WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Aug 16, 2023 – 08:52 PM EDT

|		
PDB ID	:	2F1V
Title	:	Outer membrane protein OmpW
Authors	:	van den Berg, B.
Deposited on	:	2005-11-15
Resolution	:	2.70 Å(reported)

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 2.70 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	Percentile Ranks	Value
Rfree		0.304
Clashscore		29
Ramachandran outliers		2.8%
Sidechain outliers		11.0%

Worse .... *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
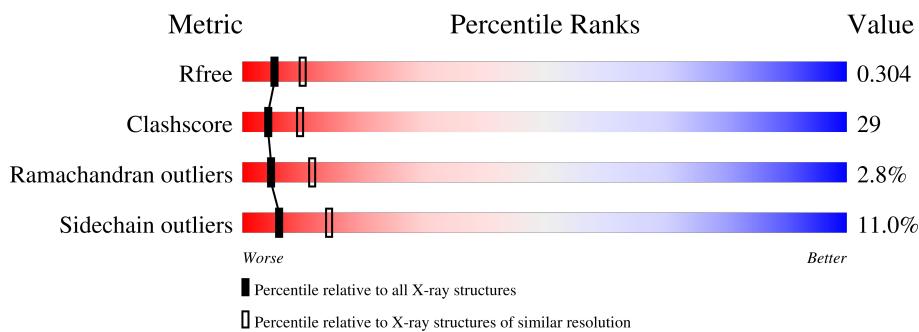
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)

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 of the lower 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 <=5%

Mol	Chain	Length	Quality of chain
1	A	197	54% 34% · · 8%
1	B	197	51% 36% · · 8%
1	C	197	51% 36% · · 8%
1	D	197	53% 35% · · 8%
1	E	197	52% 36% · · 8%
1	F	197	50% 37% · · 8%

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
2	GOL	A	200	-	-	X	-
2	GOL	B	205	-	-	X	-
2	GOL	C	203	-	-	X	-
2	GOL	D	204	-	-	X	-
2	GOL	E	202	-	-	X	-
2	GOL	F	201	-	-	X	-

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 8580 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 Outer membrane protein W.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			
1	B	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			
1	C	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			
1	D	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			
1	E	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			
1	F	182	Total	C	N	O	S	69	0	0
			1424	910	242	266	6			

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	192	HIS	-	expression tag	UNP P0A915
A	193	HIS	-	expression tag	UNP P0A915
A	194	HIS	-	expression tag	UNP P0A915
A	195	HIS	-	expression tag	UNP P0A915
A	196	HIS	-	expression tag	UNP P0A915
A	197	HIS	-	expression tag	UNP P0A915
B	192	HIS	-	expression tag	UNP P0A915
B	193	HIS	-	expression tag	UNP P0A915
B	194	HIS	-	expression tag	UNP P0A915
B	195	HIS	-	expression tag	UNP P0A915
B	196	HIS	-	expression tag	UNP P0A915
B	197	HIS	-	expression tag	UNP P0A915
C	192	HIS	-	expression tag	UNP P0A915
C	193	HIS	-	expression tag	UNP P0A915
C	194	HIS	-	expression tag	UNP P0A915
C	195	HIS	-	expression tag	UNP P0A915
C	196	HIS	-	expression tag	UNP P0A915

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Chain	Residue	Modelled	Actual	Comment	Reference
C	197	HIS	-	expression tag	UNP P0A915
D	192	HIS	-	expression tag	UNP P0A915
D	193	HIS	-	expression tag	UNP P0A915
D	194	HIS	-	expression tag	UNP P0A915
D	195	HIS	-	expression tag	UNP P0A915
D	196	HIS	-	expression tag	UNP P0A915
D	197	HIS	-	expression tag	UNP P0A915
E	192	HIS	-	expression tag	UNP P0A915
E	193	HIS	-	expression tag	UNP P0A915
E	194	HIS	-	expression tag	UNP P0A915
E	195	HIS	-	expression tag	UNP P0A915
E	196	HIS	-	expression tag	UNP P0A915
E	197	HIS	-	expression tag	UNP P0A915
F	192	HIS	-	expression tag	UNP P0A915
F	193	HIS	-	expression tag	UNP P0A915
F	194	HIS	-	expression tag	UNP P0A915
F	195	HIS	-	expression tag	UNP P0A915
F	196	HIS	-	expression tag	UNP P0A915
F	197	HIS	-	expression tag	UNP P0A915

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).
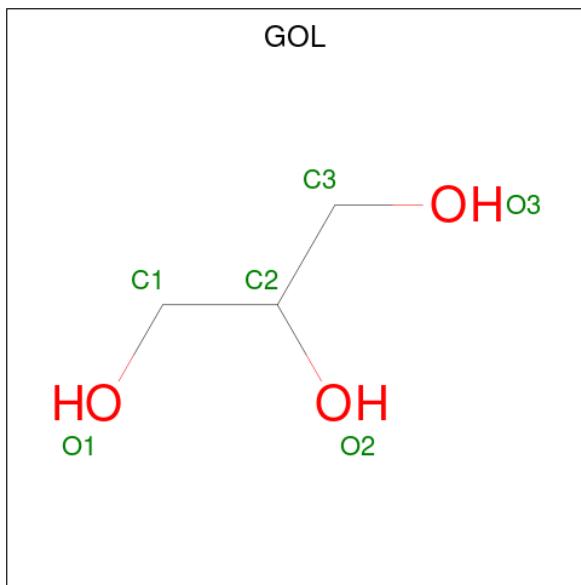
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	C	1	Total 6	C 3	O 3	0	0
2	D	1	Total 6	C 3	O 3	0	0
2	E	1	Total 6	C 3	O 3	0	0
2	F	1	Total 6	C 3	O 3	0	0

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: Outer membrane protein W
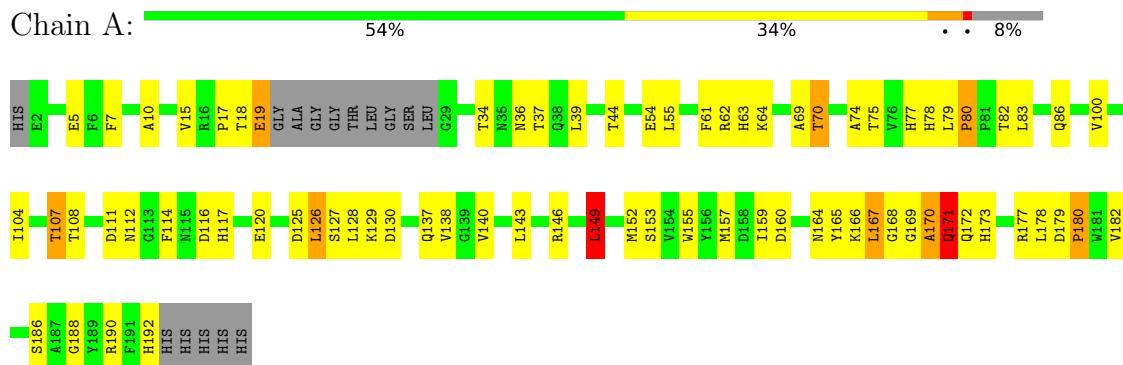
Chain A:

