Full wwPDB X-ray Structure Validation Report ⓘ

Nov 13, 2023 – 03:59 PM JST

PDB ID	:	5XJR
Title	:	Crystal Structure of the Gemin2-binding domain of SMN, Gemin2dN39 in Complex with SmD1(1-82)/D2/F/E/G from Human
Authors	:	Yi, H.; Zhang, R.
Deposited on	:	2017-05-04
Resolution	:	3.12 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*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

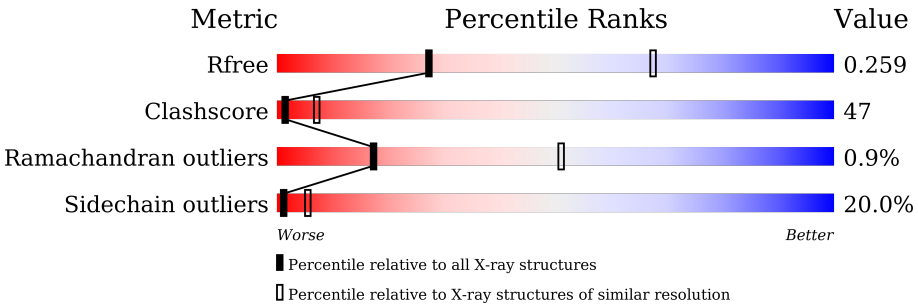
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.12 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}	130704	1292 (3.14-3.10)
Clashscore	141614	1389 (3.14-3.10)
Ramachandran outliers	138981	1337 (3.14-3.10)
Sidechain outliers	138945	1337 (3.14-3.10)

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	2	241	37% 39% 10% 14%
2	A	82	66% 26% 7% •
3	B	118	47% 25% 7% 21%
4	E	92	47% 32% • • 16%
5	F	86	40% 37% 9% 14%
6	G	76	12% 46% 22% 20%
7	M	37	19% 22% 8% 51%

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 4890 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 Gem-associated protein 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	2	208	1672	1055	296	313	8	0	0	0

- Molecule 2 is a protein called Small nuclear ribonucleoprotein Sm D1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	A	81	641	409	112	116	4	0	0	0

- Molecule 3 is a protein called Small nuclear ribonucleoprotein Sm D2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	B	93	754	473	139	137	5	0	0	0

- Molecule 4 is a protein called Small nuclear ribonucleoprotein E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	E	77	638	405	113	115	5	0	0	0

- Molecule 5 is a protein called Small nuclear ribonucleoprotein F.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	F	74	576	372	95	104	5	0	0	0

- Molecule 6 is a protein called Small nuclear ribonucleoprotein G.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	G	61	469	297	85	81	6	0	0	0

- Molecule 7 is a protein called Survival motor neuron protein.

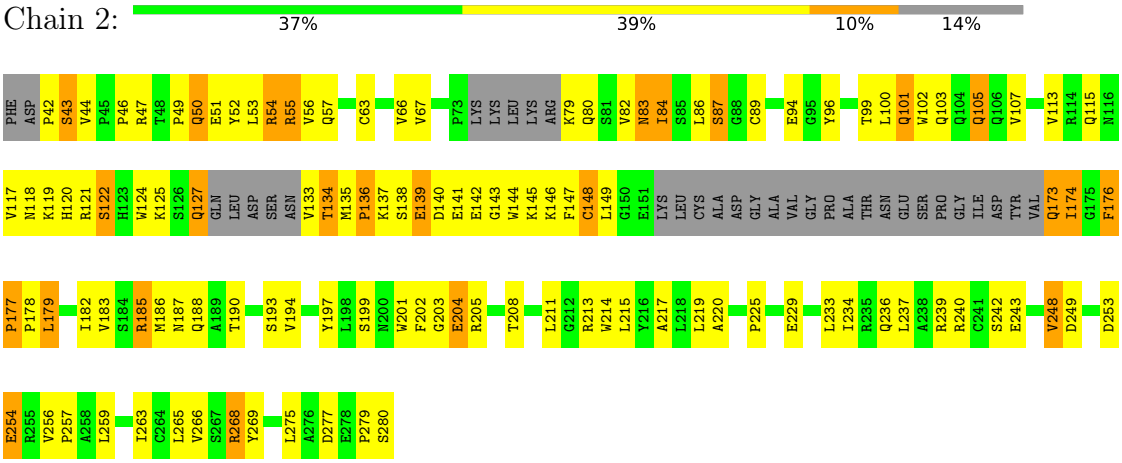
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
7	M	18	140	90	23	27	0	0	0

3 Residue-property plots (i)

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.

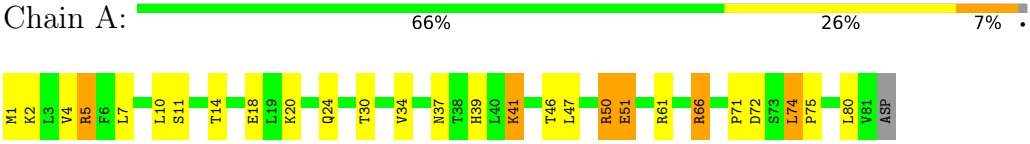
• Molecule 1: Gem-associated protein 2

Chain 2:



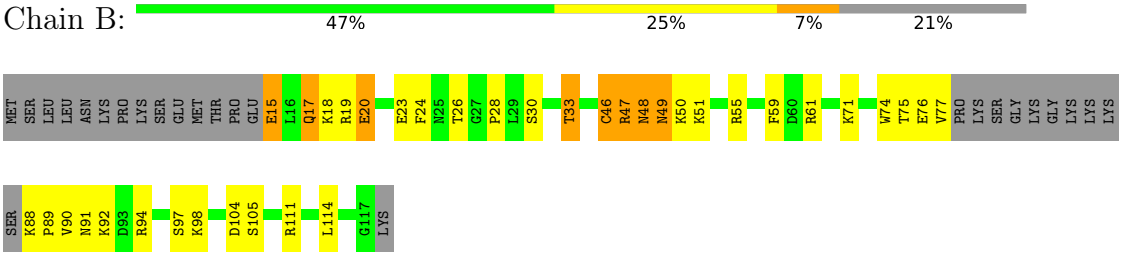
• Molecule 2: Small nuclear ribonucleoprotein Sm D1

Chain A:



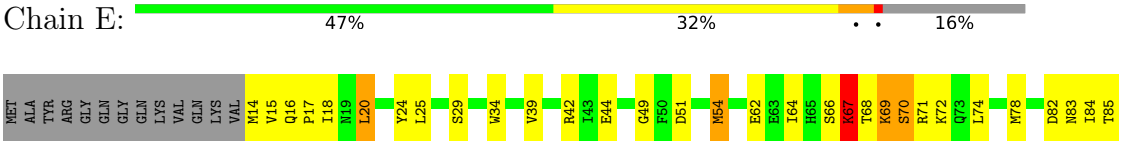
• Molecule 3: Small nuclear ribonucleoprotein Sm D2

