



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 8, 2020 – 12:08 pm GMT

PDB ID : 6TJP
Title : Crystal structure of T7 bacteriophage portal protein, 13mer, closed valve - P212121
Authors : Fabrega-Ferrer, M.; Cuervo, A.; Fernandez, F.J.; Machon, C.; Perez-Luque, R.; Pous, J.; Vega, M.C.; Carrascosa, J.L.; Coll, M.
Deposited on : 2019-11-26
Resolution : 3.74 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 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 : 2.15.1
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) : 2.15.1

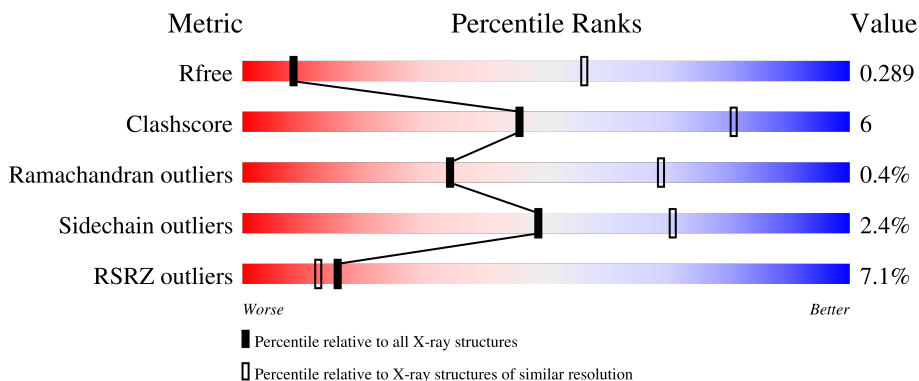
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.74 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	1001 (3.90-3.58)
Clashscore	141614	1063 (3.90-3.58)
Ramachandran outliers	138981	1027 (3.90-3.58)
Sidechain outliers	138945	1023 (3.90-3.58)
RSRZ outliers	127900	1006 (3.92-3.56)

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 $\leq 5\%$. 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	536	<div style="display: flex; align-items: center;"> <div style="width: 6%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 75%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">6% 75% 13% • 12%</p>
1	B	536	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 74%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 14%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">5% 74% 14% 12%</p>
1	C	536	<div style="display: flex; align-items: center;"> <div style="width: 9%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 72%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">9% 72% 16% • 12%</p>
1	D	536	<div style="display: flex; align-items: center;"> <div style="width: 7%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">7% 73% 15% 12%</p>
1	E	536	<div style="display: flex; align-items: center;"> <div style="width: 9%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">9% 73% 15% • 12%</p>

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	F	536	<p>6% 70% 18% • 12%</p>
1	G	536	<p>5% 72% 16% • 12%</p>
1	H	536	<p>4% 71% 17% 12%</p>
1	I	536	<p>5% 71% 17% 12%</p>
1	J	536	<p>8% 70% 18% 12%</p>
1	K	536	<p>6% 75% 13% 12%</p>
1	L	536	<p>6% 73% 15% • 12%</p>
1	M	536	<p>5% 73% 15% 12%</p>

2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 48126 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.

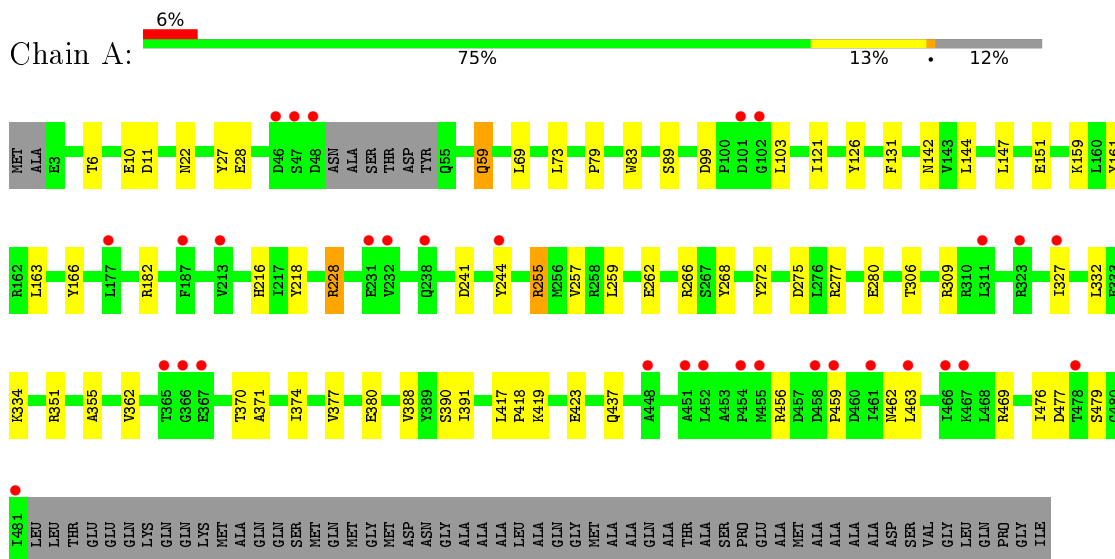
- Molecule 1 is a protein called Portal protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	473	3702	2331	627	727	17	2	0	0
1	B	473	3702	2331	627	727	17	1	0	0
1	C	473	3702	2331	627	727	17	2	0	0
1	D	473	3702	2331	627	727	17	2	0	0
1	E	473	3702	2331	627	727	17	2	0	0
1	F	473	3702	2331	627	727	17	1	0	0
1	G	473	3702	2331	627	727	17	2	0	0
1	H	473	3702	2331	627	727	17	3	0	0
1	I	473	3702	2331	627	727	17	1	0	0
1	J	473	3702	2331	627	727	17	3	0	0
1	K	473	3702	2331	627	727	17	1	0	0
1	L	473	3702	2331	627	727	17	2	0	0
1	M	473	3702	2331	627	727	17	2	0	0

