



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 13, 2016 – 07:29 PM EST

PDB ID : 5T5N  
Title : Calcium-activated chloride channel bestrophin-1 (BEST1), triple mutant: I76A, F80A, F84A; in complex with an Fab antibody fragment, chloride, and calcium  
Authors : Long, S.B.; Vaisey, G.  
Deposited on : 2016-08-31  
Resolution : 3.10 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7.1 (RC1), CSD as537be (2016)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20028442  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20028442

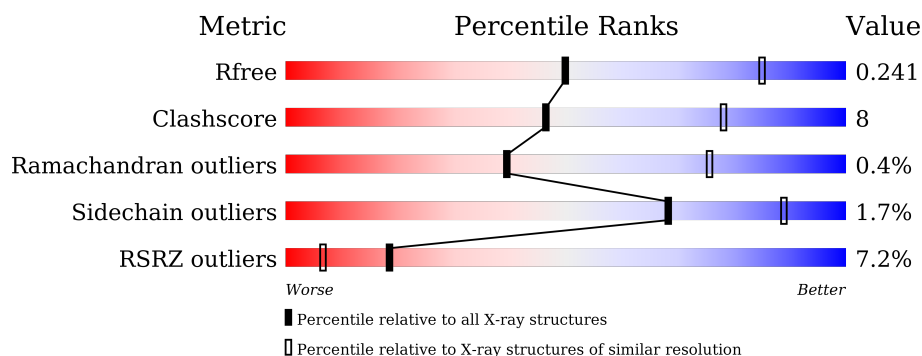
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.10 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)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	91344	1114 (3.14-3.06)
Clashscore	102246	1222 (3.14-3.06)
Ramachandran outliers	100387	1174 (3.14-3.06)
Sidechain outliers	100360	1174 (3.14-3.06)
RSRZ outliers	91569	1119 (3.14-3.06)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	409	<div> <div>72%</div> <div>17%</div> <div>•</div> <div>11%</div> </div>
1	B	409	<div> <div>71%</div> <div>17%</div> <div>•</div> <div>11%</div> </div>
1	C	409	<div> <div>72%</div> <div>16%</div> <div>•</div> <div>11%</div> </div>
1	D	409	<div> <div>70%</div> <div>18%</div> <div>•</div> <div>11%</div> </div>
1	E	409	<div> <div>71%</div> <div>18%</div> <div>11%</div> </div>
2	F	212	<div> <div>2%</div> <div>82%</div> <div>18%</div> </div>

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Mol	Chain	Length	Quality of chain
2	H	212	
2	J	212	
2	L	212	
2	N	212	
3	G	217	
3	I	217	
3	K	217	
3	M	217	
3	O	217	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	CL	D	503	-	-	-	X
5	K	E	504	-	-	-	X
6	GOL	A	504	-	-	-	X
6	GOL	C	501	-	-	-	X
6	GOL	D	501	-	-	-	X

## 2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 30705 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 bestrophin-1 (BEST1).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	366	Total	C	N	O	S	0	0	0
			2979	1947	484	535	13			
1	B	366	Total	C	N	O	S	0	0	0
			2979	1947	484	535	13			
1	C	366	Total	C	N	O	S	0	0	0
			2979	1947	484	535	13			
1	D	366	Total	C	N	O	S	0	0	0
			2979	1947	484	535	13			
1	E	366	Total	C	N	O	S	0	0	0
			2979	1947	484	535	13			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	76	ALA	ILE	engineered mutation	UNP E1C3A0
A	80	ALA	PHE	engineered mutation	UNP E1C3A0
A	84	ALA	PHE	engineered mutation	UNP E1C3A0
A	406	GLU	-	expression tag	UNP E1C3A0
A	407	GLY	-	expression tag	UNP E1C3A0
A	408	GLU	-	expression tag	UNP E1C3A0
A	409	GLU	-	expression tag	UNP E1C3A0
A	410	PHE	-	expression tag	UNP E1C3A0
B	76	ALA	ILE	engineered mutation	UNP E1C3A0
B	80	ALA	PHE	engineered mutation	UNP E1C3A0
B	84	ALA	PHE	engineered mutation	UNP E1C3A0
B	406	GLU	-	expression tag	UNP E1C3A0
B	407	GLY	-	expression tag	UNP E1C3A0
B	408	GLU	-	expression tag	UNP E1C3A0
B	409	GLU	-	expression tag	UNP E1C3A0
B	410	PHE	-	expression tag	UNP E1C3A0
C	76	ALA	ILE	engineered mutation	UNP E1C3A0
C	80	ALA	PHE	engineered mutation	UNP E1C3A0
C	84	ALA	PHE	engineered mutation	UNP E1C3A0

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Chain	Residue	Modelled	Actual	Comment	Reference
C	406	GLU	-	expression tag	UNP E1C3A0
C	407	GLY	-	expression tag	UNP E1C3A0
C	408	GLU	-	expression tag	UNP E1C3A0
C	409	GLU	-	expression tag	UNP E1C3A0
C	410	PHE	-	expression tag	UNP E1C3A0
D	76	ALA	ILE	engineered mutation	UNP E1C3A0
D	80	ALA	PHE	engineered mutation	UNP E1C3A0
D	84	ALA	PHE	engineered mutation	UNP E1C3A0
D	406	GLU	-	expression tag	UNP E1C3A0
D	407	GLY	-	expression tag	UNP E1C3A0
D	408	GLU	-	expression tag	UNP E1C3A0
D	409	GLU	-	expression tag	UNP E1C3A0
D	410	PHE	-	expression tag	UNP E1C3A0
E	76	ALA	ILE	engineered mutation	UNP E1C3A0
E	80	ALA	PHE	engineered mutation	UNP E1C3A0
E	84	ALA	PHE	engineered mutation	UNP E1C3A0
E	406	GLU	-	expression tag	UNP E1C3A0
E	407	GLY	-	expression tag	UNP E1C3A0
E	408	GLU	-	expression tag	UNP E1C3A0
E	409	GLU	-	expression tag	UNP E1C3A0
E	410	PHE	-	expression tag	UNP E1C3A0

- Molecule 2 is a protein called Fab antibody fragment, light chain (10D10).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	H	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	J	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	L	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			
2	N	212	Total	C	N	O	S	0	0	0
			1591	990	266	329	6			

- Molecule 3 is a protein called Fab antibody fragment, heavy chain (10D10).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	G	211	Total	C	N	O	S	0	0	0
			1558	991	254	305	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	I	211	Total 1558	C 991	N 254	O 305	S 8	0	0	0
3	K	211	Total 1558	C 991	N 254	O 305	S 8	0	0	0
3	M	211	Total 1558	C 991	N 254	O 305	S 8	0	0	0
3	O	211	Total 1558	C 991	N 254	O 305	S 8	0	0	0

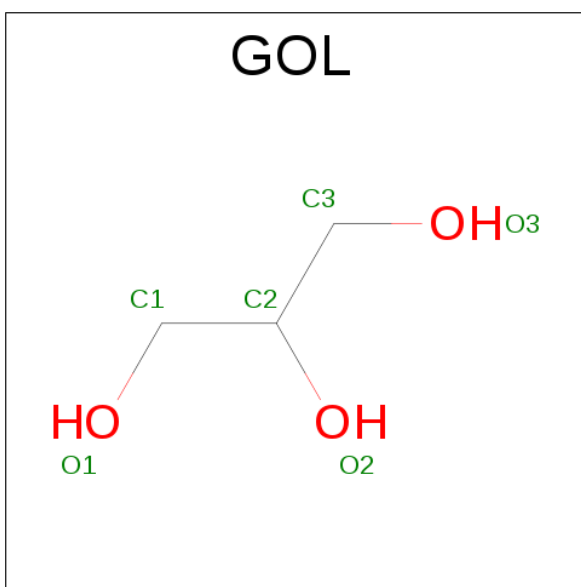
- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	3	Total 3	Cl 3	0	0
4	A	3	Total 3	Cl 3	0	0
4	D	3	Total 3	Cl 3	0	0
4	C	3	Total 3	Cl 3	0	0
4	E	3	Total 3	Cl 3	0	0

- Molecule 5 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	2	Total 2	K 2	0	0
5	C	2	Total 2	K 2	0	0
5	E	1	Total 1	K 1	0	0

- Molecule 6 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			6	3	3		
6	B	1	Total	C	O	0	0
			6	3	3		
6	C	1	Total	C	O	0	0
			6	3	3		
6	D	1	Total	C	O	0	0
			6	3	3		
6	E	1	Total	C	O	0	0
			6	3	3		

- Molecule 7 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	1	Total	Ca	0	0
			1	1		
7	A	1	Total	Ca	0	0
			1	1		
7	D	1	Total	Ca	0	0
			1	1		
7	C	1	Total	Ca	0	0
			1	1		
7	E	1	Total	Ca	0	0
			1	1		

- Molecule 8 is water.

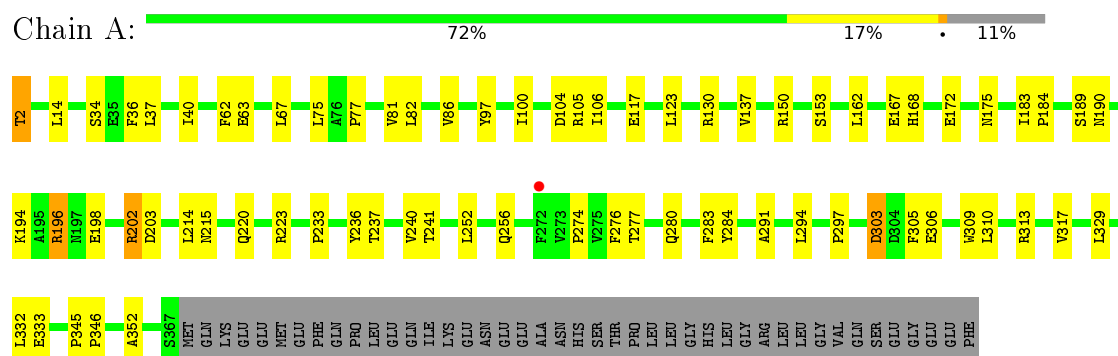
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	2	Total 2	O 2	0	0
8	B	2	Total 2	O 2	0	0
8	C	2	Total 2	O 2	0	0
8	D	2	Total 2	O 2	0	0
8	E	2	Total 2	O 2	0	0



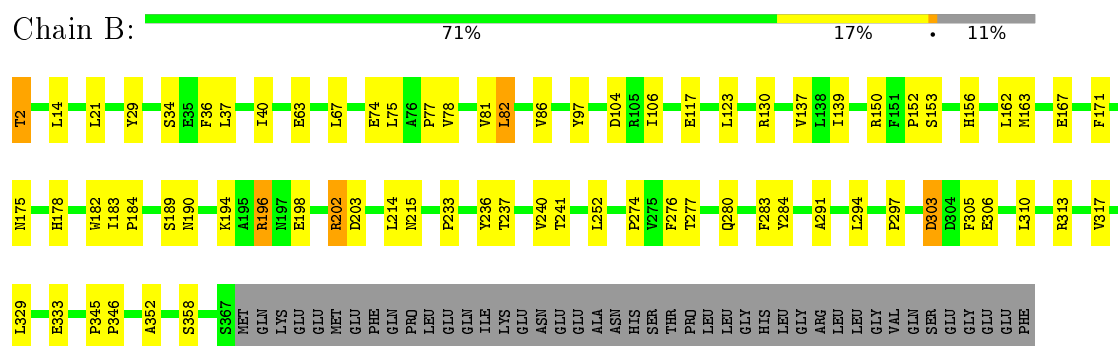
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