- Molecule 1: Outer membrane protein W
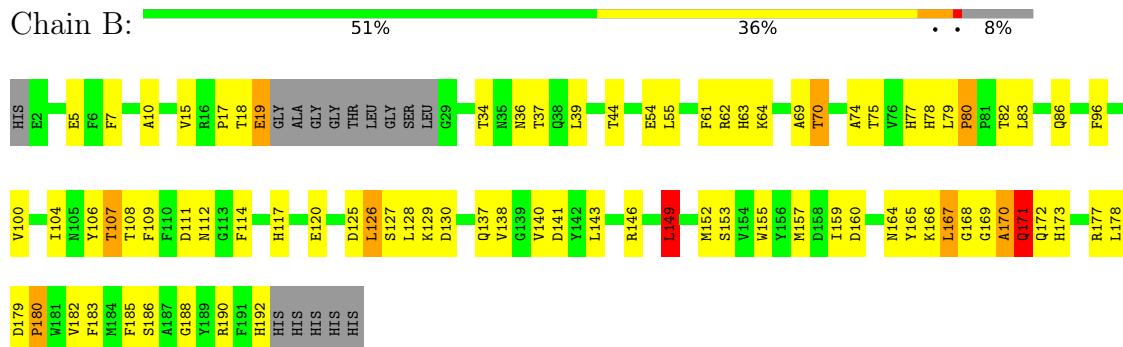
Chain B:

- Molecule 1: Outer membrane protein W

Chain C:

- Molecule 1: Outer membrane protein W

Chain D: 53% 35% · · 8%
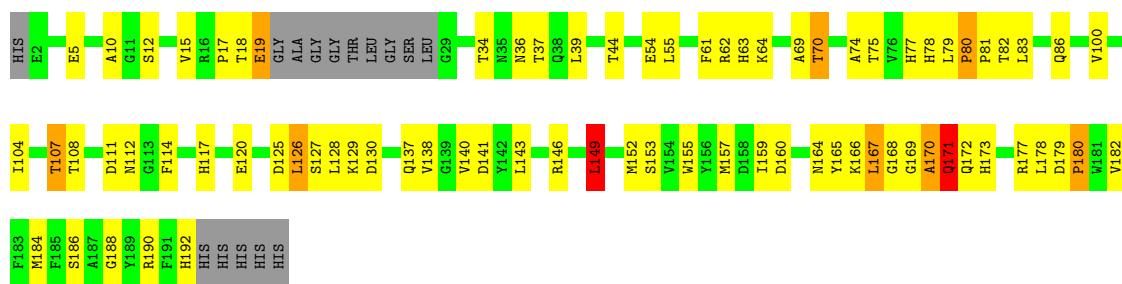
• Molecule 1: Outer membrane protein W

Chain E: 52% 36% · · 8%

• Molecule 1: Outer membrane protein W

Chain F: 50% 37% · · 8%
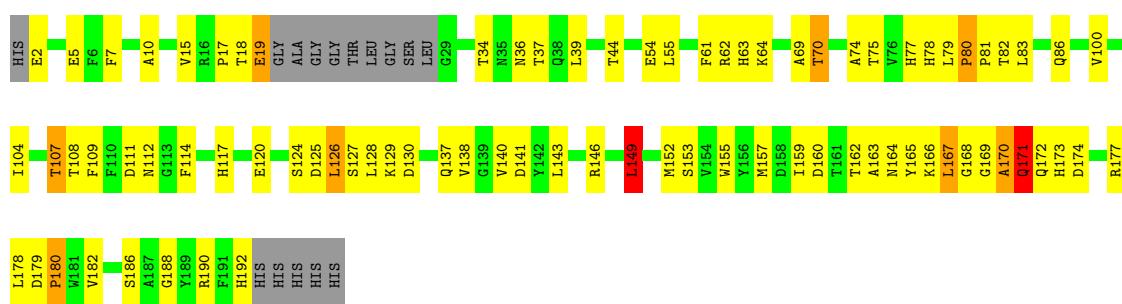
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	118.67Å 118.78Å 118.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	8.00 – 2.70 37.56 – 2.57	Depositor EDS
% Data completeness (in resolution range)	100.0 (8.00-2.70) 98.1 (37.56-2.57)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.24 (at 2.58Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.292 , 0.314 0.286 , 0.304	Depositor DCC
R_{free} test set	3466 reflections (6.55%)	wwPDB-VP
Wilson B-factor (Å^2)	51.0	Xtriage
Anisotropy	0.028	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 34.9	EDS
L-test for twinning[2]	$< \lvert L \rvert > = 0.35$, $< L^2 > = 0.18$	Xtriage
Estimated twinning fraction	0.276 for k,h,-l 0.286 for -h,-l,-k 0.477 for l,-k,h 0.279 for k,l,h 0.279 for l,h,k	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	8580	wwPDB-VP
Average B, all atoms (Å^2)	41.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.06% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< \lvert L \rvert >$, $< L^2 >$ 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

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	0.49	0/1465	0.74	1/1990 (0.1%)
1	B	0.51	0/1465	0.75	1/1990 (0.1%)
1	C	0.49	0/1465	0.74	1/1990 (0.1%)
1	D	0.50	0/1465	0.75	1/1990 (0.1%)
1	E	0.50	0/1465	0.75	1/1990 (0.1%)
1	F	0.51	0/1465	0.75	1/1990 (0.1%)
All	All	0.50	0/8790	0.75	6/11940 (0.1%)

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	149	LEU	CA-CB-CG	5.76	128.56	115.30
1	C	149	LEU	CA-CB-CG	5.62	128.23	115.30
1	D	149	LEU	CA-CB-CG	5.55	128.08	115.30
1	A	149	LEU	CA-CB-CG	5.55	128.06	115.30
1	E	149	LEU	CA-CB-CG	5.44	127.82	115.30
1	F	149	LEU	CA-CB-CG	5.39	127.71	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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	1424	0	1335	70	0
1	B	1424	0	1335	89	0
1	C	1424	0	1335	92	0
1	D	1424	0	1335	72	0
1	E	1424	0	1335	75	0
1	F	1424	0	1335	77	0
2	A	6	0	8	4	0
2	B	6	0	8	4	0
2	C	6	0	8	5	0
2	D	6	0	8	6	0
2	E	6	0	8	7	0
2	F	6	0	8	8	0
All	All	8580	0	8058	454	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 29.