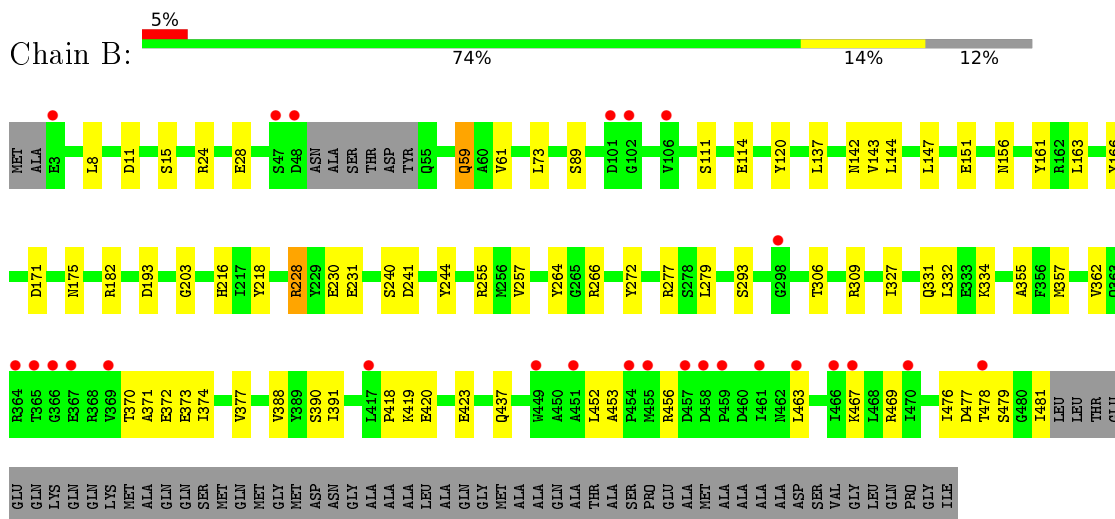
3 Residue-property plots [i](#)

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 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: Portal protein

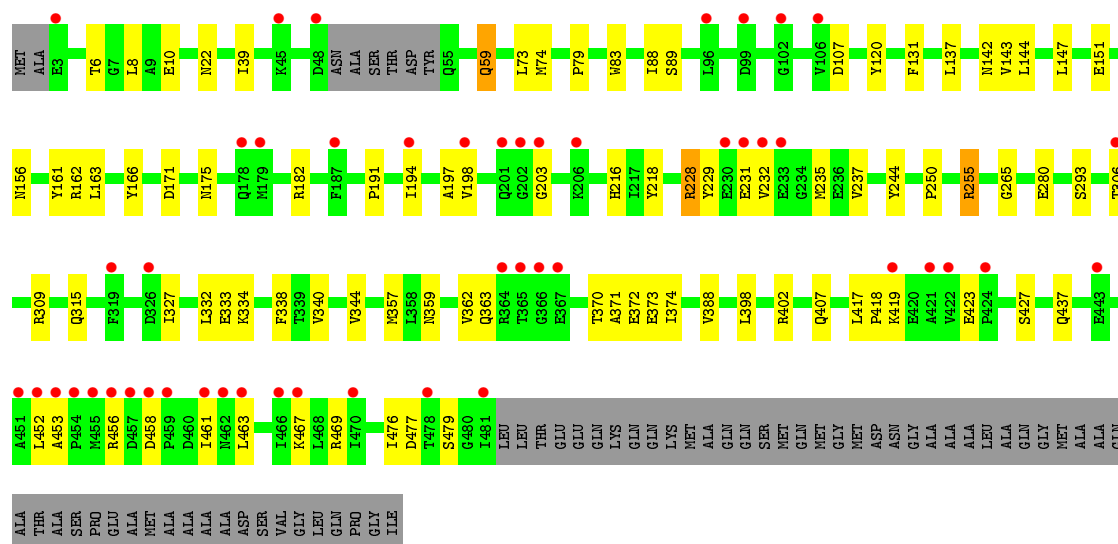


- Molecule 1: Portal protein

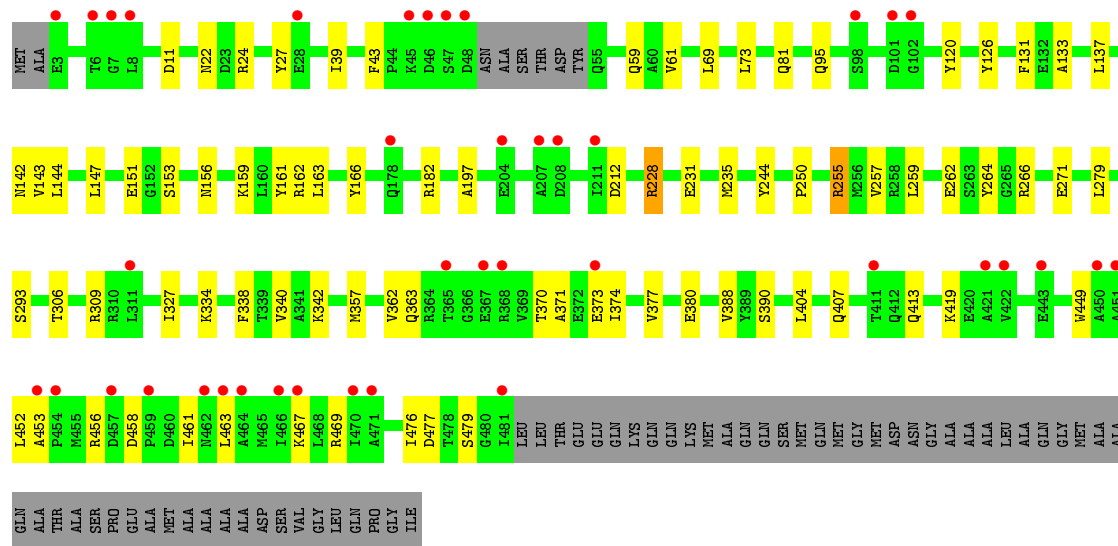
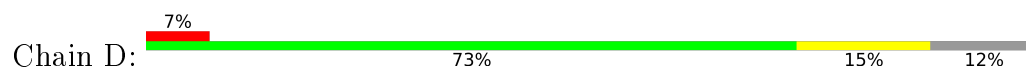


- Molecule 1: Portal protein

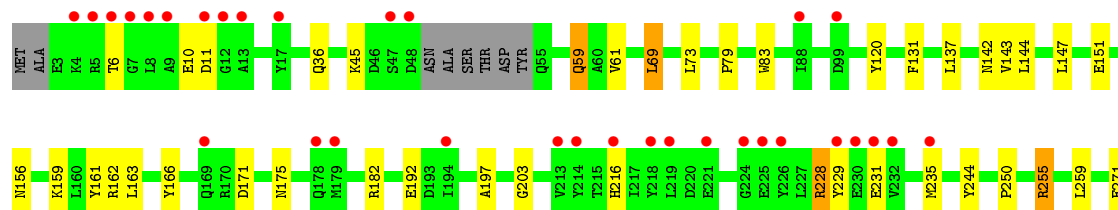
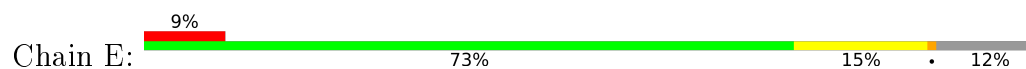