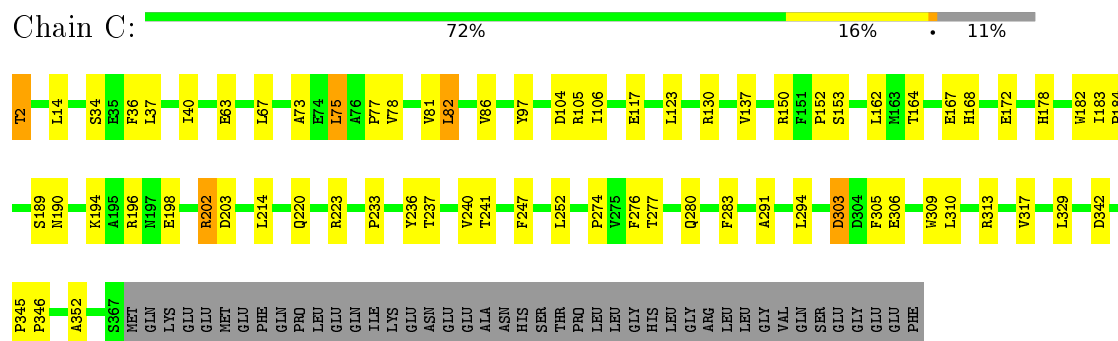
- Molecule 1: bestrophin-1 (BEST1)



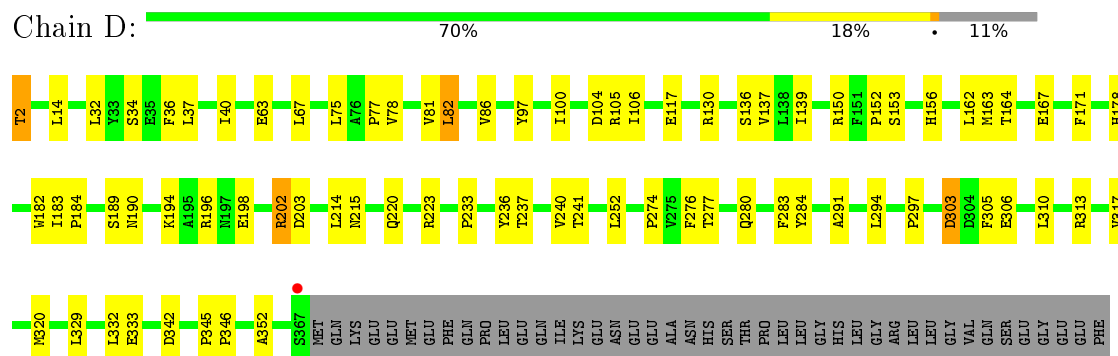
- Molecule 1: bestrophin-1 (BEST1)



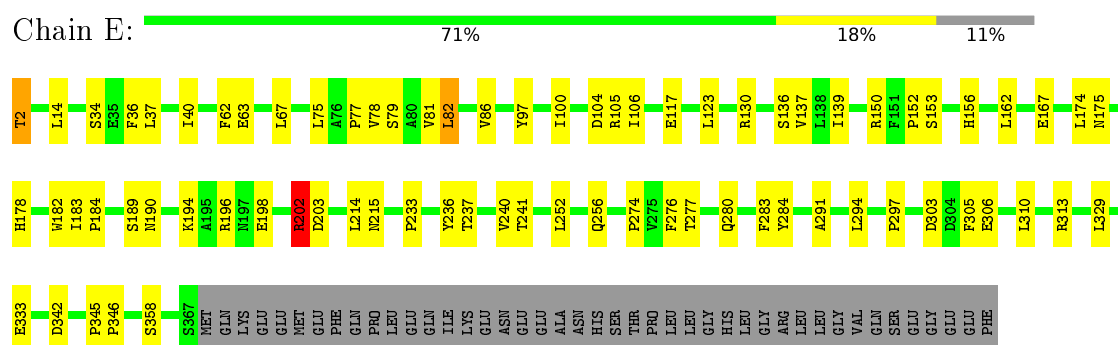
- Molecule 1: bestrophin-1 (BEST1)



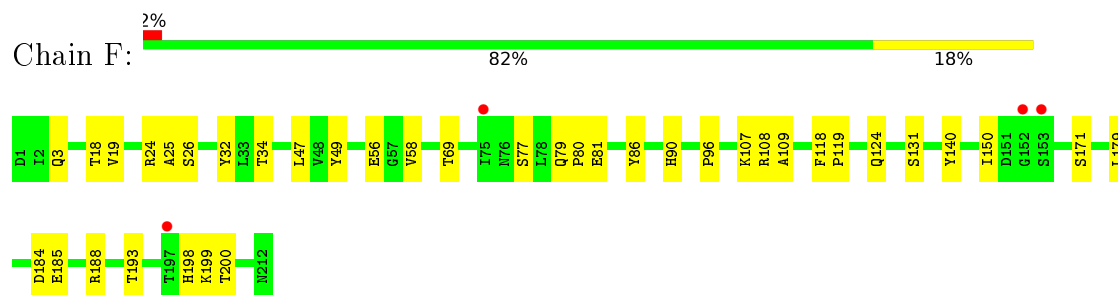
- Molecule 1: bestrophin-1 (BEST1)



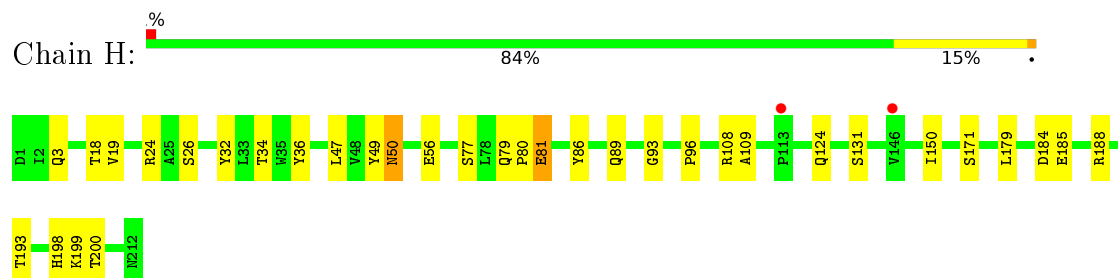
- Molecule 1: bestrophin-1 (BEST1)



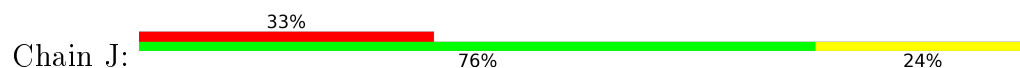
- Molecule 2: Fab antibody fragment, light chain (10D10)

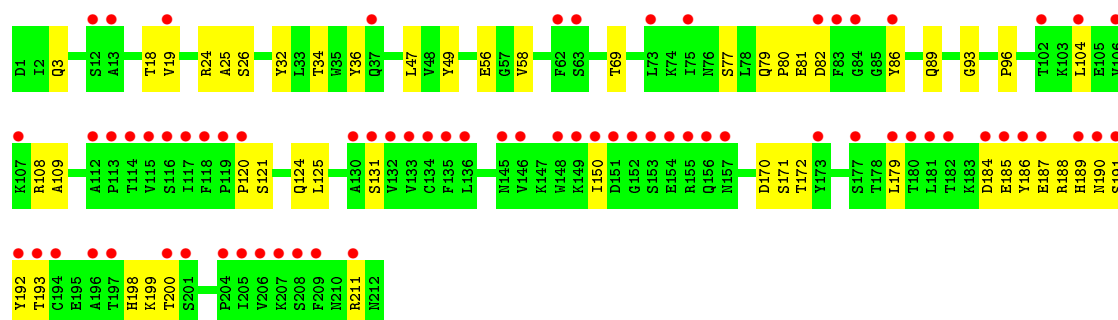


- Molecule 2: Fab antibody fragment, light chain (10D10)

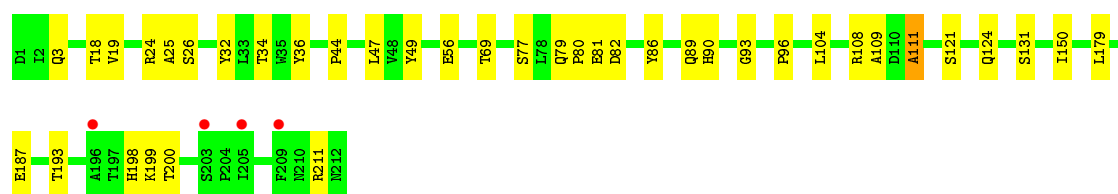
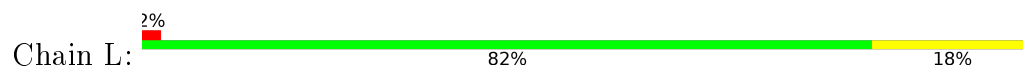


- Molecule 2: Fab antibody fragment, light chain (10D10)

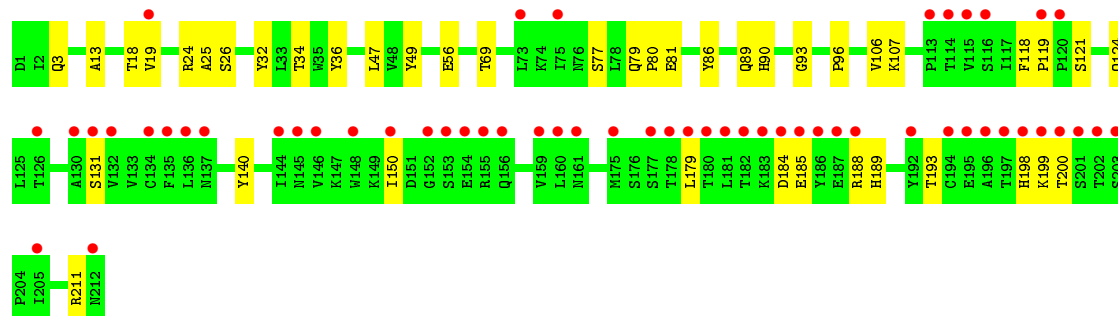
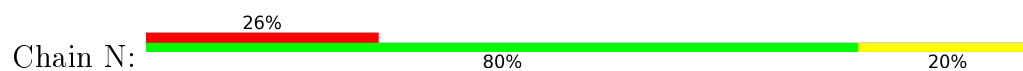




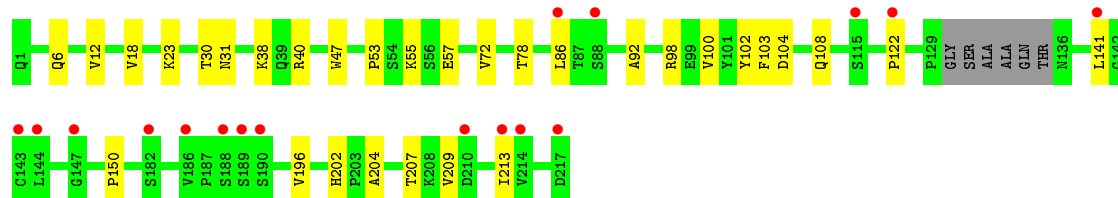
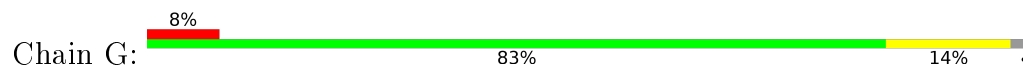
- Molecule 2: Fab antibody fragment, light chain (10D10)