All (454) 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:B:96:PHE:CE2	1:C:138:VAL:HB	1.62	1.32
1:F:143:LEU:HD21	2:F:201:GOL:H31	1.24	1.18
1:B:185:PHE:CE2	1:C:183:PHE:HB3	1.81	1.15
1:B:96:PHE:CE2	1:C:138:VAL:CB	2.55	0.89
1:E:34:THR:HG22	1:E:64:LYS:H	1.38	0.88
1:D:34:THR:HG22	1:D:64:LYS:H	1.39	0.88
1:F:34:THR:HG22	1:F:64:LYS:H	1.38	0.88
1:D:86:GLN:HE21	1:D:137:GLN:HE22	1.23	0.87
1:B:34:THR:HG22	1:B:64:LYS:H	1.39	0.87
1:A:34:THR:HG22	1:A:64:LYS:H	1.38	0.86
1:C:34:THR:HG22	1:C:64:LYS:H	1.39	0.85
1:C:86:GLN:HE21	1:C:137:GLN:HE22	1.25	0.84
1:B:185:PHE:CZ	1:C:185:PHE:CE1	2.66	0.84
1:E:86:GLN:HE21	1:E:137:GLN:HE22	1.26	0.83
1:E:190:ARG:HD3	2:E:202:GOL:H11	1.60	0.81
1:B:86:GLN:HE21	1:B:137:GLN:HE22	1.25	0.81
1:E:5:GLU:OE2	1:E:190:ARG:HD2	1.79	0.81
1:A:86:GLN:HE21	1:A:137:GLN:HE22	1.27	0.81
1:F:86:GLN:HE21	1:F:137:GLN:HE22	1.27	0.80
1:C:5:GLU:OE2	1:C:190:ARG:HD2	1.82	0.80
1:B:165:TYR:O	1:B:172:GLN:HA	1.83	0.79
1:D:165:TYR:O	1:D:172:GLN:HA	1.83	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:143:LEU:HD21	2:D:204:GOL:H11	1.65	0.79
1:F:5:GLU:OE2	1:F:190:ARG:HD2	1.83	0.79
1:B:108:THR:HG23	1:B:130:ASP:OD1	1.83	0.78
1:F:167:LEU:C	1:F:169:GLY:H	1.88	0.78
1:F:108:THR:HG23	1:F:130:ASP:OD1	1.84	0.77
1:A:5:GLU:OE2	1:A:190:ARG:HD2	1.84	0.77
1:C:165:TYR:O	1:C:172:GLN:HA	1.84	0.77
1:E:165:TYR:O	1:E:172:GLN:HA	1.85	0.77
1:F:165:TYR:O	1:F:172:GLN:HA	1.84	0.77
1:D:108:THR:HG23	1:D:130:ASP:OD1	1.84	0.77
1:E:108:THR:HG23	1:E:130:ASP:OD1	1.83	0.77
1:E:167:LEU:C	1:E:169:GLY:H	1.87	0.76
1:B:5:GLU:OE2	1:B:190:ARG:HD2	1.84	0.76
1:A:167:LEU:C	1:A:169:GLY:H	1.88	0.76
1:D:5:GLU:OE2	1:D:190:ARG:HD2	1.85	0.76
1:C:167:LEU:C	1:C:169:GLY:H	1.89	0.76
1:A:165:TYR:O	1:A:172:GLN:HA	1.85	0.75
1:E:167:LEU:O	1:E:169:GLY:N	2.19	0.75
1:F:167:LEU:O	1:F:169:GLY:N	2.20	0.75
1:C:167:LEU:O	1:C:169:GLY:N	2.20	0.75
1:B:167:LEU:O	1:B:169:GLY:N	2.20	0.74
1:B:167:LEU:C	1:B:169:GLY:H	1.90	0.74
1:B:86:GLN:HE21	1:B:137:GLN:NE2	1.85	0.74
1:D:167:LEU:C	1:D:169:GLY:H	1.90	0.74
1:A:167:LEU:O	1:A:169:GLY:N	2.19	0.74
1:B:96:PHE:HE2	1:C:138:VAL:HB	1.45	0.73
1:D:86:GLN:HE21	1:D:137:GLN:NE2	1.85	0.73
1:A:108:THR:HG23	1:A:130:ASP:OD1	1.88	0.73
1:A:18:THR:HB	1:A:179:ASP:O	1.87	0.73
1:F:143:LEU:CD2	2:F:201:GOL:H31	2.13	0.73
1:B:18:THR:HB	1:B:179:ASP:O	1.88	0.73
1:D:167:LEU:O	1:D:169:GLY:N	2.20	0.73
1:C:18:THR:HB	1:C:179:ASP:O	1.89	0.73
1:F:143:LEU:HD21	2:F:201:GOL:C3	2.11	0.73
1:F:86:GLN:HE21	1:F:137:GLN:NE2	1.86	0.73
1:D:18:THR:HB	1:D:179:ASP:O	1.88	0.72
1:C:86:GLN:HE21	1:C:137:GLN:NE2	1.87	0.72
1:B:125:ASP:O	1:B:165:TYR:HA	1.90	0.72
1:A:86:GLN:HE21	1:A:137:GLN:NE2	1.87	0.72
1:E:86:GLN:HE21	1:E:137:GLN:NE2	1.86	0.71
1:C:108:THR:HG23	1:C:130:ASP:OD1	1.90	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:125:ASP:O	1:D:165:TYR:HA	1.90	0.71
1:E:128:LEU:HD12	1:E:128:LEU:N	2.06	0.71
1:B:128:LEU:N	1:B:128:LEU:HD12	2.05	0.70
1:F:18:THR:HB	1:F:179:ASP:O	1.91	0.70
1:E:125:ASP:O	1:E:165:TYR:HA	1.92	0.70
1:F:128:LEU:N	1:F:128:LEU:HD12	2.07	0.70
1:A:128:LEU:N	1:A:128:LEU:HD12	2.06	0.70
1:E:126:LEU:HD22	1:E:127:SER:H	1.57	0.69
1:F:126:LEU:HD22	1:F:127:SER:H	1.58	0.69
1:A:44:THR:OG1	1:A:54:GLU:HG3	1.93	0.69
1:E:18:THR:HB	1:E:179:ASP:O	1.91	0.69
1:B:44:THR:OG1	1:B:54:GLU:HG3	1.92	0.69
1:A:114:PHE:CE1	1:A:126:LEU:HB2	2.28	0.69
1:B:126:LEU:HD22	1:B:127:SER:H	1.58	0.69
1:C:125:ASP:O	1:C:165:TYR:HA	1.92	0.69
1:C:126:LEU:HD22	1:C:127:SER:H	1.57	0.69
1:D:44:THR:OG1	1:D:54:GLU:HG3	1.93	0.69
1:D:126:LEU:HD22	1:D:127:SER:H	1.58	0.69
1:D:128:LEU:N	1:D:128:LEU:HD12	2.07	0.69
1:F:171:GLN:HE21	1:F:171:GLN:C	1.97	0.69
1:B:183:PHE:HB3	1:C:185:PHE:CE1	2.27	0.68
1:C:126:LEU:HD22	1:C:127:SER:N	2.09	0.68
1:A:126:LEU:HD22	1:A:127:SER:H	1.57	0.68
1:E:171:GLN:C	1:E:171:GLN:HE21	1.96	0.68
1:B:165:TYR:O	1:B:172:GLN:CA	2.41	0.68
1:C:128:LEU:HD12	1:C:128:LEU:N	2.08	0.68
1:F:125:ASP:O	1:F:165:TYR:HA	1.92	0.68
1:C:114:PHE:CE1	1:C:126:LEU:HB2	2.29	0.68
1:E:7:PHE:CD2	2:E:202:GOL:H12	2.29	0.67
1:E:126:LEU:HD22	1:E:127:SER:N	2.08	0.67
1:F:140:VAL:CG2	1:F:152:MET:HB2	2.25	0.67
1:D:140:VAL:CG2	1:D:152:MET:HB2	2.25	0.67
1:D:165:TYR:O	1:D:172:GLN:CA	2.42	0.67
1:E:140:VAL:CG2	1:E:152:MET:HB2	2.24	0.67
1:A:126:LEU:HD22	1:A:127:SER:N	2.09	0.67
1:A:125:ASP:O	1:A:165:TYR:HA	1.94	0.67
1:C:70:THR:OG1	1:C:117:HIS:HD2	1.78	0.67
1:D:70:THR:OG1	1:D:117:HIS:HD2	1.77	0.67
1:C:44:THR:OG1	1:C:54:GLU:HG3	1.94	0.66
1:F:165:TYR:O	1:F:172:GLN:CA	2.43	0.66
1:D:126:LEU:HD22	1:D:127:SER:N	2.10	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:GLN:HE21	1:A:171:GLN:C	1.99	0.66
1:B:140:VAL:CG2	1:B:152:MET:HB2	2.26	0.66
1:C:165:TYR:O	1:C:172:GLN:CA	2.43	0.66
1:B:140:VAL:HG22	1:B:152:MET:HB2	1.78	0.66
1:E:165:TYR:O	1:E:172:GLN:CA	2.43	0.66
1:A:34:THR:CG2	1:A:64:LYS:H	2.08	0.66
1:A:70:THR:OG1	1:A:117:HIS:HD2	1.78	0.66
1:E:112:ASN:HB3	1:E:126:LEU:CD1	2.26	0.66
1:C:140:VAL:CG2	1:C:152:MET:HB2	2.26	0.65