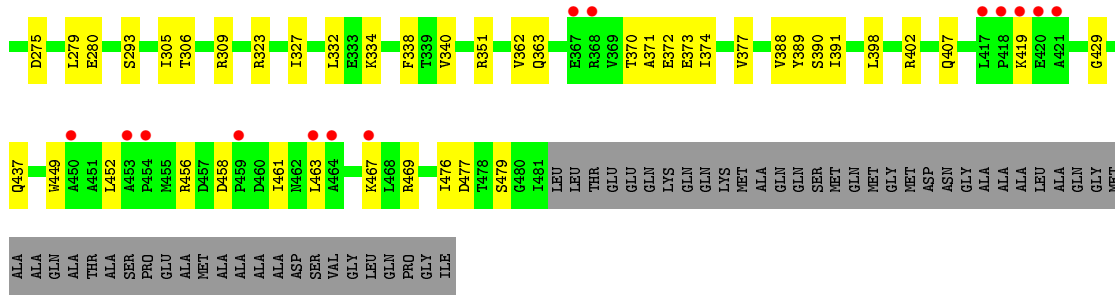


- Molecule 1: Portal protein

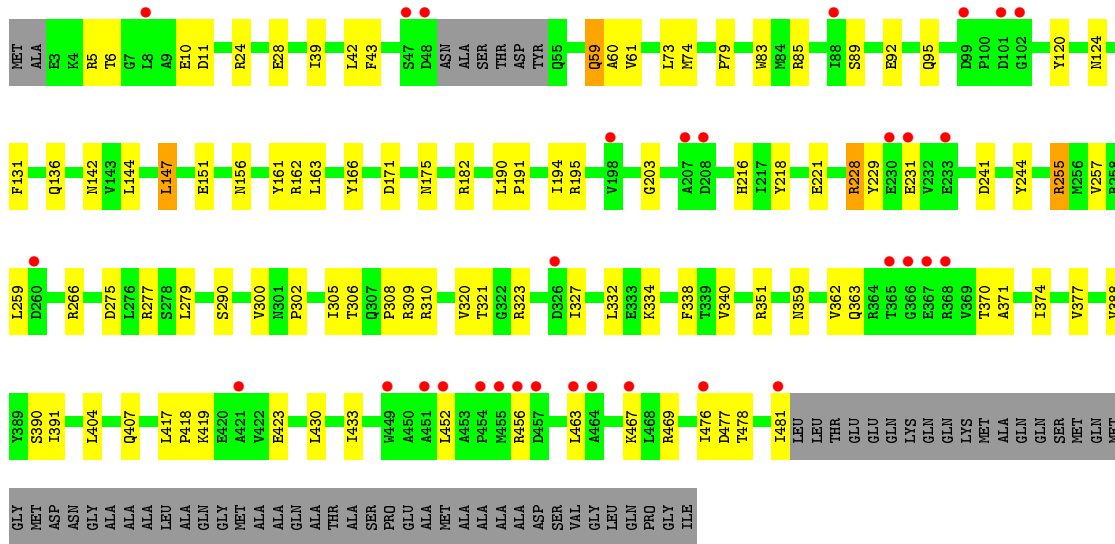


- Molecule 1: Portal protein

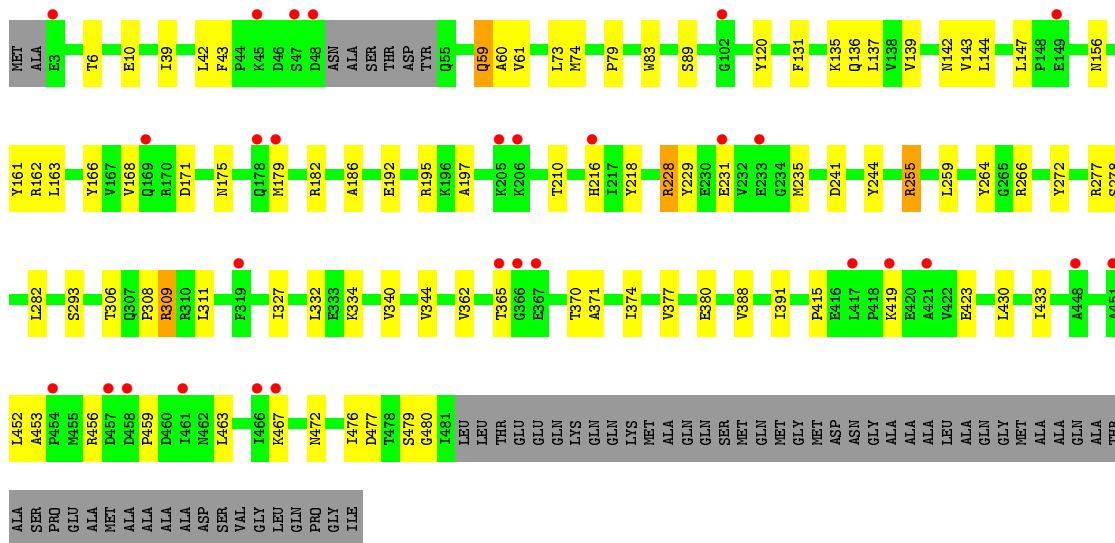




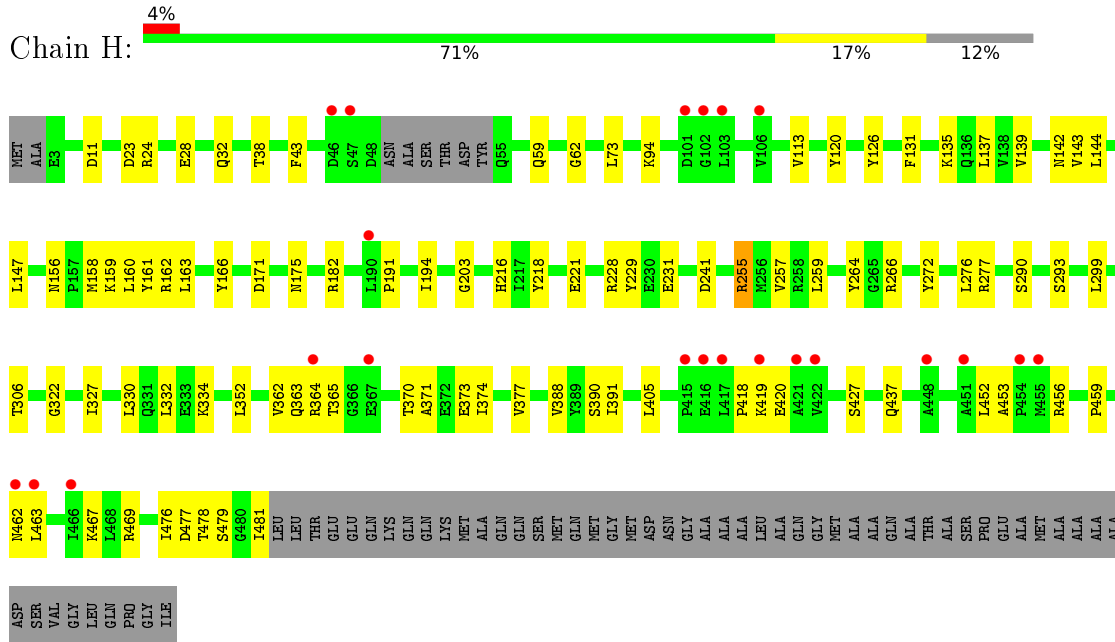
• Molecule 1: Portal protein