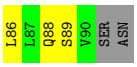
Chain B:



• Molecule 4: Small nuclear ribonucleoprotein E

Chain E:



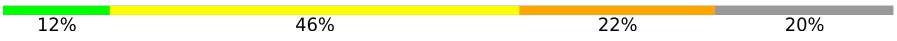


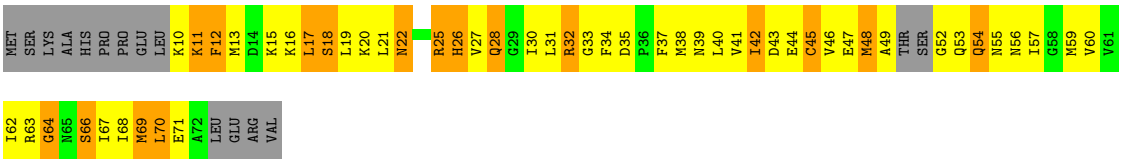
• Molecule 5: Small nuclear ribonucleoprotein F

Chain F:

• Molecule 6: Small nuclear ribonucleoprotein G

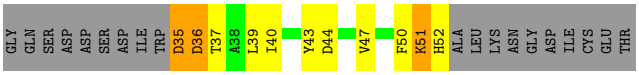
Chain G:





• Molecule 7: Survival motor neuron protein

Chain M:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	82.96Å 114.12Å 130.14Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	60.00 – 3.12 47.01 – 3.12	Depositor EDS
% Data completeness (in resolution range)	83.1 (60.00-3.12) 83.1 (47.01-3.12)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.86 (at 3.12Å)	Xtriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.168 , 0.242 0.220 , 0.259	Depositor DCC
R_{free} test set	953 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	55.8	Xtriage
Anisotropy	0.025	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 56.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.89	EDS
Total number of atoms	4890	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.48% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	2	0.76	0/1709	0.72	0/2319
2	A	0.64	0/649	0.79	0/877
3	B	0.75	0/762	0.84	0/1022
4	E	0.54	0/646	0.75	0/867
5	F	0.71	0/588	0.75	0/795
6	G	0.60	1/472 (0.2%)	0.66	0/626
7	M	0.77	0/142	0.82	0/190
All	All	0.70	1/4968 (0.0%)	0.75	0/6696

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	G	64	GLY	C-N	6.98	1.50	1.34

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	1672	0	1657	143	0
2	A	641	0	689	40	0
3	B	754	0	784	53	0
4	E	638	0	657	56	0
5	F	576	0	581	65	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	G	469	0	491	141	0
7	M	140	0	138	18	0
All	All	4890	0	4997	466	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 47.