1:D:34:THR:CG2	1:D:64:LYS:H	2.09	0.65
1:F:126:LEU:HD22	1:F:127:SER:N	2.10	0.65
1:F:143:LEU:HD22	1:F:190:ARG:CZ	2.27	0.65
1:A:140:VAL:CG2	1:A:152:MET:HB2	2.26	0.65
1:F:70:THR:OG1	1:F:117:HIS:HD2	1.78	0.65
1:F:112:ASN:HB3	1:F:126:LEU:CD1	2.26	0.65
1:E:70:THR:OG1	1:E:117:HIS:HD2	1.79	0.65
1:F:140:VAL:HG22	1:F:152:MET:HB2	1.79	0.65
1:B:70:THR:OG1	1:B:117:HIS:HD2	1.78	0.65
1:E:114:PHE:CE1	1:E:126:LEU:HB2	2.32	0.65
1:B:171:GLN:C	1:B:171:GLN:HE21	2.00	0.65
1:D:140:VAL:HG22	1:D:152:MET:HB2	1.78	0.65
1:F:114:PHE:CE1	1:F:126:LEU:HB2	2.32	0.65
1:B:126:LEU:HD22	1:B:127:SER:N	2.11	0.65
1:E:140:VAL:HG22	1:E:152:MET:HB2	1.78	0.65
1:E:44:THR:OG1	1:E:54:GLU:HG3	1.97	0.64
1:B:61:PHE:O	1:B:77:HIS:HA	1.97	0.64
1:C:112:ASN:HB3	1:C:126:LEU:CD1	2.27	0.64
1:E:34:THR:CG2	1:E:64:LYS:H	2.10	0.64
1:C:34:THR:CG2	1:C:64:LYS:H	2.08	0.64
1:C:171:GLN:HE21	1:C:171:GLN:C	1.99	0.64
1:A:112:ASN:HB3	1:A:126:LEU:CD1	2.28	0.64
1:A:165:TYR:O	1:A:172:GLN:CA	2.44	0.64
1:D:61:PHE:O	1:D:77:HIS:HA	1.98	0.64
1:B:152:MET:HG3	1:C:154:VAL:CG2	2.28	0.64
1:D:171:GLN:HE21	1:D:171:GLN:C	1.99	0.63
1:F:44:THR:OG1	1:F:54:GLU:HG3	1.97	0.63
1:B:112:ASN:HB3	1:B:126:LEU:CD1	2.29	0.63
1:D:114:PHE:CE1	1:D:126:LEU:HB2	2.32	0.63
1:E:143:LEU:HD22	1:E:190:ARG:CZ	2.27	0.63
1:D:112:ASN:HB3	1:D:126:LEU:CD1	2.29	0.63
1:C:140:VAL:HG22	1:C:152:MET:HB2	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:185:PHE:CE2	1:C:183:PHE:CB	2.71	0.63
1:F:34:THR:CG2	1:F:64:LYS:H	2.09	0.63
1:C:61:PHE:O	1:C:77:HIS:HA	1.98	0.63
1:B:114:PHE:CE1	1:B:126:LEU:HB2	2.33	0.62
1:F:61:PHE:O	1:F:77:HIS:HA	1.99	0.62
1:B:34:THR:CG2	1:B:64:LYS:H	2.09	0.62
1:D:19:GLU:N	1:D:19:GLU:OE1	2.33	0.62
1:E:5:GLU:OE2	2:E:202:GOL:O1	2.17	0.62
1:B:19:GLU:N	1:B:19:GLU:OE1	2.33	0.62
1:A:61:PHE:O	1:A:77:HIS:HA	1.99	0.61
1:E:61:PHE:O	1:E:77:HIS:HA	1.99	0.61
1:A:140:VAL:HG22	1:A:152:MET:HB2	1.81	0.61
1:F:17:PRO:HA	1:F:180:PRO:HB3	1.83	0.61
1:F:160:ASP:OD1	1:F:177:ARG:HG2	2.01	0.61
1:E:17:PRO:HA	1:E:180:PRO:HB3	1.83	0.61
1:E:19:GLU:N	1:E:19:GLU:OE1	2.33	0.61
1:B:143:LEU:HD22	1:B:190:ARG:CZ	2.31	0.60
1:F:2:GLU:OE1	2:F:201:GOL:O1	2.13	0.60
1:B:17:PRO:HA	1:B:180:PRO:HB3	1.84	0.60
1:D:143:LEU:HD22	1:D:190:ARG:CZ	2.31	0.60
1:A:17:PRO:HA	1:A:180:PRO:HB3	1.83	0.60
1:E:167:LEU:C	1:E:169:GLY:N	2.55	0.60
1:E:160:ASP:OD1	1:E:177:ARG:HG2	2.02	0.60
1:A:143:LEU:HD22	1:A:190:ARG:CZ	2.32	0.60
1:A:160:ASP:OD1	1:A:177:ARG:HG2	2.02	0.60
1:A:167:LEU:C	1:A:169:GLY:N	2.55	0.60
1:D:17:PRO:HA	1:D:180:PRO:HB3	1.82	0.60
1:F:19:GLU:N	1:F:19:GLU:OE1	2.33	0.60
1:C:143:LEU:HD22	1:C:190:ARG:CZ	2.32	0.60
1:D:160:ASP:OD1	1:D:177:ARG:HG2	2.01	0.60
1:B:185:PHE:CD1	1:C:16:ARG:NH2	2.70	0.59
1:B:160:ASP:OD1	1:B:177:ARG:HG2	2.01	0.59
1:C:160:ASP:OD1	1:C:177:ARG:HG2	2.02	0.59
1:A:19:GLU:N	1:A:19:GLU:OE1	2.36	0.59
1:A:5:GLU:OE2	2:A:200:GOL:O1	2.20	0.59
1:D:77:HIS:HD2	1:D:111:ASP:O	1.85	0.59
1:C:17:PRO:HA	1:C:180:PRO:HB3	1.84	0.59
1:B:185:PHE:HD1	1:C:16:ARG:NH2	2.00	0.59
1:C:7:PHE:CD2	2:C:203:GOL:H12	2.38	0.58
1:C:36:ASN:ND2	1:C:62:ARG:H	2.01	0.58
1:D:166:LYS:HG2	1:D:170:ALA:HA	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:77:HIS:HD2	1:A:111:ASP:O	1.87	0.58
1:A:36:ASN:ND2	1:A:62:ARG:H	2.02	0.58
1:D:172:GLN:HG3	1:D:173:HIS:NE2	2.19	0.58
1:F:77:HIS:HD2	1:F:111:ASP:O	1.85	0.58
1:C:19:GLU:OE1	1:C:19:GLU:N	2.36	0.58
1:B:166:LYS:HG2	1:B:170:ALA:HA	1.86	0.57
1:C:5:GLU:OE2	2:C:203:GOL:O1	2.21	0.57
1:B:172:GLN:HG3	1:B:173:HIS:NE2	2.19	0.57
1:B:185:PHE:CZ	1:C:183:PHE:HB3	2.36	0.57
1:A:166:LYS:HG2	1:A:170:ALA:HA	1.87	0.57
1:B:167:LEU:C	1:B:169:GLY:N	2.58	0.57
1:C:166:LYS:HG2	1:C:170:ALA:HA	1.87	0.57
1:E:77:HIS:HD2	1:E:111:ASP:O	1.85	0.57
1:E:157:MET:CE	1:E:159:ILE:HD11	2.35	0.57
1:F:7:PHE:CD2	2:F:201:GOL:H12	2.39	0.57
1:F:36:ASN:ND2	1:F:62:ARG:H	2.03	0.57
1:A:7:PHE:CD2	2:A:200:GOL:H12	2.39	0.57
1:B:77:HIS:HD2	1:B:111:ASP:O	1.86	0.57
1:B:152:MET:HG3	1:C:154:VAL:HG22	1.86	0.57
1:C:77:HIS:HD2	1:C:111:ASP:O	1.87	0.57
1:C:172:GLN:HG3	1:C:173:HIS:NE2	2.20	0.57
1:D:36:ASN:ND2	1:D:62:ARG:H	2.03	0.57
1:C:112:ASN:HB3	1:C:126:LEU:HD13	1.87	0.56
1:F:63:HIS:NE2	1:F:78:HIS:HE1	2.03	0.56
1:B:96:PHE:CZ	1:C:138:VAL:HB	2.31	0.56
1:A:157:MET:CE	1:A:159:ILE:HD11	2.35	0.56
1:A:172:GLN:HG3	1:A:173:HIS:NE2	2.20	0.56
1:C:63:HIS:NE2	1:C:78:HIS:HE1	2.03	0.56
1:A:63:HIS:NE2	1:A:78:HIS:HE1	2.04	0.56
1:C:55:LEU:HD22	1:C:82:THR:O	2.06	0.56
1:E:112:ASN:HB3	1:E:126:LEU:HD13	1.88	0.56
1:D:112:ASN:HB3	1:D:126:LEU:HD13	1.88	0.56
1:C:157:MET:CE	1:C:159:ILE:HD11	2.36	0.56
1:E:36:ASN:ND2	1:E:62:ARG:H	2.03	0.56
1:F:157:MET:CE	1:F:159:ILE:HD11	2.35	0.56
1:B:185:PHE:CD2	1:C:183:PHE:HB3	2.38	0.55
1:B:157:MET:CE	1:B:159:ILE:HD11	2.36	0.55
1:D:157:MET:CE	1:D:159:ILE:HD11	2.36	0.55
1:A:112:ASN:HB3	1:A:126:LEU:HD13	1.86	0.55
1:D:63:HIS:NE2	1:D:78:HIS:HE1	2.03	0.55
1:E:172:GLN:HG3	1:E:173:HIS:NE2	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:55:LEU:HD22	1:E:82:THR:O	2.07	0.55
