



Full wwPDB EM Validation Report ⓘ

Jul 16, 2025 – 02:16 AM JST

PDB ID : 8Z6Q / pdb_00008z6q
EMDB ID : EMD-39801
Title : SARS-CoV-2 XBB.1.16 Spike in complex with CYFN1006-1(S-CYFN1006-1 dimer trimer).
Authors : Wang, Y.J.; Sun, L.
Deposited on : 2024-04-19
Resolution : 5.41 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : **FAILED**
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

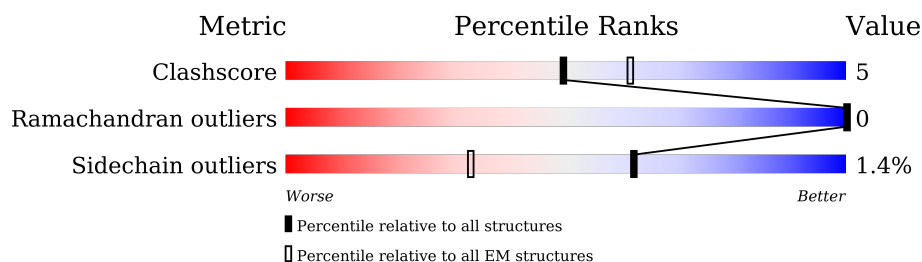
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 5.41 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	1299	66% 14% 19%
1	B	1299	68% 13% 19%
1	C	1299	67% 14% 19%
1	J	1299	67% 13% 19%
1	K	1299	67% 13% 19%
1	L	1299	68% 13% 19%
2	D	215	75% 13% 11%
2	F	215	80% 9% 11%
2	H	215	79% 11% 11%

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Mol	Chain	Length	Quality of chain
2	M	215	 78% 11% 11%
2	O	215	 80% 9% 11%
2	Q	215	 80% 9% 11%
3	E	451	 40% 5% 55%
3	G	451	 37% 6% 56%
3	I	451	 37% 8% 55%
3	N	451	 40% 5% 55%
3	P	451	 37% 7% 56%
3	R	451	 38% 6% 55%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 67108 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Spike glycoprotein,Fibritin,Expression Tag.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1051	Total	C	N	O	S	0	0
			8229	5274	1361	1554	40		
1	B	1050	Total	C	N	O	S	0	0
			8221	5270	1359	1552	40		
1	C	1051	Total	C	N	O	S	0	0
			8229	5274	1361	1554	40		
1	J	1051	Total	C	N	O	S	0	0
			8229	5274	1361	1554	40		
1	K	1050	Total	C	N	O	S	0	0
			8221	5270	1359	1552	40		
1	L	1051	Total	C	N	O	S	0	0
			8229	5274	1361	1554	40		