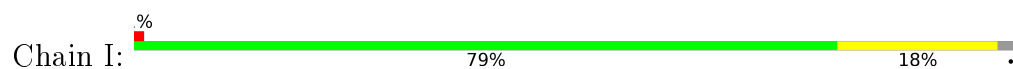
- Molecule 2: Fab antibody fragment, light chain (10D10)

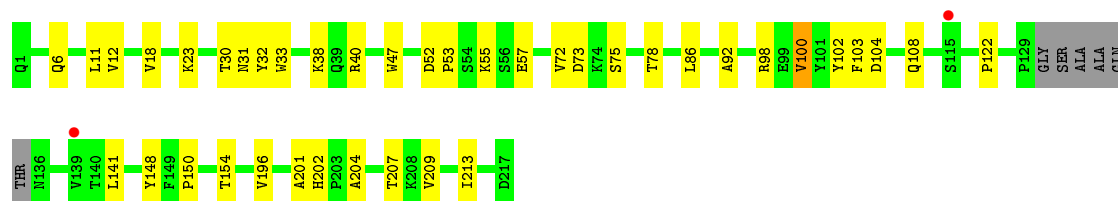


- Molecule 3: Fab antibody fragment, heavy chain (10D10)

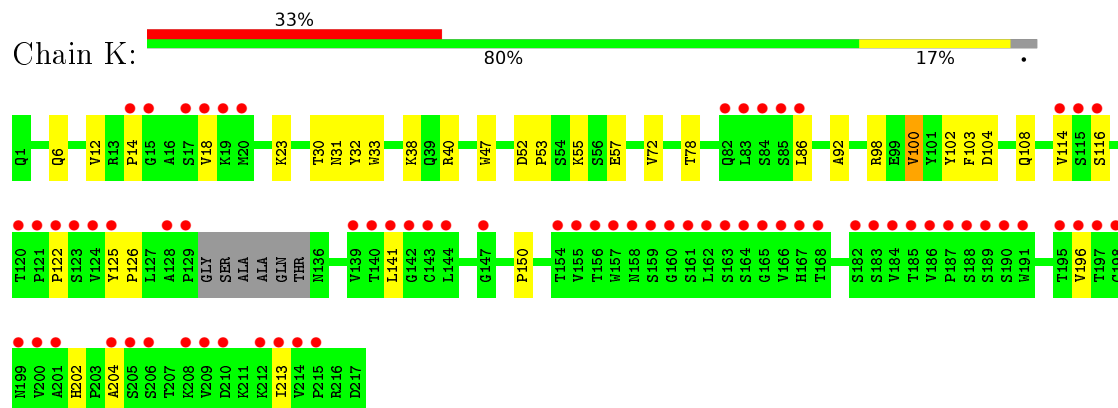


- Molecule 3: Fab antibody fragment, heavy chain (10D10)

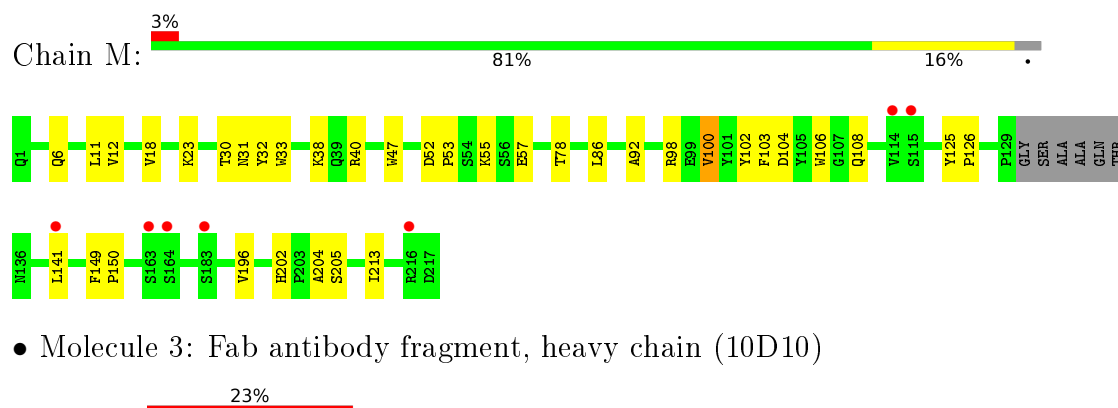




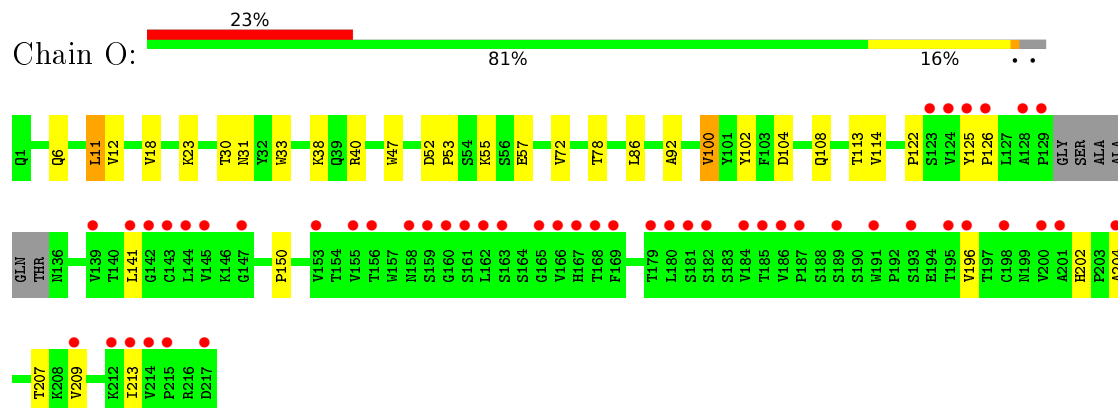
- Molecule 3: Fab antibody fragment, heavy chain (10D10)



- Molecule 3: Fab antibody fragment, heavy chain (10D10)



- Molecule 3: Fab antibody fragment, heavy chain (10D10)



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	98.24Å 243.88Å 172.05Å 90.00° 93.84° 90.00°	Depositor
Resolution (Å)	37.95 – 3.10 37.95 – 3.10	Depositor EDS
% Data completeness (in resolution range)	99.9 (37.95-3.10) 99.9 (37.95-3.10)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.62 (at 3.12Å)	Xtriage
Refinement program	PHENIX (1.10 _2155: ???)	Depositor
R, $R_{free}$	0.218 , 0.242 0.214 , 0.241	Depositor DCC
$R_{free}$ test set	7264 reflections (4.99%)	DCC
Wilson B-factor (Å <sup>2</sup> )	81.7	Xtriage
Anisotropy	0.489	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 59.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	30705	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	101.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.89% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, K, CA, CL

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	0.29	0/3064	0.50	0/4178
1	B	0.30	0/3064	0.50	0/4178
1	C	0.31	0/3064	0.51	0/4178
1	D	0.30	0/3064	0.50	0/4178
1	E	0.30	0/3064	0.50	1/4178 (0.0%)
2	F	0.28	0/1630	0.54	0/2225
2	H	0.30	0/1630	0.54	0/2225
2	J	0.32	0/1630	0.56	0/2225
2	L	0.34	1/1630 (0.1%)	0.57	0/2225
2	N	0.32	0/1630	0.57	0/2225
3	G	0.28	0/1602	0.53	0/2202
3	I	0.27	0/1602	0.54	1/2202 (0.0%)
3	K	0.26	0/1602	0.53	0/2202
3	M	0.28	0/1602	0.54	0/2202
3	O	0.28	0/1602	0.53	1/2202 (0.0%)
All	All	0.30	1/31480 (0.0%)	0.52	3/43025 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	111	ALA	C-N	5.40	1.46	1.34

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	I	11	LEU	CA-CB-CG	5.44	127.82	115.30
3	O	11	LEU	CA-CB-CG	5.39	127.69	115.30
1	E	202	ARG	NE-CZ-NH1	-5.15	117.73	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	203	ASP	Sidechain

## 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	2979	0	2917	53	0
1	B	2979	0	2917	59	0
1	C	2979	0	2917	52	0
1	D	2979	0	2917	59	0
1	E	2979	0	2917	59	0
2	F	1591	0	1449	23	0
2	H	1591	0	1449	22	0
2	J	1591	0	1449	37	0
2	L	1591	0	1449	24	0
2	N	1591	0	1449	25	0
3	G	1558	0	1441	21	0
3	I	1558	0	1441	30	0
3	K	1558	0	1441	27	0
3	M	1558	0	1441	27	0
3	O	1558	0	1441	24	0
4	A	3	0	0	0	0
4	B	3	0	0	1	0
4	C	3	0	0	0	0
4	D	3	0	0	0	0
4	E	3	0	0	0	0
5	A	2	0	0	0	0
5	C	2	0	0	0	0
5	E	1	0	0	0	0
6	A	6	0	8	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	B	6	0	8	2	0
6	C	6	0	8	1	0
6	D	6	0	8	1	0
6	E	6	0	8	1	0
7	A	1	0	0	0	0
7	B	1	0	0	0	0
7	C	1	0	0	0	0
7	D	1	0	0	0	0
7	E	1	0	0	0	0
8	A	2	0	0	0	0
8	B	2	0	0	0	0
8	C	2	0	0	0	0
8	D	2	0	0	0	0
8	E	2	0	0	0	0
All	All	30705	0	29075	452	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 8.