1:B:63:HIS:NE2	1:B:78:HIS:HE1	2.03	0.55
1:C:170:ALA:O	1:C:172:GLN:N	2.40	0.55
1:B:170:ALA:O	1:B:172:GLN:N	2.40	0.55
1:B:185:PHE:CD2	1:C:183:PHE:CD2	2.94	0.55
1:E:63:HIS:NE2	1:E:78:HIS:HE1	2.04	0.55
1:F:55:LEU:HD22	1:F:82:THR:O	2.07	0.55
1:F:146:ARG:O	1:F:192:HIS:HE1	1.90	0.55
1:F:166:LYS:HG2	1:F:170:ALA:HA	1.89	0.54
1:A:55:LEU:HD22	1:A:82:THR:O	2.07	0.54
1:A:146:ARG:O	1:A:192:HIS:HE1	1.91	0.54
1:A:190:ARG:HD3	2:A:200:GOL:H11	1.90	0.54
1:B:112:ASN:HB3	1:B:126:LEU:HD13	1.89	0.54
1:E:127:SER:C	1:E:128:LEU:HD12	2.27	0.54
1:A:170:ALA:O	1:A:172:GLN:N	2.40	0.54
1:B:36:ASN:ND2	1:B:62:ARG:H	2.05	0.54
1:D:55:LEU:HD22	1:D:82:THR:O	2.08	0.54
1:F:172:GLN:HG3	1:F:173:HIS:NE2	2.22	0.54
1:B:7:PHE:CE2	2:B:205:GOL:H12	2.42	0.54
1:E:146:ARG:O	1:E:192:HIS:HE1	1.90	0.54
1:F:127:SER:C	1:F:128:LEU:HD12	2.28	0.54
1:C:146:ARG:O	1:C:192:HIS:HE1	1.91	0.53
1:C:171:GLN:O	1:C:171:GLN:NE2	2.35	0.53
1:E:166:LYS:HG2	1:E:170:ALA:HA	1.90	0.53
1:F:112:ASN:HB3	1:F:126:LEU:HD13	1.90	0.53
1:B:146:ARG:O	1:B:192:HIS:HE1	1.91	0.53
1:D:170:ALA:O	1:D:172:GLN:N	2.40	0.53
1:A:164:ASN:HA	1:A:172:GLN:O	2.09	0.53
1:D:171:GLN:O	1:D:171:GLN:NE2	2.35	0.53
1:E:170:ALA:O	1:E:172:GLN:N	2.42	0.53
1:C:190:ARG:HD3	2:C:203:GOL:H11	1.89	0.53
1:B:55:LEU:HD22	1:B:82:THR:O	2.09	0.53
1:D:146:ARG:O	1:D:192:HIS:HE1	1.91	0.53
1:F:170:ALA:O	1:F:172:GLN:N	2.41	0.53
1:E:55:LEU:C	1:E:55:LEU:HD13	2.30	0.53
1:C:164:ASN:HA	1:C:172:GLN:O	2.09	0.53
1:B:157:MET:HE3	1:B:159:ILE:HD11	1.91	0.52
1:B:185:PHE:CE2	1:C:185:PHE:CZ	2.97	0.52
1:B:7:PHE:CD2	2:B:205:GOL:H12	2.44	0.52
1:B:127:SER:C	1:B:128:LEU:HD12	2.29	0.52
1:B:164:ASN:HA	1:B:172:GLN:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:127:SER:C	1:D:128:LEU:HD12	2.30	0.52
1:D:77:HIS:CD2	1:D:111:ASP:HB3	2.45	0.52
1:D:157:MET:HE3	1:D:159:ILE:HD11	1.92	0.52
1:F:55:LEU:HD13	1:F:55:LEU:C	2.29	0.52
1:F:141:ASP:CB	2:F:201:GOL:O3	2.58	0.52
1:F:171:GLN:O	1:F:171:GLN:NE2	2.33	0.52
1:D:164:ASN:HA	1:D:172:GLN:O	2.10	0.51
1:A:171:GLN:O	1:A:171:GLN:NE2	2.34	0.51
1:F:141:ASP:HB3	2:F:201:GOL:O3	2.09	0.51
1:C:77:HIS:CD2	1:C:111:ASP:HB3	2.45	0.51
1:D:15:VAL:HG23	1:D:61:PHE:CE2	2.45	0.51
1:D:143:LEU:HD21	2:D:204:GOL:C1	2.36	0.51
1:E:164:ASN:HA	1:E:172:GLN:O	2.10	0.51
1:F:164:ASN:HA	1:F:172:GLN:O	2.11	0.51
1:B:171:GLN:O	1:B:171:GLN:NE2	2.35	0.51
1:D:5:GLU:OE2	2:D:204:GOL:O1	2.29	0.51
1:A:18:THR:N	1:A:178:LEU:O	2.37	0.51
1:A:10:ALA:O	1:A:186:SER:HB2	2.11	0.51
1:A:127:SER:C	1:A:128:LEU:HD12	2.30	0.51
1:C:10:ALA:O	1:C:186:SER:HB2	2.11	0.51
1:C:15:VAL:HG23	1:C:61:PHE:CE2	2.46	0.51
1:E:79:LEU:O	1:E:107:THR:HA	2.12	0.50
1:A:77:HIS:CD2	1:A:111:ASP:HB3	2.46	0.50
1:D:167:LEU:C	1:D:169:GLY:N	2.58	0.50
1:F:79:LEU:O	1:F:107:THR:HA	2.12	0.50
1:E:165:TYR:O	1:E:172:GLN:HB3	2.12	0.50
1:F:77:HIS:CD2	1:F:111:ASP:HB3	2.47	0.50
1:B:15:VAL:HG23	1:B:61:PHE:CE2	2.47	0.50
1:B:18:THR:N	1:B:178:LEU:O	2.41	0.50
1:C:127:SER:C	1:C:128:LEU:HD12	2.32	0.50
1:F:10:ALA:O	1:F:186:SER:HB2	2.12	0.50
1:F:157:MET:HE3	1:F:159:ILE:HD11	1.93	0.50
1:F:171:GLN:C	1:F:171:GLN:NE2	2.63	0.50
1:B:171:GLN:C	1:B:171:GLN:NE2	2.65	0.49
1:F:15:VAL:HG23	1:F:61:PHE:CE2	2.47	0.49
1:A:15:VAL:HG23	1:A:61:PHE:CE2	2.46	0.49
1:C:157:MET:HE3	1:C:159:ILE:HD11	1.95	0.49
1:B:55:LEU:HD13	1:B:55:LEU:C	2.33	0.49
1:B:77:HIS:CD2	1:B:111:ASP:HB3	2.47	0.49
1:E:171:GLN:O	1:E:171:GLN:NE2	2.33	0.49
1:E:15:VAL:HG23	1:E:61:PHE:CE2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:18:THR:N	1:C:178:LEU:O	2.37	0.49
1:E:100:VAL:HG22	1:E:138:VAL:HG12	1.94	0.49
1:F:165:TYR:O	1:F:172:GLN:HB3	2.12	0.49
1:B:152:MET:SD	1:C:153:SER:N	2.86	0.49
1:B:153:SER:OG	1:B:155:TRP:NE1	2.45	0.49
1:E:77:HIS:CD2	1:E:111:ASP:HB3	2.47	0.49
1:B:165:TYR:O	1:B:172:GLN:HB3	2.13	0.49
1:D:141:ASP:OD1	2:D:204:GOL:H32	2.13	0.49
1:E:10:ALA:O	1:E:186:SER:HB2	2.12	0.49
1:F:100:VAL:HG22	1:F:138:VAL:HG12	1.95	0.49
1:D:55:LEU:HD13	1:D:55:LEU:C	2.33	0.49
1:E:171:GLN:C	1:E:171:GLN:NE2	2.63	0.49
1:B:185:PHE:HB2	1:C:16:ARG:NH2	2.28	0.48
1:B:143:LEU:HD21	2:B:205:GOL:H11	1.95	0.48
1:D:18:THR:N	1:D:178:LEU:O	2.40	0.48
1:C:55:LEU:C	1:C:55:LEU:HD13	2.34	0.48
1:C:153:SER:OG	1:C:155:TRP:NE1	2.47	0.48
1:D:165:TYR:O	1:D:172:GLN:HB3	2.12	0.48
1:A:157:MET:HE3	1:A:159:ILE:HD11	1.94	0.48
1:E:157:MET:HE3	1:E:159:ILE:HD11	1.93	0.48
1:B:19:GLU:H	1:B:19:GLU:CD	2.16	0.48
1:C:171:GLN:C	1:C:171:GLN:NE2	2.66	0.48
1:E:5:GLU:CD	2:E:202:GOL:O1	2.51	0.48
1:A:171:GLN:C	1:A:171:GLN:NE2	2.66	0.48
1:B:10:ALA:O	1:B:186:SER:HB2	2.14	0.48
1:A:79:LEU:O	1:A:107:THR:HA	2.13	0.47
1:B:79:LEU:O	1:B:107:THR:HA	2.14	0.47
1:D:100:VAL:HG22	1:D:138:VAL:HG12	1.96	0.47
1:D:153:SER:OG	1:D:155:TRP:NE1	2.46	0.47
1:D:165:TYR:O	1:D:172:GLN:CB	2.63	0.47
1:A:100:VAL:HG22	1:A:138:VAL:HG12	1.96	0.47
1:D:19:GLU:CD	1:D:19:GLU:H	2.17	0.47
1:E:19:GLU:CD	1:E:19:GLU:H	2.18	0.47
1:F:19:GLU:CD	1:F:19:GLU:H	2.18	0.47
1:E:128:LEU:N	1:E:128:LEU:CD1	2.77	0.47
