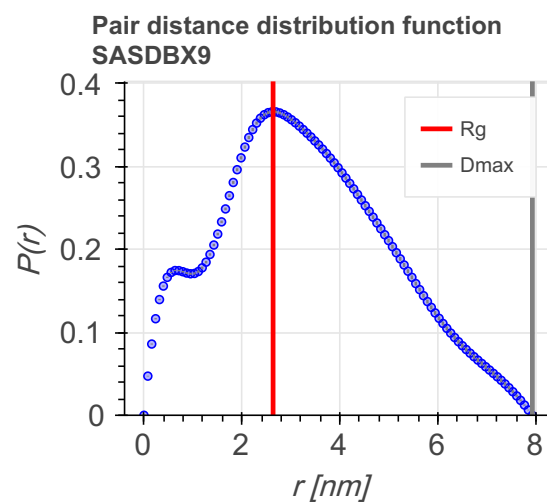
P(r) for SASDBV9: The value of P(r) should be zero beyond  $r=D_{\max}$ .



$P(r)$  for SASDBZ9: The value of  $P(r)$  should be zero beyond  $r=D_{max}$ .

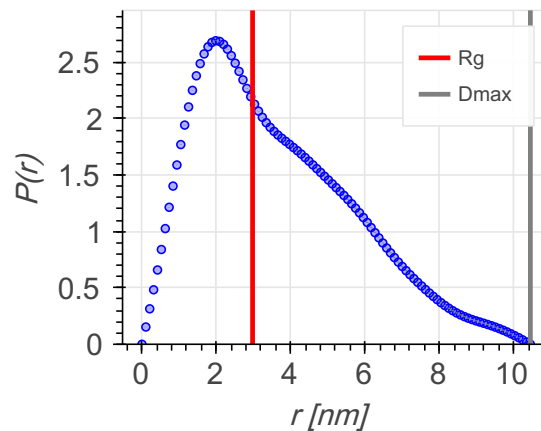


$P(r)$  for SASDBZ9: The value of  $P(r)$  should be zero beyond  $r=D_{max}$ .

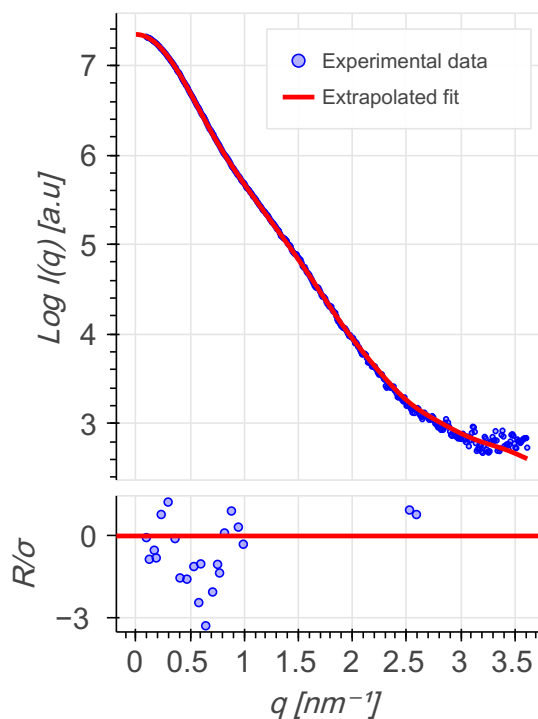


$P(r)$  for SASDBY9: The value of  $P(r)$  should be zero beyond  $r=D_{max}$ .

Pair distance distribution function  
SASDBY9



P(r) extrapolated fit for  
SASDBY9



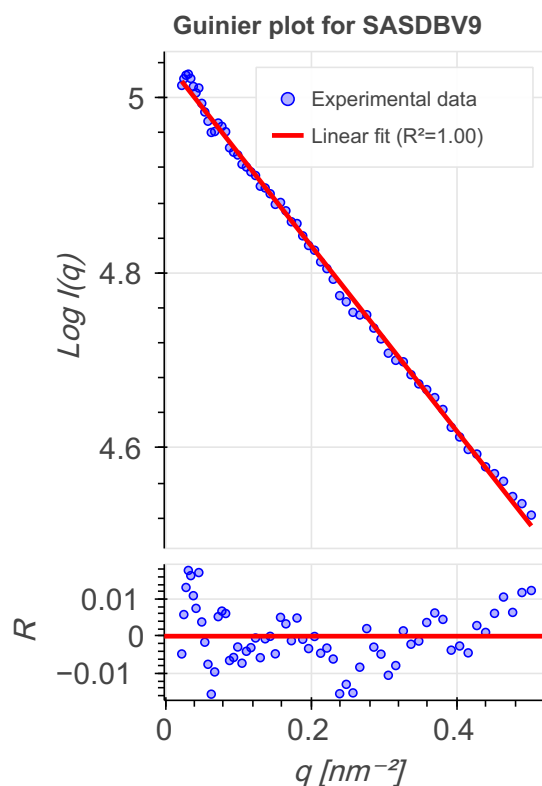
### Guinier analysis ?