There are 486 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	MET	-	initiating methionine	UNP P0DTC2
A	-5	PRO	-	expression tag	UNP P0DTC2
A	-4	MET	-	expression tag	UNP P0DTC2
A	-3	GLY	-	expression tag	UNP P0DTC2
A	-2	SER	-	expression tag	UNP P0DTC2
A	-1	LEU	-	expression tag	UNP P0DTC2
A	0	GLN	-	expression tag	UNP P0DTC2
A	1	PRO	-	expression tag	UNP P0DTC2
A	2	LEU	-	expression tag	UNP P0DTC2
A	3	ALA	-	expression tag	UNP P0DTC2
A	4	THR	-	expression tag	UNP P0DTC2
A	5	LEU	-	expression tag	UNP P0DTC2
A	6	TYR	-	expression tag	UNP P0DTC2
A	7	LEU	-	expression tag	UNP P0DTC2
A	8	LEU	-	expression tag	UNP P0DTC2
A	9	GLY	-	expression tag	UNP P0DTC2
A	10	MET	-	expression tag	UNP P0DTC2
A	11	LEU	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	12	VAL	-	expression tag	UNP P0DTC2
A	13	ALA	-	expression tag	UNP P0DTC2
A	14	SER	-	expression tag	UNP P0DTC2
A	15	VAL	-	expression tag	UNP P0DTC2
A	16	LEU	-	expression tag	UNP P0DTC2
A	17	ALA	-	expression tag	UNP P0DTC2
A	23	ILE	THR	variant	UNP P0DTC2
A	?	-	LEU	deletion	UNP P0DTC2
A	?	-	PRO	deletion	UNP P0DTC2
A	?	-	PRO	deletion	UNP P0DTC2
A	28	SER	ALA	variant	UNP P0DTC2
A	84	ALA	VAL	variant	UNP P0DTC2
A	143	ASP	GLY	variant	UNP P0DTC2
A	?	-	TYR	deletion	UNP P0DTC2
A	146	GLN	HIS	variant	UNP P0DTC2
A	180	VAL	GLU	conflict	UNP P0DTC2
A	183	GLU	GLN	variant	UNP P0DTC2
A	213	GLU	VAL	variant	UNP P0DTC2
A	252	VAL	GLY	variant	UNP P0DTC2
A	339	HIS	GLY	variant	UNP P0DTC2
A	346	THR	ARG	variant	UNP P0DTC2
A	368	ILE	LEU	variant	UNP P0DTC2
A	371	PHE	SER	variant	UNP P0DTC2
A	373	PRO	SER	variant	UNP P0DTC2
A	375	PHE	SER	variant	UNP P0DTC2
A	376	ALA	THR	variant	UNP P0DTC2
A	405	ASN	ASP	variant	UNP P0DTC2
A	408	SER	ARG	variant	UNP P0DTC2
A	417	ASN	LYS	variant	UNP P0DTC2
A	440	LYS	ASN	variant	UNP P0DTC2
A	445	PRO	VAL	variant	UNP P0DTC2
A	446	SER	GLY	variant	UNP P0DTC2
A	460	LYS	ASN	variant	UNP P0DTC2
A	477	ASN	SER	variant	UNP P0DTC2
A	478	ARG	THR	conflict	UNP P0DTC2
A	484	ALA	GLU	variant	UNP P0DTC2
A	486	PRO	PHE	variant	UNP P0DTC2
A	490	SER	PHE	variant	UNP P0DTC2
A	498	ARG	GLN	variant	UNP P0DTC2
A	501	TYR	ASN	variant	UNP P0DTC2
A	505	HIS	TYR	variant	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	655	TYR	HIS	variant	UNP P0DTC2
A	679	LYS	ASN	variant	UNP P0DTC2
A	681	HIS	PRO	variant	UNP P0DTC2
A	682	GLY	ARG	conflict	UNP P0DTC2
A	683	SER	ARG	conflict	UNP P0DTC2
A	685	SER	-	insertion	UNP P0DTC2
A	686	SER	-	insertion	UNP P0DTC2
A	687	LYS	-	insertion	UNP P0DTC2
A	689	SER	-	insertion	UNP P0DTC2
A	768	LYS	ASN	variant	UNP P0DTC2
A	800	TYR	ASP	variant	UNP P0DTC2
A	821	PRO	PHE	conflict	UNP P0DTC2
A	896	PRO	ALA	conflict	UNP P0DTC2
A	903	PRO	ALA	conflict	UNP P0DTC2
A	946	PRO	ALA	conflict	UNP P0DTC2
A	958	HIS	GLN	variant	UNP P0DTC2
A	973	LYS	ASN	variant	UNP P0DTC2
A	990	PRO	LYS	variant	UNP P0DTC2
A	991	PRO	VAL	variant	UNP P0DTC2
A	1213	GLY	-	linker	UNP P0DTC2
A	1214	SER	-	linker	UNP P0DTC2
B	-6	MET	-	initiating methionine	UNP P0DTC2
B	-5	PRO	-	expression tag	UNP P0DTC2
B	-4	MET	-	expression tag	UNP P0DTC2
B	-3	GLY	-	expression tag	UNP P0DTC2
B	-2	SER	-	expression tag	UNP P0DTC2
B	-1	LEU	-	expression tag	UNP P0DTC2
B	0	GLN	-	expression tag	UNP P0DTC2
B	1	PRO	-	expression tag	UNP P0DTC2
B	2	LEU	-	expression tag	UNP P0DTC2
B	3	ALA	-	expression tag	UNP P0DTC2
B	4	THR	-	expression tag	UNP P0DTC2
B	5	LEU	-	expression tag	UNP P0DTC2
B	6	TYR	-	expression tag	UNP P0DTC2
B	7	LEU	-	expression tag	UNP P0DTC2
B	8	LEU	-	expression tag	UNP P0DTC2
B	9	GLY	-	expression tag	UNP P0DTC2
B	10	MET	-	expression tag	UNP P0DTC2
B	11	LEU	-	expression tag	UNP P0DTC2
B	12	VAL	-	expression tag	UNP P0DTC2
B	13	ALA	-	expression tag	UNP P0DTC2
B	14	SER	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	15	VAL	-	expression tag	UNP P0DTC2
B	16	LEU	-	expression tag	UNP P0DTC2
B	17	ALA	-	expression tag	UNP P0DTC2
B	23	ILE	THR	variant	UNP P0DTC2
B	?	-	LEU	deletion	UNP P0DTC2
B	?	-	PRO	deletion	UNP P0DTC2
B	?	-	PRO	deletion	UNP P0DTC2
B	28	SER	ALA	variant	UNP P0DTC2
B	84	ALA	VAL	variant	UNP P0DTC2
B	143	ASP	GLY	variant	UNP P0DTC2
B	?	-	TYR	deletion	UNP P0DTC2
B	146	GLN	HIS	variant	UNP P0DTC2
B	180	VAL	GLU	conflict	UNP P0DTC2
B	183	GLU	GLN	variant	UNP P0DTC2
B	213	GLU	VAL	variant	UNP P0DTC2
B	252	VAL	GLY	variant	UNP P0DTC2
B	339	HIS	GLY	variant	UNP P0DTC2
B	346	THR	ARG	variant	UNP P0DTC2
B	368	ILE	LEU	variant	UNP P0DTC2
B	371	PHE	SER	variant	UNP P0DTC2
B	373	PRO	SER	variant	UNP P0DTC2
B	375	PHE	SER	variant	UNP P0DTC2
B	376	ALA	THR	variant	UNP P0DTC2
B	405	ASN	ASP	variant	UNP P0DTC2
B	408	SER	ARG	variant	UNP P0DTC2
B	417	ASN	LYS	variant	UNP P0DTC2
B	440	LYS	ASN	variant	UNP P0DTC2
B	445	PRO	VAL	variant	UNP P0DTC2
B	446	SER	GLY	variant	UNP P0DTC2
B	460	LYS	ASN	variant	UNP P0DTC2
B	477	ASN	SER	variant	UNP P0DTC2
B	478	ARG	THR	conflict	UNP P0DTC2
B	484	ALA	GLU	variant	UNP P0DTC2
B	486	PRO	PHE	variant	UNP P0DTC2
B	490	SER	PHE	variant	UNP P0DTC2
B	498	ARG	GLN	variant	UNP P0DTC2
B	501	TYR	ASN	variant	UNP P0DTC2
B	505	HIS	TYR	variant	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2
B	655	TYR	HIS	variant	UNP P0DTC2
B	679	LYS	ASN	variant	UNP P0DTC2
B	681	HIS	PRO	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	682	GLY	ARG	conflict	UNP P0DTC2
B	683	SER	ARG	conflict	UNP P0DTC2
B	685	SER	-	insertion	UNP P0DTC2
B	686	SER	-	insertion	UNP P0DTC2
B	687	LYS	-	insertion	UNP P0DTC2
B	689	SER	-	insertion	UNP P0DTC2
B	768	LYS	ASN	variant	UNP P0DTC2
B	800	TYR	ASP	variant	UNP P0DTC2
B	821	PRO	PHE	conflict	UNP P0DTC2
B	896	PRO	ALA	conflict	UNP P0DTC2
B	903	PRO	ALA	conflict	UNP P0DTC2
B	946	PRO	ALA	conflict	UNP P0DTC2
B	958	HIS	GLN	variant	UNP P0DTC2
B	973	LYS	ASN	variant	UNP P0DTC2
B	990	PRO	LYS	variant	UNP P0DTC2
B	991	PRO	VAL	variant	UNP P0DTC2
B	1213	GLY	-	linker	UNP P0DTC2
B	1214	SER	-	linker	UNP P0DTC2
C	-6	MET	-	initiating methionine	UNP P0DTC2
C	-5	PRO	-	expression tag	UNP P0DTC2
C	-4	MET	-	expression tag	UNP P0DTC2
C	-3	GLY	-	expression tag	UNP P0DTC2
C	-2	SER	-	expression tag	UNP P0DTC2
C	-1	LEU	-	expression tag	UNP P0DTC2
C	0	GLN	-	expression tag	UNP P0DTC2
C	1	PRO	-	expression tag	UNP P0DTC2
C	2	LEU	-	expression tag	UNP P0DTC2
C	3	ALA	-	expression tag	UNP P0DTC2
C	4	THR	-	expression tag	UNP P0DTC2
C	5	LEU	-	expression tag	UNP P0DTC2
C	6	TYR	-	expression tag	UNP P0DTC2
C	7	LEU	-	expression tag	UNP P0DTC2
C	8	LEU	-	expression tag	UNP P0DTC2
C	9	GLY	-	expression tag	UNP P0DTC2
C	10	MET	-	expression tag	UNP P0DTC2
C	11	LEU	-	expression tag	UNP P0DTC2
C	12	VAL	-	expression tag	UNP P0DTC2
C	13	ALA	-	expression tag	UNP P0DTC2
C	14	SER	-	expression tag	UNP P0DTC2
C	15	VAL	-	expression tag	UNP P0DTC2
C	16	LEU	-	expression tag	UNP P0DTC2
C	17	ALA	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	23	ILE	THR	variant	UNP P0DTC2
C	?	-	LEU	deletion	UNP P0DTC2
C	?	-	PRO	deletion	UNP P0DTC2
C	?	-	PRO	deletion	UNP P0DTC2
C	28	SER	ALA	variant	UNP P0DTC2
C	84	ALA	VAL	variant	UNP P0DTC2
C	143	ASP	GLY	variant	UNP P0DTC2
C	?	-	TYR	deletion	UNP P0DTC2
C	146	GLN	HIS	variant	UNP P0DTC2
C	180	VAL	GLU	conflict	UNP P0DTC2
C	183	GLU	GLN	variant	UNP P0DTC2
C	213	GLU	VAL	variant	UNP P0DTC2
C	252	VAL	GLY	variant	UNP P0DTC2
C	339	HIS	GLY	variant	UNP P0DTC2
C	346	THR	ARG	variant	UNP P0DTC2
C	368	ILE	LEU	variant	UNP P0DTC2
C	371	PHE	SER	variant	UNP P0DTC2
C	373	PRO	SER	variant	UNP P0DTC2
C	375	PHE	SER	variant	UNP P0DTC2
C	376	ALA	THR	variant	UNP P0DTC2
C	405	ASN	ASP	variant	UNP P0DTC2
C	408	SER	ARG	variant	UNP P0DTC2
C	417	ASN	LYS	variant	UNP P0DTC2
C	440	LYS	ASN	variant	UNP P0DTC2
C	445	PRO	VAL	variant	UNP P0DTC2
C	446	SER	GLY	variant	UNP P0DTC2
C	460	LYS	ASN	variant	UNP P0DTC2
C	477	ASN	SER	variant	UNP P0DTC2
C	478	ARG	THR	conflict	UNP P0DTC2
C	484	ALA	GLU	variant	UNP P0DTC2
C	486	PRO	PHE	variant	UNP P0DTC2
C	490	SER	PHE	variant	UNP P0DTC2
C	498	ARG	GLN	variant	UNP P0DTC2
C	501	TYR	ASN	variant	UNP P0DTC2
C	505	HIS	TYR	variant	UNP P0DTC2
C	614	GLY	ASP	variant	UNP P0DTC2
C	655	TYR	HIS	variant	UNP P0DTC2
C	679	LYS	ASN	variant	UNP P0DTC2
C	681	HIS	PRO	variant	UNP P0DTC2
C	682	GLY	ARG	conflict	UNP P0DTC2
C	683	SER	ARG	conflict	UNP P0DTC2
C	685	SER	-	insertion	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	686	SER	-	insertion	UNP P0DTC2
C	687	LYS	-	insertion	UNP P0DTC2
C	689	SER	-	insertion	UNP P0DTC2
C	768	LYS	ASN	variant	UNP P0DTC2
C	800	TYR	ASP	variant	UNP P0DTC2
C	821	PRO	PHE	conflict	UNP P0DTC2
C	896	PRO	ALA	conflict	UNP P0DTC2
C	903	PRO	ALA	conflict	UNP P0DTC2
C	946	PRO	ALA	conflict	UNP P0DTC2
C	958	HIS	GLN	variant	UNP P0DTC2
C	973	LYS	ASN	variant	UNP P0DTC2
C	990	PRO	LYS	variant	UNP P0DTC2
C	991	PRO	VAL	variant	UNP P0DTC2
C	1213	GLY	-	linker	UNP P0DTC2
C	1214	SER	-	linker	UNP P0DTC2
J	-6	MET	-	initiating methionine	UNP P0DTC2
J	-5	PRO	-	expression tag	UNP P0DTC2
J	-4	MET	-	expression tag	UNP P0DTC2
J	-3	GLY	-	expression tag	UNP P0DTC2
J	-2	SER	-	expression tag	UNP P0DTC2
J	-1	LEU	-	expression tag	UNP P0DTC2
J	0	GLN	-	expression tag	UNP P0DTC2
J	1	PRO	-	expression tag	UNP P0DTC2
J	2	LEU	-	expression tag	UNP P0DTC2
J	3	ALA	-	expression tag	UNP P0DTC2
J	4	THR	-	expression tag	UNP P0DTC2
J	5	LEU	-	expression tag	UNP P0DTC2
J	6	TYR	-	expression tag	UNP P0DTC2
J	7	LEU	-	expression tag	UNP P0DTC2
J	8	LEU	-	expression tag	UNP P0DTC2
J	9	GLY	-	expression tag	UNP P0DTC2
J	10	MET	-	expression tag	UNP P0DTC2
J	11	LEU	-	expression tag	UNP P0DTC2
J	12	VAL	-	expression tag	UNP P0DTC2
J	13	ALA	-	expression tag	UNP P0DTC2
J	14	SER	-	expression tag	UNP P0DTC2
J	15	VAL	-	expression tag	UNP P0DTC2
J	16	LEU	-	expression tag	UNP P0DTC2
J	17	ALA	-	expression tag	UNP P0DTC2
J	23	ILE	THR	variant	UNP P0DTC2
J	?	-	LEU	deletion	UNP P0DTC2
J	?	-	PRO	deletion	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
J	?	-	PRO	deletion	UNP P0DTC2
J	28	SER	ALA	variant	UNP P0DTC2
J	84	ALA	VAL	variant	UNP P0DTC2
J	143	ASP	GLY	variant	UNP P0DTC2
J	?	-	TYR	deletion	UNP P0DTC2
J	146	GLN	HIS	variant	UNP P0DTC2
J	180	VAL	GLU	conflict	UNP P0DTC2
J	183	GLU	GLN	variant	UNP P0DTC2
J	213	GLU	VAL	variant	UNP P0DTC2
J	252	VAL	GLY	variant	UNP P0DTC2
J	339	HIS	GLY	variant	UNP P0DTC2
J	346	THR	ARG	variant	UNP P0DTC2
J	368	ILE	LEU	variant	UNP P0DTC2
J	371	PHE	SER	variant	UNP P0DTC2
J	373	PRO	SER	variant	UNP P0DTC2
J	375	PHE	SER	variant	UNP P0DTC2
J	376	ALA	THR	variant	UNP P0DTC2
J	405	ASN	ASP	variant	UNP P0DTC2
J	408	SER	ARG	variant	UNP P0DTC2
J	417	ASN	LYS	variant	UNP P0DTC2
J	440	LYS	ASN	variant	UNP P0DTC2
J	445	PRO	VAL	variant	UNP P0DTC2
J	446	SER	GLY	variant	UNP P0DTC2
J	460	LYS	ASN	variant	UNP P0DTC2
J	477	ASN	SER	variant	UNP P0DTC2
J	478	ARG	THR	conflict	UNP P0DTC2
J	484	ALA	GLU	variant	UNP P0DTC2
J	486	PRO	PHE	variant	UNP P0DTC2
J	490	SER	PHE	variant	UNP P0DTC2
J	498	ARG	GLN	variant	UNP P0DTC2
J	501	TYR	ASN	variant	UNP P0DTC2
J	505	HIS	TYR	variant	UNP P0DTC2
J	614	GLY	ASP	variant	UNP P0DTC2
J	655	TYR	HIS	variant	UNP P0DTC2
J	679	LYS	ASN	variant	UNP P0DTC2
J	681	HIS	PRO	variant	UNP P0DTC2
J	682	GLY	ARG	conflict	UNP P0DTC2
J	683	SER	ARG	conflict	UNP P0DTC2
J	685	SER	-	insertion	UNP P0DTC2
J	686	SER	-	insertion	UNP P0DTC2
J	687	LYS	-	insertion	UNP P0DTC2
J	689	SER	-	insertion	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
J	768	LYS	ASN	variant	UNP P0DTC2
J	800	TYR	ASP	variant	UNP P0DTC2
J	821	PRO	PHE	conflict	UNP P0DTC2
J	896	PRO	ALA	conflict	UNP P0DTC2
J	903	PRO	ALA	conflict	UNP P0DTC2
J	946	PRO	ALA	conflict	UNP P0DTC2
J	958	HIS	GLN	variant	UNP P0DTC2
J	973	LYS	ASN	variant	UNP P0DTC2
J	990	PRO	LYS	variant	UNP P0DTC2
J	991	PRO	VAL	variant	UNP P0DTC2
J	1213	GLY	-	linker	UNP P0DTC2
J	1214	SER	-	linker	UNP P0DTC2
K	-6	MET	-	initiating methionine	UNP P0DTC2
K	-5	PRO	-	expression tag	UNP P0DTC2
K	-4	MET	-	expression tag	UNP P0DTC2
K	-3	GLY	-	expression tag	UNP P0DTC2
K	-2	SER	-	expression tag	UNP P0DTC2
K	-1	LEU	-	expression tag	UNP P0DTC2
K	0	GLN	-	expression tag	UNP P0DTC2
K	1	PRO	-	expression tag	UNP P0DTC2
K	2	LEU	-	expression tag	UNP P0DTC2
K	3	ALA	-	expression tag	UNP P0DTC2
K	4	THR	-	expression tag	UNP P0DTC2
K	5	LEU	-	expression tag	UNP P0DTC2
K	6	TYR	-	expression tag	UNP P0DTC2
K	7	LEU	-	expression tag	UNP P0DTC2
K	8	LEU	-	expression tag	UNP P0DTC2
K	9	GLY	-	expression tag	UNP P0DTC2
K	10	MET	-	expression tag	UNP P0DTC2
K	11	LEU	-	expression tag	UNP P0DTC2
K	12	VAL	-	expression tag	UNP P0DTC2
K	13	ALA	-	expression tag	UNP P0DTC2
K	14	SER	-	expression tag	UNP P0DTC2
K	15	VAL	-	expression tag	UNP P0DTC2
K	16	LEU	-	expression tag	UNP P0DTC2
K	17	ALA	-	expression tag	UNP P0DTC2
K	23	ILE	THR	variant	UNP P0DTC2
K	?	-	LEU	deletion	UNP P0DTC2
K	?	-	PRO	deletion	UNP P0DTC2
K	?	-	PRO	deletion	UNP P0DTC2
K	28	SER	ALA	variant	UNP P0DTC2
K	84	ALA	VAL	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
K	143	ASP	GLY	variant	UNP P0DTC2
K	?	-	TYR	deletion	UNP P0DTC2
K	146	GLN	HIS	variant	UNP P0DTC2
K	180	VAL	GLU	conflict	UNP P0DTC2
K	183	GLU	GLN	variant	UNP P0DTC2
K	213	GLU	VAL	variant	UNP P0DTC2
K	252	VAL	GLY	variant	UNP P0DTC2
K	339	HIS	GLY	variant	UNP P0DTC2
K	346	THR	ARG	variant	UNP P0DTC2
K	368	ILE	LEU	variant	UNP P0DTC2
K	371	PHE	SER	variant	UNP P0DTC2
K	373	PRO	SER	variant	UNP P0DTC2
K	375	PHE	SER	variant	UNP P0DTC2
K	376	ALA	THR	variant	UNP P0DTC2
K	405	ASN	ASP	variant	UNP P0DTC2
K	408	SER	ARG	variant	UNP P0DTC2
K	417	ASN	LYS	variant	UNP P0DTC2
K	440	LYS	ASN	variant	UNP P0DTC2
K	445	PRO	VAL	variant	UNP P0DTC2
K	446	SER	GLY	variant	UNP P0DTC2
K	460	LYS	ASN	variant	UNP P0DTC2
K	477	ASN	SER	variant	UNP P0DTC2
K	478	ARG	THR	conflict	UNP P0DTC2
K	484	ALA	GLU	variant	UNP P0DTC2
K	486	PRO	PHE	variant	UNP P0DTC2
K	490	SER	PHE	variant	UNP P0DTC2
K	498	ARG	GLN	variant	UNP P0DTC2
K	501	TYR	ASN	variant	UNP P0DTC2
K	505	HIS	TYR	variant	UNP P0DTC2
K	614	GLY	ASP	variant	UNP P0DTC2
K	655	TYR	HIS	variant	UNP P0DTC2
K	679	LYS	ASN	variant	UNP P0DTC2
K	681	HIS	PRO	variant	UNP P0DTC2
K	682	GLY	ARG	conflict	UNP P0DTC2
K	683	SER	ARG	conflict	UNP P0DTC2
K	685	SER	-	insertion	UNP P0DTC2
K	686	SER	-	insertion	UNP P0DTC2
K	687	LYS	-	insertion	UNP P0DTC2
K	689	SER	-	insertion	UNP P0DTC2
K	768	LYS	ASN	variant	UNP P0DTC2
K	800	TYR	ASP	variant	UNP P0DTC2
K	821	PRO	PHE	conflict	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
K	896	PRO	ALA	conflict	UNP P0DTC2
K	903	PRO	ALA	conflict	UNP P0DTC2
K	946	PRO	ALA	conflict	UNP P0DTC2
K	958	HIS	GLN	variant	UNP P0DTC2
K	973	LYS	ASN	variant	UNP P0DTC2
K	990	PRO	LYS	variant	UNP P0DTC2
K	991	PRO	VAL	variant	UNP P0DTC2
K	1213	GLY	-	linker	UNP P0DTC2
K	1214	SER	-	linker	UNP P0DTC2
L	-6	MET	-	initiating methionine	UNP P0DTC2
L	-5	PRO	-	expression tag	UNP P0DTC2
L	-4	MET	-	expression tag	UNP P0DTC2
L	-3	GLY	-	expression tag	UNP P0DTC2
L	-2	SER	-	expression tag	UNP P0DTC2
L	-1	LEU	-	expression tag	UNP P0DTC2
L	0	GLN	-	expression tag	UNP P0DTC2
L	1	PRO	-	expression tag	UNP P0DTC2
L	2	LEU	-	expression tag	UNP P0DTC2
L	3	ALA	-	expression tag	UNP P0DTC2
L	4	THR	-	expression tag	UNP P0DTC2
L	5	LEU	-	expression tag	UNP P0DTC2
L	6	TYR	-	expression tag	UNP P0DTC2
L	7	LEU	-	expression tag	UNP P0DTC2
L	8	LEU	-	expression tag	UNP P0DTC2
L	9	GLY	-	expression tag	UNP P0DTC2
L	10	MET	-	expression tag	UNP P0DTC2
L	11	LEU	-	expression tag	UNP P0DTC2
L	12	VAL	-	expression tag	UNP P0DTC2
L	13	ALA	-	expression tag	UNP P0DTC2
L	14	SER	-	expression tag	UNP P0DTC2
L	15	VAL	-	expression tag	UNP P0DTC2
L	16	LEU	-	expression tag	UNP P0DTC2
L	17	ALA	-	expression tag	UNP P0DTC2
L	23	ILE	THR	variant	UNP P0DTC2
L	?	-	LEU	deletion	UNP P0DTC2
L	?	-	PRO	deletion	UNP P0DTC2
L	?	-	PRO	deletion	UNP P0DTC2
L	28	SER	ALA	variant	UNP P0DTC2
L	84	ALA	VAL	variant	UNP P0DTC2
L	143	ASP	GLY	variant	UNP P0DTC2
L	?	-	TYR	deletion	UNP P0DTC2
L	146	GLN	HIS	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
L	180	VAL	GLU	conflict	UNP P0DTC2
L	183	GLU	GLN	variant	UNP P0DTC2
L	213	GLU	VAL	variant	UNP P0DTC2
L	252	VAL	GLY	variant	UNP P0DTC2
L	339	HIS	GLY	variant	UNP P0DTC2
L	346	THR	ARG	variant	UNP P0DTC2
L	368	ILE	LEU	variant	UNP P0DTC2
L	371	PHE	SER	variant	UNP P0DTC2
L	373	PRO	SER	variant	UNP P0DTC2
L	375	PHE	SER	variant	UNP P0DTC2
L	376	ALA	THR	variant	UNP P0DTC2
L	405	ASN	ASP	variant	UNP P0DTC2
L	408	SER	ARG	variant	UNP P0DTC2
L	417	ASN	LYS	variant	UNP P0DTC2
L	440	LYS	ASN	variant	UNP P0DTC2
L	445	PRO	VAL	variant	UNP P0DTC2
L	446	SER	GLY	variant	UNP P0DTC2
L	460	LYS	ASN	variant	UNP P0DTC2
L	477	ASN	SER	variant	UNP P0DTC2
L	478	ARG	THR	conflict	UNP P0DTC2
L	484	ALA	GLU	variant	UNP P0DTC2
L	486	PRO	PHE	variant	UNP P0DTC2
L	490	SER	PHE	variant	UNP P0DTC2
L	498	ARG	GLN	variant	UNP P0DTC2
L	501	TYR	ASN	variant	UNP P0DTC2
L	505	HIS	TYR	variant	UNP P0DTC2
L	614	GLY	ASP	variant	UNP P0DTC2
L	655	TYR	HIS	variant	UNP P0DTC2
L	679	LYS	ASN	variant	UNP P0DTC2
L	681	HIS	PRO	variant	UNP P0DTC2
L	682	GLY	ARG	conflict	UNP P0DTC2
L	683	SER	ARG	conflict	UNP P0DTC2
L	685	SER	-	insertion	UNP P0DTC2
L	686	SER	-	insertion	UNP P0DTC2
L	687	LYS	-	insertion	UNP P0DTC2
L	689	SER	-	insertion	UNP P0DTC2
L	768	LYS	ASN	variant	UNP P0DTC2
L	800	TYR	ASP	variant	UNP P0DTC2
L	821	PRO	PHE	conflict	UNP P0DTC2
L	896	PRO	ALA	conflict	UNP P0DTC2
L	903	PRO	ALA	conflict	UNP P0DTC2
L	946	PRO	ALA	conflict	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
L	958	HIS	GLN	variant	UNP P0DTC2
L	973	LYS	ASN	variant	UNP P0DTC2
L	990	PRO	LYS	variant	UNP P0DTC2
L	991	PRO	VAL	variant	UNP P0DTC2
L	1213	GLY	-	linker	UNP P0DTC2
L	1214	SER	-	linker	UNP P0DTC2

- Molecule 2 is a protein called CYFN1006-1 light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	191	Total	C	N	O	S	0	0
			1419	889	234	289	7		
2	F	192	Total	C	N	O	S	0	0
			1429	895	237	290	7		
2	H	192	Total	C	N	O	S	0	0
			1429	895	237	290	7		
2	M	191	Total	C	N	O	S	0	0
			1419	889	234	289	7		
2	O	192	Total	C	N	O	S	0	0
			1429	895	237	290	7		
2	Q	192	Total	C	N	O	S	0	0
			1429	895	237	290	7		