1:E:143:LEU:HD21	2:E:202:GOL:H2	1.95	0.47
1:A:55:LEU:HD13	1:A:55:LEU:C	2.34	0.47
1:C:165:TYR:O	1:C:172:GLN:HB3	2.15	0.47
1:C:167:LEU:C	1:C:169:GLY:N	2.57	0.47
1:D:79:LEU:O	1:D:107:THR:HA	2.15	0.47
1:D:171:GLN:C	1:D:171:GLN:NE2	2.65	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:165:TYR:O	1:F:172:GLN:CB	2.63	0.47
1:E:165:TYR:O	1:E:172:GLN:CB	2.63	0.47
1:A:153:SER:OG	1:A:155:TRP:NE1	2.47	0.47
1:B:141:ASP:OD1	2:B:205:GOL:C3	2.62	0.47
1:C:100:VAL:HG22	1:C:138:VAL:HG12	1.97	0.47
1:E:7:PHE:CE1	2:E:202:GOL:H32	2.50	0.47
1:D:74:ALA:HB2	1:D:114:PHE:CD2	2.50	0.46
1:C:79:LEU:O	1:C:107:THR:HA	2.15	0.46
1:B:100:VAL:HG22	1:B:138:VAL:HG12	1.97	0.46
1:B:128:LEU:N	1:B:128:LEU:CD1	2.76	0.46
1:B:165:TYR:O	1:B:172:GLN:CB	2.63	0.46
1:D:155:TRP:HB2	1:D:182:VAL:HB	1.97	0.46
1:A:19:GLU:CD	1:A:19:GLU:H	2.19	0.46
1:B:74:ALA:HB2	1:B:114:PHE:CD2	2.50	0.46
1:C:19:GLU:CD	1:C:19:GLU:H	2.19	0.46
1:E:143:LEU:HD21	2:E:202:GOL:C2	2.45	0.46
1:F:153:SER:OG	1:F:155:TRP:NE1	2.48	0.46
1:E:18:THR:N	1:E:178:LEU:O	2.40	0.46
1:F:149:LEU:C	1:F:149:LEU:HD22	2.36	0.46
1:F:167:LEU:C	1:F:169:GLY:N	2.55	0.45
1:B:155:TRP:HB2	1:B:182:VAL:HB	1.97	0.45
1:D:10:ALA:O	1:D:186:SER:HB2	2.16	0.45
1:A:74:ALA:HB2	1:A:114:PHE:CD2	2.52	0.45
1:C:74:ALA:HB2	1:C:114:PHE:CD2	2.52	0.45
1:D:172:GLN:O	1:D:173:HIS:CG	2.70	0.45
1:F:18:THR:N	1:F:178:LEU:O	2.39	0.45
1:A:165:TYR:O	1:A:172:GLN:HB3	2.16	0.45
1:E:172:GLN:O	1:E:173:HIS:ND1	2.50	0.45
1:F:74:ALA:HB2	1:F:114:PHE:CD2	2.52	0.45
1:A:116:ASP:OD2	1:F:124:SER:OG	2.29	0.45
1:C:165:TYR:O	1:C:172:GLN:CB	2.65	0.45
1:F:172:GLN:O	1:F:173:HIS:ND1	2.50	0.45
1:C:70:THR:OG1	1:C:117:HIS:CD2	2.66	0.45
1:B:172:GLN:O	1:B:173:HIS:CG	2.70	0.44
1:B:185:PHE:HD1	1:C:16:ARG:HH21	1.58	0.44
1:F:7:PHE:CE2	2:F:201:GOL:H12	2.53	0.44
1:E:153:SER:OG	1:E:155:TRP:NE1	2.49	0.44
1:D:70:THR:OG1	1:D:117:HIS:CD2	2.65	0.44
1:D:128:LEU:N	1:D:128:LEU:CD1	2.77	0.44
1:A:165:TYR:O	1:A:172:GLN:CB	2.66	0.44
1:E:149:LEU:C	1:E:149:LEU:HD22	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:172:GLN:O	1:F:173:HIS:CG	2.71	0.44
1:B:149:LEU:HD13	1:B:188:GLY:O	2.18	0.43
1:C:172:GLN:O	1:C:173:HIS:CG	2.71	0.43
1:E:74:ALA:HB2	1:E:114:PHE:CD2	2.53	0.43
1:F:77:HIS:O	1:F:109:PHE:HA	2.17	0.43
1:A:70:THR:OG1	1:A:117:HIS:CD2	2.66	0.43
1:A:149:LEU:C	1:A:149:LEU:HD22	2.39	0.43
1:C:128:LEU:N	1:C:128:LEU:CD1	2.79	0.43
1:C:178:LEU:O	1:C:179:ASP:C	2.57	0.43
1:D:143:LEU:CD2	2:D:204:GOL:H11	2.43	0.43
1:C:172:GLN:O	1:C:173:HIS:ND1	2.51	0.43
1:A:153:SER:HG	1:A:155:TRP:HE1	1.66	0.43
1:F:155:TRP:HB2	1:F:182:VAL:HB	2.00	0.43
1:C:149:LEU:C	1:C:149:LEU:HD22	2.39	0.43
1:A:172:GLN:O	1:A:173:HIS:ND1	2.52	0.43
1:B:70:THR:OG1	1:B:117:HIS:CD2	2.66	0.43
1:F:149:LEU:HD13	1:F:188:GLY:O	2.19	0.43
1:A:149:LEU:HD13	1:A:188:GLY:O	2.19	0.42
1:A:172:GLN:O	1:A:173:HIS:CG	2.72	0.42
1:D:178:LEU:O	1:D:179:ASP:C	2.57	0.42
1:A:155:TRP:HB2	1:A:182:VAL:HB	2.01	0.42
1:D:149:LEU:C	1:D:149:LEU:HD22	2.39	0.42
1:E:155:TRP:HB2	1:E:182:VAL:HB	2.00	0.42
1:F:62:ARG:HB2	1:F:77:HIS:CE1	2.54	0.42
1:B:149:LEU:C	1:B:149:LEU:HD22	2.39	0.42
1:C:155:TRP:HB2	1:C:182:VAL:HB	2.01	0.42
1:B:178:LEU:O	1:B:179:ASP:C	2.58	0.42
1:D:172:GLN:O	1:D:173:HIS:ND1	2.52	0.42
1:E:172:GLN:O	1:E:173:HIS:CG	2.72	0.42
1:E:79:LEU:O	1:E:81:PRO:HD2	2.19	0.42
1:B:172:GLN:O	1:B:173:HIS:ND1	2.53	0.42
1:D:190:ARG:HD3	2:D:204:GOL:H11	2.01	0.42
1:E:77:HIS:O	1:E:109:PHE:HA	2.19	0.42
1:A:128:LEU:N	1:A:128:LEU:CD1	2.77	0.42
1:E:149:LEU:HD13	1:E:188:GLY:O	2.19	0.42
1:F:79:LEU:O	1:F:81:PRO:HD2	2.20	0.42
1:D:149:LEU:HD13	1:D:188:GLY:O	2.19	0.41
1:A:178:LEU:O	1:A:179:ASP:C	2.57	0.41
1:C:149:LEU:HD13	1:C:188:GLY:O	2.20	0.41
1:B:185:PHE:CE2	1:C:185:PHE:CE1	3.09	0.41
1:E:178:LEU:O	1:E:179:ASP:C	2.58	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:77:HIS:O	1:B:109:PHE:HA	2.20	0.41
1:F:86:GLN:NE2	1:F:137:GLN:HE22	2.06	0.41
1:C:143:LEU:HD21	2:C:203:GOL:H11	2.03	0.41
1:C:112:ASN:CB	1:C:126:LEU:HD13	2.50	0.41
1:C:162:THR:HA	1:C:174:ASP:O	2.21	0.41
1:D:79:LEU:O	1:D:81:PRO:HD2	2.21	0.41
1:F:128:LEU:N	1:F:128:LEU:CD1	2.77	0.41
1:F:178:LEU:O	1:F:179:ASP:C	2.59	0.41
1:A:112:ASN:CB	1:A:126:LEU:HD13	2.51	0.41
1:A:143:LEU:HD21	2:A:200:GOL:H11	2.02	0.41
1:E:162:THR:HA	1:E:174:ASP:O	2.20	0.41
1:B:106:TYR:CE2	1:B:108:THR:OG1	2.74	0.40
1:C:5:GLU:CD	2:C:203:GOL:O1	2.59	0.40
1:C:172:GLN:HG3	1:C:173:HIS:CE1	2.56	0.40
1:D:112:ASN:CB	1:D:126:LEU:HD13	2.51	0.40
1:F:163:ALA:N	1:F:174:ASP:O	2.54	0.40
1:E:62:ARG:HB2	1:E:77:HIS:CE1	2.56	0.40
1:F:162:THR:HA	1:F:174:ASP:O	2.21	0.40
1:C:86:GLN:HG2	1:C:137:GLN:NE2	2.37	0.40
1:D:12:SER:O	1:D:184:MET:HA	2.22	0.40
1:E:86:GLN:NE2	1:E:137:GLN:HE22	2.06	0.40
1:E:106:TYR:CE2	1:E:108:THR:OG1	2.75	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	178/197 (90%)	164 (92%)	9 (5%)	5 (3%)	5	11
1	B	178/197 (90%)	165 (93%)	8 (4%)	5 (3%)	5	11
1	C	178/197 (90%)	164 (92%)	9 (5%)	5 (3%)	5	11