Guinier analysis: agreement between the  $P(r)$  and Guinier-determined  $R_g$  (table below) is a good measure of the self-consistency of the SAS profile. Molecular weight estimates can also be compared to Porod and sample molecular weights for consistency.

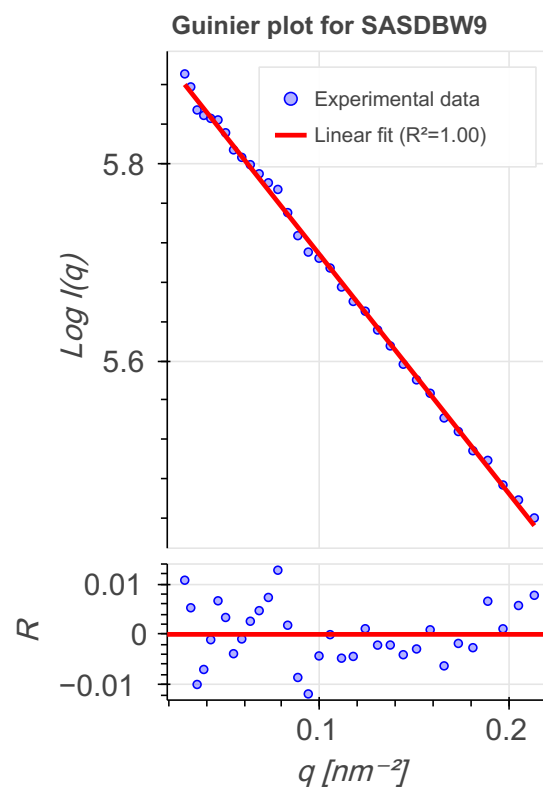
SASDB ID	$R_g$	$R_g$ error	MW	MW error
SASDBV9	1.77 nm	0.05 nm	12.2 kDa	N/A
SASDBW9	2.71 nm	0.06 nm	25.2 kDa	N/A

SASDB ID	Rg	Rg error	MW	MW error
SASDBZ9	4.34 nm	0.17 nm	48.3 kDa	N/A
SASDBX9	2.78 nm	0.18 nm	14.7 kDa	N/A
SASDBY9	2.95 nm	0.11 nm	25.2 kDa	N/A

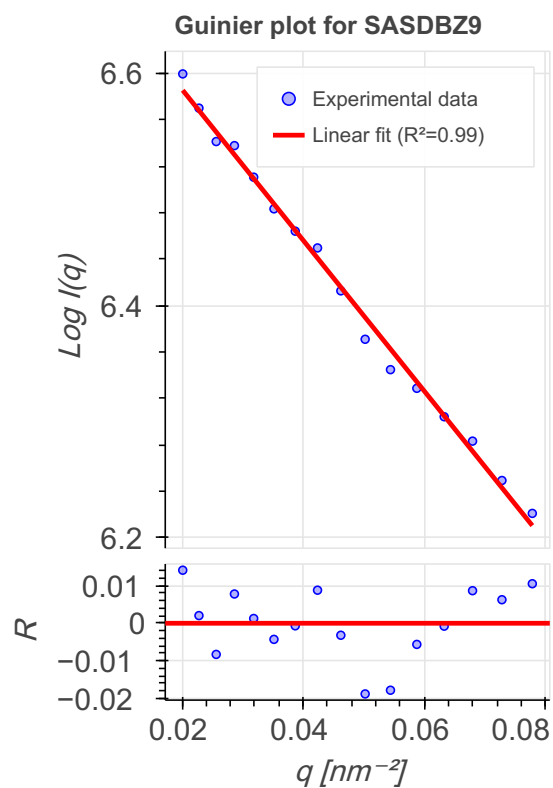
Guinier analysis for SASDBV9: the linearity of the Guinier plot is a sensitive indicator of the quality of the experimental SAS data; a linear Guinier plot is a necessary but not sufficient demonstration that a solution contains monodisperse particles of the same size. Deviations from linearity usually point to strong interference effects, polydispersity of the samples or improper background subtraction. Residual value plot and coefficient of determination ( $R^2$ ) are measures to assess linear fit to the data. A perfect fit has an  $R^2$  value of 1. Residual values should be equally and randomly spaced around the horizontal axis.