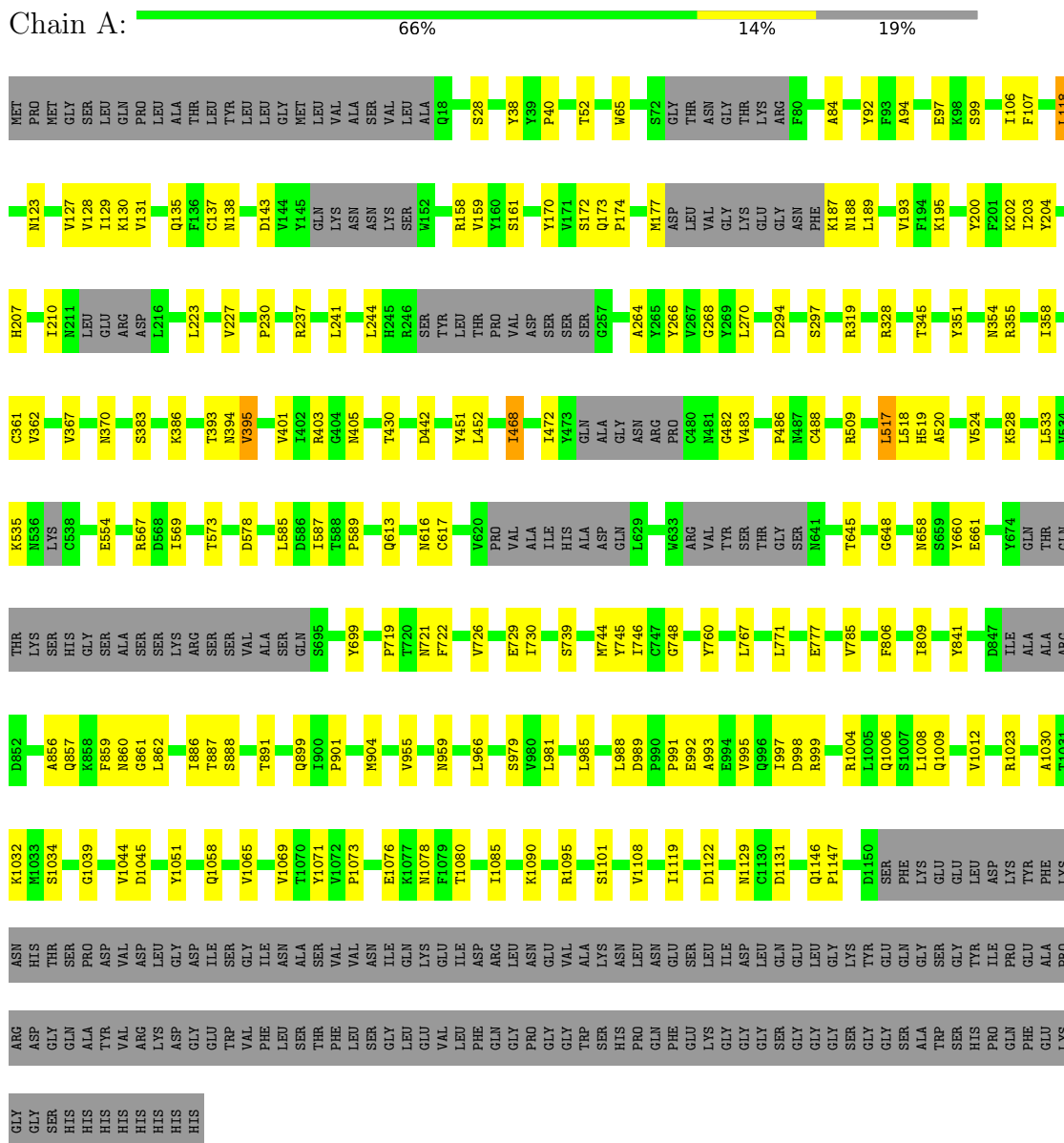
- Molecule 3 is a protein called CYFN1006-1 heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	202	Total	C	N	O	S	0	0
			1544	992	251	293	8		
3	G	198	Total	C	N	O	S	0	0
			1510	971	245	287	7		
3	I	202	Total	C	N	O	S	0	0
			1544	992	251	293	8		
3	N	202	Total	C	N	O	S	0	0
			1544	992	251	293	8		
3	P	198	Total	C	N	O	S	0	0
			1510	971	245	287	7		
3	R	202	Total	C	N	O	S	0	0
			1544	992	251	293	8		

3 Residue-property plots

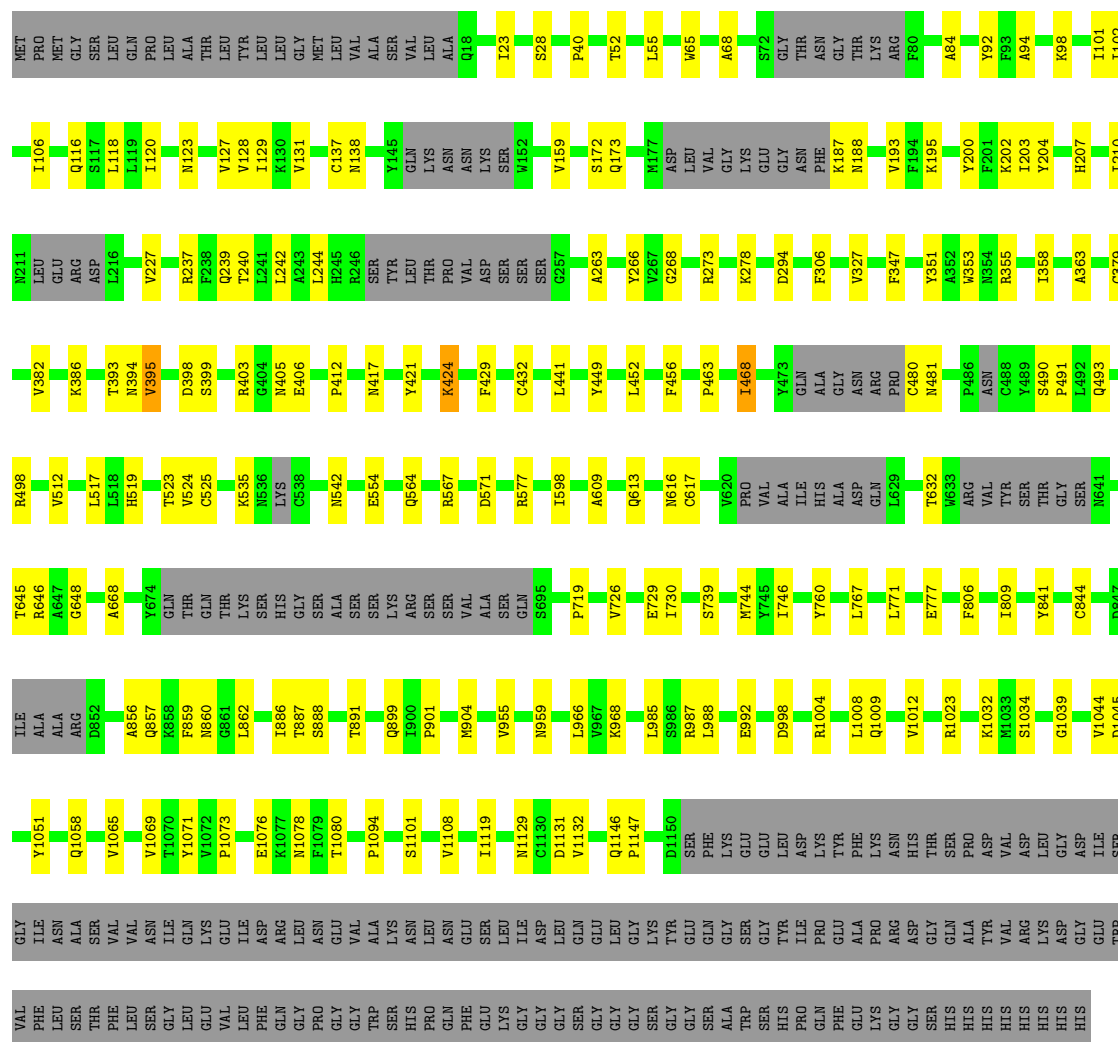
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Spike glycoprotein,Fibritin,Expression Tag



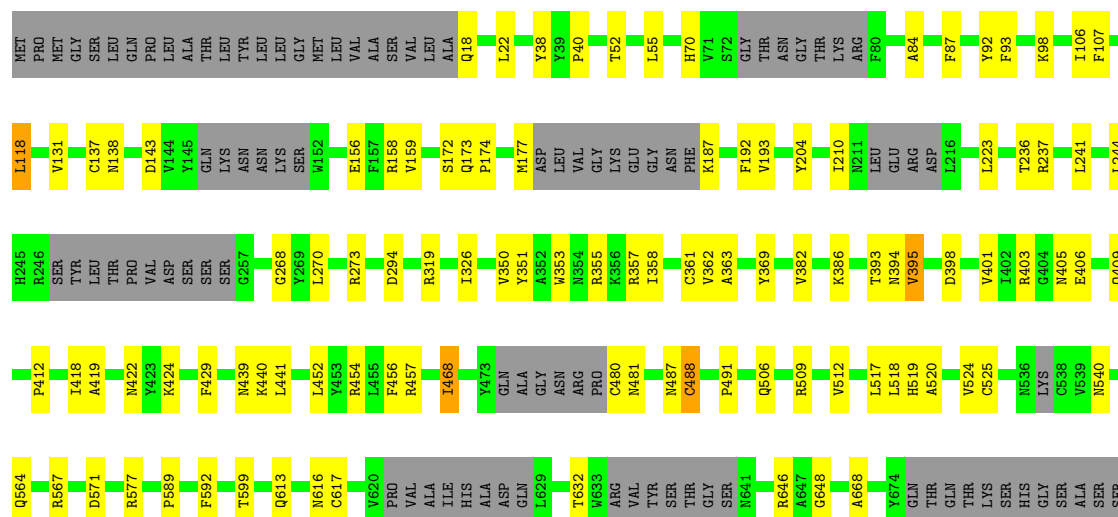
- Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

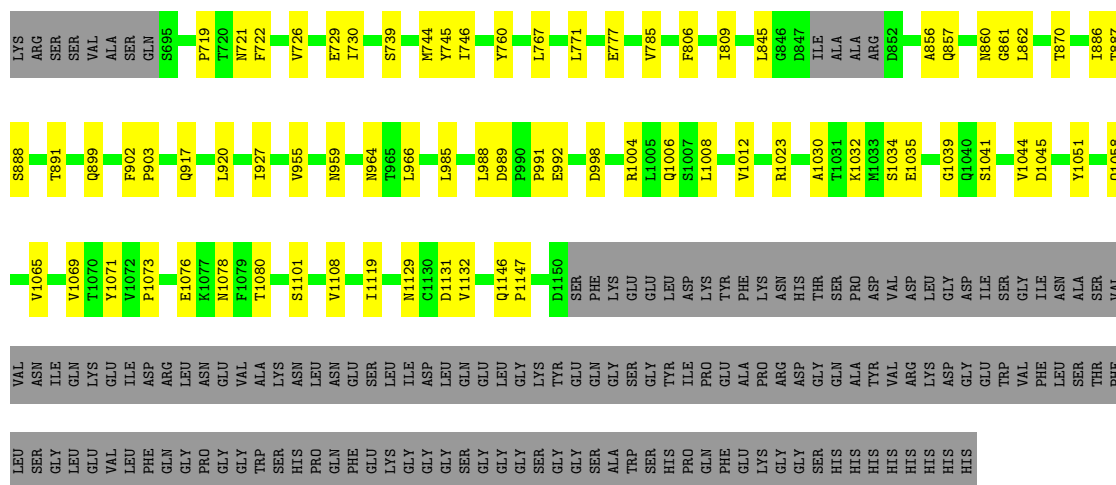




● Molecule 1: Spike glycoprotein,Fibrin,Expression Tag

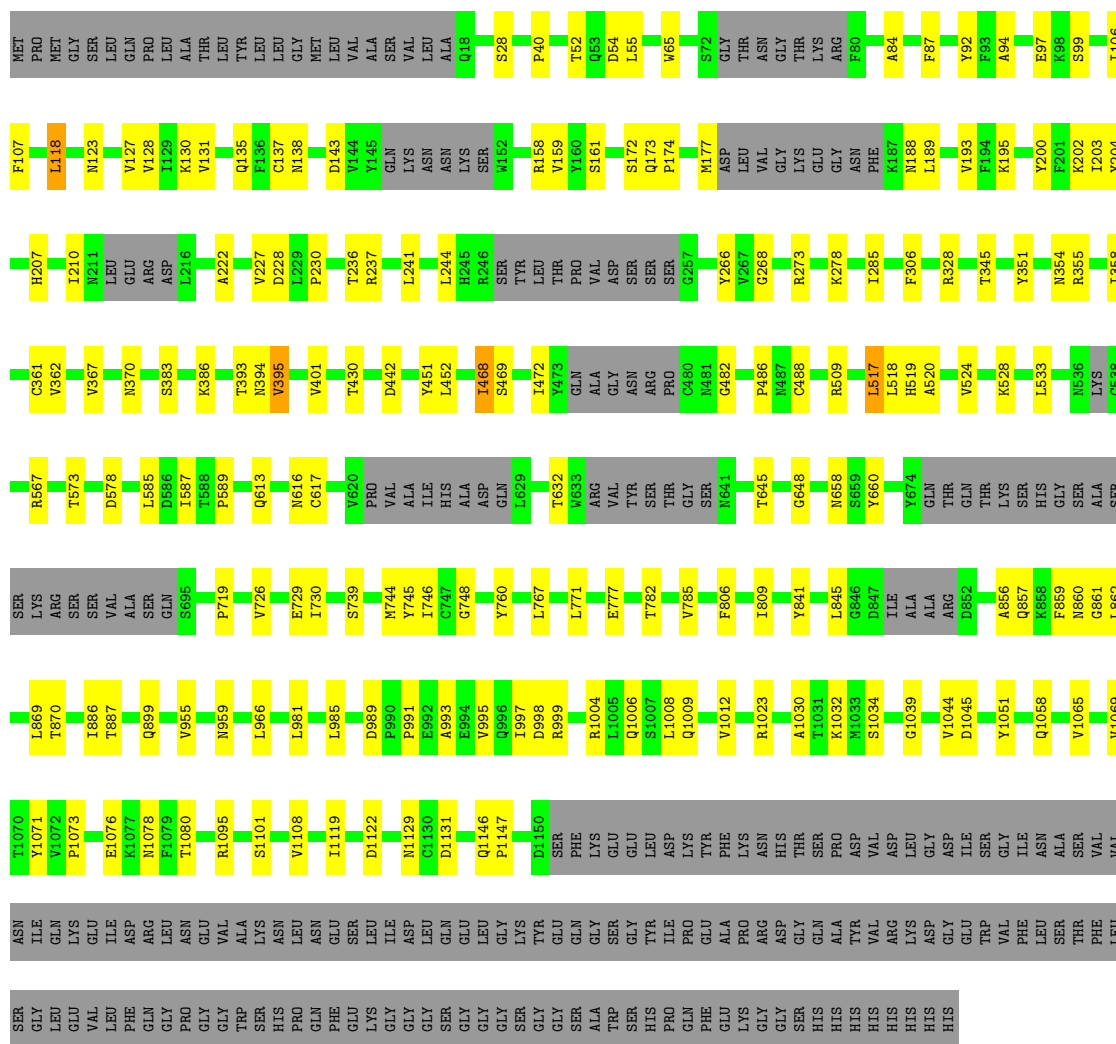
Chain C: 67% 14% 19%





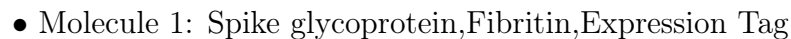
• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

Chain J: 67% 13% 19%



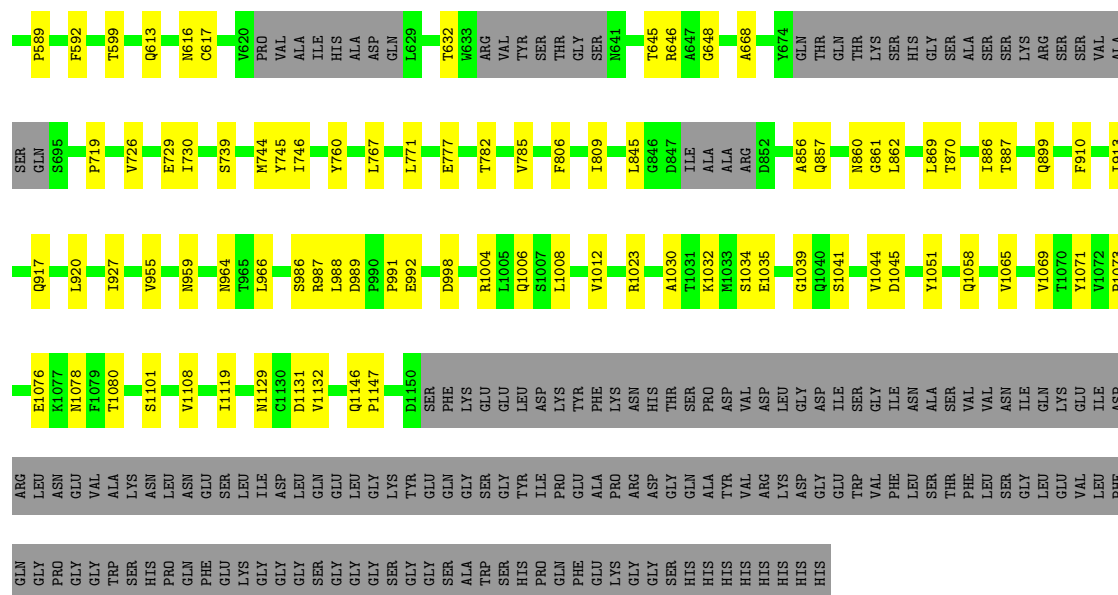
• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