All (466) 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)
4:E:66:SER:O	4:E:67:LYS:HG2	1.39	1.20
6:G:32:ARG:CD	6:G:43:ASP:HB2	1.72	1.20
1:2:113:VAL:O	1:2:117:VAL:HG23	1.39	1.20
1:2:135:MET:SD	1:2:182:ILE:CD1	2.29	1.20
5:F:8:LYS:HE3	5:F:12:ASN:OD1	1.35	1.19
6:G:32:ARG:HD2	6:G:43:ASP:CB	1.74	1.16
2:A:1:MET:HE2	2:A:34:VAL:CG2	1.76	1.15
4:E:88:GLN:CB	6:G:57:ILE:HD11	1.76	1.13
1:2:203:GLY:C	1:2:204:GLU:OE1	1.85	1.13
6:G:17:LEU:HD13	6:G:71:GLU:O	1.51	1.11
6:G:28:GLN:HG2	6:G:48:MET:CE	1.81	1.11
1:2:135:MET:SD	1:2:182:ILE:HD11	1.89	1.10
6:G:57:ILE:HD13	6:G:60:VAL:HG11	1.13	1.10
6:G:48:MET:HA	6:G:54:GLN:HB3	1.32	1.10
1:2:239:ARG:O	1:2:243:GLU:HG3	1.51	1.09
4:E:88:GLN:HB3	6:G:57:ILE:HD11	1.11	1.08
6:G:28:GLN:HG2	6:G:48:MET:HE3	1.14	1.08
1:2:204:GLU:OE1	1:2:204:GLU:N	1.90	1.04
6:G:45:CYS:SG	6:G:57:ILE:CG2	2.45	1.04
3:B:77:VAL:HG21	3:B:88:LYS:HD3	1.38	1.02
6:G:45:CYS:SG	6:G:57:ILE:HG22	1.99	1.01
4:E:88:GLN:HB3	6:G:57:ILE:CD1	1.91	1.01
5:F:51:ILE:HG22	5:F:52:ASP:OD1	1.61	1.01
1:2:248:VAL:HG22	1:2:253:ASP:OD2	1.58	1.00
1:2:137:LYS:HD3	1:2:139:GLU:OE2	1.60	1.00
5:F:49:GLU:HG2	5:F:56:SER:HB3	1.42	1.00
6:G:25:ARG:HH11	6:G:25:ARG:HG2	1.27	1.00
6:G:16:LYS:HE2	6:G:28:GLN:OE1	1.61	0.99
5:F:3:LEU:N	5:F:4:PRO:HD2	1.77	0.99
5:F:49:GLU:HB3	5:F:57:GLY:H	1.30	0.97
2:A:1:MET:CE	2:A:34:VAL:CG2	2.42	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:177:PRO:HB2	7:M:40:ILE:HD11	1.47	0.96
6:G:32:ARG:HH11	6:G:32:ARG:HB3	1.31	0.94
5:F:25:TRP:HE1	5:F:68:ASN:ND2	1.64	0.94
6:G:46:VAL:HG23	6:G:56:ASN:CG	1.88	0.94
5:F:25:TRP:HE1	5:F:68:ASN:HD22	1.13	0.93
5:F:24:LYS:HG3	5:F:68:ASN:O	1.69	0.93
6:G:57:ILE:CD1	6:G:60:VAL:HG11	1.98	0.93
3:B:48:ASN:HD22	3:B:48:ASN:H	1.11	0.92
4:E:66:SER:O	4:E:67:LYS:CG	2.16	0.92
4:E:14:MET:HG3	6:G:33:GLY:HA2	1.50	0.91
6:G:32:ARG:HB3	6:G:32:ARG:NH1	1.86	0.91
6:G:20:LYS:HD2	6:G:26:HIS:CD2	2.04	0.91
6:G:57:ILE:HD13	6:G:60:VAL:CG1	1.99	0.91
1:2:173:GLN:HG3	1:2:174:ILE:H	1.32	0.91
1:2:120:HIS:O	1:2:124:TRP:HD1	1.54	0.90
2:A:47:LEU:HG	2:A:50:ARG:HD3	1.51	0.90
5:F:3:LEU:N	5:F:4:PRO:CD	2.34	0.90
1:2:148:CYS:HB3	1:2:214:TRP:CE2	2.06	0.90
1:2:203:GLY:CA	1:2:204:GLU:OE1	2.20	0.89
1:2:248:VAL:CG2	1:2:253:ASP:OD2	2.21	0.89
5:F:49:GLU:O	5:F:55:LEU:HD23	1.72	0.89
6:G:28:GLN:CG	6:G:48:MET:HE3	2.03	0.88
6:G:20:LYS:HD2	6:G:26:HIS:HD2	1.36	0.88
6:G:38:MET:O	6:G:64:GLY:HA2	1.74	0.88
6:G:13:MET:HA	6:G:31:LEU:HD22	1.56	0.87
4:E:83:ASN:HD21	5:F:24:LYS:HG2	1.38	0.86
6:G:17:LEU:CD1	6:G:71:GLU:O	2.23	0.86
1:2:135:MET:SD	1:2:182:ILE:HD12	2.15	0.86
6:G:21:LEU:HA	6:G:66:SER:O	1.75	0.85
3:B:77:VAL:HB	3:B:89:PRO:HA	1.56	0.85
1:2:67:VAL:HG21	5:F:15:THR:HG21	1.59	0.84
4:E:84:ILE:O	6:G:63:ARG:HG3	1.78	0.84
6:G:46:VAL:HG22	6:G:56:ASN:CA	2.08	0.84
6:G:46:VAL:HG22	6:G:56:ASN:HA	1.59	0.83
6:G:46:VAL:CG2	6:G:56:ASN:OD1	2.26	0.83
6:G:41:VAL:O	6:G:42:ILE:HD12	1.79	0.83
4:E:68:THR:O	4:E:69:LYS:HG3	1.79	0.83
6:G:46:VAL:HG22	6:G:55:ASN:C	1.99	0.83
1:2:179:LEU:O	1:2:183:VAL:HG22	1.77	0.82
5:F:49:GLU:O	5:F:55:LEU:HA	1.79	0.82
2:A:47:LEU:HG	2:A:50:ARG:CD	2.10	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1:MET:CE	2:A:34:VAL:HG22	2.06	0.81
5:F:11:LEU:HD13	5:F:36:VAL:HG11	1.63	0.80
3:B:77:VAL:HG21	3:B:88:LYS:CD	2.12	0.79
1:2:254:GLU:O	1:2:257:PRO:HD2	1.82	0.79
2:A:5:ARG:HG2	2:A:5:ARG:HH11	1.47	0.79
4:E:39:VAL:HG23	6:G:25:ARG:NH1	1.98	0.79
1:2:67:VAL:CG2	5:F:15:THR:HG21	2.13	0.79
1:2:113:VAL:O	1:2:117:VAL:CG2	2.28	0.78
2:A:1:MET:HE2	2:A:34:VAL:HG23	1.63	0.78
2:A:1:MET:HE1	2:A:34:VAL:HG22	1.65	0.78
5:F:49:GLU:HB3	5:F:57:GLY:N	1.98	0.77
6:G:49:ALA:HB3	6:G:52:GLY:O	1.82	0.77
1:2:148:CYS:HB3	1:2:214:TRP:NE1	1.98	0.77
6:G:46:VAL:HG23	6:G:56:ASN:OD1	1.84	0.77
5:F:20:MET:CE	5:F:30:LYS:HD3	2.15	0.76
1:2:176:PHE:O	1:2:177:PRO:O	2.03	0.75
6:G:64:GLY:O	6:G:67:ILE:HG12	1.86	0.75
1:2:177:PRO:HB2	7:M:40:ILE:CD1	2.16	0.75
1:2:185:ARG:HG2	1:2:185:ARG:HH11	1.50	0.75
3:B:46:CYS:HB3	3:B:48:ASN:ND2	2.01	0.75
4:E:51:ASP:O	4:E:54:MET:HE1	1.87	0.75
1:2:103:GLN:OE1	1:2:268:ARG:NH1	2.20	0.75