Guinier analysis for SASDBW9: the linearity of the Guinier plot is a sensitive indicator of the quality of the experimental SAS data; a linear Guinier plot is a necessary but not sufficient demonstration that a solution contains monodisperse particles of the same size. Deviations from linearity usually point to strong interference effects, polydispersity of the samples or improper background subtraction. Residual value plot and coefficient of determination ( $R^2$ ) are measures to assess linear fit to the data. A perfect fit has an  $R^2$  value of 1. Residual values should be equally and randomly spaced around the horizontal axis.

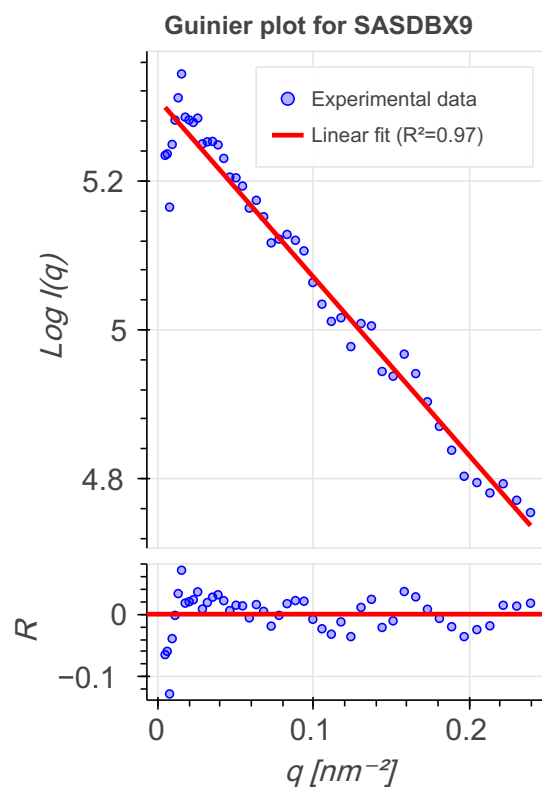


Guinier analysis for SASDBZ9: the linearity of the Guinier plot is a sensitive indicator of the quality of the experimental SAS data; a linear Guinier plot is a necessary but not sufficient demonstration that a solution contains monodisperse particles of the same size. Deviations from linearity usually point to strong interference effects, polydispersity of the samples or improper background subtraction. Residual value plot and coefficient of determination ( $R^2$ ) are measures to assess linear fit to the data. A perfect fit has an  $R^2$  value of 1. Residual values should be equally and randomly spaced around the horizontal axis.