Device Type	Percentage
Smartphone	67%
Tablet	13%
Feature phone	19%



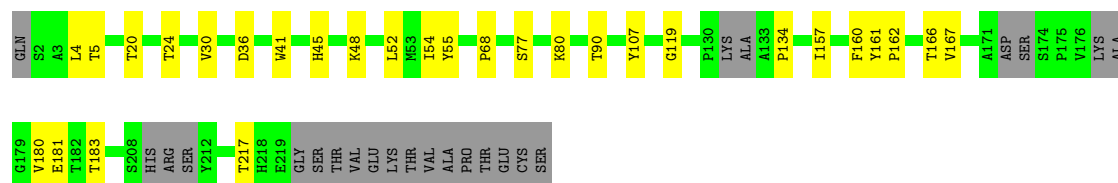
Response	Percentage
Yes	68%
No	13%
Don't know	19%





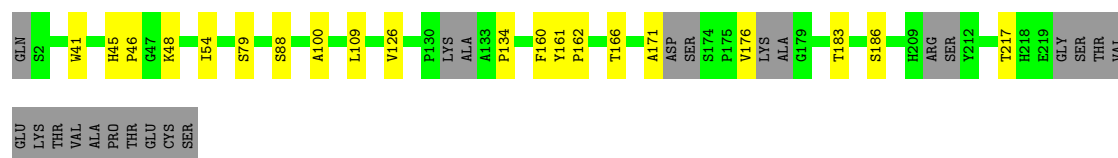
• Molecule 2: CYFN1006-1 light chain

Chain D: 75% 13% 11%



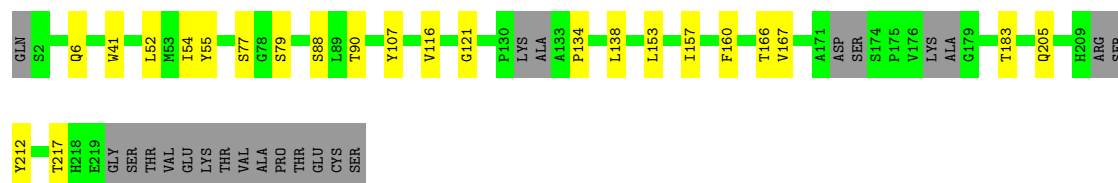
• Molecule 2: CYFN1006-1 light chain

Chain F: 80% 9% 11%



• Molecule 2: CYFN1006-1 light chain

Chain H: 79% 11% 11%



• Molecule 2: CYFN1006-1 light chain

T217	GLN
H218	S2
E219	T20
GLY	Y30
SER	D36
THR	W41
VAL	H45
ALA	K48
PRO	L52
THR	H53
GLU	I54
GLU	Y55
CYS	K80
SER	T90
	Y107
	P130
	LYS
	ALA
	A133
	P134
	I157
	F160
	V161
	P162
	T166
	V167
	A171
	ASP
	SER
	P174
	P175
	V176
	LYS
	ALA
	G179
	V180
	E181
	T182
	T183
	S208
	HIS
	ARG
	SER
	V210

[illegible]

GLY	GLN
SER	S2
THR	
VAL	W41
GLU	
LYS	L52
THR	W63
VAL	L54
ALA	Y55
PRO	
THR	S77
GLU	G78
CYS	S79
SER	
	S88
	L89
	T90
	Y107
	V116
	V117
	F118
	P130
	LYS
	ALA
	A133
	P134
	L138
	L153
	I157
	F160
	V167
	A171
	ASP
	SER
	S174
	P175
	V176
	LYS
	ALA
	G179
	T183
	Q205
	H209
	ARG
	SER
	Y212
	S219

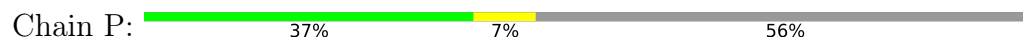
GLY LYS	GLN	LYS	VAL	LEU	Q1
	PRO	ALA	VAL	GLY	
	GLU	LEU	HIS	THR	V12
	ASN	PRO	GLU	GLN	L19
	ASN	ALA	ASP	THR	
	TYR	PRO	PRO	Y209	C23
	LYS	ILE	GLU		
	THR	LYS	VAL	N212	I39
	PRO	THR	PHE	V226	G40
	PRO	ILE	ASN	GLU	M41
	VAL	SER	TRP	PRO	V42
	LEU	LYS	TYR	LYS	
	ASP	ALA	VAL	SER	M45
	SER	LYS	ASP	CYS	
	ASP	GLY	GLY	ASP	M52
	GLY	GLN	VAL	LYS	
	SER	PRO	GLU	THR	P69
	PHE	ARG	VAL	HIS	
	LEU	GLU	HIS	THR	Q72
	TYR	PRO	ASN	CYS	
	TYR	GLN	ALA	PRO	A80
	SER	VAL	LYS	PRO	
	LYS	TYR	THR	CYS	A87
	LEU	THR	LYS	PRO	
	THR	LEU	PRO	ALA	T99
	VAL	PRO	ARG	PRO	
	ASP	PRO	GLU	GLU	V126
	LYS	SER	GLU	LEU	
	SER	ARG	GLN	LEU	L139
	ARG	ASP	TYR	GLY	ALA
	TRP	GLU	ASN	PRO	
	GLN	LEU	SER	PRO	
	GLN	THR	THR	SER	SER
	GLY	LYS	TYR	VAL	K144
	ASN	ASN	ARG	PHE	S145
	VAL	GLN	VAL	LEU	T146
	PHE	VAL	VAL	PHE	SER
	SER	SER	SER	PRO	GLY
	CYS	LEU	VAL	PRO	GLY
	SER	THR	LEU	LYS	THR
	VAL	CYS	THR	PRO	A151
	MET	LEU	VAL	LYS	
	HIS	VAL	LEU	ASP	K158
	GLU	LYS	HIS	THR	
	ALA	GLY	GLN	LEU	S168
	LEU	PHE	ASP	MET	
	HIS	TYR	TRP	ILE	V178
	ASN	PRO	LEU	SER	
	HIS	SER	ASN	ARG	V184
	TYR	ASP	GLY	THR	L185
	THR	ILE	LYS	PRO	Q186
	GLN	ALA	GLU	GLU	
	LYS	VAL	TYR	VAL	V197
	SER	GLU	LYS	THR	T198
	LEU	TRP	CYS	CYS	V199
	SER	GLU	LYS	VAL	PRO
	LEU	SER	VAL	VAL	SER
	PRO	ASN	VAL	VAL	SER
	SER	GLY	ASN	ASP	SER

WORLDWIDE
PDB
PROTEIN DATA BANK

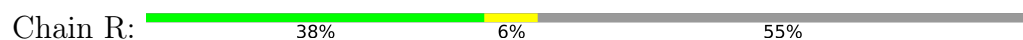


[illegible]

- Molecule 3: CYFN1006-1 heavy chain

[illegible]

- Molecule 3: CYFN1006-1 heavy chain



HIS	THR	SER	ASN	ARG	V184	G1
	THR	ASP	GLY	THR		
	GLN	ILE	GLU	GLU	L190	E11
	LYS	ALA	GLU	VAL	V199	K13
	LEU	VAL	TYR	THR	PRO	
	LEU	TRP	LYS	THR	SER	G16
	SER	GLU	CYS	CYS	SER	
	SER	GLU	LYS	VAL	SER	S35
	SER	SER	VAL	VAL	LEU	
	PRO	ASN	SER	VAL	GLY	I39
LYS	GLY	GLY	ASN	VAL	THR	G40
	GLY	GLN	LYS	VAL	GLN	W41
	GLU	PRO	ALA	SER	THR	V42
	GLU	GLU	PRO	HIS	GLN	R43
	ASN	ASN	ASP	GLU	V209	
	ASN	ALA	ASP	ASP		
	TYR	PRO	PRO	PRO	N212	L50
	LYS	ILE	GLU	GLU		E51
	THR	THR	GLU	VAL	D223	
	THR	THR	LYS	LYS	V226	I55
HIS	PRO	PRO	THR	PHE	GLU	P58
	VAL	VAL	SER	TRP	PRO	
	LEU	LYS	LYS	TYR	LYS	R66
	ASP	ALA	ALA	VAL	SER	
	SER	SER	LYS	GLY	CYS	A80
	GLY	GLY	GLN	VAL	ASP	
	GLY	GLY	VAL	VAL	LYS	A87
	SER	SER	PRO	GLU	THR	
	PHE	PHE	ARG	VAL	HIS	L94
	PHE	LEU	GLU	HIS	THR	X95
LYS	TYR	TYR	PRO	ASN	CYS	A96
	TYR	GLN	GLN	ALA	PRO	S97
	SER	VAL	VAL	LYS	PRO	D98
	LYS	TYR	THR	THR	CYS	T99
	LEU	THR	THR	LYS	PRO	
	THR	THR	LEU	PRO	ALA	Y103
	VAL	VAL	PRO	ARG	PRO	
	ASP	ASP	PRO	GLU	GLU	V126
	LYS	LYS	GLU	GLU	LEU	
	SER	SER	ARG	GLN	LEU	L139
GLN	ARG	ARG	ASP	TYR	GLY	ALA
	TRP	TRP	GLU	ASN	GLY	PRO
	GLN	GLN	LEU	SER	PRO	SER
	GLN	THR	THR	THR	SER	SER
	GLY	GLY	LYS	TYR	VAL	K144
	ASN	ASN	ASN	ARG	PHE	S145
	VAL	VAL	GLN	VAL	LEU	T146
	PHE	PHE	VAL	VAL	PHE	SER
	SER	SER	SER	SER	PRO	GLY
	CYS	CYS	LEU	VAL	PRO	GLY
MET	SER	SER	THR	THR	LYS	THR
	VAL	VAL	CYS	THR	PRO	A151
	MET	MET	LEU	VAL	LYS	
	HIS	HIS	VAL	LEU	LYS	
	GLU	GLU	LYS	HIS	ASP	D159
	ALA	ALA	GLY	GLN	THR	
	LEU	LEU	PHE	ASP	MET	M170
	LEU	LEU	THR	THR	ILE	
	HIS	HIS	PRO	THR	THR	L174
	ASN	ASN	THR	THR	SER	

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	38112	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.08	0/8424	0.22	0/11465
1	B	0.08	0/8415	0.22	0/11451
1	C	0.08	0/8424	0.23	0/11465
1	J	0.08	0/8424	0.22	0/11465
1	K	0.08	0/8415	0.22	0/11451
1	L	0.08	0/8424	0.22	0/11465
2	D	0.07	0/1449	0.21	0/1971
2	F	0.07	0/1460	0.21	0/1986
2	H	0.08	0/1460	0.22	0/1986
2	M	0.08	0/1449	0.21	0/1971
2	O	0.07	0/1460	0.21	0/1986
2	Q	0.07	0/1460	0.21	0/1986
3	E	0.08	0/1584	0.22	0/2151
3	G	0.08	0/1550	0.21	0/2106
3	I	0.08	0/1584	0.21	0/2151
3	N	0.08	0/1584	0.23	0/2151
3	P	0.08	0/1550	0.22	0/2106
3	R	0.08	0/1584	0.21	0/2151
All	All	0.08	0/68700	0.22	0/93464