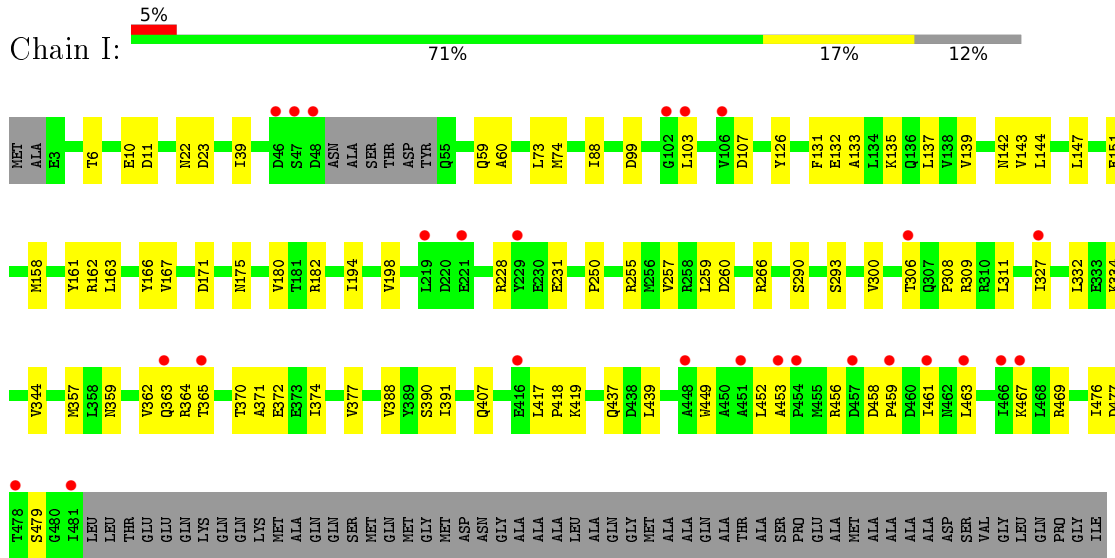
• Molecule 1: Portal protein



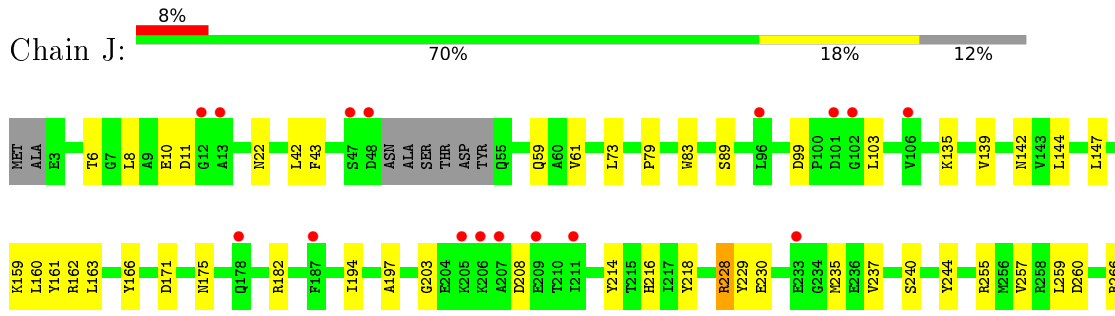
• Molecule 1: Portal protein

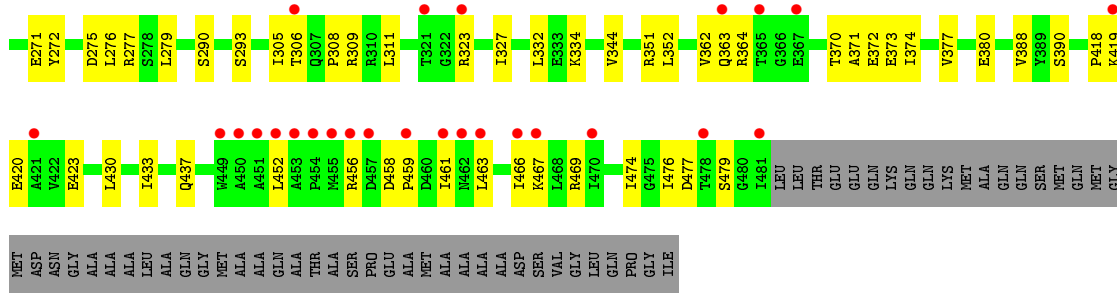


• Molecule 1: Portal protein

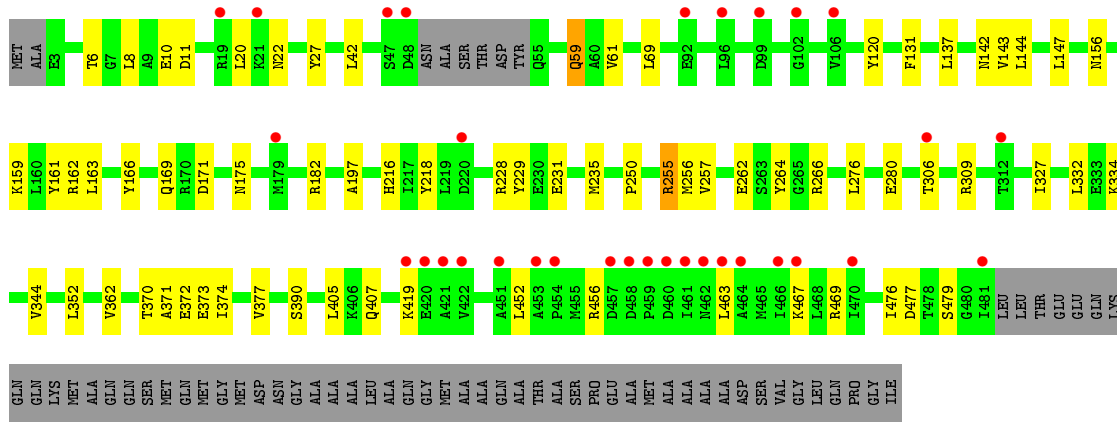
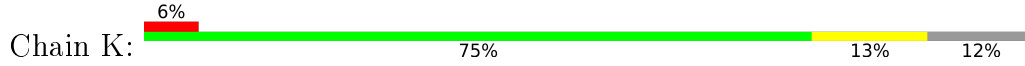