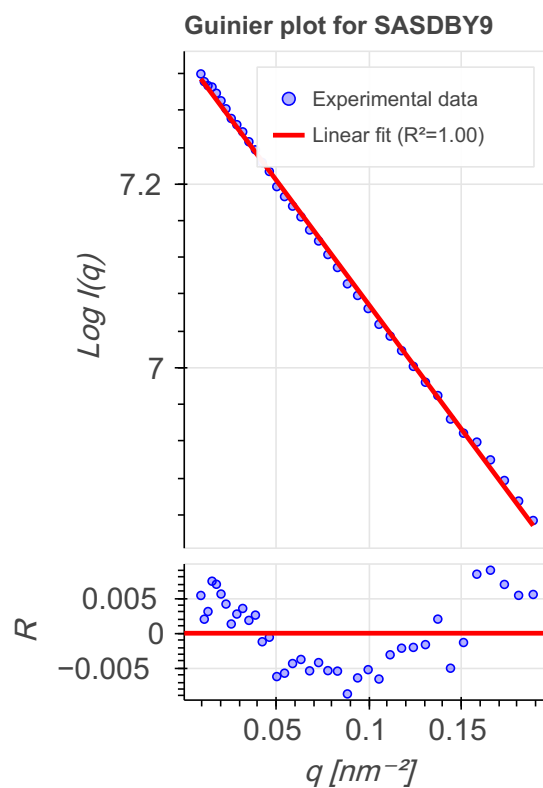


Guinier analysis for SASDBX9: the linearity of the Guinier plot is a sensitive indicator of the quality of the experimental SAS data; a linear Guinier plot is a necessary but not sufficient demonstration that a solution contains monodisperse particles of the same size. Deviations from linearity usually point to strong interference effects, polydispersity of the samples or improper background subtraction. Residual value plot and coefficient of determination ( $R^2$ ) are measures to assess linear fit to the data. A perfect fit has an  $R^2$  value of 1. Residual values should be equally and randomly spaced around the horizontal axis.





Guinier analysis for SASDBY9: the linearity of the Guinier plot is a sensitive indicator of the quality of the experimental SAS data; a linear Guinier plot is a necessary but not sufficient demonstration that a solution contains monodisperse particles of the same size. Deviations from linearity usually point to strong interference effects, polydispersity of the samples or improper background subtraction. Residual value plot and coefficient of determination ( $R^2$ ) are measures to assess linear fit to the data. A perfect fit has an  $R^2$  value of 1. Residual values should be equally and randomly spaced around the horizontal axis.



### Crosslinking-MS

Validation for this section is under development.

### 2DEM class average

Validation for this section is under development.

### 3DEM volume

Validation for this section is under development.

### EM raw micrographs

Validation for this section is under development.

### Mass Spectrometry

Validation for this section is under development.

## Model quality ?

For models with atomic structures, molprobability analysis is performed. For models with coarse-grained or multi-scale structures, excluded volume analysis is performed.

### Excluded volume satisfaction ?

*Excluded volume satisfaction for the models in the entry are listed below.*

Models	Excluded Volume Satisfaction (%)	Number of violations

Models	Excluded Volume Satisfaction (%)	Number of violations
1	100.0	611820.0
2	100.0	156.0