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8229	0	8031	109	0
1	B	8221	0	8024	105	0
1	C	8229	0	8031	107	0
1	J	8229	0	8031	101	0
1	K	8221	0	8024	109	0
1	L	8229	0	8031	103	0
2	D	1419	0	1368	17	0
2	F	1429	0	1375	12	0
2	H	1429	0	1375	12	0
2	M	1419	0	1368	13	0
2	O	1429	0	1375	12	0
2	Q	1429	0	1375	12	0
3	E	1544	0	1519	10	0
3	G	1510	0	1480	16	0
3	I	1544	0	1519	20	0
3	N	1544	0	1519	11	0
3	P	1510	0	1480	16	0
3	R	1544	0	1519	15	0
All	All	67108	0	65444	722	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (722) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1051:TYR:HB2	1:C:1071:TYR:HB3	1.72	0.70
1:L:1051:TYR:HB2	1:L:1071:TYR:HB3	1.72	0.70
1:B:102:ILE:HG21	1:B:240:THR:HB	1.74	0.69
1:J:1051:TYR:HB2	1:J:1071:TYR:HB3	1.75	0.69
1:A:123:ASN:H	1:A:127:VAL:HG12	1.58	0.69
1:B:1051:TYR:HB2	1:B:1071:TYR:HB3	1.75	0.68
1:J:123:ASN:H	1:J:127:VAL:HG12	1.59	0.67
1:K:1051:TYR:HB2	1:K:1071:TYR:HB3	1.75	0.67
1:J:106:ILE:HG13	1:J:241:LEU:HD21	1.76	0.67
1:A:106:ILE:HG13	1:A:241:LEU:HD21	1.77	0.66
1:A:1051:TYR:HB2	1:A:1071:TYR:HB3	1.76	0.66
1:B:1129:ASN:ND2	1:B:1131:ASP:OD1	2.30	0.65
1:K:40:PRO:HG3	1:K:52:THR:HG21	1.79	0.65
1:A:143:ASP:OD2	1:A:158:ARG:NH2	2.29	0.65
1:L:1129:ASN:ND2	1:L:1131:ASP:OD1	2.30	0.65
1:K:102:ILE:HG21	1:K:240:THR:HB	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:1129:ASN:ND2	1:K:1131:ASP:OD1	2.30	0.65
1:C:767:LEU:HG	1:C:1012:VAL:HG21	1.80	0.64
1:J:519:HIS:HE1	1:J:567:ARG:HH11	1.45	0.64
1:C:1129:ASN:ND2	1:C:1131:ASP:OD1	2.30	0.64
1:B:188:ASN:HD21	1:B:207:HIS:HB2	1.63	0.64
1:J:143:ASP:OD2	1:J:158:ARG:NH2	2.30	0.64
1:A:767:LEU:HG	1:A:1012:VAL:HG21	1.80	0.64
1:B:767:LEU:HG	1:B:1012:VAL:HG21	1.79	0.64
1:K:1080:THR:HB	1:K:1101:SER:HB3	1.80	0.63
1:B:412:PRO:HG3	1:B:429:PHE:HB3	1.81	0.63
1:A:519:HIS:HE1	1:A:567:ARG:HH11	1.45	0.63
1:K:68:ALA:HB3	1:K:263:ALA:HB3	1.81	0.63
2:D:134:PRO:HB3	2:D:160:PHE:HB3	1.81	0.63
1:J:1080:THR:HB	1:J:1101:SER:HB3	1.81	0.63
1:C:106:ILE:HG13	1:C:241:LEU:HD21	1.80	0.63
1:C:519:HIS:HE1	1:C:567:ARG:HH11	1.47	0.62
1:L:567:ARG:NH2	1:L:571:ASP:OD1	2.32	0.62
1:C:856:ALA:O	1:C:860:ASN:ND2	2.30	0.62
1:L:767:LEU:HG	1:L:1012:VAL:HG21	1.80	0.62
1:B:68:ALA:HB3	1:B:263:ALA:HB3	1.81	0.62
1:J:767:LEU:HG	1:J:1012:VAL:HG21	1.80	0.62
1:L:519:HIS:HE1	1:L:567:ARG:HH11	1.48	0.62
1:L:1080:THR:HB	1:L:1101:SER:HB3	1.81	0.62
1:B:519:HIS:HE1	1:B:567:ARG:HH11	1.48	0.62
1:C:567:ARG:NH2	1:C:571:ASP:OD1	2.32	0.62
1:L:856:ALA:O	1:L:860:ASN:ND2	2.29	0.62
1:K:188:ASN:HD21	1:K:207:HIS:HB2	1.64	0.62
1:A:730:ILE:HG13	1:A:1065:VAL:HG22	1.82	0.61
1:B:1080:THR:HB	1:B:1101:SER:HB3	1.82	0.61
1:C:730:ILE:HG13	1:C:1065:VAL:HG22	1.82	0.61
1:J:856:ALA:O	1:J:860:ASN:ND2	2.30	0.61
2:M:134:PRO:HB3	2:M:160:PHE:HB3	1.82	0.61
3:R:170:ASN:HD22	3:R:174:LEU:HD23	1.65	0.61
1:K:730:ILE:HG13	1:K:1065:VAL:HG22	1.83	0.61
1:K:767:LEU:HG	1:K:1012:VAL:HG21	1.81	0.61
3:E:99:THR:HB	3:E:126:VAL:H	1.66	0.61
1:K:856:ALA:O	1:K:860:ASN:ND2	2.34	0.61
1:J:1129:ASN:ND2	1:J:1131:ASP:OD1	2.33	0.61
3:I:43:ARG:NH1	3:I:97:SER:O	2.34	0.61
1:L:106:ILE:HG13	1:L:241:LEU:HD21	1.82	0.61
1:L:730:ILE:HG13	1:L:1065:VAL:HG22	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:159:ASP:HA	3:I:190:LEU:HD13	1.83	0.61
3:N:99:THR:HB	3:N:126:VAL:H	1.65	0.61
1:A:1080:THR:HB	1:A:1101:SER:HB3	1.82	0.60
1:A:1129:ASN:ND2	1:A:1131:ASP:OD1	2.33	0.60
1:B:40:PRO:HG3	1:B:52:THR:HG21	1.83	0.60
1:K:519:HIS:HE1	1:K:567:ARG:HH11	1.48	0.60
1:B:195:LYS:HB2	1:B:202:LYS:HB2	1.83	0.60
1:C:1080:THR:HB	1:C:1101:SER:HB3	1.84	0.60
3:R:43:ARG:NH1	3:R:97:SER:O	2.34	0.60
1:A:1039:GLY:HA3	1:C:1044:VAL:HG21	1.84	0.60
1:B:730:ILE:HG13	1:B:1065:VAL:HG22	1.83	0.60
1:J:746:ILE:O	1:J:1004:ARG:NH2	2.34	0.60
3:R:159:ASP:HA	3:R:190:LEU:HD13	1.83	0.60
2:O:45:HIS:HB2	2:O:48:LYS:HB2	1.83	0.59
1:K:412:PRO:HG3	1:K:429:PHE:HB3	1.84	0.59
1:L:955:VAL:O	1:L:959:ASN:ND2	2.35	0.59
1:B:856:ALA:O	1:B:860:ASN:ND2	2.34	0.59
1:K:195:LYS:HB2	1:K:202:LYS:HB2	1.83	0.59
1:C:1108:VAL:HG23	1:C:1119:ILE:HG12	1.84	0.59
1:B:598:ILE:HB	1:B:609:ALA:HB3	1.84	0.59
1:J:188:ASN:HD21	1:J:207:HIS:HB2	1.68	0.59
2:M:45:HIS:HB2	2:M:48:LYS:HB2	1.85	0.59
3:I:170:ASN:HD22	3:I:174:LEU:HD23	1.67	0.59
1:B:888:SER:HG	1:B:891:THR:HG1	1.50	0.58
1:C:726:VAL:HG22	1:C:1069:VAL:HG22	1.85	0.58
3:E:42:VAL:HG12	3:E:52:TRP:HA	1.85	0.58
2:H:134:PRO:HB3	2:H:160:PHE:HB3	1.84	0.58
1:C:412:PRO:HG3	1:C:429:PHE:HB3	1.84	0.58
1:J:1039:GLY:HA3	1:L:1044:VAL:HG21	1.85	0.58
1:A:746:ILE:O	1:A:1004:ARG:NH2	2.36	0.58
1:C:137:CYS:SG	1:C:138:ASN:N	2.76	0.58
2:Q:107:TYR:HB3	2:Q:116:VAL:HG12	1.85	0.58
1:J:730:ILE:HG13	1:J:1065:VAL:HG22	1.84	0.58
1:L:744:MET:HE3	1:L:861:GLY:HA2	1.85	0.58
3:N:158:LYS:NZ	3:N:186:GLN:OE1	2.36	0.58
1:K:1129:ASN:HD21	1:K:1132:VAL:HG23	1.68	0.58
1:L:137:CYS:SG	1:L:138:ASN:N	2.77	0.58
1:L:1108:VAL:HG23	1:L:1119:ILE:HG12	1.85	0.58
3:G:159:ASP:HA	3:G:190:LEU:HD13	1.85	0.58
2:H:52:LEU:HD11	2:H:55:TYR:HB3	1.86	0.58
1:A:985:LEU:O	1:C:386:LYS:NZ	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:P:159:ASP:HA	3:P:190:LEU:HD13	1.84	0.57
3:E:158:LYS:NZ	3:E:186:GLN:OE1	2.37	0.57
2:F:45:HIS:HB2	2:F:48:LYS:HB2	1.85	0.57
1:C:143:ASP:OD2	1:C:158:ARG:NH2	2.34	0.57
1:B:760:TYR:OH	1:B:998:ASP:OD1	2.22	0.57
1:C:955:VAL:O	1:C:959:ASN:ND2	2.34	0.57
1:K:94:ALA:HB3	1:K:266:TYR:HB2	1.85	0.57
1:J:899:GLN:NE2	1:L:1078:ASN:OD1	2.37	0.57
1:K:535:LYS:NZ	1:K:554:GLU:OE2	2.36	0.57
2:D:45:HIS:HB2	2:D:48:LYS:HB2	1.86	0.57
2:H:107:TYR:HB3	2:H:116:VAL:HG12	1.86	0.57
1:A:726:VAL:HG22	1:A:1069:VAL:HG22	1.86	0.57
1:A:856:ALA:O	1:A:860:ASN:ND2	2.32	0.57
3:I:35:SER:HA	3:I:58:PRO:HB2	1.87	0.57
1:A:955:VAL:O	1:A:959:ASN:ND2	2.34	0.57
3:N:23:CYS:HB2	3:N:41:TRP:HZ2	1.70	0.57
2:D:77:SER:HG	2:D:90:THR:HG1	1.53	0.57
1:A:137:CYS:SG	1:A:138:ASN:N	2.78	0.57
1:B:98:LYS:HD3	1:B:188:ASN:HB3	1.86	0.57
1:B:203:ILE:HD12	1:B:227:VAL:HB	1.87	0.57
1:K:398:ASP:HB2	1:K:512:VAL:HB	1.87	0.57
1:K:729:GLU:OE2	1:K:1032:LYS:NZ	2.33	0.57
1:B:726:VAL:HG22	1:B:1069:VAL:HG22	1.87	0.56
3:P:11:GLU:OE1	3:P:13:LYS:NZ	2.38	0.56
1:B:1044:VAL:HG21	1:C:1039:GLY:HA3	1.88	0.56
1:J:726:VAL:HG22	1:J:1069:VAL:HG22	1.88	0.56
1:J:955:VAL:O	1:J:959:ASN:ND2	2.35	0.56
2:Q:52:LEU:HD11	2:Q:55:TYR:HB3	1.86	0.56
1:A:195:LYS:HB2	1:A:202:LYS:HB2	1.88	0.56
1:K:137:CYS:SG	1:K:138:ASN:N	2.78	0.56
1:L:412:PRO:HG3	1:L:429:PHE:HB3	1.87	0.56
1:A:188:ASN:HD21	1:A:207:HIS:HB2	1.70	0.56
3:E:23:CYS:HB2	3:E:41:TRP:HZ2	1.69	0.56
1:B:94:ALA:HB3	1:B:266:TYR:HB2	1.88	0.56
3:N:42:VAL:HG12	3:N:52:TRP:HA	1.88	0.56
1:C:40:PRO:HG3	1:C:52:THR:HG21	1.86	0.56
1:C:744:MET:HE3	1:C:861:GLY:HA2	1.87	0.56
1:J:137:CYS:SG	1:J:138:ASN:N	2.78	0.56
1:L:351:TYR:HE1	1:L:452:LEU:HB2	1.71	0.56
2:F:134:PRO:HB3	2:F:160:PHE:HB3	1.88	0.56
1:J:472:ILE:HD13	1:J:482:GLY:HA2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:760:TYR:OH	1:K:998:ASP:OD1	2.23	0.56
1:K:1078:ASN:OD1	1:L:899:GLN:NE2	2.39	0.56
2:Q:134:PRO:HB3	2:Q:160:PHE:HB3	1.86	0.56
3:R:35:SER:HA	3:R:58:PRO:HB2	1.88	0.56
1:K:598:ILE:HB	1:K:609:ALA:HB3	1.87	0.56
1:J:1078:ASN:OD1	1:K:899:GLN:NE2	2.38	0.55
1:A:1078:ASN:OD1	1:B:899:GLN:NE2	2.39	0.55
3:G:11:GLU:OE1	3:G:13:LYS:NZ	2.39	0.55
1:B:456:PHE:HB2	1:B:491:PRO:HB3	1.87	0.55
2:D:166:THR:HB	2:D:217:THR:HB	1.88	0.55
1:A:386:LYS:NZ	1:B:985:LEU:O	2.36	0.55
1:B:535:LYS:NZ	1:B:554:GLU:OE2	2.35	0.55
1:C:351:TYR:HE1	1:C:452:LEU:HB2	1.72	0.55
1:A:1095:ARG:NH1	1:A:1122:ASP:O	2.40	0.55
1:K:123:ASN:HD21	1:K:127:VAL:HA	1.69	0.55
1:L:487:ASN:ND2	1:L:488:CYS:SG	2.80	0.55
1:L:726:VAL:HG22	1:L:1069:VAL:HG22	1.87	0.55
1:B:137:CYS:SG	1:B:138:ASN:N	2.79	0.55
1:B:955:VAL:O	1:B:959:ASN:ND2	2.35	0.55
2:O:41:TRP:HB2	2:O:54:ILE:HB	1.87	0.55
1:A:472:ILE:HD13	1:A:482:GLY:HA2	1.88	0.55
2:F:41:TRP:HB2	2:F:54:ILE:HB	1.89	0.55
1:A:899:GLN:NE2	1:C:1078:ASN:OD1	2.40	0.55
1:B:1078:ASN:OD1	1:C:899:GLN:NE2	2.40	0.54
1:C:480:CYS:SG	1:C:481:ASN:N	2.79	0.54
3:P:6:GLN:NE2	3:P:122:THR:OG1	2.40	0.54
1:K:726:VAL:HG22	1:K:1069:VAL:HG22	1.88	0.54
3:G:6:GLN:HG2	3:G:23:CYS:HA	1.89	0.54
1:B:123:ASN:HD21	1:B:127:VAL:HA	1.73	0.54
1:B:273:ARG:HH12	1:B:632:THR:HG21	1.73	0.54
1:C:187:LYS:HE3	1:C:210:ILE:HG13	1.90	0.54
1:J:859:PHE:HA	1:L:592:PHE:HZ	1.72	0.54
1:A:1044:VAL:HG21	1:B:1039:GLY:HA3	1.88	0.54
1:J:1044:VAL:HG21	1:K:1039:GLY:HA3	1.89	0.54
2:D:20:THR:HG22	2:D:90:THR:HG22	1.89	0.54
1:K:567:ARG:NH2	1:K:571:ASP:O	2.40	0.54
1:A:859:PHE:HA	1:C:592:PHE:HZ	1.71	0.54
3:I:96:ALA:HA	3:I:126:VAL:HG11	1.90	0.54
1:J:985:LEU:O	1:L:386:LYS:NZ	2.38	0.54
2:O:134:PRO:HB3	2:O:160:PHE:HB3	1.90	0.54
2:D:41:TRP:HB2	2:D:54:ILE:HB	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:398:ASP:HB2	1:C:512:VAL:HB	1.89	0.54
1:A:777:GLU:OE2	1:A:1023:ARG:NE	2.41	0.54
1:L:729:GLU:OE2	1:L:1032:LYS:NZ	2.32	0.54
1:C:18:GLN:HB2	1:C:158:ARG:HE	1.73	0.53
1:J:777:GLU:OE2	1:J:1023:ARG:NE	2.40	0.53
1:K:456:PHE:HB2	1:K:491:PRO:HB3	1.90	0.53
1:K:490:SER:O	1:K:493:GLN:NE2	2.41	0.53
2:M:166:THR:HB	2:M:217:THR:HB	1.90	0.53
1:K:1044:VAL:HG21	1:L:1039:GLY:HA3	1.89	0.53
1:B:398:ASP:HB2	1:B:512:VAL:HB	1.91	0.53
3:G:66:ARG:HH12	1:B:441:LEU:HD11	1.72	0.53
1:B:567:ARG:NH2	1:B:571:ASP:O	2.41	0.53
2:D:157:ILE:HD12	2:D:167:VAL:HG22	1.91	0.53
1:J:841:TYR:OH	1:L:589:PRO:O	2.27	0.53
1:B:564:GLN:NE2	1:B:577:ARG:O	2.42	0.53
2:M:41:TRP:HB2	2:M:54:ILE:HB	1.91	0.53
1:C:1129:ASN:HD21	1:C:1132:VAL:HG23	1.74	0.53
3:P:38:TRP:HB2	3:P:107:GLN:HB2	1.91	0.53
1:L:616:ASN:OD1	1:L:617:CYS:N	2.42	0.53
1:J:1095:ARG:NH1	1:J:1122:ASP:O	2.41	0.53
1:K:564:GLN:NE2	1:K:577:ARG:O	2.42	0.53
1:A:841:TYR:OH	1:C:589:PRO:O	2.27	0.52
1:K:273:ARG:HH12	1:K:632:THR:HG21	1.74	0.52
3:E:69:PRO:HA	3:E:72:GLN:HE21	1.74	0.52
1:C:857:GLN:HB3	1:C:862:LEU:HB2	1.92	0.52
1:K:351:TYR:HE1	1:K:452:LEU:HB2	1.75	0.52
3:G:6:GLN:NE2	3:G:122:THR:OG1	2.43	0.52
1:K:84:ALA:HB3	1:K:237:ARG:HE	1.75	0.52
1:K:203:ILE:HD12	1:K:227:VAL:HB	1.90	0.52
1:B:424:LYS:HB3	1:B:463:PRO:HA	1.92	0.52
1:C:487:ASN:ND2	1:C:488:CYS:SG	2.82	0.52
3:R:80:ALA:HA	3:R:87:ALA:HA	1.92	0.52
1:B:1129:ASN:HD21	1:B:1132:VAL:HG23	1.73	0.52
1:K:98:LYS:HD3	1:K:188:ASN:HB3	1.92	0.52
1:B:84:ALA:HB3	1:B:237:ARG:HE	1.74	0.52
1:L:1129:ASN:HD21	1:L:1132:VAL:HG23	1.75	0.52
3:R:11:GLU:OE1	3:R:13:LYS:NZ	2.43	0.52
1:A:744:MET:SD	1:C:319:ARG:NH2	2.83	0.52
1:C:777:GLU:OE2	1:C:1023:ARG:NE	2.43	0.52
1:J:40:PRO:HG3	1:J:52:THR:HG21	1.91	0.52
1:J:189:LEU:HB2	1:J:210:ILE:HD13	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:195:LYS:HB2	1:J:202:LYS:HB2	1.90	0.52
1:J:616:ASN:OD1	1:J:617:CYS:N	2.43	0.52
3:N:69:PRO:HA	3:N:72:GLN:HE21	1.75	0.52
1:K:120:ILE:HG12	1:K:129:ILE:HG23	1.92	0.52
1:B:92:TYR:N	1:B:268:GLY:O	2.40	0.51
1:K:616:ASN:OD1	1:K:617:CYS:N	2.43	0.51
1:K:955:VAL:O	1:K:959:ASN:ND2	2.36	0.51
1:A:1108:VAL:HG23	1:A:1119:ILE:HG12	1.93	0.51
1:A:1006:GLN:NE2	1:B:1009:GLN:OE1	2.35	0.51
1:B:616:ASN:OD1	1:B:617:CYS:N	2.43	0.51
1:J:351:TYR:HE1	1:J:452:LEU:HB2	1.75	0.51
3:P:66:ARG:HH12	1:K:441:LEU:HD11	1.74	0.51
1:B:393:THR:HG22	1:B:394:ASN:HD22	1.75	0.51
1:B:806:PHE:HD1	1:B:809:ILE:HD11	1.74	0.51
3:P:6:GLN:HG2	3:P:23:CYS:HA	1.92	0.51
1:A:345:THR:OG1	2:D:107:TYR:O	2.28	0.51
1:C:418:ILE:HA	1:C:422:ASN:HD22	1.75	0.51
1:K:55:LEU:HD23	1:K:195:LYS:HG2	1.92	0.51
1:L:40:PRO:HG3	1:L:52:THR:HG21	1.93	0.51
3:I:80:ALA:HA	3:I:87:ALA:HA	1.93	0.51
1:B:490:SER:O	1:B:493:GLN:NE2	2.44	0.51
1:A:230:PRO:HD2	1:C:357:ARG:HH11	1.76	0.51
1:L:156:GLU:OE2	1:L:158:ARG:NH2	2.44	0.51
1:A:1129:ASN:OD1	1:A:1129:ASN:N	2.42	0.51
2:M:157:ILE:HD12	2:M:167:VAL:HG22	1.93	0.51
3:R:66:ARG:HH12	1:L:441:LEU:HD11	1.76	0.51
1:K:92:TYR:N	1:K:268:GLY:O	2.39	0.51
1:K:646:ARG:NH1	1:K:668:ALA:O	2.44	0.51
1:K:806:PHE:HD1	1:K:809:ILE:HD11	1.75	0.51
1:L:143:ASP:OD2	1:L:158:ARG:NH2	2.37	0.51
1:L:719:PRO:HG3	1:L:1073:PRO:HB3	1.92	0.51
1:L:777:GLU:OE2	1:L:1023:ARG:NE	2.44	0.51
1:A:189:LEU:HB2	1:A:210:ILE:HD13	1.92	0.50
1:C:616:ASN:OD1	1:C:617:CYS:N	2.44	0.50
1:L:273:ARG:HH12	1:L:632:THR:HG21	1.75	0.50
1:B:729:GLU:OE2	1:B:1032:LYS:NZ	2.32	0.50
1:C:172:SER:OG	1:C:173:GLN:OE1	2.29	0.50
1:C:273:ARG:HH12	1:C:632:THR:HG21	1.76	0.50
1:A:40:PRO:HG3	1:A:52:THR:HG21	1.93	0.50
1:K:777:GLU:OE2	1:K:1023:ARG:NE	2.44	0.50
1:A:729:GLU:OE2	1:A:1032:LYS:NZ	2.32	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:386:LYS:NZ	1:K:985:LEU:O	2.39	0.50
1:B:347:PHE:HD2	1:B:399:SER:HB3	1.75	0.50
1:K:1045:ASP:HB2	1:L:1034:SER:HB3	1.94	0.50
1:A:569:ILE:O	1:B:968:LYS:NZ	2.35	0.50
1:K:101:ILE:HG22	1:K:102:ILE:H	1.77	0.50
1:L:857:GLN:HB3	1:L:862:LEU:HB2	1.94	0.50
1:B:187:LYS:HE3	1:B:210:ILE:HG13	1.93	0.50
1:B:327:VAL:HA	1:B:542:ASN:HB3	1.93	0.50
1:K:393:THR:HG22	1:K:394:ASN:HD22	1.77	0.50
1:C:84:ALA:HB3	1:C:237:ARG:HE	1.76	0.50
1:C:1058:GLN:HB2	1:C:1065:VAL:HB	1.93	0.50
1:J:442:ASP:HB3	1:J:451:TYR:HE2	1.77	0.50
1:L:966:LEU:HD11	1:L:1008:LEU:HD23	1.94	0.50
1:B:449:TYR:OH	1:B:498:ARG:NH1	2.45	0.50
3:N:80:ALA:HA	3:N:87:ALA:HA	1.94	0.49
1:B:358:ILE:HB	1:B:395:VAL:HG13	1.94	0.49
1:C:92:TYR:N	1:C:268:GLY:O	2.41	0.49
1:K:327:VAL:HA	1:K:542:ASN:HB3	1.94	0.49
1:B:101:ILE:HG22	1:B:102:ILE:H	1.77	0.49
1:C:156:GLU:OE2	1:C:158:ARG:NH2	2.46	0.49
1:J:589:PRO:O	1:K:841:TYR:OH	2.31	0.49
1:A:616:ASN:OD1	1:A:617:CYS:N	2.43	0.49
1:A:745:TYR:OH	1:A:966:LEU:O	2.30	0.49
3:I:66:ARG:HH12	1:C:441:LEU:HD11	1.78	0.49
1:C:888:SER:OG	1:C:891:THR:OG1	2.28	0.49
2:M:20:THR:HG22	2:M:90:THR:HG22	1.94	0.49
1:A:84:ALA:HB3	1:A:237:ARG:HE	1.77	0.49
1:B:403:ARG:NE	1:B:405:ASN:OD1	2.45	0.49
1:C:646:ARG:NH1	1:C:668:ALA:O	2.46	0.49
1:K:424:LYS:HB3	1:K:463:PRO:HA	1.95	0.49
2:D:52:LEU:HD11	2:D:55:TYR:HB3	1.95	0.49
3:E:80:ALA:HA	3:E:87:ALA:HA	1.94	0.49
1:L:294:ASP:OD1	1:L:294:ASP:N	2.43	0.49
1:B:777:GLU:OE2	1:B:1023:ARG:NE	2.46	0.49
1:L:84:ALA:HB3	1:L:237:ARG:HE	1.77	0.49
2:H:157:ILE:HD12	2:H:167:VAL:HG22	1.95	0.49
1:C:107:PHE:HB2	1:C:118:LEU:HB3	1.94	0.49
1:C:966:LEU:HD11	1:C:1008:LEU:HD23	1.94	0.49
1:J:645:THR:OG1	1:J:648:GLY:O	2.27	0.49
1:L:480:CYS:SG	1:L:481:ASN:N	2.81	0.49
1:A:174:PRO:HB2	1:A:177:MET:HB3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:230:PRO:HD2	1:L:357:ARG:HH11	1.77	0.49
1:J:1108:VAL:HG23	1:J:1119:ILE:HG12	1.95	0.49
3:R:212:ASN:ND2	3:R:223:ASP:OD1	2.46	0.49
1:L:172:SER:OG	1:L:173:GLN:OE1	2.31	0.49
2:D:5:THR:OG1	2:D:24:THR:OG1	2.31	0.48
1:B:55:LEU:HD23	1:B:195:LYS:HG2	1.94	0.48
1:B:172:SER:OG	1:B:173:GLN:OE1	2.31	0.48
2:M:36:ASP:O	2:M:80:LYS:NZ	2.46	0.48
1:L:418:ILE:HA	1:L:422:ASN:HD22	1.78	0.48
1:B:1108:VAL:HG23	1:B:1119:ILE:HG12	1.94	0.48
1:J:857:GLN:HB3	1:J:862:LEU:HB2	1.94	0.48
1:K:403:ARG:NE	1:K:405:ASN:OD1	2.45	0.48
3:I:11:GLU:OE1	3:I:13:LYS:NZ	2.46	0.48
1:C:613:GLN:HA	1:C:648:GLY:HA3	1.96	0.48
1:L:403:ARG:NE	1:L:405:ASN:OD1	2.45	0.48
1:A:645:THR:OG1	1:A:648:GLY:O	2.27	0.48
1:C:1035:GLU:HB3	1:C:1041:SER:HB2	1.94	0.48
1:K:347:PHE:HD2	1:K:399:SER:HB3	1.78	0.48
2:D:36:ASP:O	2:D:80:LYS:NZ	2.46	0.48
1:J:719:PRO:HG3	1:J:1073:PRO:HB3	1.95	0.48
1:K:202:LYS:NZ	1:K:228:ASP:OD2	2.46	0.48
1:L:920:LEU:HD12	1:L:927:ILE:HD12	1.95	0.48
1:B:966:LEU:HD11	1:B:1008:LEU:HD23	1.95	0.48
1:B:1045:ASP:HB2	1:C:1034:SER:HB3	1.95	0.48
1:C:564:GLN:NE2	1:C:577:ARG:O	2.46	0.48
1:K:449:TYR:OH	1:K:498:ARG:NH1	2.47	0.48
1:K:739:SER:HA	1:K:771:LEU:HD13	1.94	0.48
1:L:98:LYS:HD2	1:L:187:LYS:HA	1.94	0.48
3:G:178:VAL:HG22	3:G:197:VAL:HG23	1.95	0.48
1:B:613:GLN:HA	1:B:648:GLY:HA3	1.96	0.48
1:C:358:ILE:HB	1:C:395:VAL:HG13	1.95	0.48
1:J:273:ARG:HH12	1:J:632:THR:HG21	1.78	0.48
2:F:183:THR:HG23	3:G:184:VAL:HG13	1.96	0.48
1:J:97:GLU:OE2	1:J:99:SER:OG	2.32	0.48
1:J:744:MET:HE3	1:J:861:GLY:HA2	1.96	0.48
1:J:1045:ASP:HB2	1:K:1034:SER:HB3	1.94	0.48
2:M:52:LEU:HD11	2:M:55:TYR:HB3	1.96	0.48
1:L:988:LEU:HB3	1:L:992:GLU:HG3	1.96	0.48
1:J:745:TYR:OH	1:J:966:LEU:O	2.31	0.47
1:J:989:ASP:HB2	1:J:991:PRO:HD2	1.95	0.47
1:L:746:ILE:O	1:L:1004:ARG:NH2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:857:GLN:HB3	1:A:862:LEU:HB2	1.95	0.47
1:C:719:PRO:HG3	1:C:1073:PRO:HB3	1.96	0.47
1:J:28:SER:OG	1:J:65:TRP:O	2.28	0.47
1:J:806:PHE:HD1	1:J:809:ILE:HD11	1.79	0.47
1:J:1009:GLN:OE1	1:L:1006:GLN:NE2	2.36	0.47
1:B:405:ASN:ND2	1:C:369:TYR:O	2.39	0.47
1:K:369:TYR:OH	1:K:384:PRO:O	2.32	0.47
1:L:38:TYR:OH	1:L:55:LEU:O	2.29	0.47
2:H:77:SER:HG	2:H:90:THR:HG1	1.62	0.47
1:B:719:PRO:HA	1:B:1076:GLU:HA	1.96	0.47
1:L:358:ILE:HB	1:L:395:VAL:HG13	1.96	0.47
1:A:658:ASN:ND2	1:A:660:TYR:OH	2.47	0.47
1:C:193:VAL:HB	1:C:204:TYR:HB2	1.96	0.47
1:C:746:ILE:O	1:C:1004:ARG:NH2	2.47	0.47
1:J:84:ALA:HB3	1:J:237:ARG:HE	1.80	0.47
1:K:966:LEU:HD11	1:K:1008:LEU:HD23	1.96	0.47
1:A:1045:ASP:HB2	1:B:1034:SER:HB3	1.97	0.47
3:G:38:TRP:HB2	3:G:107:GLN:HB2	1.96	0.47
1:B:393:THR:O	1:B:523:THR:OG1	2.32	0.47
1:A:351:TYR:HE1	1:A:452:LEU:HB2	1.78	0.47
1:A:430:THR:HG21	1:A:517:LEU:HD11	1.97	0.47
1:A:744:MET:HE3	1:A:861:GLY:HA2	1.96	0.47
1:A:966:LEU:HD11	1:A:1008:LEU:HD23	1.97	0.47
3:I:212:ASN:ND2	3:I:223:ASP:OD1	2.46	0.47
1:C:93:PHE:HB3	1:C:192:PHE:HB2	1.97	0.47
1:J:94:ALA:HB3	1:J:266:TYR:HB2	1.97	0.47
1:J:760:TYR:OH	1:J:998:ASP:OD1	2.29	0.47
1:K:172:SER:OG	1:K:173:GLN:OE1	2.33	0.47
1:L:107:PHE:HB2	1:L:118:LEU:HB3	1.96	0.47
1:A:92:TYR:N	1:A:268:GLY:O	2.42	0.47