• Molecule 1: Portal protein

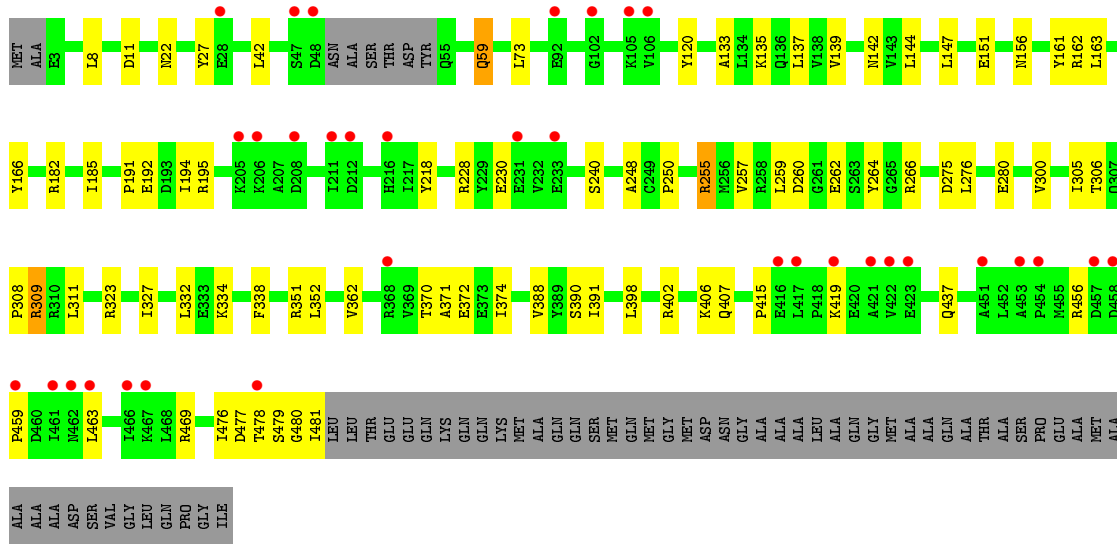
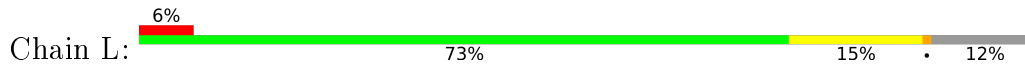




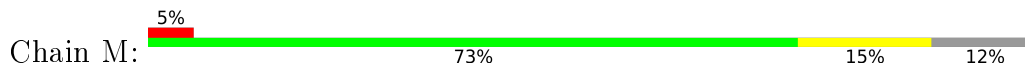
• Molecule 1: Portal protein

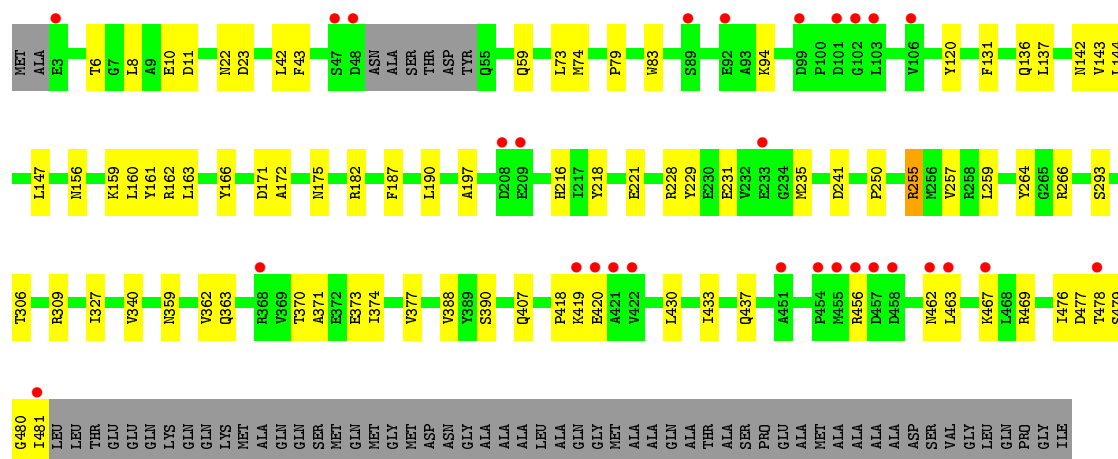


• Molecule 1: Portal protein



• Molecule 1: Portal protein





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	119.85Å 238.57Å 265.61Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.47 – 3.74 49.47 – 3.74	Depositor EDS
% Data completeness (in resolution range)	98.5 (49.47-3.74) 98.5 (49.47-3.74)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.58 (at 3.77Å)	Xtrriage
Refinement program	REFMAC 5.5, PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.244 , 0.286 0.257 , 0.289	Depositor DCC
R_{free} test set	3918 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	130.3	Xtrriage
Anisotropy	0.431	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 108.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.42$, $\langle L^2 \rangle = 0.25$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	48126	wwPDB-VP
Average B, all atoms (Å ²)	151.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.75% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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](#)

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	0.26	0/3760	0.46	0/5089
1	B	0.26	0/3760	0.46	0/5089
1	C	0.26	0/3760	0.47	0/5089
1	D	0.26	0/3760	0.46	0/5089
1	E	0.26	0/3760	0.47	0/5089
1	F	0.27	0/3760	0.47	0/5089
1	G	0.27	0/3760	0.47	0/5089
1	H	0.26	0/3760	0.46	0/5089
1	I	0.26	0/3760	0.47	0/5089
1	J	0.27	0/3760	0.47	0/5089
1	K	0.27	0/3760	0.47	0/5089
1	L	0.26	0/3760	0.47	0/5089
1	M	0.26	0/3760	0.47	0/5089
All	All	0.26	0/48880	0.47	0/66157

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [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	3702	0	3710	44	0
1	B	3702	0	3710	48	2
1	C	3702	0	3710	50	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3702	0	3710	52	1
1	E	3702	0	3710	54	0
1	F	3702	0	3710	67	0
1	G	3702	0	3710	63	0
1	H	3702	0	3710	61	0
1	I	3702	0	3710	60	0
1	J	3702	0	3710	60	0
1	K	3702	0	3710	55	0
1	L	3702	0	3710	53	0
1	M	3702	0	3710	55	1
All	All	48126	0	48230	620	2

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 6.