All (452) 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)
3:O:38:LYS:HE2	3:O:40:ARG:HD2	1.64	0.79
3:I:38:LYS:HE2	3:I:40:ARG:HD2	1.66	0.77
3:M:38:LYS:HE2	3:M:40:ARG:HD2	1.67	0.77
3:G:38:LYS:HE2	3:G:40:ARG:HD2	1.66	0.76
3:K:38:LYS:HE2	3:K:40:ARG:HD2	1.65	0.76
2:N:185:GLU:HA	2:N:188:ARG:HD3	1.70	0.74
2:F:185:GLU:HA	2:F:188:ARG:HD2	1.72	0.72
2:J:187:GLU:HA	2:J:211:ARG:NH2	2.03	0.72
2:J:192:TYR:HE1	2:J:211:ARG:HD2	1.56	0.71
3:K:30:THR:HA	3:K:53:PRO:HB2	1.74	0.70
1:B:294:LEU:HD11	1:C:233:PRO:HG2	1.74	0.68
3:I:30:THR:HA	3:I:53:PRO:HB2	1.76	0.68
1:D:294:LEU:HD11	1:E:233:PRO:HG2	1.75	0.68
1:E:75:LEU:HD23	1:E:284:TYR:CE1	2.29	0.68
2:J:192:TYR:CE1	2:J:211:ARG:HD2	2.28	0.68
1:B:329:LEU:HD11	1:C:190:ASN:HB3	1.76	0.68
3:G:30:THR:HA	3:G:53:PRO:HB2	1.75	0.67
3:M:12:VAL:HG21	3:M:86:LEU:HD13	1.76	0.67
1:D:75:LEU:HD23	1:D:284:TYR:CE1	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:196:VAL:HB	3:M:213:ILE:HD11	1.76	0.67
2:J:185:GLU:HA	2:J:188:ARG:HD3	1.75	0.67
2:L:150:ILE:HD11	2:L:179:LEU:HD21	1.77	0.67
1:A:190:ASN:HB3	1:E:329:LEU:HD11	1.77	0.67
1:A:75:LEU:HD23	1:A:284:TYR:CE1	2.30	0.67
1:A:233:PRO:HG2	1:E:294:LEU:HD11	1.75	0.67
3:M:30:THR:HA	3:M:53:PRO:HB2	1.77	0.67
1:C:294:LEU:HD11	1:D:233:PRO:HG2	1.76	0.66
2:F:184:ASP:O	2:F:188:ARG:HG3	1.96	0.66
3:O:196:VAL:HB	3:O:213:ILE:HD11	1.79	0.65
1:A:294:LEU:HD11	1:B:233:PRO:HG2	1.78	0.64
3:O:30:THR:HA	3:O:53:PRO:HB2	1.77	0.64
3:G:196:VAL:HB	3:G:213:ILE:HD11	1.79	0.64
3:I:196:VAL:HB	3:I:213:ILE:HD11	1.77	0.64
1:B:75:LEU:HD23	1:B:284:TYR:CE1	2.33	0.64
2:L:108:ARG:NH1	2:L:109:ALA:O	2.31	0.64
2:J:120:PRO:HD2	2:J:186:TYR:OH	1.97	0.64
1:C:329:LEU:HD11	1:D:190:ASN:HB3	1.78	0.63
2:F:150:ILE:HD11	2:F:179:LEU:HD21	1.81	0.62
1:A:14:LEU:HD13	1:B:34:SER:HB2	1.81	0.62
1:A:329:LEU:HD11	1:B:190:ASN:HB3	1.82	0.62
1:D:14:LEU:HD13	1:E:34:SER:HB2	1.82	0.61
1:B:283:PHE:HE2	1:C:77:PRO:HB2	1.64	0.61
1:C:14:LEU:HD13	1:D:34:SER:HB2	1.82	0.61
1:C:153:SER:HB3	3:K:31:ASN:HB3	1.81	0.60
3:I:141:LEU:HD13	3:I:213:ILE:HD13	1.82	0.60
1:D:329:LEU:HD11	1:E:190:ASN:HB3	1.82	0.60
3:I:12:VAL:HG21	3:I:86:LEU:HD13	1.84	0.60
2:J:3:GLN:H	2:J:26:SER:HB3	1.67	0.59
3:G:102:TYR:CE1	3:G:104:ASP:HB3	2.37	0.59
3:K:196:VAL:HB	3:K:213:ILE:HD11	1.83	0.59
1:B:14:LEU:HD13	1:C:34:SER:HB2	1.84	0.59
2:J:150:ILE:HD11	2:J:179:LEU:HD21	1.85	0.59
1:A:130:ARG:NH2	1:A:167:GLU:OE2	2.36	0.59
1:D:274:PRO:HB2	1:D:277:THR:HB	1.84	0.59
2:L:18:THR:HG22	2:L:77:SER:H	1.67	0.59
1:D:237:THR:O	1:D:241:THR:HG23	2.03	0.59
3:G:12:VAL:HG21	3:G:86:LEU:HD13	1.83	0.59
1:B:130:ARG:NH2	1:B:167:GLU:OE2	2.36	0.59
2:H:108:ARG:HD2	2:H:171:SER:HB2	1.85	0.58
3:K:141:LEU:HD13	3:K:213:ILE:HD13	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:274:PRO:HB2	1:E:277:THR:HB	1.86	0.58
3:M:141:LEU:HD13	3:M:213:ILE:HD13	1.85	0.58
3:G:141:LEU:HD13	3:G:213:ILE:HD13	1.85	0.57
2:H:18:THR:HG22	2:H:77:SER:H	1.70	0.57
2:L:47:LEU:HD11	2:L:86:TYR:HE1	1.70	0.57
2:H:198:HIS:HB3	2:H:200:THR:HG22	1.86	0.57
2:J:47:LEU:HD11	2:J:86:TYR:HE1	1.70	0.57
2:J:184:ASP:O	2:J:188:ARG:HG3	2.05	0.57
1:A:34:SER:HB2	1:E:14:LEU:HD13	1.87	0.56
2:L:3:GLN:H	2:L:26:SER:HB3	1.70	0.56
2:J:18:THR:HG22	2:J:77:SER:H	1.70	0.56
2:N:150:ILE:HD11	2:N:179:LEU:HD21	1.87	0.56
2:H:47:LEU:HD11	2:H:86:TYR:HE1	1.69	0.56
3:M:18:VAL:HG12	3:M:86:LEU:HD11	1.88	0.56
3:O:141:LEU:HD13	3:O:213:ILE:HD13	1.87	0.56
2:J:108:ARG:HD2	2:J:171:SER:HB2	1.88	0.56
2:F:18:THR:HG22	2:F:77:SER:H	1.71	0.56
2:F:3:GLN:H	2:F:26:SER:HB3	1.70	0.56
2:H:3:GLN:H	2:H:26:SER:HB3	1.70	0.56
1:D:130:ARG:NH2	1:D:167:GLU:OE2	2.39	0.56
1:B:237:THR:O	1:B:241:THR:HG23	2.06	0.55
1:E:237:THR:O	1:E:241:THR:HG23	2.06	0.55
1:C:130:ARG:NH2	1:C:167:GLU:OE2	2.40	0.55
1:C:237:THR:O	1:C:241:THR:HG23	2.06	0.55
2:N:184:ASP:O	2:N:188:ARG:HG3	2.07	0.55
2:N:47:LEU:HD11	2:N:86:TYR:HE1	1.72	0.55
1:A:183:ILE:HB	1:A:184:PRO:HD3	1.89	0.55
2:J:186:TYR:CZ	2:J:211:ARG:NH1	2.74	0.55
1:D:153:SER:HB3	3:M:31:ASN:HB3	1.88	0.54
1:A:81:VAL:HG22	1:A:240:VAL:HG12	1.89	0.54
1:A:346:PRO:HA	2:H:32:TYR:CE1	2.43	0.54
3:G:23:LYS:HG3	3:G:78:THR:HG22	1.88	0.54
3:O:23:LYS:HG3	3:O:78:THR:HG22	1.89	0.54
1:E:183:ILE:HB	1:E:184:PRO:HD3	1.89	0.54
2:N:18:THR:HG22	2:N:77:SER:H	1.72	0.54
2:L:198:HIS:CD2	2:L:199:LYS:H	2.26	0.54
1:B:183:ILE:HB	1:B:184:PRO:HD3	1.90	0.54
1:E:130:ARG:NH2	1:E:167:GLU:OE2	2.40	0.54
1:E:36:PHE:CZ	1:E:40:ILE:HD11	2.43	0.54
2:F:108:ARG:NH1	2:F:109:ALA:O	2.40	0.54
1:A:77:PRO:HB2	1:E:283:PHE:HE2	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:36:PHE:CZ	1:D:40:ILE:HD11	2.43	0.53
1:A:36:PHE:CZ	1:A:40:ILE:HD11	2.43	0.53
1:D:183:ILE:HB	1:D:184:PRO:HD3	1.89	0.53
2:F:47:LEU:HD11	2:F:86:TYR:HE1	1.72	0.53
2:N:3:GLN:H	2:N:26:SER:HB3	1.72	0.53
3:G:18:VAL:HG12	3:G:86:LEU:HD11	1.89	0.53
1:A:274:PRO:HB2	1:A:277:THR:HB	1.91	0.53
1:C:183:ILE:HB	1:C:184:PRO:HD3	1.89	0.53
1:A:237:THR:O	1:A:241:THR:HG23	2.08	0.53
2:L:187:GLU:OE1	2:L:211:ARG:NH2	2.42	0.53
1:C:97:TYR:HB2	1:C:305:PHE:CZ	2.44	0.53
3:I:23:LYS:HG3	3:I:78:THR:HG22	1.91	0.53
3:M:23:LYS:HG3	3:M:78:THR:HG22	1.90	0.53
2:N:24:ARG:HG2	2:N:24:ARG:HH11	1.73	0.53
1:D:137:VAL:HG21	1:D:162:LEU:HD13	1.91	0.52
1:C:283:PHE:HE2	1:D:77:PRO:HB2	1.74	0.52
1:C:137:VAL:HG21	1:C:162:LEU:HD13	1.92	0.52
2:H:108:ARG:NH1	2:H:109:ALA:O	2.42	0.52
1:A:283:PHE:HE2	1:B:77:PRO:HB2	1.74	0.52
1:D:283:PHE:HE2	1:E:77:PRO:HB2	1.73	0.52
2:H:198:HIS:CD2	2:H:199:LYS:H	2.28	0.52
3:G:150:PRO:HD2	3:G:204:ALA:HB1	1.92	0.52
1:C:36:PHE:CZ	1:C:40:ILE:HD11	2.45	0.51
3:O:102:TYR:CE1	3:O:104:ASP:HB3	2.45	0.51
1:B:202:ARG:HG2	1:B:203:ASP:OD1	2.10	0.51
1:C:81:VAL:HG22	1:C:240:VAL:HG12	1.91	0.51
2:J:198:HIS:HB3	2:J:200:THR:HG22	1.92	0.51
1:B:352:ALA:HB3	2:J:93:GLY:HA2	1.93	0.51
1:C:86:VAL:HG22	1:C:291:ALA:HB2	1.93	0.51
3:K:23:LYS:HG3	3:K:78:THR:HG22	1.91	0.51
2:H:150:ILE:HD11	2:H:179:LEU:HD21	1.93	0.51
2:H:184:ASP:O	2:H:188:ARG:HG3	2.11	0.51
1:C:274:PRO:HB2	1:C:277:THR:HB	1.92	0.51
3:K:12:VAL:HG21	3:K:86:LEU:HD13	1.92	0.51
2:J:198:HIS:CD2	2:J:199:LYS:H	2.29	0.50
1:B:36:PHE:CZ	1:B:40:ILE:HD11	2.47	0.50
1:E:106:ILE:HD11	1:E:214:LEU:HA	1.93	0.50
1:E:79:SER:HG	1:E:284:TYR:HH	1.60	0.50
2:F:124:GLN:HE22	2:F:131:SER:N	2.10	0.50
1:A:100:ILE:HG21	1:A:310:LEU:HD23	1.94	0.50
1:D:306:GLU:OE1	6:D:501:GOL:H12	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:97:TYR:HB2	1:B:305:PHE:CZ	2.47	0.50
1:E:156:HIS:NE2	3:O:100:VAL:HA	2.27	0.50
1:B:345:PRO:HB2	1:C:150:ARG:NH2	2.26	0.50
2:F:198:HIS:CD2	2:F:199:LYS:H	2.30	0.50
3:I:150:PRO:HD2	3:I:204:ALA:HB1	1.94	0.49
3:O:11:LEU:HD13	3:O:113:THR:HB	1.93	0.49
1:D:81:VAL:HG22	1:D:240:VAL:HG12	1.95	0.49