1:A:886:ILE:HG13	1:A:887:THR:HG23	1.97	0.47
1:A:1058:GLN:HB2	1:A:1065:VAL:HB	1.96	0.47
2:Q:205:GLN:O	2:Q:212:TYR:OH	2.32	0.47
1:B:351:TYR:HE1	1:B:452:LEU:HB2	1.80	0.47
1:B:739:SER:HA	1:B:771:LEU:HD13	1.97	0.47
1:J:143:ASP:OD1	1:J:143:ASP:N	2.45	0.47
1:K:857:GLN:HB3	1:K:862:LEU:HB2	1.97	0.47
1:L:92:TYR:N	1:L:268:GLY:O	2.43	0.47
1:L:745:TYR:OH	1:L:966:LEU:O	2.33	0.47
1:A:589:PRO:O	1:B:841:TYR:OH	2.32	0.47
1:A:995:VAL:O	1:A:999:ARG:NH2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:174:PRO:HB2	1:J:177:MET:HB3	1.97	0.46
1:J:383:SER:HB2	1:K:988:LEU:HA	1.96	0.46
1:J:533:LEU:HD21	1:J:585:LEU:HD11	1.96	0.46
1:A:358:ILE:HB	1:A:395:VAL:HG13	1.97	0.46
3:G:41:TRP:HE1	3:G:87:ALA:HB1	1.80	0.46
2:H:205:GLN:O	2:H:212:TYR:OH	2.31	0.46
1:B:102:ILE:HG12	1:B:242:LEU:HA	1.97	0.46
1:K:1108:VAL:HG23	1:K:1119:ILE:HG12	1.97	0.46
1:A:28:SER:OG	1:A:65:TRP:O	2.27	0.46
1:A:135:GLN:HB3	1:A:161:SER:HB3	1.97	0.46
1:A:989:ASP:HB2	1:A:991:PRO:HD2	1.95	0.46
3:N:165:VAL:HG22	3:N:215:HIS:HD2	1.80	0.46
1:K:358:ILE:HB	1:K:395:VAL:HG13	1.96	0.46
1:B:379:CYS:HB3	1:B:382:VAL:HG23	1.98	0.46
1:C:22:LEU:HB3	1:C:70:HIS:CE1	2.51	0.46
1:C:403:ARG:NE	1:C:405:ASN:OD1	2.48	0.46
1:K:296:LEU:HB2	1:K:608:VAL:HG11	1.97	0.46
1:K:719:PRO:HA	1:K:1076:GLU:HA	1.96	0.46
1:A:760:TYR:OH	1:A:998:ASP:OD1	2.31	0.46
2:D:183:THR:HG23	3:E:184:VAL:HG13	1.96	0.46
1:J:739:SER:HA	1:J:771:LEU:HD13	1.97	0.46
3:P:62:ASP:OD1	3:P:62:ASP:N	2.48	0.46
2:Q:77:SER:HG	2:Q:90:THR:HG1	1.63	0.46
1:A:901:PRO:HB2	1:A:904:MET:HG3	1.97	0.46
1:C:920:LEU:HD12	1:C:927:ILE:HD12	1.97	0.46
1:K:519:HIS:CE1	1:K:567:ARG:HH11	2.32	0.46
1:K:886:ILE:HG13	1:K:887:THR:HG23	1.97	0.46
1:L:398:ASP:HB2	1:L:512:VAL:HB	1.97	0.46
1:L:760:TYR:OH	1:L:998:ASP:OD1	2.28	0.46
1:A:354:ASN:OD1	1:A:355:ARG:N	2.49	0.46
2:H:79:SER:OG	2:H:88:SER:OG	2.34	0.46
1:L:806:PHE:HD1	1:L:809:ILE:HD11	1.81	0.46
1:J:367:VAL:O	1:J:370:ASN:ND2	2.49	0.46
1:J:785:VAL:HG22	1:J:1030:ALA:HB2	1.98	0.46
1:K:1094:PRO:O	1:L:917:GLN:NE2	2.49	0.46
1:A:328:ARG:NE	1:A:578:ASP:OD1	2.45	0.46
1:B:646:ARG:NH1	1:B:668:ALA:O	2.49	0.46
1:K:719:PRO:HG3	1:K:1073:PRO:HB3	1.97	0.46
1:A:383:SER:HB2	1:B:988:LEU:HA	1.97	0.46
2:F:79:SER:OG	2:F:88:SER:OG	2.34	0.46
1:C:294:ASP:OD1	1:C:294:ASP:N	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:1058:GLN:HB2	1:L:1065:VAL:HB	1.98	0.46
1:A:97:GLU:OE2	1:A:99:SER:OG	2.32	0.45
1:A:367:VAL:O	1:A:370:ASN:ND2	2.49	0.45
1:A:993:ALA:O	1:A:997:ILE:HG12	2.16	0.45
1:B:120:ILE:HG12	1:B:129:ILE:HG23	1.98	0.45
1:C:87:PHE:N	1:C:236:THR:O	2.49	0.45
1:L:857:GLN:NE2	1:L:964:ASN:OD1	2.49	0.45
1:J:354:ASN:OD1	1:J:355:ARG:N	2.49	0.45
1:J:966:LEU:HD11	1:J:1008:LEU:HD23	1.98	0.45
1:J:1034:SER:HB3	1:L:1045:ASP:HB2	1.98	0.45
2:M:183:THR:HG23	3:N:184:VAL:HG13	1.96	0.45
3:R:96:ALA:HA	3:R:126:VAL:HG11	1.98	0.45
1:B:403:ARG:HE	1:B:406:GLU:HG3	1.81	0.45
1:C:760:TYR:OH	1:C:998:ASP:OD1	2.30	0.45
1:J:202:LYS:NZ	1:J:228:ASP:OD2	2.45	0.45
2:Q:157:ILE:HD12	2:Q:167:VAL:HG22	1.97	0.45
1:L:401:VAL:HG22	1:L:509:ARG:HG2	1.97	0.45
1:J:383:SER:N	1:K:987:ARG:O	2.49	0.45
2:Q:183:THR:HG23	3:R:184:VAL:HG13	1.98	0.45
1:L:187:LYS:HE3	1:L:210:ILE:HG13	1.98	0.45
1:A:193:VAL:HB	1:A:204:TYR:HB2	1.99	0.45
3:G:80:ALA:HA	3:G:88:TYR:H	1.82	0.45
1:B:23:ILE:HG13	1:B:242:LEU:HG	1.98	0.45
2:O:79:SER:OG	2:O:88:SER:OG	2.34	0.45
2:O:183:THR:HG23	3:P:184:VAL:HG13	1.97	0.45
1:K:379:CYS:HB3	1:K:382:VAL:HG23	1.99	0.45
1:L:468:ILE:HD13	1:L:468:ILE:H	1.81	0.45
3:I:64:ASP:OD2	1:C:440:LYS:NZ	2.43	0.45
1:C:193:VAL:HG13	1:C:270:LEU:HD11	1.98	0.45
1:J:1058:GLN:HB2	1:J:1065:VAL:HB	1.98	0.45
2:Q:41:TRP:HB2	2:Q:54:ILE:HB	1.99	0.45
1:B:519:HIS:CE1	1:B:567:ARG:HH11	2.30	0.45
1:C:326:ILE:N	1:C:540:ASN:O	2.46	0.45
1:J:658:ASN:ND2	1:J:660:TYR:OH	2.49	0.45
1:K:613:GLN:HA	1:K:648:GLY:HA3	1.99	0.45
1:A:468:ILE:HD13	1:A:468:ILE:H	1.82	0.45
1:J:748:GLY:H	1:J:981:LEU:HD22	1.82	0.45
1:A:143:ASP:OD1	1:A:143:ASP:N	2.44	0.45
1:B:28:SER:OG	1:B:65:TRP:O	2.34	0.45
1:C:988:LEU:HB3	1:C:992:GLU:HG3	1.99	0.45
1:A:486:PRO:HG2	1:A:488:CYS:SG	2.57	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:888:SER:OG	1:A:891:THR:OG1	2.25	0.45
1:A:1146:GLN:HB2	1:A:1147:PRO:HD3	1.99	0.45
3:G:104:CYS:O	3:G:119:GLY:N	2.50	0.45
1:B:480:CYS:SG	1:B:481:ASN:N	2.90	0.45
1:C:98:LYS:HD2	1:C:187:LYS:HA	1.98	0.45
1:C:729:GLU:OE2	1:C:1032:LYS:NZ	2.32	0.45
1:J:486:PRO:HG2	1:J:488:CYS:SG	2.57	0.45
1:J:993:ALA:O	1:J:997:ILE:HG12	2.17	0.45
1:K:746:ILE:O	1:K:1004:ARG:NH2	2.50	0.45
1:K:1058:GLN:HB2	1:K:1065:VAL:HB	1.98	0.45
1:L:739:SER:HA	1:L:771:LEU:HD13	1.98	0.45
1:B:68:ALA:O	1:B:263:ALA:N	2.50	0.44
1:C:401:VAL:HG22	1:C:509:ARG:HG2	1.99	0.44
3:P:41:TRP:HE1	3:P:87:ALA:HB1	1.82	0.44
1:A:442:ASP:HB3	1:A:451:TYR:HE2	1.81	0.44
2:D:181:GLU:HG2	3:E:186:GLN:HA	1.99	0.44
2:F:109:LEU:HD23	2:F:109:LEU:H	1.82	0.44
1:C:403:ARG:HE	1:C:406:GLU:HG3	1.83	0.44
1:C:468:ILE:HD13	1:C:468:ILE:H	1.81	0.44
1:J:172:SER:OG	1:J:173:GLN:OE1	2.35	0.44
1:A:203:ILE:HD12	1:A:227:VAL:HB	2.00	0.44
1:J:358:ILE:HB	1:J:395:VAL:HG13	2.00	0.44
1:J:719:PRO:HA	1:J:1076:GLU:HA	1.99	0.44
2:O:109:LEU:H	2:O:109:LEU:HD23	1.83	0.44
1:L:22:LEU:HB3	1:L:70:HIS:CE1	2.52	0.44
1:A:383:SER:N	1:B:987:ARG:O	2.50	0.44
2:Q:138:LEU:HD11	2:Q:153:LEU:HD11	2.00	0.44
1:K:102:ILE:HG12	1:K:242:LEU:HA	1.99	0.44
1:A:748:GLY:H	1:A:981:LEU:HD22	1.81	0.44
1:C:719:PRO:HA	1:C:1076:GLU:HA	1.98	0.44
1:J:1006:GLN:NE2	1:K:1009:GLN:OE1	2.35	0.44
2:Q:107:TYR:O	1:L:345:THR:OG1	2.30	0.44
1:K:403:ARG:HE	1:K:406:GLU:HG3	1.83	0.44
1:B:468:ILE:HD13	1:B:468:ILE:H	1.83	0.44
1:J:222:ALA:HB2	1:J:285:ILE:HB	1.99	0.44
1:J:573:THR:HG22	1:J:587:ILE:HD12	2.00	0.44
1:K:390:LEU:HD11	1:L:987:ARG:HA	1.99	0.44
1:K:767:LEU:HD21	1:K:1008:LEU:HB3	1.99	0.44
1:L:719:PRO:HA	1:L:1076:GLU:HA	2.00	0.44
1:A:535:LYS:NZ	1:A:554:GLU:OE2	2.41	0.44
2:H:41:TRP:HB2	2:H:54:ILE:HB	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:123:ASN:H	1:B:127:VAL:HG12	1.83	0.44
1:C:409:GLN:OE1	1:C:419:ALA:N	2.47	0.44
1:J:401:VAL:HG22	1:J:509:ARG:HG2	1.99	0.44
1:J:729:GLU:OE2	1:J:1032:LYS:NZ	2.34	0.44
1:K:123:ASN:H	1:K:127:VAL:HG12	1.83	0.44
1:B:886:ILE:HG13	1:B:887:THR:HG23	1.98	0.44
1:B:1058:GLN:HB2	1:B:1065:VAL:HB	1.99	0.44
1:J:782:THR:HG22	1:J:869:LEU:HD12	2.00	0.44
1:J:886:ILE:HG13	1:J:887:THR:HG23	1.99	0.44
1:K:721:ASN:OD1	1:K:722:PHE:N	2.46	0.44
1:L:18:GLN:HB2	1:L:158:ARG:HE	1.82	0.44
1:L:93:PHE:HB3	1:L:192:PHE:HB2	1.99	0.44
1:L:613:GLN:HA	1:L:648:GLY:HA3	1.99	0.44
2:F:46:PRO:HD3	2:F:100:ALA:HA	2.00	0.43
3:I:43:ARG:N	3:I:51:GLU:O	2.44	0.43
1:J:107:PHE:HB2	1:J:118:LEU:HB3	2.00	0.43
1:J:430:THR:HG21	1:J:517:LEU:HD11	2.00	0.43
1:J:870:THR:HG21	1:L:646:ARG:HH11	1.83	0.43
1:K:68:ALA:O	1:K:263:ALA:N	2.51	0.43
1:C:38:TYR:OH	1:C:55:LEU:O	2.33	0.43
1:J:1146:GLN:HB2	1:J:1147:PRO:HD3	2.00	0.43
3:R:40:GLY:HA3	3:R:55:ILE:HG22	1.99	0.43
1:L:785:VAL:HG22	1:L:1030:ALA:HB2	1.99	0.43
1:A:401:VAL:HG22	1:A:509:ARG:HG2	2.00	0.43
3:G:62:ASP:OD1	3:G:62:ASP:N	2.51	0.43
1:B:193:VAL:HB	1:B:204:TYR:HB2	2.00	0.43
1:J:354:ASN:HB3	2:M:30:VAL:HG13	1.99	0.43
2:O:186:SER:HA	3:P:182:PRO:HG2	1.99	0.43
3:P:44:GLN:HB2	3:P:50:LEU:HD23	2.00	0.43
3:P:104:CYS:O	3:P:119:GLY:N	2.51	0.43
1:L:403:ARG:HE	1:L:406:GLU:HG3	1.83	0.43
2:F:126:VAL:O	2:F:161:TYR:OH	2.35	0.43
1:C:363:ALA:N	1:C:525:CYS:O	2.40	0.43
1:C:456:PHE:HB2	1:C:491:PRO:HB3	2.00	0.43
1:L:193:VAL:HB	1:L:204:TYR:HB2	2.01	0.43
1:L:518:LEU:HG	1:L:520:ALA:H	1.83	0.43
2:H:6:GLN:HE21	2:H:121:GLY:H	1.66	0.43
1:B:106:ILE:HD12	1:B:239:GLN:HB3	2.00	0.43
1:B:901:PRO:HB2	1:B:904:MET:HG3	2.01	0.43
1:C:93:PHE:O	1:C:192:PHE:N	2.45	0.43
1:C:439:ASN:HB2	1:C:506:GLN:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:613:GLN:HA	1:J:648:GLY:HA3	2.01	0.43
3:P:80:ALA:HA	3:P:88:TYR:H	1.84	0.43
1:L:193:VAL:HG13	1:L:270:LEU:HD11	2.01	0.43
1:A:1034:SER:HB3	1:C:1045:ASP:HB2	2.00	0.43
2:F:161:TYR:HB3	2:F:162:PRO:HD3	2.00	0.43
2:H:138:LEU:HD11	2:H:153:LEU:HD11	2.00	0.43
1:J:203:ILE:HD12	1:J:227:VAL:HB	2.00	0.43
1:K:468:ILE:HD13	1:K:468:ILE:H	1.83	0.43
1:A:533:LEU:HD21	1:A:585:LEU:HD11	2.00	0.43
1:A:613:GLN:HA	1:A:648:GLY:HA3	2.00	0.43
1:B:386:LYS:NZ	1:C:985:LEU:O	2.44	0.43
1:B:857:GLN:HB3	1:B:862:LEU:HB2	2.00	0.43
1:C:785:VAL:HG22	1:C:1030:ALA:HB2	2.01	0.43
1:J:518:LEU:HG	1:J:520:ALA:H	1.84	0.43
1:B:1146:GLN:HB2	1:B:1147:PRO:HD3	2.01	0.43
1:C:143:ASP:OD1	1:C:143:ASP:N	2.47	0.43
1:J:135:GLN:HB3	1:J:161:SER:HB3	2.00	0.43
1:J:468:ILE:HD13	1:J:468:ILE:H	1.82	0.43
3:P:178:VAL:HG22	3:P:197:VAL:HG23	1.99	0.43
1:K:390:LEU:HD21	1:L:986:SER:HB3	2.01	0.43
1:L:519:HIS:CE1	1:L:567:ARG:HH11	2.31	0.43
1:J:995:VAL:O	1:J:999:ARG:NH2	2.51	0.43
1:K:187:LYS:HE3	1:K:210:ILE:HG13	1.99	0.43
1:L:645:THR:OG1	1:L:648:GLY:O	2.36	0.43
1:A:65:TRP:HE1	1:A:264:ALA:HB1	1.83	0.43
1:J:469:SER:HB3	1:K:115:THR:HG22	2.01	0.43
2:M:181:GLU:HG2	3:N:186:GLN:HA	2.00	0.43
2:O:126:VAL:O	2:O:161:TYR:OH	2.37	0.43
1:A:107:PHE:HB2	1:A:118:LEU:HB3	2.00	0.42
1:A:319:ARG:NH2	1:B:744:MET:SD	2.92	0.42
1:J:744:MET:SD	1:L:319:ARG:NH2	2.92	0.42
1:K:278:LYS:HB2	1:K:306:PHE:CZ	2.54	0.42
1:C:454:ARG:HH11	1:C:457:ARG:HG3	1.84	0.42
1:L:94:ALA:HB3	1:L:266:TYR:HB2	2.01	0.42
1:L:1131:ASP:OD1	1:L:1131:ASP:N	2.51	0.42
1:A:38:TYR:HA	1:A:223:LEU:H	1.82	0.42
1:A:172:SER:OG	1:A:173:GLN:OE1	2.38	0.42
1:A:354:ASN:HB3	2:D:30:VAL:HG13	2.02	0.42
1:A:573:THR:HG22	1:A:587:ILE:HD12	2.01	0.42
1:A:739:SER:HA	1:A:771:LEU:HD13	2.01	0.42
3:I:24:LYS:NZ	3:I:25:GLY:O	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:193:VAL:HB	1:J:204:TYR:HB2	2.00	0.42
1:J:345:THR:OG1	2:M:107:TYR:O	2.29	0.42
1:K:294:ASP:OD1	1:K:294:ASP:N	2.51	0.42
1:L:1035:GLU:HB3	1:L:1041:SER:HB2	2.00	0.42
3:I:21:ILE:HG22	3:I:89:LEU:HB2	2.01	0.42
1:J:468:ILE:HD12	1:K:116:GLN:HG2	2.01	0.42
1:C:739:SER:HA	1:C:771:LEU:HD13	2.01	0.42
3:N:6:GLN:H	3:N:120:GLN:HE22	1.67	0.42
1:L:87:PHE:N	1:L:236:THR:O	2.51	0.42
1:B:646:ARG:HH11	1:C:870:THR:HG21	1.84	0.42
3:R:43:ARG:N	3:R:51:GLU:O	2.43	0.42
1:L:989:ASP:HB2	1:L:991:PRO:HD2	2.02	0.42
1:A:393:THR:HG22	1:A:394:ASN:HD22	1.84	0.42
2:F:171:ALA:HB2	2:F:176:VAL:HG22	2.00	0.42
3:G:44:GLN:HB2	3:G:50:LEU:HD23	2.01	0.42
1:B:645:THR:OG1	1:B:648:GLY:O	2.33	0.42
1:B:988:LEU:HB3	1:B:992:GLU:HG3	2.02	0.42
1:C:745:TYR:OH	1:C:966:LEU:O	2.35	0.42
1:J:92:TYR:N	1:J:268:GLY:O	2.43	0.42
1:A:94:ALA:HB3	1:A:266:TYR:HB2	2.02	0.42
2:D:161:TYR:HB3	2:D:162:PRO:HD3	2.02	0.42
2:H:166:THR:HB	2:H:217:THR:HB	2.02	0.42
1:B:1094:PRO:O	1:C:917:GLN:NE2	2.52	0.42
2:O:102:TYR:O	2:O:122:THR:OG1	2.33	0.42
3:P:170:ASN:HD22	3:P:174:LEU:HD23	1.85	0.42
1:K:646:ARG:HH11	1:L:870:THR:HG21	1.85	0.42
1:K:988:LEU:HB3	1:K:992:GLU:HG3	2.01	0.42
1:L:54:ASP:OD1	1:L:55:LEU:N	2.46	0.42
3:I:16:GLY:H	3:I:94:LEU:HB2	1.85	0.42
3:I:42:VAL:N	3:I:103:TYR:O	2.46	0.42
2:O:161:TYR:HB3	2:O:162:PRO:HD3	2.00	0.42
2:Q:79:SER:OG	2:Q:88:SER:OG	2.37	0.42
1:K:379:CYS:HA	1:K:432:CYS:HA	2.02	0.42
1:K:480:CYS:SG	1:K:481:ASN:N	2.93	0.42
1:A:1009:GLN:OE1	1:C:1006:GLN:NE2	2.36	0.42
1:K:857:GLN:NE2	1:K:964:ASN:OD1	2.53	0.42
1:K:1146:GLN:HB2	1:K:1147:PRO:HD3	2.01	0.42
1:A:661:GLU:O	1:A:699:TYR:OH	2.31	0.41
1:A:719:PRO:HG3	1:A:1073:PRO:HB3	2.01	0.41
2:D:4:LEU:HB2	2:D:119:GLY:HA2	2.01	0.41
1:C:857:GLN:NE2	1:C:964:ASN:OD1	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:186:SER:HA	3:G:182:PRO:HG2	2.02	0.41
3:G:68:SER:HB3	3:G:71:PHE:HD2	1.85	0.41
3:I:40:GLY:HA3	3:I:55:ILE:HG22	2.02	0.41
1:C:721:ASN:OD1	1:C:722:PHE:N	2.46	0.41
1:J:328:ARG:NE	1:J:578:ASP:OD1	2.46	0.41
2:O:46:PRO:HD3	2:O:100:ALA:HA	2.02	0.41
1:K:189:LEU:HB2	1:K:210:ILE:HD13	2.02	0.41
1:L:1146:GLN:HB2	1:L:1147:PRO:HD3	2.02	0.41
1:A:719:PRO:HA	1:A:1076:GLU:HA	2.02	0.41
1:A:785:VAL:HG22	1:A:1030:ALA:HB2	2.03	0.41
3:I:7:SER:OG	3:I:22:SER:OG	2.32	0.41
1:B:746:ILE:O	1:B:1004:ARG:NH2	2.54	0.41
1:C:518:LEU:HG	1:C:520:ALA:H	1.84	0.41
1:J:54:ASP:OD1	1:J:55:LEU:N	2.46	0.41
1:L:350:VAL:HG12	1:L:422:ASN:HB3	2.02	0.41
1:A:988:LEU:HB3	1:A:992:GLU:HG3	2.03	0.41
1:B:351:TYR:CE1	1:B:452:LEU:HB2	2.56	0.41
1:J:87:PHE:N	1:J:236:THR:O	2.45	0.41
1:A:129:ILE:HD12	1:A:170:TYR:HD2	1.86	0.41
1:A:979:SER:OG	1:C:571:ASP:OD2	2.30	0.41
3:I:99:THR:HB	3:I:126:VAL:H	1.86	0.41
1:B:844:CYS:HB3	1:B:859:PHE:HZ	1.86	0.41
1:C:393:THR:HG22	1:C:394:ASN:HD22	1.85	0.41
1:C:1146:GLN:HB2	1:C:1147:PRO:HD3	2.02	0.41
2:O:171:ALA:HB2	2:O:176:VAL:HG22	2.02	0.41
3:R:16:GLY:H	3:R:94:LEU:HB2	1.85	0.41
3:R:42:VAL:N	3:R:103:TYR:O	2.47	0.41
1:K:417:ASN:O	1:K:421:TYR:HB2	2.20	0.41
1:K:468:ILE:HD12	1:L:116:GLN:HG2	2.02	0.41
1:A:806:PHE:HD1	1:A:809:ILE:HD11	1.86	0.41
1:B:294:ASP:N	1:B:294:ASP:OD1	2.52	0.41
1:L:278:LYS:HB2	1:L:306:PHE:CZ	2.56	0.41
1:A:187:LYS:HE3	1:A:210:ILE:HG13	2.03	0.41
3:G:21:ILE:HD12	3:G:21:ILE:HA	1.93	0.41
1:C:350:VAL:HG12	1:C:422:ASN:HB3	2.02	0.41
1:J:1129:ASN:OD1	1:J:1129:ASN:N	2.43	0.41
1:A:351:TYR:CE1	1:A:452:LEU:HB2	2.56	0.41
3:E:168:SER:O	3:E:212:ASN:N	2.50	0.41
1:B:278:LYS:HB2	1:B:306:PHE:CZ	2.55	0.41
1:B:417:ASN:O	1:B:421:TYR:HB2	2.20	0.41
1:C:746:ILE:HG23	1:C:1004:ARG:HD2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:886:ILE:HG13	1:C:887:THR:HG23	2.03	0.41
1:J:351:TYR:CE1	1:J:452:LEU:HB2	2.55	0.41
2:M:161:TYR:HB3	2:M:162:PRO:HD3	2.02	0.41
1:L:393:THR:HG22	1:L:394:ASN:ND2	2.36	0.41
1:L:439:ASN:HB2	1:L:506:GLN:HB3	2.02	0.41
1:L:886:ILE:HG13	1:L:887:THR:HG23	2.02	0.41
1:A:294:ASP:OD1	1:A:297:SER:N	2.46	0.41
3:E:178:VAL:HG22	3:E:197:VAL:HG23	2.03	0.41
2:F:166:THR:HB	2:F:217:THR:HB	2.03	0.41
1:B:719:PRO:HG3	1:B:1073:PRO:HB3	2.02	0.41
1:C:393:THR:HG22	1:C:394:ASN:ND2	2.36	0.41
1:C:806:PHE:HD1	1:C:809:ILE:HD11	1.85	0.41
1:C:989:ASP:HB2	1:C:991:PRO:HD2	2.02	0.41
1:C:1131:ASP:OD1	1:C:1131:ASP:N	2.51	0.41
1:J:393:THR:HG22	1:J:394:ASN:ND2	2.36	0.41
3:N:159:ASP:HA	3:N:190:LEU:HD13	2.03	0.41
3:P:68:SER:HB3	3:P:71:PHE:HD2	1.86	0.41
1:K:353:TRP:HZ3	1:K:355:ARG:HE	1.69	0.41
1:K:888:SER:OG	1:K:891:THR:OG1	2.28	0.41
1:L:646:ARG:NH1	1:L:668:ALA:O	2.54	0.41
1:A:193:VAL:HG13	1:A:270:LEU:HD11	2.03	0.41
1:B:379:CYS:HA	1:B:432:CYS:HA	2.02	0.41
2:Q:118:PHE:CG	3:R:50:LEU:HB2	2.55	0.41
1:K:208:THR:HG21	1:K:221:SER:HB3	2.02	0.41
1:K:745:TYR:OH	1:K:966:LEU:O	2.37	0.41
1:A:468:ILE:HD12	1:B:116:GLN:HG2	2.03	0.40
1:C:902:PHE:N	1:C:903:PRO:HD2	2.37	0.40
1:A:1090:LYS:HE2	1:A:1090:LYS:HB2	1.94	0.40
2:H:183:THR:HG23	3:I:184:VAL:HG13	2.01	0.40
1:C:38:TYR:HA	1:C:223:LEU:H	1.86	0.40
1:K:28:SER:OG	1:K:65:TRP:O	2.30	0.40
1:K:645:THR:OG1	1:K:648:GLY:O	2.33	0.40
1:K:844:CYS:HB3	1:K:859:PHE:HZ	1.85	0.40
1:L:782:THR:HG22	1:L:869:LEU:HD12	2.03	0.40
1:A:518:LEU:HG	1:A:520:ALA:H	1.86	0.40
2:D:55:TYR:CD1	2:D:68:PRO:HG3	2.56	0.40
3:I:30:PHE:O	3:I:58:PRO:HG2	2.21	0.40
1:B:353:TRP:HZ3	1:B:355:ARG:HE	1.69	0.40
1:K:55:LEU:HB3	1:K:195:LYS:HE3	2.03	0.40
1:L:28:SER:OG	1:L:65:TRP:O	2.30	0.40
1:C:174:PRO:HB2	1:C:177:MET:HB3	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:353:TRP:HZ3	1:C:355:ARG:HE	1.70	0.40
1:J:278:LYS:HB2	1:J:306:PHE:CZ	2.56	0.40
1:K:405:ASN:ND2	1:L:369:TYR:O	2.39	0.40
1:L:746:ILE:HG23	1:L:1004:ARG:HD2	2.03	0.40
1:A:403:ARG:NE	1:A:405:ASN:OD1	2.46	0.40
1:A:721:ASN:OD1	1:A:722:PHE:N	2.46	0.40
1:B:363:ALA:N	1:B:525:CYS:O	2.51	0.40
1:L:564:GLN:NE2	1:L:577:ARG:O	2.55	0.40
1:L:910:PHE:HA	1:L:913:ILE:HG12	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1027/1299 (79%)	1009 (98%)	18 (2%)	0	100	100
1	B	1024/1299 (79%)	1000 (98%)	24 (2%)	0	100	100
1	C	1027/1299 (79%)	1001 (98%)	26 (2%)	0	100	100
1	J	1027/1299 (79%)	1010 (98%)	17 (2%)	0	100	100
1	K	1024/1299 (79%)	998 (98%)	26 (2%)	0	100	100
1	L	1027/1299 (79%)	1003 (98%)	24 (2%)	0	100	100
2	D	181/215 (84%)	177 (98%)	4 (2%)	0	100	100
2	F	182/215 (85%)	179 (98%)	3 (2%)	0	100	100
2	H	182/215 (85%)	179 (98%)	3 (2%)	0	100	100
2	M	181/215 (84%)	177 (98%)	4 (2%)	0	100	100
2	O	182/215 (85%)	180 (99%)	2 (1%)	0	100	100
2	Q	182/215 (85%)	179 (98%)	3 (2%)	0	100	100
3	E	194/451 (43%)	188 (97%)	6 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	G	190/451 (42%)	183 (96%)	7 (4%)	0	100	100
3	I	194/451 (43%)	186 (96%)	8 (4%)	0	100	100
3	N	194/451 (43%)	187 (96%)	7 (4%)	0	100	100
3	P	190/451 (42%)	182 (96%)	8 (4%)	0	100	100
3	R	194/451 (43%)	186 (96%)	8 (4%)	0	100	100
All	All	8402/11790 (71%)	8204 (98%)	198 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	919/1122 (82%)	903 (98%)	16 (2%)	56	72
1	B	918/1122 (82%)	907 (99%)	11 (1%)	67	79
1	C	919/1122 (82%)	904 (98%)	15 (2%)	58	74
1	J	919/1122 (82%)	904 (98%)	15 (2%)	58	74
1	K	918/1122 (82%)	905 (99%)	13 (1%)	62	75
1	L	919/1122 (82%)	904 (98%)	15 (2%)	58	74
2	D	161/181 (89%)	160 (99%)	1 (1%)	84	88
2	F	162/181 (90%)	162 (100%)	0	100	100
2	H	162/181 (90%)	162 (100%)	0	100	100
2	M	161/181 (89%)	160 (99%)	1 (1%)	84	88
2	O	162/181 (90%)	162 (100%)	0	100	100
2	Q	162/181 (90%)	162 (100%)	0	100	100
3	E	171/399 (43%)	166 (97%)	5 (3%)	37	56
3	G	167/399 (42%)	164 (98%)	3 (2%)	54	71
3	I	171/399 (43%)	168 (98%)	3 (2%)	54	71
3	N	171/399 (43%)	167 (98%)	4 (2%)	45	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	P	167/399 (42%)	164 (98%)	3 (2%)	54	71
3	R	171/399 (43%)	168 (98%)	3 (2%)	54	71
All	All	7500/10212 (73%)	7392 (99%)	108 (1%)	62	75