All (620) 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:F:144:LEU:HB3	1:F:161:TYR:HB2	1.60	0.83
1:C:306:THR:HG21	1:C:327:ILE:HD11	1.66	0.78
1:C:479:SER:O	1:D:469:ARG:NH2	2.16	0.78
1:I:162:ARG:HH22	1:J:259:LEU:HD22	1.50	0.77
1:K:456:ARG:HA	1:K:463:LEU:HD11	1.66	0.76
1:M:306:THR:HG21	1:M:327:ILE:HD11	1.67	0.75
1:L:195:ARG:NH2	1:M:221:GLU:OE2	2.17	0.75
1:B:144:LEU:HB3	1:B:161:TYR:HB2	1.69	0.74
1:B:230:GLU:H	1:B:240:SER:HB2	1.52	0.74
1:J:456:ARG:HA	1:J:463:LEU:HD11	1.68	0.74
1:B:306:THR:HG21	1:B:327:ILE:HD11	1.70	0.73
1:D:479:SER:O	1:E:469:ARG:NH2	2.21	0.73
1:K:306:THR:HG21	1:K:327:ILE:HD11	1.70	0.73
1:D:306:THR:HG21	1:D:327:ILE:HD11	1.69	0.73
1:H:306:THR:HG21	1:H:327:ILE:HD11	1.71	0.73
1:G:306:THR:HG21	1:G:327:ILE:HD11	1.69	0.73
1:E:144:LEU:HB3	1:E:161:TYR:HB2	1.70	0.72
1:K:42:LEU:O	1:K:162:ARG:NH1	2.23	0.71
1:D:24:ARG:NH1	1:D:166:TYR:O	2.23	0.71
1:I:476:ILE:HG22	1:I:477:ASP:H	1.55	0.71
1:E:306:THR:HG21	1:E:327:ILE:HD11	1.72	0.71
1:B:293:SER:O	1:C:334:LYS:NZ	2.24	0.70
1:B:479:SER:O	1:C:469:ARG:NH2	2.24	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:162:ARG:HH22	1:F:259:LEU:HD22	1.57	0.70
1:G:144:LEU:HB3	1:G:161:TYR:HB2	1.74	0.70
1:L:306:THR:HG21	1:L:327:ILE:HD11	1.72	0.70
1:I:306:THR:HG21	1:I:327:ILE:HD11	1.74	0.70
1:J:476:ILE:HG22	1:J:477:ASP:H	1.57	0.70
1:B:476:ILE:HG22	1:B:477:ASP:H	1.57	0.69
1:C:362:VAL:HG11	1:C:374:ILE:HG12	1.74	0.69
1:I:456:ARG:HA	1:I:463:LEU:HD11	1.73	0.69
1:K:476:ILE:HG22	1:K:477:ASP:H	1.58	0.69
1:D:144:LEU:HB3	1:D:161:TYR:HB2	1.73	0.69
1:D:476:ILE:HG22	1:D:477:ASP:H	1.59	0.68
1:E:476:ILE:HG22	1:E:477:ASP:H	1.57	0.68
1:A:476:ILE:HG22	1:A:477:ASP:H	1.59	0.67
1:L:476:ILE:HG22	1:L:477:ASP:H	1.57	0.67
1:G:476:ILE:HG22	1:G:477:ASP:H	1.58	0.67
1:H:476:ILE:HG22	1:H:477:ASP:H	1.59	0.67
1:A:144:LEU:HB3	1:A:161:TYR:HB2	1.77	0.67
1:L:162:ARG:HH22	1:M:259:LEU:HD22	1.59	0.67
1:L:456:ARG:HA	1:L:463:LEU:HD11	1.78	0.66
1:J:306:THR:HG21	1:J:327:ILE:HD11	1.77	0.66
1:E:456:ARG:HA	1:E:463:LEU:HD11	1.77	0.66
1:C:476:ILE:HG22	1:C:477:ASP:H	1.60	0.65
1:F:476:ILE:HG22	1:F:477:ASP:H	1.61	0.65
1:F:306:THR:HG21	1:F:327:ILE:HD11	1.78	0.65
1:I:479:SER:O	1:J:469:ARG:NH2	2.30	0.65
1:E:36:GLN:HB2	1:E:45:LYS:HD2	1.77	0.64
1:I:257:VAL:HB	1:I:266:ARG:HB2	1.78	0.64
1:I:144:LEU:HB3	1:I:161:TYR:HB2	1.78	0.64
1:L:362:VAL:HG11	1:L:374:ILE:HG12	1.80	0.64
1:D:362:VAL:HG11	1:D:374:ILE:HG12	1.79	0.64
1:A:456:ARG:HA	1:A:463:LEU:HD11	1.80	0.63
1:D:456:ARG:HA	1:D:463:LEU:HD11	1.80	0.63
1:A:306:THR:HG21	1:A:327:ILE:HD11	1.81	0.63
1:M:476:ILE:HG22	1:M:477:ASP:H	1.62	0.62
1:G:137:LEU:HD13	1:G:143:VAL:HG23	1.80	0.62
1:I:362:VAL:HG11	1:I:374:ILE:HG12	1.79	0.62
1:E:362:VAL:HG11	1:E:374:ILE:HG12	1.82	0.62
1:K:137:LEU:HD13	1:K:143:VAL:HG23	1.82	0.62
1:F:456:ARG:HA	1:F:463:LEU:HD11	1.80	0.62
1:H:144:LEU:HB3	1:H:161:TYR:HB2	1.82	0.62
1:C:137:LEU:HD13	1:C:143:VAL:HG23	1.82	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:480:GLY:O	1:H:462:ASN:ND2	2.33	0.61
1:J:362:VAL:HG11	1:J:374:ILE:HG12	1.82	0.61
1:C:456:ARG:HA	1:C:463:LEU:HD11	1.81	0.61
1:C:197:ALA:HB1	1:C:235:MET:HE3	1.82	0.61
1:G:456:ARG:HA	1:G:463:LEU:HD11	1.83	0.61
1:B:456:ARG:HA	1:B:463:LEU:HD11	1.83	0.61
1:F:300:VAL:HG21	1:F:308:PRO:HD3	1.83	0.60
1:L:275:ASP:OD2	1:L:351:ARG:NH1	2.33	0.60