2:N:198:HIS:HB3	2:N:200:THR:HG22	1.93	0.49
1:B:274:PRO:HB2	1:B:277:THR:HB	1.93	0.49
1:B:175:ASN:ND2	1:E:342:ASP:OD2	2.46	0.49
3:I:102:TYR:CE1	3:I:104:ASP:HB3	2.47	0.49
1:B:153:SER:HB3	3:I:31:ASN:HB3	1.94	0.49
1:B:81:VAL:HG22	1:B:240:VAL:HG12	1.95	0.49
1:E:153:SER:HB3	3:O:31:ASN:HB3	1.93	0.49
1:C:75:LEU:O	1:C:78:VAL:N	2.45	0.49
1:D:152:PRO:HB2	3:M:31:ASN:O	2.13	0.49
2:L:198:HIS:HB3	2:L:200:THR:HG22	1.94	0.49
1:A:106:ILE:HD11	1:A:214:LEU:HA	1.95	0.49
2:H:79:GLN:HB3	2:H:80:PRO:HD2	1.95	0.49
2:J:34:THR:HG22	2:J:49:TYR:HA	1.95	0.49
2:L:79:GLN:HB3	2:L:80:PRO:HD2	1.95	0.49
1:C:202:ARG:HG2	1:C:203:ASP:OD1	2.12	0.49
1:E:62:PHE:HZ	1:E:256:GLN:HG3	1.77	0.49
1:C:346:PRO:HA	2:L:32:TYR:CE1	2.47	0.49
1:A:150:ARG:NH2	1:E:345:PRO:HB2	2.28	0.48
1:C:342:ASP:OD2	1:E:175:ASN:ND2	2.46	0.48
1:D:106:ILE:HD11	1:D:214:LEU:HA	1.95	0.48
1:E:194:LYS:O	1:E:198:GLU:HG3	2.13	0.48
1:E:202:ARG:HG2	1:E:203:ASP:OD1	2.13	0.48
1:E:81:VAL:HG22	1:E:240:VAL:HG12	1.95	0.48
1:C:345:PRO:HB2	1:D:150:ARG:NH2	2.28	0.48
2:N:198:HIS:CD2	2:N:199:LYS:H	2.31	0.48
2:N:79:GLN:HB3	2:N:80:PRO:HD2	1.96	0.48
1:E:152:PRO:HB2	3:O:31:ASN:O	2.13	0.48
2:F:198:HIS:HB3	2:F:200:THR:HG22	1.96	0.48
2:F:79:GLN:HB3	2:F:80:PRO:HD2	1.95	0.48
1:B:306:GLU:OE1	6:B:501:GOL:H12	2.14	0.48
1:C:306:GLU:OE1	6:C:501:GOL:H12	2.13	0.48
2:J:125:LEU:HD21	2:J:186:TYR:CD2	2.49	0.48
2:N:34:THR:HG22	2:N:49:TYR:HA	1.95	0.48
1:A:137:VAL:HG21	1:A:162:LEU:HD13	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:96:PRO:HD2	3:K:47:TRP:CD2	2.49	0.47
1:D:346:PRO:HA	2:N:32:TYR:CE1	2.48	0.47
3:K:14:PRO:HD2	3:K:116:SER:OG	2.13	0.47
3:M:102:TYR:CE1	3:M:104:ASP:HB3	2.49	0.47
1:B:21:LEU:O	1:B:29:TYR:OH	2.25	0.47
2:J:25:ALA:HB3	2:J:69:THR:HA	1.97	0.47
2:J:79:GLN:HB3	2:J:80:PRO:HD2	1.95	0.47
3:M:213:ILE:O	3:M:213:ILE:HD12	2.15	0.47
1:A:153:SER:HB3	3:G:31:ASN:HB3	1.95	0.47
1:A:86:VAL:HG22	1:A:291:ALA:HB2	1.96	0.47
1:C:106:ILE:HD11	1:C:214:LEU:HA	1.97	0.47
2:N:124:GLN:HG3	3:O:125:TYR:CE2	2.50	0.47
1:B:152:PRO:HB2	3:I:31:ASN:O	2.15	0.47
1:D:86:VAL:HG22	1:D:291:ALA:HB2	1.95	0.46
1:E:86:VAL:HG22	1:E:291:ALA:HB2	1.96	0.46
2:L:34:THR:HG22	2:L:49:TYR:HA	1.97	0.46
1:B:313:ARG:HA	1:C:178:HIS:NE2	2.30	0.46
3:G:102:TYR:HE1	3:G:104:ASP:HB3	1.79	0.46
1:B:346:PRO:HA	2:J:32:TYR:CE1	2.51	0.46
3:K:40:ARG:HG2	3:K:92:ALA:HB2	1.97	0.46
1:D:97:TYR:HB2	1:D:305:PHE:CZ	2.51	0.46
1:D:345:PRO:HB2	1:E:150:ARG:NH2	2.30	0.46
2:J:124:GLN:HG3	3:K:125:TYR:CE2	2.50	0.46
1:C:78:VAL:O	1:C:82:LEU:HB2	2.16	0.46
1:E:306:GLU:OE1	6:E:501:GOL:H12	2.16	0.46
3:M:202:HIS:HD2	3:M:205:SER:HB3	1.79	0.46
3:O:55:LYS:HB2	3:O:57:GLU:HG3	1.98	0.46
1:A:310:LEU:HA	1:A:310:LEU:HD12	1.81	0.46
1:C:152:PRO:HB2	3:K:31:ASN:O	2.15	0.46
1:B:156:HIS:NE2	3:I:100:VAL:HA	2.31	0.46
1:C:313:ARG:HA	1:D:178:HIS:NE2	2.31	0.46
1:A:306:GLU:OE1	6:A:504:GOL:H12	2.16	0.46
1:B:137:VAL:HG21	1:B:162:LEU:HD13	1.97	0.46
1:A:62:PHE:HZ	1:A:256:GLN:HG3	1.81	0.46
2:J:124:GLN:HE22	2:J:131:SER:N	2.13	0.46
2:J:125:LEU:HD21	2:J:186:TYR:CE2	2.51	0.46
2:J:3:GLN:HB2	2:J:26:SER:HB2	1.96	0.46
2:J:121:SER:HB3	3:K:126:PRO:O	2.16	0.46
3:O:213:ILE:HD12	3:O:213:ILE:O	2.16	0.46
1:E:310:LEU:HD12	1:E:310:LEU:HA	1.84	0.45
3:G:150:PRO:O	3:G:202:HIS:HE1	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:96:PRO:HD2	3:G:47:TRP:CD2	2.51	0.45
1:A:352:ALA:HB3	2:H:93:GLY:HA2	1.98	0.45
3:M:6:GLN:N	3:M:108:GLN:HE22	2.13	0.45
1:B:86:VAL:HG22	1:B:291:ALA:HB2	1.98	0.45
1:D:317:VAL:HG13	1:E:182:TRP:CZ2	2.51	0.45
1:D:333:GLU:O	1:E:123:LEU:HD11	2.15	0.45
3:G:213:ILE:O	3:G:213:ILE:HD12	2.16	0.45
1:A:313:ARG:C	1:A:313:ARG:HD3	2.36	0.45
3:K:102:TYR:CE1	3:K:104:ASP:HB3	2.51	0.45
2:F:107:LYS:HA	2:F:140:TYR:OH	2.17	0.45
2:F:34:THR:HG22	2:F:49:TYR:HA	1.98	0.45
2:H:47:LEU:HD11	2:H:86:TYR:CE1	2.51	0.45
3:I:213:ILE:HD12	3:I:213:ILE:O	2.17	0.45
2:L:124:GLN:HG3	3:M:125:TYR:CE2	2.51	0.45
3:O:122:PRO:HD3	3:O:202:HIS:CD2	2.51	0.45
1:A:317:VAL:HG13	1:B:182:TRP:CZ2	2.52	0.45
1:D:36:PHE:O	1:D:40:ILE:HG12	2.17	0.45
1:E:63:GLU:O	1:E:67:LEU:HG	2.16	0.45
1:C:352:ALA:HB3	2:L:93:GLY:HA2	1.97	0.45
3:I:18:VAL:HG12	3:I:86:LEU:HD11	1.98	0.45
1:A:123:LEU:HD11	1:E:333:GLU:O	2.17	0.45
1:A:97:TYR:HB2	1:A:305:PHE:CZ	2.52	0.45
1:B:63:GLU:O	1:B:67:LEU:HG	2.17	0.45
3:K:18:VAL:HG12	3:K:86:LEU:HD11	1.98	0.45
1:D:220:GLN:OE1	1:D:223:ARG:NH1	2.50	0.45
2:H:124:GLN:HE22	2:H:131:SER:N	2.14	0.45
3:I:6:GLN:N	3:I:108:GLN:HE22	2.15	0.45
2:L:90:HIS:CE1	2:L:96:PRO:HA	2.51	0.45
1:D:63:GLU:O	1:D:67:LEU:HG	2.17	0.45
2:L:82:ASP:O	2:L:104:LEU:HD23	2.16	0.45
2:N:24:ARG:HG3	2:N:69:THR:O	2.17	0.45
1:A:63:GLU:O	1:A:67:LEU:HG	2.17	0.45
1:D:100:ILE:HG21	1:D:310:LEU:HD23	1.99	0.45
2:J:47:LEU:HD11	2:J:86:TYR:CE1	2.51	0.45
2:N:90:HIS:CE1	2:N:96:PRO:HA	2.52	0.45
1:A:117:GLU:N	1:A:117:GLU:OE1	2.51	0.44
3:M:33:TRP:CH2	3:M:52:ASP:HB2	2.52	0.44
1:D:276:PHE:O	1:D:280:GLN:HG3	2.17	0.44
1:E:137:VAL:HG21	1:E:162:LEU:HD13	1.98	0.44
3:I:150:PRO:O	3:I:202:HIS:HE1	1.99	0.44
3:K:213:ILE:O	3:K:213:ILE:HD12	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:55:LYS:HB2	3:K:57:GLU:HG3	1.99	0.44
1:C:36:PHE:O	1:C:40:ILE:HG12	2.17	0.44
2:N:25:ALA:HB3	2:N:69:THR:HA	1.99	0.44
1:C:63:GLU:O	1:C:67:LEU:HG	2.18	0.44
1:D:117:GLU:N	1:D:117:GLU:OE1	2.51	0.44
1:C:105:ARG:CZ	1:D:215:ASN:HB3	2.47	0.44
2:F:108:ARG:HD2	2:F:171:SER:HB2	1.99	0.44
1:E:97:TYR:HB2	1:E:305:PHE:CZ	2.52	0.44
3:M:11:LEU:HD11	3:M:149:PHE:CE2	2.52	0.44
1:E:78:VAL:O	1:E:82:LEU:HB2	2.18	0.44
3:O:40:ARG:HG2	3:O:92:ALA:HB2	1.99	0.44
1:A:168:HIS:O	1:A:172:GLU:HG3	2.17	0.44
1:A:36:PHE:O	1:A:40:ILE:HG12	2.18	0.44
1:C:14:LEU:HD13	1:D:34:SER:CB	2.48	0.44
1:B:358:SER:HA	1:C:309:TRP:NE1	2.33	0.44
3:I:154:THR:HB	3:I:201:ALA:HB3	2.00	0.44
3:K:53:PRO:HA	3:K:72:VAL:HG21	2.00	0.44
2:L:25:ALA:HB3	2:L:69:THR:HA	2.00	0.44
2:N:107:LYS:HA	2:N:140:TYR:OH	2.17	0.44
1:C:2:THR:OG1	1:C:303:ASP:HA	2.17	0.44
3:O:18:VAL:HG12	3:O:86:LEU:HD11	1.99	0.44
1:B:276:PHE:O	1:B:280:GLN:HG3	2.18	0.43
1:B:310:LEU:HD12	1:B:310:LEU:HA	1.86	0.43
1:B:333:GLU:O	1:C:123:LEU:HD11	2.18	0.43
1:D:105:ARG:CZ	1:E:215:ASN:HB3	2.47	0.43
3:G:55:LYS:HB2	3:G:57:GLU:HG3	2.00	0.43
1:B:78:VAL:O	1:B:82:LEU:HB2	2.18	0.43
1:C:317:VAL:HG13	1:D:182:TRP:CZ2	2.53	0.43
1:D:194:LYS:O	1:D:198:GLU:HG3	2.18	0.43
1:A:194:LYS:O	1:A:198:GLU:HG3	2.18	0.43
1:A:333:GLU:O	1:B:123:LEU:HD11	2.17	0.43
1:B:317:VAL:HG13	1:C:182:TRP:CZ2	2.53	0.43
2:F:3:GLN:HB2	2:F:26:SER:HB2	2.00	0.43
2:H:36:TYR:HE2	2:H:89:GLN:HE21	1.64	0.43
3:I:32:TYR:CD2	3:I:100:VAL:HG22	2.54	0.43
3:M:150:PRO:HD2	3:M:204:ALA:HB1	1.99	0.43
2:N:189:HIS:O	2:N:211:ARG:NE	2.34	0.43