1:2:137:LYS:CD	1:2:139:GLU:OE2	2.33	0.75
6:G:28:GLN:CG	6:G:48:MET:CE	2.62	0.74
6:G:19:LEU:HD21	6:G:70:LEU:CB	2.17	0.74
5:F:24:LYS:HE3	5:F:67:ASN:O	1.86	0.74
6:G:39:ASN:OD1	6:G:63:ARG:HA	1.88	0.74
6:G:46:VAL:CG2	6:G:56:ASN:CG	2.56	0.73
5:F:20:MET:HE2	5:F:30:LYS:HD3	1.71	0.73
1:2:53:LEU:O	1:2:57:GLN:HG3	1.89	0.73
4:E:88:GLN:CG	6:G:57:ILE:HD11	2.19	0.73
6:G:37:PHE:HB3	6:G:39:ASN:ND2	2.03	0.72
5:F:8:LYS:CE	5:F:12:ASN:OD1	2.29	0.72
6:G:53:GLN:HG3	6:G:54:GLN:N	2.04	0.72
5:F:8:LYS:HE3	5:F:12:ASN:CG	2.09	0.72
1:2:118:ASN:OD1	1:2:121:ARG:NH1	2.23	0.72
5:F:67:ASN:H	5:F:67:ASN:HD22	1.38	0.71
1:2:201:TRP:CE2	1:2:205:ARG:HD3	2.25	0.71
1:2:239:ARG:O	1:2:243:GLU:CG	2.35	0.71
4:E:39:VAL:HG23	6:G:25:ARG:HH12	1.55	0.71
3:B:47:ARG:HG2	3:B:105:SER:O	1.90	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:46:VAL:HG22	6:G:56:ASN:N	2.05	0.71
3:B:77:VAL:CG2	3:B:88:LYS:HD3	2.18	0.70
5:F:50:TYR:HA	5:F:54:ALA:O	1.91	0.70
4:E:66:SER:C	4:E:67:LYS:HG2	2.10	0.70
1:2:173:GLN:CG	1:2:174:ILE:H	2.05	0.70
1:2:142:GLU:O	1:2:146:LYS:HG3	1.91	0.70
6:G:46:VAL:CG2	6:G:56:ASN:HA	2.21	0.69
6:G:27:VAL:HG13	6:G:46:VAL:O	1.92	0.69
6:G:39:ASN:OD1	6:G:64:GLY:N	2.25	0.69
4:E:62:GLU:OE1	4:E:71:ARG:NH2	2.25	0.69
2:A:72:ASP:O	3:B:98:LYS:NZ	2.25	0.69
6:G:70:LEU:O	6:G:70:LEU:HD13	1.93	0.69
1:2:174:ILE:O	1:2:174:ILE:HD13	1.93	0.69
1:2:179:LEU:HD23	7:M:37:THR:HG22	1.75	0.69
6:G:32:ARG:HD2	6:G:43:ASP:HB2	0.81	0.69
1:2:120:HIS:O	1:2:124:TRP:CD1	2.44	0.68
6:G:19:LEU:HD21	6:G:70:LEU:HB2	1.76	0.68
6:G:70:LEU:O	6:G:70:LEU:HD22	1.93	0.68
5:F:24:LYS:HD2	5:F:67:ASN:O	1.93	0.68
5:F:49:GLU:O	5:F:56:SER:N	2.25	0.68
6:G:48:MET:HA	6:G:54:GLN:CB	2.19	0.68
4:E:68:THR:C	4:E:69:LYS:HG3	2.14	0.68
1:2:51:GLU:OE1	1:2:54:ARG:NH1	2.27	0.68
1:2:203:GLY:HA3	1:2:204:GLU:OE1	1.94	0.68
5:F:52:ASP:OD1	5:F:52:ASP:N	2.27	0.68
6:G:45:CYS:SG	6:G:57:ILE:HG21	2.33	0.67
1:2:173:GLN:NE2	1:2:174:ILE:HG22	2.08	0.67
4:E:17:PRO:O	4:E:20:LEU:N	2.27	0.67
5:F:8:LYS:HB3	5:F:9:PRO:HD3	1.77	0.67
2:A:1:MET:HE2	2:A:34:VAL:HG21	1.75	0.67
6:G:28:GLN:HB3	6:G:48:MET:HE1	1.75	0.67
1:2:99:THR:HG23	7:M:52:HIS:HE1	1.59	0.67
1:2:136:PRO:CD	1:2:147:PHE:CD2	2.77	0.67
1:2:46:PRO:HG3	1:2:55:ARG:NE	2.10	0.66
1:2:84:ILE:N	1:2:84:ILE:HD12	2.10	0.66
1:2:99:THR:HG23	7:M:52:HIS:CE1	2.30	0.66
7:M:51:LYS:O	7:M:51:LYS:HG2	1.95	0.66
4:E:88:GLN:CB	6:G:57:ILE:CD1	2.62	0.66
6:G:57:ILE:CD1	6:G:60:VAL:CG1	2.69	0.66
6:G:37:PHE:HB3	6:G:39:ASN:HD21	1.60	0.66
6:G:19:LEU:CD2	6:G:70:LEU:CB	2.74	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:43:ASP:OD1	6:G:44:GLU:N	2.28	0.66
1:2:135:MET:CG	1:2:182:ILE:HD11	2.26	0.65
6:G:57:ILE:HG12	6:G:57:ILE:O	1.96	0.65
5:F:11:LEU:CD1	5:F:36:VAL:HG11	2.26	0.65
6:G:53:GLN:HG3	6:G:54:GLN:H	1.61	0.65
4:E:66:SER:C	4:E:67:LYS:CG	2.58	0.65
1:2:87:SER:O	1:2:239:ARG:NE	2.30	0.65
6:G:25:ARG:HG2	6:G:25:ARG:NH1	1.98	0.65
1:2:174:ILE:HD13	1:2:174:ILE:C	2.17	0.65
6:G:64:GLY:O	6:G:67:ILE:CG1	2.44	0.65
1:2:52:TYR:O	1:2:56:VAL:HG23	1.97	0.64
3:B:76:GLU:O	3:B:90:VAL:N	2.29	0.64
6:G:31:LEU:C	6:G:31:LEU:HD23	2.18	0.64
6:G:48:MET:HG3	6:G:54:GLN:HG2	1.78	0.64
6:G:37:PHE:O	6:G:38:MET:HB2	1.97	0.64
1:2:173:GLN:HG3	1:2:174:ILE:N	2.07	0.63
6:G:46:VAL:HG13	6:G:55:ASN:O	1.98	0.63
1:2:256:VAL:HB	1:2:257:PRO:HD3	1.80	0.63
3:B:20:GLU:O	3:B:23:GLU:HB3	1.98	0.63
6:G:46:VAL:HG11	6:G:54:GLN:NE2	2.13	0.63
6:G:48:MET:CG	6:G:54:GLN:HG2	2.27	0.63
6:G:43:ASP:OD1	6:G:44:GLU:HG3	1.99	0.63
6:G:46:VAL:HG22	6:G:55:ASN:O	1.98	0.63
1:2:44:VAL:O	1:2:55:ARG:NH2	2.32	0.63
1:2:176:PHE:O	1:2:177:PRO:C	2.35	0.63
4:E:88:GLN:HB3	6:G:60:VAL:HG12	1.79	0.63
1:2:141:GLU:HG2	1:2:145:LYS:HD2	1.80	0.62
3:B:48:ASN:H	3:B:48:ASN:ND2	1.90	0.62
3:B:28:PRO:O	5:F:63:LEU:HD13	1.98	0.62
2:A:66:ARG:NH1	2:A:66:ARG:HG3	2.14	0.62
1:2:185:ARG:HG2	1:2:185:ARG:NH1	2.14	0.62
1:2:225:PRO:HG2	2:A:46:THR:OG1	1.99	0.62
1:2:204:GLU:O	1:2:205:ARG:HG3	2.00	0.61
1:2:42:PRO:HG2	1:2:43:SER:H	1.65	0.61
1:2:179:LEU:HB3	7:M:36:ASP:O	1.99	0.61
1:2:137:LYS:HG2	1:2:138:SER:N	2.15	0.61