1:I:73:LEU:HD21	1:I:388:VAL:HG23	1.83	0.60
1:L:120:TYR:OH	1:L:156:ASN:ND2	2.27	0.60
1:H:479:SER:O	1:I:469:ARG:NH2	2.35	0.59
1:K:144:LEU:HB3	1:K:161:TYR:HB2	1.84	0.59
1:A:6:THR:HA	1:A:10:GLU:HA	1.83	0.59
1:M:362:VAL:HG11	1:M:374:ILE:HG12	1.84	0.59
1:H:362:VAL:HG11	1:H:374:ILE:HG12	1.84	0.59
1:H:456:ARG:HA	1:H:463:LEU:HD11	1.83	0.59
1:B:142:ASN:HD21	1:B:264:TYR:HB3	1.67	0.59
1:K:216:HIS:HE1	1:K:218:TYR:HB3	1.67	0.59
1:F:162:ARG:HH22	1:G:259:LEU:HD22	1.66	0.59
1:J:144:LEU:HB3	1:J:161:TYR:HB2	1.84	0.59
1:K:452:LEU:HD11	1:K:467:LYS:HE3	1.85	0.58
1:F:142:ASN:HD22	1:F:163:LEU:HD12	1.68	0.58
1:K:11:ASP:N	1:K:11:ASP:OD1	2.35	0.58
1:M:43:PHE:HD2	1:M:136:GLN:HE22	1.51	0.58
1:I:293:SER:O	1:J:334:LYS:NZ	2.35	0.58
1:K:362:VAL:HG11	1:K:374:ILE:HG12	1.85	0.58
1:J:479:SER:O	1:K:469:ARG:NH2	2.35	0.58
1:E:142:ASN:HD22	1:E:163:LEU:HD12	1.68	0.58
1:M:144:LEU:HB3	1:M:161:TYR:HB2	1.86	0.57
1:B:362:VAL:HG11	1:B:374:ILE:HG12	1.86	0.57
1:A:11:ASP:OD1	1:A:11:ASP:N	2.37	0.57
1:A:259:LEU:HD22	1:M:162:ARG:HH22	1.69	0.57
1:M:120:TYR:OH	1:M:156:ASN:ND2	2.37	0.57
1:C:171:ASP:OD1	1:C:175:ASN:N	2.36	0.57
1:F:24:ARG:NH1	1:F:166:TYR:O	2.34	0.57
1:I:11:ASP:N	1:I:11:ASP:OD1	2.35	0.57
1:B:171:ASP:OD1	1:B:175:ASN:N	2.37	0.57
1:K:162:ARG:HH22	1:L:259:LEU:HD22	1.69	0.57
1:C:120:TYR:OH	1:C:156:ASN:ND2	2.37	0.56
1:E:338:PHE:CD2	1:F:340:VAL:HG13	2.40	0.56
1:D:452:LEU:HD11	1:D:467:LYS:HE3	1.86	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:11:ASP:N	1:H:11:ASP:OD1	2.39	0.56
1:M:478:THR:HA	1:M:481:ILE:HD12	1.87	0.56
1:A:257:VAL:HB	1:A:266:ARG:HB2	1.87	0.56
1:I:371:ALA:HB2	1:J:372:GLU:HG3	1.88	0.56
1:J:437:GLN:OE1	1:J:437:GLN:N	2.37	0.56
1:M:456:ARG:HA	1:M:463:LEU:HD11	1.88	0.56
1:L:185:ILE:HD11	1:M:172:ALA:HB2	1.86	0.56
1:C:6:THR:HA	1:C:10:GLU:HA	1.88	0.55
1:K:257:VAL:HB	1:K:266:ARG:HB2	1.87	0.55
1:L:480:GLY:O	1:M:462:ASN:ND2	2.35	0.55
1:F:467:LYS:HZ3	1:G:459:PRO:HG2	1.71	0.55
1:K:27:TYR:OH	1:K:262:GLU:HG2	2.07	0.55
1:L:73:LEU:HD21	1:L:388:VAL:HG23	1.89	0.55
1:A:459:PRO:HG2	1:M:467:LYS:NZ	2.20	0.55
1:D:11:ASP:OD1	1:D:11:ASP:N	2.39	0.55
1:A:362:VAL:HG22	1:A:377:VAL:HG23	1.89	0.54
1:G:309:ARG:HH11	1:G:309:ARG:HB2	1.72	0.54
1:B:216:HIS:HE1	1:B:218:TYR:HB3	1.72	0.54
1:C:162:ARG:HH22	1:D:259:LEU:HD22	1.72	0.54
1:I:452:LEU:HD11	1:I:467:LYS:HE3	1.89	0.54
1:A:362:VAL:HG11	1:A:374:ILE:HG12	1.90	0.54
1:F:305:ILE:HG12	1:F:323:ARG:HH21	1.72	0.54
1:B:142:ASN:HD22	1:B:163:LEU:HD12	1.71	0.54
1:J:452:LEU:HD11	1:J:467:LYS:HE3	1.89	0.54
1:F:6:THR:HA	1:F:10:GLU:HA	1.90	0.54
1:F:362:VAL:HG11	1:F:374:ILE:HG12	1.89	0.54
1:H:142:ASN:HD22	1:H:163:LEU:HD12	1.73	0.54
1:J:11:ASP:N	1:J:11:ASP:OD1	2.38	0.54
1:J:293:SER:O	1:K:334:LYS:NZ	2.40	0.54
1:B:61:VAL:HG21	1:B:279:LEU:HD21	1.90	0.54
1:J:305:ILE:HG12	1:J:323:ARG:HH21	1.72	0.54
1:L:11:ASP:OD1	1:L:11:ASP:N	2.41	0.54
1:A:459:PRO:HG2	1:M:467:LYS:HZ3	1.73	0.53
1:K:276:LEU:HD12	1:K:352:LEU:HD13	1.91	0.53
1:K:6:THR:HA	1:K:10:GLU:HA	1.90	0.53
1:M:250:PRO:HB3	1:M:407:GLN:HE21	1.73	0.53
1:A:275:ASP:OD2	1:A:351:ARG:HD2	2.08	0.53
1:K:131:PHE:CG	1:L:391:ILE:HD11	2.44	0.53
1:E:6:THR:HA	1:E:10:GLU:HA	1.90	0.53
1:I:142:ASN:HD22	1:I:163:LEU:HD12	1.74	0.53
1:B:257:VAL:HB	1:B:266:ARG:HB2	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:137:LEU:HD13	1:I:143:VAL:HG23	1.91	0.53