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	118	LEU
1	A	128	VAL
1	A	130	LYS
1	A	131	VAL
1	A	159	VAL
1	A	200	TYR
1	A	244	LEU
1	A	361	CYS
1	A	362	VAL
1	A	395	VAL
1	A	468	ILE
1	A	483	VAL
1	A	517	LEU
1	A	524	VAL
1	A	528	LYS
1	A	1085	ILE
2	D	180	VAL
3	E	12	VAL
3	E	19	LEU
3	E	39	ILE
3	E	45	MET
3	E	99	THR
3	G	12	VAL
3	G	39	ILE
3	G	99	THR
3	I	12	VAL
3	I	39	ILE
3	I	99	THR
1	B	118	LEU
1	B	128	VAL
1	B	131	VAL
1	B	159	VAL
1	B	200	TYR
1	B	244	LEU

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Mol	Chain	Res	Type
1	B	395	VAL
1	B	424	LYS
1	B	468	ILE
1	B	517	LEU
1	B	524	VAL
1	C	118	LEU
1	C	131	VAL
1	C	159	VAL
1	C	244	LEU
1	C	361	CYS
1	C	362	VAL
1	C	382	VAL
1	C	395	VAL
1	C	424	LYS
1	C	468	ILE
1	C	488	CYS
1	C	517	LEU
1	C	524	VAL
1	C	599	THR
1	C	845	LEU
1	J	118	LEU
1	J	128	VAL
1	J	130	LYS
1	J	131	VAL
1	J	159	VAL
1	J	200	TYR
1	J	244	LEU
1	J	361	CYS
1	J	362	VAL
1	J	395	VAL
1	J	468	ILE
1	J	517	LEU
1	J	524	VAL
1	J	528	LYS
1	J	845	LEU
2	M	180	VAL
3	N	12	VAL
3	N	19	LEU
3	N	39	ILE
3	N	99	THR
3	P	12	VAL
3	P	39	ILE