## Fit of model to data used for modeling ?

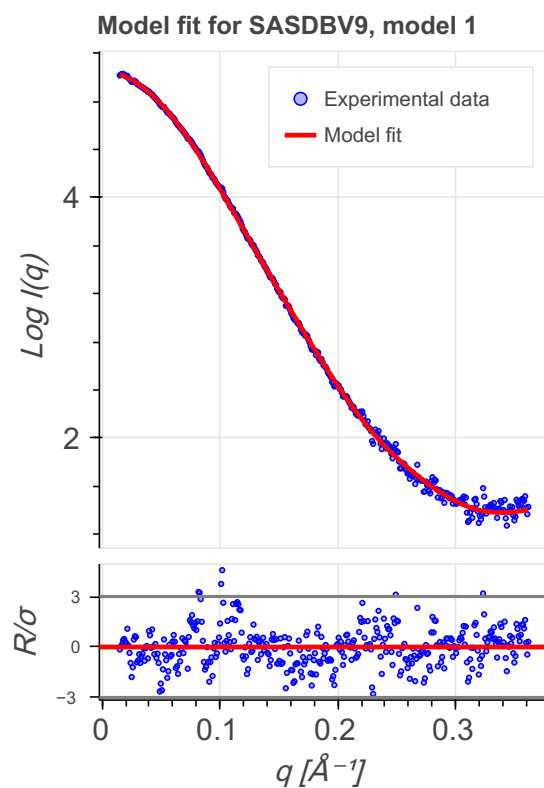
### Fit of model(s) to SAS data

#### $\chi^2$ goodness of fit and cormap analysis ?

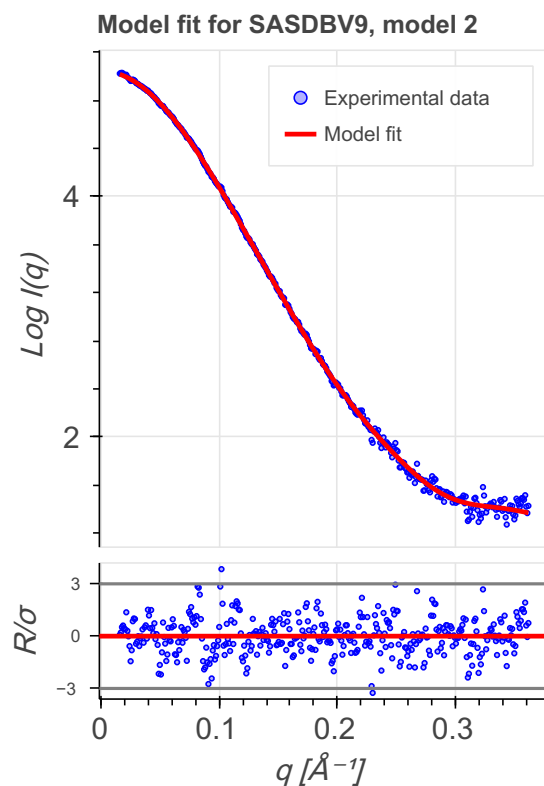
Model and fits displayed below were obtained from SASBDB.  $\chi^2$  values are a measure of fit of the model to data. A perfect fit has a  $\chi^2$  value of 1.0. ATSAS datcmp was used for hypothesis testing. All data sets are similar (i.e. the fit and the data collected) is the null hypothesis. p-value is a measure of evidence against the null hypothesis, smaller the value, the stronger the evidence that you should reject the null hypothesis.

SASDB ID	Model	$\chi^2$	p-value
SASDBV9	1	1.28	2.22E-02
SASDBV9	2	1.10	5.56E-03
SASDBW9	1	1.97	1.10E-05
SASDBZ9	1	1.94	0.00E+00
SASDBX9	1	2.86	0.00E+00
SASDBY9	1	2.02	3.00E-06

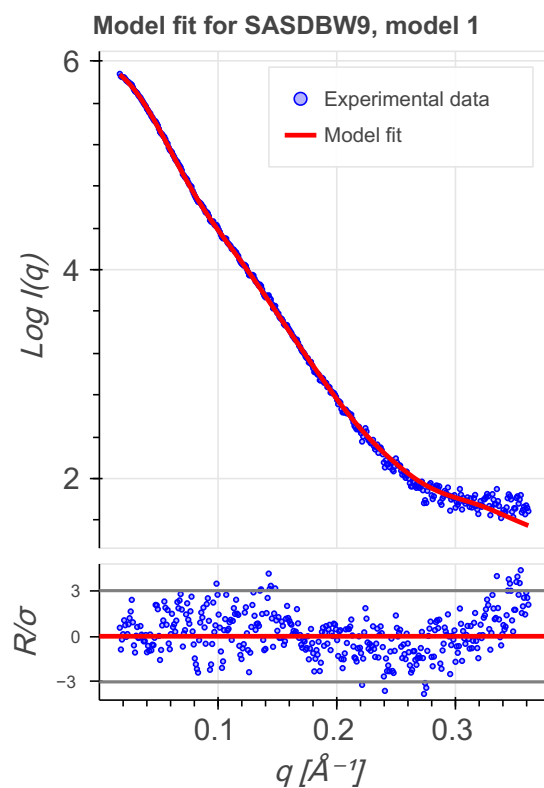
Model fit for SASDBV9 (fit/model number 1): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



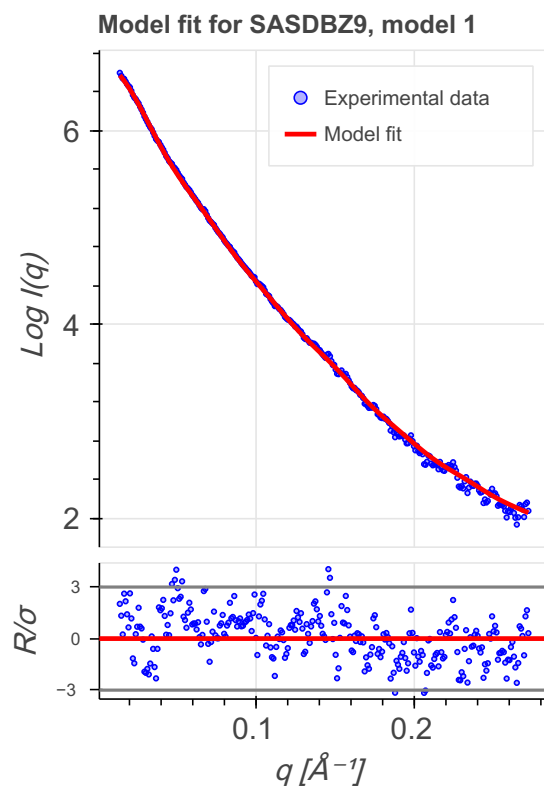
Model fit for SASDBV9 (fit/model number 2): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