1:A:14:LEU:HD13	1:B:34:SER:CB	2.47	0.43
1:A:105:ARG:CZ	1:B:215:ASN:HB3	2.49	0.43
3:G:53:PRO:HA	3:G:72:VAL:HG21	2.01	0.43
2:J:190:ASN:HB3	2:J:191:SER:H	1.71	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:32:TYR:CD2	3:K:100:VAL:HG22	2.54	0.43
2:L:3:GLN:HB2	2:L:26:SER:HB2	2.00	0.43
2:L:36:TYR:HE2	2:L:89:GLN:HE21	1.66	0.43
1:D:352:ALA:HB3	2:N:93:GLY:HA2	2.00	0.43
2:F:25:ALA:HB3	2:F:69:THR:HA	2.01	0.43
3:I:6:GLN:H	3:I:108:GLN:HE22	1.66	0.43
1:A:297:PRO:HB2	1:A:305:PHE:CE2	2.54	0.43
2:F:118:PHE:HA	2:F:119:PRO:HD3	1.89	0.43
3:O:6:GLN:N	3:O:108:GLN:HE22	2.17	0.43
1:E:117:GLU:N	1:E:117:GLU:OE1	2.51	0.43
2:H:96:PRO:HD2	3:I:47:TRP:CD2	2.53	0.43
3:I:40:ARG:HG2	3:I:92:ALA:HB2	2.01	0.43
3:K:98:ARG:O	3:K:103:PHE:HA	2.19	0.43
2:N:13:ALA:O	2:N:106:VAL:HA	2.18	0.43
1:A:276:PHE:O	1:A:280:GLN:HG3	2.18	0.43
1:B:2:THR:HG21	1:B:305:PHE:HA	2.01	0.43
1:C:117:GLU:N	1:C:117:GLU:OE1	2.52	0.43
1:C:276:PHE:O	1:C:280:GLN:HG3	2.19	0.43
1:D:14:LEU:HD13	1:E:34:SER:CB	2.49	0.43
1:E:346:PRO:HA	2:F:32:TYR:CE1	2.54	0.43
1:E:36:PHE:O	1:E:40:ILE:HG12	2.18	0.43
2:F:90:HIS:CE1	2:F:96:PRO:HA	2.54	0.43
3:I:55:LYS:HB2	3:I:57:GLU:HG3	2.00	0.43
2:J:24:ARG:HH11	2:J:24:ARG:HG2	1.84	0.43
3:K:33:TRP:CH2	3:K:52:ASP:HB2	2.54	0.43
1:A:345:PRO:HB2	1:B:150:ARG:NH2	2.33	0.43
1:B:130:ARG:HH22	1:B:167:GLU:CD	2.21	0.43
1:B:194:LYS:O	1:B:198:GLU:HG3	2.18	0.43
1:C:168:HIS:O	1:C:172:GLU:HG3	2.19	0.43
1:C:310:LEU:HA	1:C:310:LEU:HD12	1.89	0.43
1:D:313:ARG:HA	1:E:178:HIS:NE2	2.33	0.43
1:E:297:PRO:HB2	1:E:305:PHE:CE2	2.54	0.43
2:J:189:HIS:O	2:J:211:ARG:HD3	2.19	0.43
3:K:150:PRO:HD2	3:K:204:ALA:HB1	2.01	0.43
3:K:6:GLN:N	3:K:108:GLN:HE22	2.17	0.43
2:L:96:PRO:HD2	3:M:47:TRP:CD2	2.54	0.43
1:C:252:LEU:HD23	1:C:252:LEU:HA	1.84	0.42
1:D:320:MET:HE3	1:E:174:LEU:HB3	2.01	0.42
3:I:33:TRP:CH2	3:I:52:ASP:HB2	2.54	0.42
2:J:108:ARG:NH1	2:J:109:ALA:O	2.51	0.42
3:O:150:PRO:HD2	3:O:204:ALA:HB1	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:74:GLU:HB3	4:B:505:CL:CL	2.56	0.42
1:C:313:ARG:HD3	1:C:313:ARG:C	2.40	0.42
1:E:100:ILE:HG21	1:E:310:LEU:HD23	2.01	0.42
1:E:252:LEU:HA	1:E:252:LEU:HD23	1.82	0.42
3:K:12:VAL:O	3:K:114:VAL:HA	2.19	0.42
1:A:313:ARG:HA	1:B:178:HIS:NE2	2.34	0.42
2:J:82:ASP:O	2:J:104:LEU:HD23	2.19	0.42
3:M:32:TYR:CD2	3:M:100:VAL:HG22	2.54	0.42
3:O:12:VAL:O	3:O:114:VAL:HA	2.19	0.42
1:B:117:GLU:OE1	1:B:117:GLU:N	2.52	0.42
1:E:2:THR:HG21	1:E:305:PHE:HA	2.02	0.42
2:J:47:LEU:HA	2:J:58:VAL:HG21	2.02	0.42
3:M:6:GLN:H	3:M:108:GLN:HE22	1.66	0.42
1:B:297:PRO:HB2	1:B:305:PHE:CE2	2.54	0.42
1:D:313:ARG:C	1:D:313:ARG:HD3	2.39	0.42
1:E:313:ARG:C	1:E:313:ARG:HD3	2.40	0.42
2:F:24:ARG:HG3	2:F:69:THR:O	2.19	0.42
3:I:73:ASP:OD1	3:I:75:SER:OG	2.31	0.42
1:E:130:ARG:HH22	1:E:167:GLU:CD	2.23	0.42
2:F:24:ARG:HG2	2:F:24:ARG:HH11	1.84	0.42
3:K:122:PRO:HD3	3:K:202:HIS:CD2	2.55	0.42
1:B:106:ILE:HD11	1:B:214:LEU:HA	2.02	0.42
3:I:53:PRO:HA	3:I:72:VAL:HG21	2.01	0.42
2:N:36:TYR:HE2	2:N:89:GLN:HE21	1.67	0.42
1:A:130:ARG:HH22	1:A:167:GLU:CD	2.22	0.42
1:B:14:LEU:HD13	1:C:34:SER:CB	2.50	0.42
1:D:139:ILE:HA	1:D:139:ILE:HD12	1.90	0.42
1:D:78:VAL:O	1:D:82:LEU:HB2	2.19	0.42
1:E:82:LEU:HA	1:E:82:LEU:HD23	1.92	0.42
3:I:122:PRO:HA	3:I:148:TYR:HB3	2.01	0.42
2:J:186:TYR:CE1	2:J:211:ARG:NH1	2.88	0.42
2:L:108:ARG:HH12	2:L:111:ALA:HB2	1.85	0.42
1:C:194:LYS:O	1:C:198:GLU:HG3	2.20	0.42
2:H:185:GLU:HA	2:H:188:ARG:HD2	2.02	0.42
3:I:32:TYR:HD2	3:I:100:VAL:HG22	1.85	0.42
3:M:32:TYR:HD2	3:M:100:VAL:HG22	1.84	0.42
3:O:53:PRO:HA	3:O:72:VAL:HG21	2.02	0.42
1:B:36:PHE:O	1:B:40:ILE:HG12	2.20	0.42
2:H:49:TYR:CD1	2:H:50:ASN:HB2	2.55	0.42
3:I:98:ARG:O	3:I:103:PHE:HA	2.19	0.42
2:N:124:GLN:HE22	2:N:131:SER:N	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:306:GLU:HA	6:B:501:GOL:H12	2.01	0.41
2:H:81:GLU:HG2	2:H:81:GLU:H	1.62	0.41
3:G:122:PRO:HD3	3:G:202:HIS:CD2	2.55	0.41
3:G:6:GLN:N	3:G:108:GLN:HE22	2.18	0.41
2:H:34:THR:HG22	2:H:49:TYR:HA	2.03	0.41
3:I:207:THR:HG22	3:I:209:VAL:HG23	2.02	0.41
3:M:98:ARG:O	3:M:103:PHE:HA	2.20	0.41
3:M:55:LYS:HB2	3:M:57:GLU:HG3	2.01	0.41
3:M:40:ARG:HG2	3:M:92:ALA:HB2	2.02	0.41
2:N:121:SER:HB3	3:O:126:PRO:O	2.20	0.41
1:A:175:ASN:ND2	1:D:342:ASP:OD2	2.53	0.41
1:D:2:THR:OG1	1:D:303:ASP:HA	2.19	0.41
3:G:98:ARG:O	3:G:103:PHE:HA	2.20	0.41
1:D:130:ARG:NH2	1:D:164:THR:HG23	2.36	0.41
1:D:202:ARG:HG2	1:D:203:ASP:OD1	2.20	0.41
1:E:136:SER:O	1:E:139:ILE:HG22	2.20	0.41
1:D:320:MET:CE	1:E:174:LEU:HB3	2.50	0.41
3:I:213:ILE:H	3:I:213:ILE:HG13	1.66	0.41
2:N:118:PHE:HA	2:N:119:PRO:HD3	1.89	0.41
1:A:220:GLN:OE1	1:A:223:ARG:NH1	2.54	0.41
1:B:252:LEU:HA	1:B:252:LEU:HD23	1.83	0.41
1:C:130:ARG:NH2	1:C:164:THR:HG23	2.35	0.41
3:I:122:PRO:HD3	3:I:202:HIS:CD2	2.56	0.41
2:N:96:PRO:HD2	3:O:47:TRP:CD2	2.56	0.41
1:A:202:ARG:HD3	1:B:196:ARG:NH2	2.36	0.41
1:A:309:TRP:NE1	1:E:358:SER:HA	2.35	0.41
3:G:40:ARG:HG2	3:G:92:ALA:HB2	2.03	0.41
2:J:24:ARG:HG3	2:J:69:THR:O	2.21	0.41
3:K:150:PRO:O	3:K:202:HIS:HE1	2.03	0.41
1:A:332:LEU:HB3	1:B:123:LEU:HD21	2.02	0.41
1:B:163:MET:HE1	1:B:171:PHE:CG	2.55	0.41
1:C:75:LEU:HD12	1:C:247:PHE:CE1	2.55	0.41
1:D:332:LEU:HB3	1:E:123:LEU:HD21	2.03	0.41
1:B:313:ARG:C	1:B:313:ARG:HD3	2.40	0.41
2:L:124:GLN:HE22	2:L:131:SER:N	2.19	0.41
1:B:2:THR:OG1	1:B:303:ASP:HA	2.20	0.41
2:L:24:ARG:HG2	2:L:24:ARG:HH11	1.86	0.41
3:G:207:THR:HG22	3:G:209:VAL:HG23	2.03	0.41
2:H:24:ARG:HH11	2:H:24:ARG:HG2	1.85	0.41
2:J:170:ASP:OD1	2:J:172:THR:OG1	2.33	0.41
2:J:36:TYR:HE2	2:J:89:GLN:HE21	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:252:LEU:HD23	1:A:252:LEU:HA	1.89	0.40
1:A:2:THR:OG1	1:A:303:ASP:HA	2.20	0.40
2:F:47:LEU:HA	2:F:58:VAL:HG21	2.03	0.40
2:H:3:GLN:HB2	2:H:26:SER:HB2	2.02	0.40
1:A:215:ASN:HB3	1:E:105:ARG:CZ	2.50	0.40
1:C:220:GLN:OE1	1:C:223:ARG:NH1	2.54	0.40
1:C:73:ALA:HB1	1:C:247:PHE:CE1	2.56	0.40
1:B:139:ILE:HA	1:B:139:ILE:HD12	1.91	0.40
1:D:163:MET:HE1	1:D:171:PHE:CG	2.57	0.40
1:D:297:PRO:HB2	1:D:305:PHE:CE2	2.57	0.40
1:E:276:PHE:O	1:E:280:GLN:HG3	2.21	0.40
2:L:121:SER:HB3	3:M:126:PRO:O	2.21	0.40
1:D:130:ARG:HH22	1:D:167:GLU:CD	2.25	0.40
1:D:32:LEU:HD23	1:D:32:LEU:HA	1.87	0.40
1:A:196:ARG:NH2	1:E:202:ARG:HD3	2.37	0.40
1:D:156:HIS:NE2	3:M:100:VAL:HA	2.37	0.40
2:L:44:PRO:HG2	3:M:106:TRP:CD2	2.57	0.40
3:O:33:TRP:CH2	3:O:52:ASP:HB2	2.56	0.40
1:D:136:SER:O	1:D:139:ILE:HG22	2.21	0.40
1:D:252:LEU:HD23	1:D:252:LEU:HA	1.87	0.40
1:A:34:SER:CB	1:E:14:LEU:HD13	2.51	0.40
3:K:32:TYR:HD2	3:K:100:VAL:HG22	1.85	0.40
3:O:207:THR:HG22	3:O:209:VAL:HG23	2.04	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	46 80
1	B	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	46 80