3:B:76:GLU:HG3	3:B:77:VAL:H	1.65	0.61
2:A:50:ARG:O	2:A:51:GLU:O	2.19	0.61
1:2:179:LEU:O	1:2:182:ILE:HG22	2.00	0.61
4:E:54:MET:CE	4:E:54:MET:HA	2.30	0.60
2:A:1:MET:CE	2:A:34:VAL:HG23	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:37:PHE:CB	6:G:39:ASN:ND2	2.63	0.60
2:A:18:GLU:HG3	2:A:24:GLN:NE2	2.17	0.60
4:E:44:GLU:HB2	4:E:64:ILE:CD1	2.31	0.60
6:G:41:VAL:HG11	6:G:59:MET:HE2	1.83	0.60
3:B:47:ARG:HH11	3:B:47:ARG:HB3	1.65	0.60
6:G:19:LEU:HD21	6:G:70:LEU:HB3	1.83	0.60
1:2:135:MET:O	1:2:136:PRO:O	2.18	0.60
2:A:66:ARG:HG3	2:A:66:ARG:HH11	1.65	0.60
6:G:19:LEU:CD2	6:G:70:LEU:HB3	2.32	0.60
1:2:119:LYS:C	1:2:120:HIS:HD2	2.05	0.60
2:A:47:LEU:CB	2:A:50:ARG:HG3	2.32	0.60
3:B:48:ASN:HD22	3:B:48:ASN:N	1.85	0.60
6:G:19:LEU:HD23	6:G:70:LEU:HA	1.83	0.60
3:B:77:VAL:HG23	3:B:88:LYS:O	2.02	0.59
6:G:19:LEU:O	6:G:26:HIS:HA	2.02	0.59
1:2:236:GLN:OE1	1:2:239:ARG:NH1	2.32	0.59
2:A:5:ARG:HG2	2:A:5:ARG:NH1	2.16	0.59
4:E:66:SER:O	4:E:67:LYS:CB	2.51	0.59
1:2:263:ILE:HG22	1:2:263:ILE:O	2.02	0.59
1:2:84:ILE:HD12	1:2:84:ILE:H	1.67	0.59
2:A:66:ARG:NH2	3:B:47:ARG:HB2	2.18	0.58
1:2:249:ASP:OD1	1:2:249:ASP:N	2.34	0.58
3:B:50:LYS:HG2	3:B:74:TRP:HB3	1.84	0.58
1:2:133:VAL:HG22	1:2:133:VAL:O	2.01	0.58
1:2:52:TYR:CE2	4:E:25:LEU:CD2	2.87	0.58
3:B:76:GLU:O	3:B:89:PRO:HA	2.03	0.58
2:A:30:THR:CG2	2:A:41:LYS:HG2	2.34	0.58
1:2:217:ALA:O	1:2:220:ALA:HB3	2.04	0.57
3:B:47:ARG:HB3	3:B:47:ARG:NH1	2.19	0.57
7:M:50:PHE:CE1	7:M:52:HIS:CD2	2.91	0.57
1:2:179:LEU:CD2	7:M:37:THR:HG22	2.34	0.57
6:G:28:GLN:HG2	6:G:48:MET:HE1	1.83	0.57
6:G:20:LYS:CD	6:G:26:HIS:CD2	2.85	0.57
5:F:24:LYS:CE	5:F:67:ASN:O	2.52	0.57
6:G:21:LEU:CA	6:G:66:SER:O	2.50	0.57
1:2:133:VAL:O	1:2:133:VAL:HG13	2.04	0.57
1:2:46:PRO:HG3	1:2:55:ARG:HE	1.70	0.57
1:2:213:ARG:NH1	7:M:44:ASP:OD1	2.38	0.56
3:B:47:ARG:CG	3:B:105:SER:O	2.52	0.56
6:G:19:LEU:N	6:G:27:VAL:O	2.27	0.56
3:B:75:THR:HG22	3:B:91:ASN:OD1	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:54:GLN:HE21	6:G:54:GLN:C	2.09	0.56
1:2:213:ARG:HG2	7:M:43:TYR:CD2	2.40	0.56
2:A:18:GLU:HG3	2:A:24:GLN:HE22	1.71	0.56
4:E:82:ASP:OD1	5:F:24:LYS:CE	2.54	0.56
4:E:17:PRO:O	4:E:18:ILE:C	2.44	0.56
6:G:25:ARG:HH11	6:G:25:ARG:CG	2.09	0.56
6:G:46:VAL:HG21	6:G:56:ASN:OD1	2.04	0.56
7:M:51:LYS:O	7:M:52:HIS:CD2	2.58	0.56
3:B:77:VAL:HG22	3:B:77:VAL:O	2.06	0.55
1:2:101:GLN:HG3	1:2:102:TRP:N	2.21	0.55
4:E:67:LYS:HD3	4:E:67:LYS:N	2.20	0.55
6:G:16:LYS:NZ	6:G:28:GLN:HE22	2.04	0.55
4:E:16:GLN:HB3	6:G:35:ASP:OD1	2.07	0.55
6:G:68:ILE:HG22	6:G:69:MET:HG2	1.89	0.55
5:F:49:GLU:O	5:F:55:LEU:CA	2.54	0.55
7:M:35:ASP:C	7:M:37:THR:H	2.10	0.55
3:B:76:GLU:HG3	3:B:77:VAL:N	2.22	0.54
1:2:137:LYS:HB2	1:2:137:LYS:NZ	2.23	0.54
1:2:141:GLU:HA	1:2:197:TYR:CD2	2.43	0.54
3:B:33:THR:HG22	3:B:59:PHE:HZ	1.71	0.54
1:2:257:PRO:HB2	7:M:47:VAL:HG13	1.88	0.54
1:2:186:MET:CE	1:2:190:THR:HG22	2.37	0.54
3:B:88:LYS:N	3:B:89:PRO:CD	2.70	0.54
1:2:50:GLN:CD	1:2:50:GLN:H	2.11	0.54
5:F:37:ASP:OD2	5:F:41:ASN:ND2	2.40	0.53
5:F:67:ASN:HD22	5:F:67:ASN:N	2.04	0.53
4:E:54:MET:CE	4:E:54:MET:CA	2.85	0.53
6:G:55:ASN:OD1	6:G:55:ASN:N	2.40	0.53
1:2:82:VAL:HG12	3:B:114:LEU:HD23	1.90	0.53
6:G:37:PHE:HB2	6:G:39:ASN:HD22	1.73	0.53
2:A:20:LYS:HG2	2:A:66:ARG:NH1	2.23	0.53
6:G:41:VAL:O	6:G:42:ILE:CD1	2.56	0.53
2:A:47:LEU:HB2	2:A:50:ARG:HG3	1.91	0.53
5:F:24:LYS:CD	5:F:67:ASN:O	2.57	0.53
6:G:19:LEU:O	6:G:26:HIS:CA	2.57	0.53
3:B:15:GLU:O	3:B:18:LYS:HG2	2.09	0.52
1:2:127:GLN:HA	1:2:127:GLN:HE21	1.74	0.52
1:2:183:VAL:HA	1:2:186:MET:HG3	1.91	0.52
3:B:76:GLU:CG	3:B:77:VAL:N	2.72	0.52
6:G:41:VAL:HG11	6:G:59:MET:CE	2.38	0.52
4:E:66:SER:C	4:E:67:LYS:HD3	2.29	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:21:LEU:HB2	6:G:25:ARG:HD2	1.90	0.52
6:G:22:ASN:O	6:G:25:ARG:HD2	2.08	0.52
5:F:37:ASP:CG	5:F:41:ASN:HD22	2.12	0.52
6:G:42:ILE:HG22	6:G:45:CYS:HB3	1.92	0.52
6:G:46:VAL:HA	6:G:55:ASN:O	2.10	0.52
3:B:46:CYS:SG	3:B:48:ASN:ND2	2.82	0.52
2:A:74:LEU:HD22	2:A:75:PRO:HD2	1.91	0.52
1:2:176:PHE:C	1:2:177:PRO:O	2.48	0.52