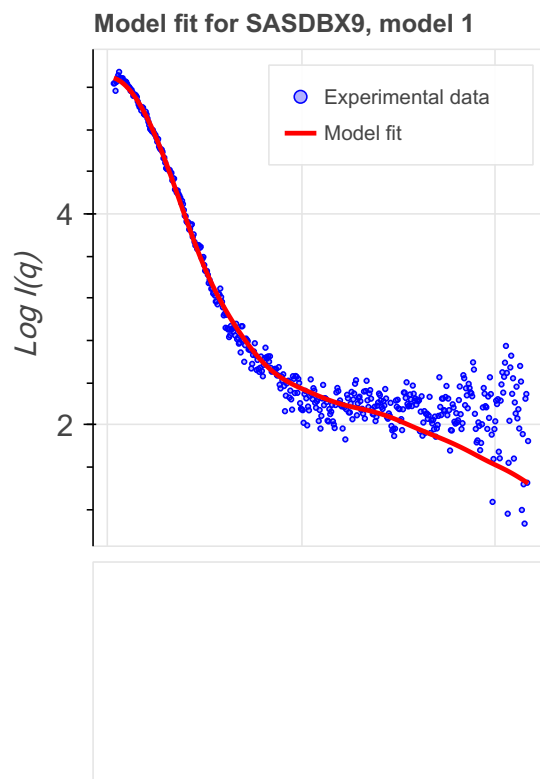
Model fit for SASDBV9 (fit/model number 1): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



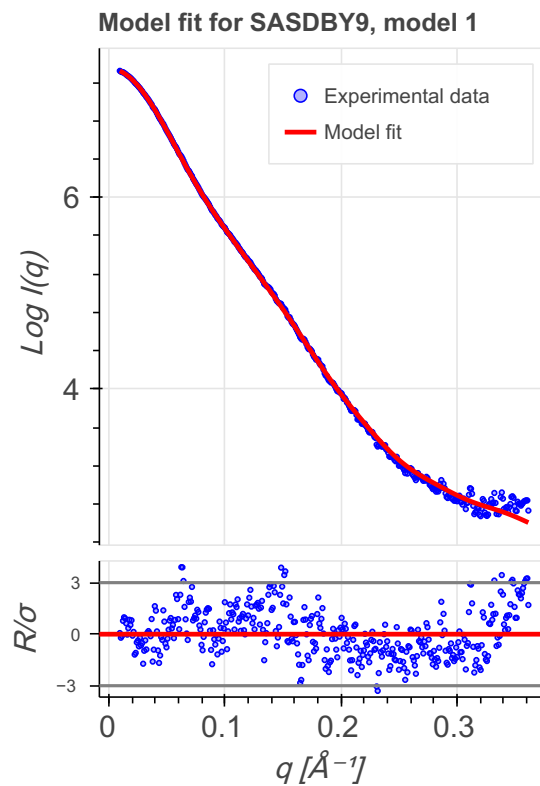
Model fit for SASDBZ9 (fit/model number 1): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



Model fit for SASDBX9 (fit/model number 1): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



Model fit for SASDBY9 (fit/model number 1): Residual value plot is a measure to assess fit to the data. Residual values should be equally and randomly spaced around the horizontal axis.



Crosslinking-MS

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### 3DEM volume

Validation for this section is under development.

### EM raw micrographs

Validation for this section is under development.

### Mass Spectrometry

Validation for this section is under development.

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## Fit of model to data used for validation ?

Validation for this section is under development.

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### *Acknowledgements*

*Development of integrative model validation metrics, implementation of a model validation pipeline, and creation of a validation report for integrative structures, are funded by NSF ABI awards (DBI-1756248, DBI-2112966, DBI-2112967, DBI-2112968, and DBI-1756250). The [PDB-Dev team](#) and members of [Sali lab](#) contributed model validation metrics and software packages.*

*Implementation of validation methods for SAS data and SAS-based models are funded by [RCSB PDB](#) (grant number DBI-1832184). Dr. Stephen Burley, Dr. John Westbrook, and Dr. Jasmine Young from [RCSB PDB](#), Dr. Jill Trehwella, Dr. Dina Schneidman, and members of the [SASBDB](#) repository are acknowledged for their advice and support in implementing SAS validation methods.*

*Members of the [wwPDB Integrative/Hybrid Methods Task Force](#) provided recommendations and community support for the project.*