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	46	80
1	D	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	46	80
1	E	364/409 (89%)	349 (96%)	14 (4%)	1 (0%)	46	80
2	F	210/212 (99%)	191 (91%)	18 (9%)	1 (0%)	34	72
2	H	210/212 (99%)	193 (92%)	16 (8%)	1 (0%)	34	72
2	J	210/212 (99%)	192 (91%)	17 (8%)	1 (0%)	34	72
2	L	210/212 (99%)	191 (91%)	18 (9%)	1 (0%)	34	72
2	N	210/212 (99%)	191 (91%)	18 (9%)	1 (0%)	34	72
3	G	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	34	72
3	I	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	34	72
3	K	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	34	72
3	M	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	34	72
3	O	207/217 (95%)	201 (97%)	5 (2%)	1 (0%)	34	72
All	All	3905/4190 (93%)	3708 (95%)	182 (5%)	15 (0%)	39	75

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	202	ARG
1	B	202	ARG
1	C	202	ARG
1	D	202	ARG
1	E	202	ARG
2	F	56	GLU
2	H	56	GLU
2	J	56	GLU
2	L	56	GLU
2	N	56	GLU
3	M	100	VAL
3	G	100	VAL
3	I	100	VAL
3	K	100	VAL
3	O	100	VAL

### 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 X-ray entries followed by that with respect to entries of similar resolution.

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	324/367 (88%)	316 (98%)	8 (2%)	55	84
1	B	324/367 (88%)	316 (98%)	8 (2%)	55	84
1	C	324/367 (88%)	315 (97%)	9 (3%)	51	82
1	D	324/367 (88%)	316 (98%)	8 (2%)	55	84
1	E	324/367 (88%)	316 (98%)	8 (2%)	55	84
2	F	173/187 (92%)	170 (98%)	3 (2%)	68	89
2	H	173/187 (92%)	169 (98%)	4 (2%)	58	84
2	J	173/187 (92%)	170 (98%)	3 (2%)	68	89
2	L	173/187 (92%)	170 (98%)	3 (2%)	68	89
2	N	173/187 (92%)	170 (98%)	3 (2%)	68	89
3	G	166/190 (87%)	166 (100%)	0	100	100
3	I	166/190 (87%)	166 (100%)	0	100	100
3	K	166/190 (87%)	166 (100%)	0	100	100
3	M	166/190 (87%)	166 (100%)	0	100	100
3	O	166/190 (87%)	166 (100%)	0	100	100
All	All	3315/3720 (89%)	3258 (98%)	57 (2%)	68	89

All (57) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	THR
1	A	37	LEU
1	A	82	LEU
1	A	104	ASP
1	A	189	SER
1	A	196	ARG
1	A	236	TYR
1	A	303	ASP
1	B	2	THR
1	B	37	LEU

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Mol	Chain	Res	Type
1	B	82	LEU
1	B	104	ASP
1	B	189	SER
1	B	196	ARG
1	B	236	TYR
1	B	303	ASP
1	C	2	THR
1	C	37	LEU
1	C	75	LEU
1	C	82	LEU
1	C	104	ASP
1	C	189	SER
1	C	196	ARG
1	C	236	TYR
1	C	303	ASP
1	D	2	THR
1	D	37	LEU
1	D	82	LEU
1	D	104	ASP
1	D	189	SER
1	D	196	ARG
1	D	236	TYR
1	D	303	ASP
1	E	2	THR
1	E	37	LEU
1	E	82	LEU
1	E	104	ASP
1	E	189	SER
1	E	196	ARG
1	E	236	TYR
1	E	303	ASP
2	F	19	VAL
2	F	81	GLU
2	F	193	THR
2	H	19	VAL
2	H	50	ASN
2	H	81	GLU
2	H	193	THR
2	J	19	VAL
2	J	81	GLU
2	J	193	THR
2	L	19	VAL

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Mol	Chain	Res	Type
2	L	81	GLU
2	L	193	THR
2	N	19	VAL
2	N	81	GLU
2	N	193	THR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	175	ASN
1	A	326	HIS
1	B	175	ASN
1	C	175	ASN
1	D	175	ASN
1	D	326	HIS
1	E	175	ASN
1	E	326	HIS
2	F	3	GLN
2	F	38	GLN
2	F	50	ASN
2	F	89	GLN
2	F	124	GLN
2	F	198	HIS
3	G	39	GLN
3	G	202	HIS
2	H	3	GLN
2	H	50	ASN
2	H	89	GLN
2	H	124	GLN
2	H	198	HIS
3	I	202	HIS
2	J	3	GLN
2	J	50	ASN
2	J	89	GLN
2	J	124	GLN
3	K	136	ASN
3	K	202	HIS
2	L	3	GLN
2	L	50	ASN
2	L	89	GLN
2	L	124	GLN
2	L	198	HIS

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Mol	Chain	Res	Type
3	M	202	HIS
2	N	3	GLN
2	N	50	ASN
2	N	89	GLN
2	N	124	GLN
3	O	136	ASN
3	O	202	HIS

### 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 carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

Of 30 ligands modelled in this entry, 25 are monoatomic - leaving 5 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
6	GOL	A	504	-	5,5,5	0.37	0	5,5,5	0.30	0
6	GOL	B	501	-	5,5,5	0.38	0	5,5,5	0.27	0
6	GOL	C	501	-	5,5,5	0.37	0	5,5,5	0.34	0
6	GOL	D	501	-	5,5,5	0.40	0	5,5,5	0.25	0
6	GOL	E	501	-	5,5,5	0.38	0	5,5,5	0.25	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral



centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	GOL	A	504	-	-	0/4/4/4	0/0/0/0
6	GOL	B	501	-	-	0/4/4/4	0/0/0/0
6	GOL	C	501	-	-	0/4/4/4	0/0/0/0
6	GOL	D	501	-	-	0/4/4/4	0/0/0/0
6	GOL	E	501	-	-	0/4/4/4	0/0/0/0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	504	GOL	1	0
6	B	501	GOL	2	0
6	C	501	GOL	1	0
6	D	501	GOL	1	0
6	E	501	GOL	1	0

## 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.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	366/409 (89%)	-0.34	1 (0%) 94 88	45, 70, 94, 130	0
1	B	366/409 (89%)	-0.35	0 100 100	50, 72, 95, 137	0
1	C	366/409 (89%)	-0.35	0 100 100	49, 70, 90, 130	0
1	D	366/409 (89%)	-0.37	1 (0%) 94 88	49, 67, 91, 140	0
1	E	366/409 (89%)	-0.36	0 100 100	45, 68, 92, 137	0
2	F	212/212 (100%)	0.06	4 (1%) 70 48	84, 120, 142, 171	0
2	H	212/212 (100%)	-0.03	2 (0%) 85 72	76, 111, 133, 143	0
2	J	212/212 (100%)	1.80	71 (33%) 0 0	88, 182, 231, 245	0
2	L	212/212 (100%)	-0.02	4 (1%) 70 48	67, 105, 124, 141	0
2	N	212/212 (100%)	1.22	56 (26%) 1 0	79, 153, 223, 239	0
3	G	211/217 (97%)	0.27	17 (8%) 15 5	75, 120, 159, 176	0
3	I	211/217 (97%)	-0.16	2 (0%) 85 72	76, 109, 140, 159	0
3	K	211/217 (97%)	1.46	71 (33%) 0 0	87, 148, 235, 247	0
3	M	211/217 (97%)	-0.06	7 (3%) 50 26	64, 103, 150, 171	0
3	O	211/217 (97%)	0.93	50 (23%) 1 0	66, 112, 228, 246	0
All	All	3945/4190 (94%)	0.13	286 (7%) 18 7	45, 90, 212, 247	0

All (286) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	N	120	PRO	12.8
2	J	150	ILE	11.9
3	O	182	SER	11.5
2	J	181	LEU	11.4
3	K	183	SER	10.6
2	J	153	SER	9.7
3	O	143	CYS	9.3

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Mol	Chain	Res	Type	RSRZ
3	K	184	VAL	9.3
3	K	142	GLY	8.9
2	N	177	SER	8.9
2	J	152	GLY	8.7
3	O	129	PRO	8.6
3	K	141	LEU	8.5
3	K	182	SER	8.3
3	O	144	LEU	8.3
3	K	214	VAL	8.0
2	J	115	VAL	7.9
2	N	181	LEU	7.8
2	J	151	ASP	7.8
2	J	146	VAL	7.5
2	N	119	PRO	7.4
3	K	166	VAL	7.3
2	J	155	ARG	7.3
2	J	192	TYR	7.2
3	O	185	THR	7.1
2	J	132	VAL	7.1
2	N	186	TYR	7.1
2	J	193	THR	6.7
2	N	155	ARG	6.7
3	K	200	VAL	6.6
2	J	154	GLU	6.6
2	N	184	ASP	6.5
3	K	143	CYS	6.5
2	J	156	GLN	6.5
3	O	124	VAL	6.5
3	O	142	GLY	6.5
2	J	148	TRP	6.5
3	O	165	GLY	6.3
3	O	128	ALA	6.1
2	N	130	ALA	5.9
2	J	186	TYR	5.8
2	J	149	LYS	5.7
2	J	187	GLU	5.6
2	J	194	CYS	5.5
2	J	133	VAL	5.5
2	J	117	ILE	5.5
3	O	214	VAL	5.4
3	O	125	TYR	5.4
3	K	167	HIS	5.3