6:G:16:LYS:CE	6:G:28:GLN:OE1	2.49	0.52
6:G:70:LEU:CD1	6:G:70:LEU:N	2.73	0.52
3:B:77:VAL:HG21	3:B:88:LYS:CG	2.40	0.51
4:E:34:TRP:CE2	4:E:86:LEU:HD22	2.44	0.51
6:G:28:GLN:CB	6:G:48:MET:HE1	2.40	0.51
6:G:49:ALA:HB3	6:G:52:GLY:C	2.31	0.51
3:B:46:CYS:CB	3:B:48:ASN:ND2	2.73	0.51
2:A:47:LEU:HB3	2:A:50:ARG:HG3	1.91	0.51
3:B:17:GLN:O	3:B:20:GLU:HB2	2.11	0.51
5:F:35:SER:O	5:F:36:VAL:HG23	2.11	0.51
2:A:20:LYS:HA	2:A:66:ARG:HD2	1.93	0.51
4:E:86:LEU:HD12	6:G:62:ILE:HG12	1.93	0.51
5:F:39:TYR:O	5:F:40:MET:HB2	2.11	0.51
3:B:30:SER:HA	3:B:33:THR:HG23	1.92	0.51
3:B:76:GLU:CD	3:B:92:LYS:HE3	2.31	0.51
1:2:239:ARG:O	1:2:242:SER:OG	2.29	0.50
4:E:67:LYS:N	4:E:67:LYS:CD	2.74	0.50
6:G:67:ILE:O	6:G:67:ILE:HD12	2.10	0.50
1:2:49:PRO:O	1:2:50:GLN:C	2.48	0.50
1:2:50:GLN:HE21	1:2:50:GLN:CA	2.23	0.50
1:2:259:LEU:O	1:2:263:ILE:HG13	2.12	0.50
1:2:119:LYS:HB3	1:2:120:HIS:CD2	2.47	0.50
4:E:14:MET:HA	6:G:32:ARG:O	2.12	0.50
4:E:83:ASN:HD21	5:F:24:LYS:CG	2.19	0.50
6:G:32:ARG:HH11	6:G:32:ARG:CB	2.13	0.50
1:2:136:PRO:CD	1:2:147:PHE:CE2	2.94	0.50
4:E:83:ASN:ND2	5:F:24:LYS:HE2	2.27	0.50
2:A:4:VAL:HG22	2:A:4:VAL:O	2.11	0.49
6:G:21:LEU:HD23	6:G:66:SER:O	2.12	0.49
4:E:88:GLN:CB	6:G:60:VAL:HG12	2.42	0.49
1:2:147:PHE:CD1	1:2:147:PHE:C	2.86	0.49
3:B:77:VAL:HB	3:B:89:PRO:CA	2.36	0.49
2:A:66:ARG:HH11	2:A:66:ARG:CG	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:49:GLY:HA3	5:F:5:LEU:O	2.12	0.49
6:G:70:LEU:HD13	6:G:70:LEU:H	1.76	0.49
1:2:279:PRO:C	1:2:280:SER:OXT	2.51	0.49
1:2:279:PRO:O	1:2:280:SER:OXT	2.30	0.49
3:B:46:CYS:HB3	3:B:48:ASN:HD21	1.75	0.49
3:B:46:CYS:CB	3:B:48:ASN:HD21	2.26	0.49
4:E:54:MET:HE1	4:E:54:MET:HA	1.95	0.49
1:2:119:LYS:C	1:2:120:HIS:CD2	2.86	0.48
1:2:122:SER:O	1:2:125:LYS:HB2	2.12	0.48
6:G:17:LEU:HD13	6:G:18:SER:H	1.77	0.48
6:G:46:VAL:CG2	6:G:56:ASN:CA	2.82	0.48
1:2:136:PRO:HD3	1:2:147:PHE:CD2	2.47	0.48
2:A:47:LEU:HG	2:A:50:ARG:HD2	1.93	0.48
5:F:66:CYS:SG	5:F:67:ASN:ND2	2.87	0.48
4:E:85:THR:HG23	6:G:66:SER:CB	2.44	0.48
1:2:136:PRO:HD2	1:2:147:PHE:CE2	2.49	0.48
1:2:142:GLU:O	1:2:146:LYS:CG	2.61	0.48
3:B:17:GLN:C	3:B:17:GLN:HE21	2.16	0.48
4:E:44:GLU:HB2	4:E:64:ILE:HD11	1.94	0.48
5:F:75:VAL:CG1	5:F:76:GLU:N	2.76	0.48
6:G:22:ASN:N	6:G:22:ASN:HD22	2.11	0.48
1:2:51:GLU:O	1:2:55:ARG:HB2	2.14	0.47
1:2:50:GLN:CA	1:2:50:GLN:NE2	2.77	0.47
1:2:50:GLN:N	1:2:50:GLN:NE2	2.63	0.47
6:G:42:ILE:O	6:G:59:MET:HA	2.14	0.47
6:G:37:PHE:CB	6:G:39:ASN:HD22	2.24	0.47
2:A:1:MET:O	2:A:1:MET:HG3	2.14	0.47
4:E:14:MET:HG3	6:G:33:GLY:CA	2.35	0.47
6:G:19:LEU:O	6:G:27:VAL:N	2.41	0.47
6:G:39:ASN:OD1	6:G:63:ARG:CA	2.61	0.47
1:2:136:PRO:HD2	1:2:147:PHE:CD2	2.49	0.47
4:E:86:LEU:HD12	6:G:62:ILE:CG1	2.44	0.47
6:G:12:PHE:CD1	6:G:12:PHE:N	2.78	0.47
1:2:137:LYS:HB2	1:2:137:LYS:HZ3	1.79	0.47
3:B:47:ARG:HG3	3:B:105:SER:HA	1.96	0.47
3:B:104:ASP:C	3:B:104:ASP:OD1	2.52	0.47
5:F:23:LEU:HD22	5:F:29:TYR:HE1	1.79	0.47
5:F:71:TYR:C	5:F:71:TYR:CD1	2.86	0.47
6:G:47:GLU:O	6:G:54:GLN:HB3	2.15	0.47
2:A:30:THR:HG22	2:A:41:LYS:HG2	1.95	0.47
1:2:103:GLN:O	1:2:107:VAL:HG23	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:25:TRP:HB2	5:F:27:MET:SD	2.55	0.47
6:G:46:VAL:HG13	6:G:55:ASN:H	1.80	0.47
6:G:70:LEU:CD1	6:G:70:LEU:H	2.27	0.47
1:2:144:TRP:O	1:2:147:PHE:HB3	2.16	0.46
5:F:20:MET:HE1	5:F:30:LYS:HD3	1.92	0.46
6:G:46:VAL:CG1	6:G:54:GLN:HB2	2.45	0.46
1:2:178:PRO:HB3	1:2:214:TRP:CE3	2.50	0.46
4:E:20:LEU:HD22	4:E:24:TYR:CE2	2.51	0.46
1:2:120:HIS:CD2	1:2:120:HIS:N	2.84	0.46
4:E:88:GLN:CD	6:G:57:ILE:HD11	2.36	0.46
6:G:22:ASN:HD22	6:G:22:ASN:H	1.63	0.46
5:F:67:ASN:N	5:F:67:ASN:ND2	2.64	0.46
3:B:17:GLN:HE22	3:B:18:LYS:NZ	2.14	0.46
4:E:66:SER:HB3	4:E:67:LYS:HD3	1.97	0.46
5:F:41:ASN:C	5:F:42:MET:HG3	2.36	0.46
2:A:47:LEU:HD22	2:A:47:LEU:N	2.31	0.45
5:F:48:GLU:HB3	5:F:50:TYR:CE1	2.51	0.45
6:G:34:PHE:CD1	6:G:34:PHE:C	2.89	0.45
1:2:52:TYR:CE2	4:E:25:LEU:HD22	2.51	0.45
1:2:188:GLN:NE2	1:2:188:GLN:HA	2.32	0.45
5:F:20:MET:CE	5:F:30:LYS:HB2	2.47	0.45
1:2:135:MET:O	1:2:136:PRO:C	2.55	0.44