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	178/197 (90%)	165 (93%)	8 (4%)	5 (3%)	5	11
1	E	178/197 (90%)	165 (93%)	8 (4%)	5 (3%)	5	11
1	F	178/197 (90%)	166 (93%)	7 (4%)	5 (3%)	5	11
All	All	1068/1182 (90%)	989 (93%)	49 (5%)	30 (3%)	5	11

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	69	ALA
1	B	69	ALA
1	C	69	ALA
1	D	69	ALA
1	E	69	ALA
1	E	168	GLY
1	F	69	ALA
1	F	168	GLY
1	A	80	PRO
1	A	168	GLY
1	A	170	ALA
1	A	171	GLN
1	B	80	PRO
1	B	168	GLY
1	B	170	ALA
1	B	171	GLN
1	C	80	PRO
1	C	168	GLY
1	C	170	ALA
1	C	171	GLN
1	D	80	PRO
1	D	168	GLY
1	D	170	ALA
1	D	171	GLN
1	E	80	PRO
1	E	171	GLN
1	F	80	PRO
1	F	171	GLN
1	E	170	ALA
1	F	170	ALA

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	145/155 (94%)	129 (89%)	16 (11%)	6	14
1	B	145/155 (94%)	129 (89%)	16 (11%)	6	14
1	C	145/155 (94%)	129 (89%)	16 (11%)	6	14
1	D	145/155 (94%)	129 (89%)	16 (11%)	6	14
1	E	145/155 (94%)	129 (89%)	16 (11%)	6	14
1	F	145/155 (94%)	129 (89%)	16 (11%)	6	14
All	All	870/930 (94%)	774 (89%)	96 (11%)	6	14