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Mol	Chain	Res	Type	RSRZ
3	O	156	THR	5.3
3	O	126	PRO	5.3
2	N	212	ASN	5.2
2	J	191	SER	5.2
2	J	177	SER	5.2
2	N	185	GLU	5.1
3	O	141	LEU	5.0
2	J	134	CYS	5.0
2	N	182	THR	5.0
3	K	188	SER	5.0
3	K	213	ILE	5.0
2	J	114	THR	5.0
3	K	124	VAL	4.9
3	O	155	VAL	4.9
2	J	182	THR	4.8
2	N	179	LEU	4.8
2	N	146	VAL	4.8
2	N	134	CYS	4.8
3	O	179	THR	4.7
3	O	166	VAL	4.7
2	J	135	PHE	4.6
3	K	155	VAL	4.6
3	K	186	VAL	4.6
3	O	186	VAL	4.5
3	K	209	VAL	4.5
3	K	156	THR	4.5
3	O	163	SER	4.5
2	N	202	THR	4.5
2	J	180	THR	4.4
2	J	120	PRO	4.4
3	K	185	THR	4.4
3	O	123	SER	4.4
3	K	201	ALA	4.4
2	N	156	GLN	4.4
2	N	197	THR	4.3
3	K	160	GLY	4.3
2	N	135	PHE	4.3
3	O	184	VAL	4.2
2	J	190	ASN	4.1
3	K	159	SER	4.1
3	O	168	THR	4.1
3	K	83	LEU	4.1

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Mol	Chain	Res	Type	RSRZ
3	K	128	ALA	4.1
2	N	154	GLU	4.1
2	N	148	TRP	4.1
3	K	114	VAL	4.1
3	K	212	LYS	4.1
3	O	181	SER	4.0
2	J	119	PRO	4.0
3	K	139	VAL	4.0
2	J	200	THR	4.0
2	J	63	SER	4.0
3	O	213	ILE	3.9
3	O	217	ASP	3.9
2	L	205	ILE	3.9
3	K	196	VAL	3.9
2	N	198	HIS	3.9
3	K	163	SER	3.9
3	O	147	GLY	3.9
3	O	145	VAL	3.9
2	N	145	ASN	3.9
3	K	123	SER	3.9
2	N	114	THR	3.8
3	O	200	VAL	3.8
3	K	158	ASN	3.8
3	K	144	LEU	3.8
2	J	189	HIS	3.7
2	J	157	ASN	3.7
3	K	215	PRO	3.7
3	O	158	ASN	3.7
2	N	160	LEU	3.7
2	N	194	CYS	3.6
3	K	116	SER	3.6
2	N	153	SER	3.6
2	N	161	ASN	3.6
2	J	116	SER	3.5
3	O	159	SER	3.5
3	K	154	THR	3.5
2	N	199	LYS	3.5
2	J	145	ASN	3.5
2	N	115	VAL	3.5
3	O	193	SER	3.5
3	O	180	LEU	3.5
3	O	187	PRO	3.4

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Mol	Chain	Res	Type	RSRZ
2	N	75	ILE	3.4
2	J	112	ALA	3.4
2	J	185	GLU	3.4
3	K	190	SER	3.4
3	K	115	SER	3.4
2	J	209	PHE	3.4
3	K	191	TRP	3.4
2	J	75	ILE	3.4
2	J	184	ASP	3.3
3	O	198	CYS	3.3
3	K	18	VAL	3.3
2	N	175	MET	3.3
2	N	196	ALA	3.3
2	J	131	SER	3.3
3	K	164	SER	3.2
2	J	86	TYR	3.2
2	N	144	ILE	3.2
3	K	140	THR	3.2
3	K	197	THR	3.1
3	K	125	TYR	3.1
2	J	12	SER	3.1
2	J	113	PRO	3.1
2	N	192	TYR	3.0
3	K	15	GLY	3.0
2	J	73	LEU	3.0
2	F	153	SER	3.0
3	K	210	ASP	3.0
2	J	37	GLN	3.0
3	G	190	SER	3.0
2	J	19	VAL	3.0
2	N	113	PRO	3.0
3	K	204	ALA	3.0
3	K	198	CYS	3.0
3	G	213	ILE	2.9
3	O	162	LEU	2.9
2	J	196	ALA	2.9
3	G	189	SER	2.9
2	N	152	GLY	2.9
3	K	187	PRO	2.9
3	K	199	ASN	2.9
2	J	206	VAL	2.9
2	N	183	LYS	2.9

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Mol	Chain	Res	Type	RSRZ
2	N	150	ILE	2.8
3	K	189	SER	2.8
3	O	169	PHE	2.8
3	G	188	SER	2.8
2	J	104	LEU	2.8
2	N	205	ILE	2.8
3	K	17	SER	2.8
2	J	118	PHE	2.8
2	N	178	THR	2.8
3	O	160	GLY	2.8
2	N	200	THR	2.8
3	K	165	GLY	2.7
2	J	130	ALA	2.7
3	K	14	PRO	2.7
3	O	189	SER	2.7
1	A	272	PHE	2.7
2	F	197	THR	2.7
3	O	204	ALA	2.7
2	J	179	LEU	2.7
2	J	201	SER	2.7
3	K	205	SER	2.7
3	K	195	THR	2.7
3	M	216	ARG	2.7
2	J	208	SER	2.7
3	K	129	PRO	2.7
2	J	136	LEU	2.7
2	N	187	GLU	2.7
3	M	141	LEU	2.6
2	J	62	PHE	2.6
2	N	203	SER	2.6
3	O	161	SER	2.6
2	J	197	THR	2.6
2	L	209	PHE	2.6
3	M	115	SER	2.6
2	N	201	SER	2.6
3	K	161	SER	2.5
2	N	159	VAL	2.5
3	O	191	TRP	2.5
2	N	131	SER	2.5
3	K	122	PRO	2.5
2	J	84	GLY	2.4
3	O	139	VAL	2.4

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Mol	Chain	Res	Type	RSRZ
3	O	215	PRO	2.4
3	G	210	ASP	2.4
3	M	114	VAL	2.4
3	G	86	LEU	2.4
2	N	116	SER	2.4
1	D	367	SER	2.4
2	N	132	VAL	2.4
3	K	120	THR	2.4
3	O	153	VAL	2.4
3	K	85	SER	2.3
2	N	188	ARG	2.3
3	O	167	HIS	2.3
3	M	163	SER	2.3
3	K	162	LEU	2.3
2	N	180	THR	2.3
2	J	204	PRO	2.3
3	M	183	SER	2.3
2	J	107	LYS	2.3
3	I	139	VAL	2.3
2	N	136	LEU	2.3
3	G	217	ASP	2.3
2	F	152	GLY	2.3
2	N	73	LEU	2.3
3	G	141	LEU	2.3
3	K	168	THR	2.3
3	O	196	VAL	2.2
2	N	137	ASN	2.2
3	K	208	LYS	2.2
3	K	82	GLN	2.2
2	H	113	PRO	2.2
3	O	195	THR	2.2
2	L	196	ALA	2.2
2	J	211	ARG	2.2
3	K	86	LEU	2.2
3	K	84	SER	2.2
2	F	75	ILE	2.2
2	L	203	SER	2.2
3	G	115	SER	2.2
3	M	164	SER	2.2
3	K	147	GLY	2.2
2	J	102	THR	2.2
3	O	212	LYS	2.2

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Mol	Chain	Res	Type	RSRZ
2	J	106	VAL	2.2
2	J	205	ILE	2.2
3	G	143	CYS	2.2
3	O	201	ALA	2.1
3	K	20	MET	2.1
2	J	13	ALA	2.1
2	J	83	PHE	2.1
2	N	19	VAL	2.1
3	G	147	GLY	2.1
2	N	195	GLU	2.1
3	O	209	VAL	2.1
2	J	173	TYR	2.1
3	K	206	SER	2.1
2	J	207	LYS	2.1
3	K	19	LYS	2.1
3	G	122	PRO	2.1
2	H	146	VAL	2.1
2	N	126	THR	2.1
3	G	88	SER	2.1
3	G	214	VAL	2.0
3	K	121	PRO	2.0
3	I	115	SER	2.0
2	J	82	ASP	2.0
3	G	182	SER	2.0
3	G	144	LEU	2.0
3	K	157	TRP	2.0
3	G	186	VAL	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains.

The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
4	CL	D	503	1/1	0.70	0.56	39.79	124,124,124,124	0
6	GOL	A	504	6/6	0.85	0.39	4.22	67,93,109,110	0
5	K	E	504	1/1	0.79	0.34	3.54	133,133,133,133	0
6	GOL	D	501	6/6	0.87	0.29	2.85	55,74,95,99	0
6	GOL	C	501	6/6	0.92	0.31	2.25	61,77,106,108	0
6	GOL	B	501	6/6	0.89	0.28	1.60	60,82,99,104	0
6	GOL	E	501	6/6	0.89	0.22	0.92	59,71,99,101	0
7	CA	B	502	1/1	0.99	0.20	0.47	79,79,79,79	0
5	K	A	507	1/1	0.94	0.19	0.24	95,95,95,95	0
7	CA	C	502	1/1	0.98	0.17	-0.29	67,67,67,67	0
4	CL	C	505	1/1	0.89	0.19	-0.53	107,107,107,107	0
5	K	C	507	1/1	0.95	0.15	-0.59	92,92,92,92	0
7	CA	A	505	1/1	0.98	0.15	-0.90	70,70,70,70	0
7	CA	E	502	1/1	0.98	0.11	-1.43	49,49,49,49	0
5	K	A	503	1/1	0.94	0.10	-1.44	91,91,91,91	0
5	K	C	504	1/1	0.97	0.12	-1.56	92,92,92,92	0
4	CL	A	501	1/1	0.95	0.15	-1.59	85,85,85,85	0
7	CA	D	502	1/1	0.95	0.13	-2.24	53,53,53,53	0
4	CL	D	504	1/1	0.97	0.08	-3.08	57,57,57,57	0
4	CL	B	504	1/1	0.96	0.09	-3.74	68,68,68,68	0
4	CL	E	505	1/1	0.93	0.08	-6.68	56,56,56,56	0
4	CL	E	506	1/1	0.70	0.51	-	104,104,104,104	0
4	CL	C	503	1/1	0.86	0.40	-	117,117,117,117	0
4	CL	D	505	1/1	0.70	0.35	-	104,104,104,104	0
4	CL	C	506	1/1	0.67	0.42	-	104,104,104,104	0
4	CL	A	502	1/1	0.72	0.50	-	102,102,102,102	0
4	CL	A	506	1/1	0.75	0.47	-	106,106,106,106	0
4	CL	B	505	1/1	0.65	0.34	-	104,104,104,104	0
4	CL	E	503	1/1	0.69	0.38	-	136,136,136,136	0
4	CL	B	503	1/1	0.69	0.55	-	129,129,129,129	0

## 6.5 Other polymers ⓘ

There are no such residues in this entry.