4:E:20:LEU:HD22	4:E:24:TYR:CZ	2.52	0.44
1:2:173:GLN:HE21	1:2:173:GLN:HB2	1.60	0.44
1:2:173:GLN:CG	1:2:174:ILE:N	2.73	0.44
1:2:203:GLY:HA2	1:2:240:ARG:HD3	1.99	0.44
3:B:76:GLU:N	3:B:90:VAL:O	2.49	0.44
4:E:66:SER:C	4:E:67:LYS:CD	2.85	0.44
1:2:96:TYR:N	1:2:96:TYR:CD1	2.84	0.44
1:2:136:PRO:HD3	1:2:147:PHE:CE2	2.52	0.44
6:G:21:LEU:HB2	6:G:25:ARG:CD	2.47	0.44
5:F:5:LEU:HD23	5:F:5:LEU:HA	1.88	0.44
1:2:143:GLY:O	1:2:147:PHE:HB2	2.18	0.44
1:2:234:ILE:HD12	1:2:266:VAL:HG13	1.98	0.44
2:A:2:LYS:O	2:A:2:LYS:HG2	2.17	0.44
5:F:29:TYR:CD1	5:F:29:TYR:N	2.86	0.43
1:2:50:GLN:HE21	1:2:50:GLN:HA	1.83	0.43
1:2:84:ILE:H	1:2:84:ILE:CD1	2.28	0.43
4:E:82:ASP:OD1	5:F:24:LYS:NZ	2.50	0.43
3:B:48:ASN:O	3:B:49:ASN:CB	2.66	0.43
1:2:96:TYR:HE2	1:2:248:VAL:CG1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:17:LEU:CD1	6:G:18:SER:N	2.81	0.43
1:2:182:ILE:HG23	1:2:183:VAL:N	2.33	0.43
2:A:47:LEU:CG	2:A:50:ARG:CD	2.90	0.43
4:E:83:ASN:HD21	5:F:24:LYS:HE2	1.82	0.43
5:F:35:SER:C	5:F:36:VAL:HG23	2.38	0.43
2:A:30:THR:OG1	2:A:39:HIS:HB2	2.19	0.43
3:B:24:PHE:O	3:B:33:THR:HG21	2.19	0.43
3:B:48:ASN:O	3:B:49:ASN:HB2	2.19	0.43
5:F:8:LYS:CB	5:F:9:PRO:HD3	2.48	0.43
6:G:28:GLN:HB3	6:G:48:MET:CE	2.45	0.43
1:2:96:TYR:N	1:2:96:TYR:HD1	2.17	0.42
1:2:137:LYS:HG2	1:2:139:GLU:H	1.84	0.42
5:F:55:LEU:HD22	5:F:56:SER:N	2.35	0.42
1:2:101:GLN:O	1:2:105:GLN:HB3	2.18	0.42
3:B:104:ASP:OD1	3:B:104:ASP:O	2.37	0.42
6:G:19:LEU:O	6:G:26:HIS:HB3	2.20	0.42
1:2:49:PRO:HG3	4:E:18:ILE:HG23	2.02	0.42
6:G:41:VAL:C	6:G:42:ILE:CD1	2.88	0.42
3:B:18:LYS:HA	3:B:18:LYS:HD3	1.68	0.42
3:B:33:THR:HG22	3:B:59:PHE:CZ	2.53	0.42
5:F:36:VAL:HG12	5:F:37:ASP:N	2.35	0.42
6:G:11:LYS:HB3	6:G:11:LYS:HE2	1.75	0.42
1:2:213:ARG:HD3	7:M:40:ILE:HG23	2.02	0.42
3:B:17:GLN:C	3:B:17:GLN:NE2	2.73	0.42
1:2:234:ILE:CD1	1:2:266:VAL:HG13	2.50	0.42
6:G:32:ARG:CD	6:G:43:ASP:CB	2.60	0.42
1:2:265:LEU:O	1:2:269:TYR:HB3	2.20	0.41
6:G:27:VAL:HG11	6:G:45:CYS:SG	2.60	0.41
1:2:82:VAL:O	1:2:82:VAL:HG23	2.20	0.41
4:E:85:THR:HG23	6:G:66:SER:HB3	2.01	0.41
7:M:35:ASP:O	7:M:37:THR:N	2.53	0.41
7:M:39:LEU:HD23	7:M:39:LEU:HA	1.78	0.41
1:2:83:ASN:ND2	3:B:114:LEU:O	2.50	0.41
1:2:134:THR:O	1:2:136:PRO:HD3	2.21	0.41
5:F:10:PHE:CE2	5:F:14:LEU:HD11	2.55	0.41
3:B:48:ASN:ND2	3:B:48:ASN:N	2.58	0.41
2:A:71:PRO:O	2:A:74:LEU:HB2	2.21	0.41
5:F:55:LEU:CD2	5:F:56:SER:N	2.83	0.41
1:2:136:PRO:CD	1:2:147:PHE:HD2	2.32	0.41
1:2:148:CYS:CB	1:2:214:TRP:NE1	2.77	0.41
1:2:256:VAL:N	1:2:257:PRO:CD	2.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:50:ARG:C	2:A:51:GLU:O	2.59	0.41
4:E:68:THR:HG23	4:E:70:SER:OG	2.20	0.41
7:M:35:ASP:C	7:M:37:THR:N	2.73	0.41
1:2:190:THR:O	1:2:194:VAL:HG23	2.20	0.41
1:2:199:SER:OG	1:2:237:LEU:HD13	2.21	0.41
1:2:199:SER:OG	1:2:237:LEU:CD1	2.69	0.41
4:E:34:TRP:HB2	4:E:86:LEU:HB3	2.02	0.41
5:F:23:LEU:HD22	5:F:29:TYR:CE1	2.55	0.41
6:G:19:LEU:HD23	6:G:19:LEU:HA	1.78	0.40
6:G:41:VAL:C	6:G:42:ILE:HD12	2.40	0.40
1:2:202:PHE:CD1	1:2:202:PHE:O	2.74	0.40
2:A:7:LEU:HD23	2:A:10:LEU:HD12	2.03	0.40
6:G:46:VAL:HG13	6:G:55:ASN:N	2.36	0.40
1:2:84:ILE:HD13	3:B:91:ASN:HD21	1.86	0.40
1:2:182:ILE:HD12	1:2:182:ILE:O	2.22	0.40
1:2:188:GLN:NE2	1:2:188:GLN:CA	2.84	0.40
1:2:202:PHE:CD1	1:2:202:PHE:C	2.94	0.40
2:A:50:ARG:O	2:A:51:GLU:C	2.60	0.40
5:F:36:VAL:CG1	5:F:37:ASP:N	2.84	0.40
1:2:137:LYS:O	1:2:144:TRP:NE1	2.53	0.40
2:A:37:ASN:OD1	2:A:61:ARG:HA	2.22	0.40
4:E:78:MET:HB2	5:F:10:PHE:CE2	2.56	0.40
1:2:187:ASN:OD1	1:2:190:THR:CB	2.70	0.40
5:F:49:GLU:CG	5:F:56:SER:HB3	2.31	0.40
6:G:54:GLN:NE2	6:G:54:GLN:C	2.73	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	2	200/241 (83%)	190 (95%)	8 (4%)	2 (1%)	15 48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	A	79/82 (96%)	74 (94%)	4 (5%)	1 (1%)	12 41
3	B	89/118 (75%)	81 (91%)	8 (9%)	0	100 100
4	E	75/92 (82%)	73 (97%)	1 (1%)	1 (1%)	12 41
5	F	72/86 (84%)	71 (99%)	1 (1%)	0	100 100
6	G	57/76 (75%)	49 (86%)	8 (14%)	0	100 100
7	M	16/37 (43%)	14 (88%)	1 (6%)	1 (6%)	1 8
All	All	588/732 (80%)	552 (94%)	31 (5%)	5 (1%)	17 51