All (96) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	GLU
1	A	37	THR
1	A	39	LEU
1	A	70	THR
1	A	75	THR
1	A	80	PRO
1	A	83	LEU
1	A	104	ILE
1	A	107	THR
1	A	120	GLU
1	A	126	LEU
1	A	129	LYS
1	A	149	LEU
1	A	167	LEU
1	A	171	GLN
1	A	180	PRO
1	B	19	GLU
1	B	37	THR
1	B	39	LEU
1	B	70	THR
1	B	75	THR
1	B	80	PRO

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Mol	Chain	Res	Type
1	B	83	LEU
1	B	104	ILE
1	B	107	THR
1	B	120	GLU
1	B	126	LEU
1	B	129	LYS
1	B	149	LEU
1	B	167	LEU
1	B	171	GLN
1	B	180	PRO
1	C	19	GLU
1	C	37	THR
1	C	39	LEU
1	C	70	THR
1	C	75	THR
1	C	80	PRO
1	C	83	LEU
1	C	104	ILE
1	C	107	THR
1	C	120	GLU
1	C	126	LEU
1	C	129	LYS
1	C	149	LEU
1	C	167	LEU
1	C	171	GLN
1	C	180	PRO
1	D	19	GLU
1	D	37	THR
1	D	39	LEU
1	D	70	THR
1	D	75	THR
1	D	80	PRO
1	D	83	LEU
1	D	104	ILE
1	D	107	THR
1	D	120	GLU
1	D	126	LEU
1	D	129	LYS
1	D	149	LEU
1	D	167	LEU
1	D	171	GLN
1	D	180	PRO

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Mol	Chain	Res	Type
1	E	19	GLU
1	E	37	THR
1	E	39	LEU
1	E	70	THR
1	E	75	THR
1	E	80	PRO
1	E	83	LEU
1	E	104	ILE
1	E	107	THR
1	E	120	GLU
1	E	126	LEU
1	E	129	LYS
1	E	149	LEU
1	E	167	LEU
1	E	171	GLN
1	E	180	PRO
1	F	19	GLU
1	F	37	THR
1	F	39	LEU
1	F	70	THR
1	F	75	THR
1	F	80	PRO
1	F	83	LEU
1	F	104	ILE
1	F	107	THR
1	F	120	GLU
1	F	126	LEU
1	F	129	LYS
1	F	149	LEU
1	F	167	LEU
1	F	171	GLN
1	F	180	PRO

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (61) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	ASN
1	A	38	GLN
1	A	77	HIS
1	A	78	HIS
1	A	105	ASN
1	A	117	HIS

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Mol	Chain	Res	Type
1	A	137	GLN
1	A	151	ASN
1	A	171	GLN
1	A	172	GLN
1	A	192	HIS
1	B	36	ASN
1	B	38	GLN
1	B	77	HIS
1	B	78	HIS
1	B	117	HIS
1	B	137	GLN
1	B	151	ASN
1	B	171	GLN
1	B	172	GLN
1	B	192	HIS
1	C	36	ASN
1	C	38	GLN
1	C	77	HIS
1	C	78	HIS
1	C	105	ASN
1	C	117	HIS
1	C	137	GLN
1	C	151	ASN
1	C	171	GLN
1	C	172	GLN
1	C	192	HIS
1	D	36	ASN
1	D	38	GLN
1	D	77	HIS
1	D	78	HIS
1	D	117	HIS
1	D	137	GLN
1	D	151	ASN
1	D	171	GLN
1	D	172	GLN
1	D	192	HIS
1	E	36	ASN
1	E	38	GLN
1	E	77	HIS
1	E	78	HIS
1	E	117	HIS
1	E	137	GLN

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Mol	Chain	Res	Type
1	E	171	GLN
1	E	172	GLN
1	E	192	HIS
1	F	36	ASN
1	F	38	GLN
1	F	77	HIS
1	F	78	HIS
1	F	117	HIS
1	F	137	GLN
1	F	151	ASN
1	F	171	GLN
1	F	172	GLN
1	F	192	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

6 ligands are modelled in this entry.

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	$\#|Z| > 2$
2	GOL	A	200	-	5,5,5	0.57	0	5,5,5	0.65	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	GOL	C	203	-	5,5,5	0.49	0	5,5,5	0.64	0
2	GOL	F	201	-	5,5,5	0.45	0	5,5,5	0.54	0
2	GOL	B	205	-	5,5,5	0.28	0	5,5,5	0.60	0
2	GOL	D	204	-	5,5,5	0.49	0	5,5,5	0.43	0
2	GOL	E	202	-	5,5,5	0.95	0	5,5,5	0.97	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
2	GOL	A	200	-	-	0/4/4/4	-
2	GOL	C	203	-	-	0/4/4/4	-
2	GOL	F	201	-	-	0/4/4/4	-
2	GOL	B	205	-	-	0/4/4/4	-
2	GOL	D	204	-	-	0/4/4/4	-
2	GOL	E	202	-	-	0/4/4/4	-

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.

6 monomers are involved in 34 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	200	GOL	4	0
2	C	203	GOL	5	0
2	F	201	GOL	8	0
2	B	205	GOL	4	0
2	D	204	GOL	6	0
2	E	202	GOL	7	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

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 ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.