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Mol	Chain	Res	Type
3	P	99	THR
3	R	12	VAL
3	R	39	ILE
3	R	99	THR
1	K	118	LEU
1	K	128	VAL
1	K	131	VAL
1	K	159	VAL
1	K	200	TYR
1	K	244	LEU
1	K	395	VAL
1	K	424	LYS
1	K	433	VAL
1	K	468	ILE
1	K	517	LEU
1	K	524	VAL
1	K	845	LEU
1	L	118	LEU
1	L	131	VAL
1	L	159	VAL
1	L	244	LEU
1	L	361	CYS
1	L	362	VAL
1	L	382	VAL
1	L	395	VAL
1	L	424	LYS
1	L	468	ILE
1	L	488	CYS
1	L	517	LEU
1	L	524	VAL
1	L	599	THR
1	L	845	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (137) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	88	ASN
1	A	138	ASN
1	A	188	ASN
1	A	239	GLN
1	A	360	ASN
1	A	394	ASN

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Mol	Chain	Res	Type
1	A	519	HIS
1	A	536	ASN
1	A	641	ASN
1	A	644	GLN
1	A	788	GLN
1	A	857	GLN
1	A	876	GLN
1	A	905	GLN
1	A	917	GLN
1	A	969	GLN
1	A	982	ASN
1	A	1015	GLN
1	A	1123	ASN
2	D	44	GLN
2	D	95	GLN
3	E	3	GLN
3	E	72	GLN
3	E	179	HIS
2	F	44	GLN
3	G	44	GLN
3	G	90	HIS
3	G	179	HIS
3	G	186	GLN
2	H	6	GLN
3	I	3	GLN
3	I	120	GLN
1	B	50	HIS
1	B	88	ASN
1	B	123	ASN
1	B	138	ASN
1	B	188	ASN
1	B	239	GLN
1	B	360	ASN
1	B	394	ASN
1	B	519	HIS
1	B	532	ASN
1	B	641	ASN
1	B	857	GLN
1	B	876	GLN
1	B	905	GLN
1	B	917	GLN
1	B	1015	GLN

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Mol	Chain	Res	Type
1	B	1052	HIS
1	B	1062	HIS
1	B	1129	ASN
1	C	123	ASN
1	C	138	ASN
1	C	239	GLN
1	C	394	ASN
1	C	519	HIS
1	C	536	ASN
1	C	641	ASN
1	C	658	ASN
1	C	857	GLN
1	C	876	GLN
1	C	905	GLN
1	C	917	GLN
1	C	969	GLN
1	C	1015	GLN
1	C	1075	GLN
1	C	1123	ASN
1	C	1129	ASN
1	J	70	HIS
1	J	88	ASN
1	J	138	ASN
1	J	188	ASN
1	J	321	GLN
1	J	394	ASN
1	J	439	ASN
1	J	519	HIS
1	J	613	GLN
1	J	641	ASN
1	J	788	GLN
1	J	876	GLN
1	J	905	GLN
1	J	917	GLN
1	J	969	GLN
1	J	1015	GLN
1	J	1075	GLN
1	J	1123	ASN
2	M	37	ASN
2	M	44	GLN
3	N	3	GLN
3	N	72	GLN

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Mol	Chain	Res	Type
3	N	179	HIS
3	P	179	HIS
3	P	186	GLN
2	Q	6	GLN
3	R	3	GLN
3	R	120	GLN
3	R	170	ASN
3	R	179	HIS
1	K	50	HIS
1	K	88	ASN
1	K	123	ASN
1	K	138	ASN
1	K	188	ASN
1	K	239	GLN
1	K	394	ASN
1	K	519	HIS
1	K	532	ASN
1	K	613	GLN
1	K	641	ASN
1	K	658	ASN
1	K	876	GLN
1	K	905	GLN
1	K	917	GLN
1	K	969	GLN
1	K	1015	GLN
1	K	1052	HIS
1	K	1062	HIS
1	K	1092	HIS
1	K	1129	ASN
1	L	88	ASN
1	L	123	ASN
1	L	138	ASN
1	L	321	GLN
1	L	394	ASN
1	L	519	HIS
1	L	613	GLN
1	L	641	ASN
1	L	644	GLN
1	L	658	ASN
1	L	788	GLN
1	L	876	GLN
1	L	905	GLN

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Mol	Chain	Res	Type
1	L	917	GLN
1	L	969	GLN
1	L	1015	GLN
1	L	1075	GLN
1	L	1129	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.