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	51	GLU
4	E	67	LYS
1	2	136	PRO
1	2	177	PRO
7	M	36	ASP

5.3.2 Protein sidechains (i)

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	2	189/216 (88%)	145 (77%)	44 (23%)	1 3
2	A	76/77 (99%)	68 (90%)	8 (10%)	7 26
3	B	87/110 (79%)	70 (80%)	17 (20%)	1 6
4	E	72/84 (86%)	61 (85%)	11 (15%)	2 12
5	F	62/74 (84%)	54 (87%)	8 (13%)	4 18
6	G	51/66 (77%)	31 (61%)	20 (39%)	0 0
7	M	14/30 (47%)	12 (86%)	2 (14%)	3 14
All	All	551/657 (84%)	441 (80%)	110 (20%)	1 5

All (110) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	2	43	SER
1	2	47	ARG
1	2	50	GLN
1	2	54	ARG
1	2	55	ARG
1	2	63	CYS
1	2	66	VAL
1	2	79	LYS
1	2	80	GLN
1	2	83	ASN
1	2	84	ILE
1	2	86	LEU
1	2	87	SER
1	2	89	CYS
1	2	94	GLU
1	2	100	LEU
1	2	101	GLN
1	2	105	GLN
1	2	115	GLN
1	2	122	SER
1	2	127	GLN
1	2	134	THR
1	2	139	GLU
1	2	140	ASP
1	2	148	CYS
1	2	149	LEU
1	2	173	GLN
1	2	174	ILE
1	2	176	PHE
1	2	179	LEU
1	2	185	ARG
1	2	193	SER
1	2	204	GLU
1	2	208	THR
1	2	211	LEU
1	2	215	LEU
1	2	219	LEU
1	2	229	GLU
1	2	233	LEU
1	2	248	VAL
1	2	254	GLU
1	2	268	ARG
1	2	275	LEU

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Mol	Chain	Res	Type
1	2	277	ASP
2	A	5	ARG
2	A	11	SER
2	A	14	THR
2	A	41	LYS
2	A	50	ARG
2	A	66	ARG
2	A	74	LEU
2	A	80	LEU
3	B	15	GLU
3	B	17	GLN
3	B	19	ARG
3	B	20	GLU
3	B	26	THR
3	B	33	THR
3	B	46	CYS
3	B	47	ARG
3	B	48	ASN
3	B	49	ASN
3	B	51	LYS
3	B	55	ARG
3	B	61	ARG
3	B	71	LYS
3	B	94	ARG
3	B	97	SER
3	B	111	ARG
4	E	15	VAL
4	E	20	LEU
4	E	29	SER
4	E	42	ARG
4	E	54	MET
4	E	67	LYS
4	E	69	LYS
4	E	70	SER
4	E	72	LYS
4	E	74	LEU
4	E	89	SER
5	F	5	LEU
5	F	11	LEU
5	F	23	LEU
5	F	24	LYS
5	F	27	MET

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Mol	Chain	Res	Type
5	F	52	ASP
5	F	55	LEU
5	F	67	ASN
6	G	10	LYS
6	G	11	LYS
6	G	12	PHE
6	G	15	LYS
6	G	17	LEU
6	G	18	SER
6	G	22	ASN
6	G	25	ARG
6	G	26	HIS
6	G	28	GLN
6	G	30	ILE
6	G	32	ARG
6	G	40	LEU
6	G	42	ILE
6	G	45	CYS
6	G	48	MET
6	G	54	GLN
6	G	66	SER
6	G	69	MET
6	G	70	LEU
7	M	35	ASP
7	M	51	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	2	50	GLN
1	2	80	GLN
1	2	105	GLN
1	2	109	GLN
1	2	120	HIS
1	2	127	GLN
1	2	173	GLN
2	A	26	HIS
2	A	39	HIS
3	B	17	GLN
3	B	25	ASN
3	B	48	ASN
3	B	49	ASN

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Mol	Chain	Res	Type
3	B	62	HIS
4	E	65	HIS
4	E	83	ASN
5	F	41	ASN
5	F	46	ASN
5	F	67	ASN
5	F	68	ASN
6	G	22	ASN
6	G	54	GLN
6	G	65	ASN
7	M	52	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

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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.