1:A:462:ASN:ND2	1:M:480:GLY:O	2.41	0.53
1:H:162:ARG:HH22	1:I:259:LEU:HD22	1.74	0.53
1:L:144:LEU:HB3	1:L:161:TYR:HB2	1.91	0.53
1:A:142:ASN:OD1	1:A:255:ARG:HG3	2.09	0.52
1:A:334:LYS:NZ	1:M:293:SER:O	2.42	0.52
1:E:73:LEU:HD21	1:E:388:VAL:HG23	1.91	0.52
1:M:42:LEU:O	1:M:162:ARG:NH1	2.42	0.52
1:E:437:GLN:OE1	1:E:437:GLN:N	2.36	0.52
1:F:11:ASP:OD1	1:F:11:ASP:N	2.43	0.52
1:G:162:ARG:HH22	1:H:259:LEU:HD22	1.75	0.52
1:H:171:ASP:OD1	1:H:175:ASN:N	2.43	0.52
1:I:171:ASP:OD1	1:I:175:ASN:N	2.42	0.52
1:J:171:ASP:OD1	1:J:175:ASN:N	2.42	0.52
1:J:332:LEU:HD13	1:J:334:LYS:H	1.74	0.52
1:D:228:ARG:NH1	1:D:244:TYR:OH	2.43	0.52
1:E:11:ASP:OD1	1:E:11:ASP:N	2.40	0.52
1:E:293:SER:O	1:F:334:LYS:NZ	2.42	0.52
1:C:79:PRO:HD2	1:C:83:TRP:CD1	2.44	0.52
1:E:59:GLN:OE1	1:E:61:VAL:N	2.42	0.52
1:C:73:LEU:HD21	1:C:388:VAL:HG23	1.91	0.52
1:L:305:ILE:HG12	1:L:323:ARG:HH21	1.75	0.52
1:K:216:HIS:CE1	1:K:218:TYR:HB3	2.44	0.52
1:G:192:GLU:HB2	1:H:221:GLU:HG2	1.92	0.52
1:K:142:ASN:OD1	1:K:255:ARG:HG3	2.10	0.52
1:M:79:PRO:HD2	1:M:83:TRP:CD1	2.45	0.52
1:C:437:GLN:OE1	1:C:437:GLN:N	2.36	0.52
1:H:142:ASN:HD21	1:H:264:TYR:HB3	1.75	0.52
1:D:228:ARG:HG2	1:D:244:TYR:CE2	2.45	0.52
1:F:257:VAL:HB	1:F:266:ARG:HB2	1.92	0.52
1:E:479:SER:HB3	1:F:469:ARG:HH22	1.75	0.52
1:J:308:PRO:HA	1:J:311:LEU:HD12	1.92	0.52
1:D:159:LYS:HE3	1:D:161:TYR:CZ	2.44	0.51
1:E:192:GLU:HB2	1:F:221:GLU:HG2	1.91	0.51
1:G:171:ASP:OD1	1:G:175:ASN:N	2.43	0.51
1:C:144:LEU:HB3	1:C:161:TYR:HB2	1.90	0.51
1:B:120:TYR:OH	1:B:156:ASN:ND2	2.31	0.51
1:D:142:ASN:HD22	1:D:163:LEU:HD12	1.76	0.51
1:H:453:ALA:HA	1:H:456:ARG:HG3	1.93	0.51
1:B:142:ASN:ND2	1:B:264:TYR:HB3	2.26	0.51
1:I:362:VAL:HG22	1:I:377:VAL:HG23	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:59:GLN:OE1	1:F:61:VAL:N	2.43	0.51
1:F:430:LEU:HD12	1:F:433:ILE:HD12	1.92	0.51
1:K:120:TYR:OH	1:K:156:ASN:ND2	2.36	0.51
1:M:6:THR:HA	1:M:10:GLU:HA	1.92	0.51
1:G:142:ASN:HD22	1:G:163:LEU:HD12	1.75	0.51
1:C:74:MET:SD	1:C:131:PHE:HB2	2.51	0.51
1:E:250:PRO:HB3	1:E:407:GLN:HE21	1.75	0.51
1:F:478:THR:HA	1:F:481:ILE:HD12	1.92	0.51
1:G:42:LEU:O	1:G:162:ARG:NH1	2.44	0.51
1:J:163:LEU:HA	1:J:166:TYR:CE2	2.46	0.51
1:A:469:ARG:HH22	1:M:479:SER:HB3	1.76	0.51
1:B:8:LEU:HD22	1:B:218:TYR:HB2	1.93	0.51
1:J:197:ALA:HB1	1:J:235:MET:HE3	1.93	0.51
1:I:371:ALA:CB	1:J:372:GLU:HG3	2.41	0.50
1:L:332:LEU:HD13	1:L:334:LYS:HB2	1.92	0.50
1:B:332:LEU:HD13	1:B:334:LYS:HB2	1.93	0.50
1:G:467:LYS:NZ	1:H:459:PRO:HG2	2.26	0.50
1:K:362:VAL:HG22	1:K:377:VAL:HG23	1.93	0.50
1:C:88:ILE:HD11	1:C:107:ASP:HB2	1.93	0.50
1:M:73:LEU:HD21	1:M:388:VAL:HG23	1.93	0.50
1:K:59:GLN:OE1	1:K:61:VAL:N	2.44	0.50
1:F:241:ASP:N	1:F:241:ASP:OD1	2.44	0.50
1:I:439:LEU:HD22	1:J:474:ILE:HG12	1.93	0.50
1:M:257:VAL:HB	1:M:266:ARG:HB2	1.94	0.50
1:I:365:THR:HG22	1:J:364:ARG:HH11	1.76	0.50
1:J:135:LYS:O	1:J:139:VAL:HG12	2.11	0.50
1:J:230:GLU:H	1:J:240:SER:HB2	1.77	0.50
1:J:309:ARG:HB2	1:J:309:ARG:HH11	1.77	0.50
1:F:359:ASN:HB2	1:G:380:GLU:HB2	1.93	0.50
1:H:467:LYS:NZ	1:I:459:PRO:HG2	2.26	0.50
1:B:111:SER:HA	1:B:114:GLU:HB2	1.94	0.49
1:F:452:LEU:HD11	1:F:467:LYS:HE3	1.94	0.49
1:L:250:PRO:HB3	1:L:407:GLN:HE21	1.77	0.49
1:B:163:LEU:HA	1:B:166:TYR:CE2	2.48	0.49
1:D:142:ASN:OD1	1:D:255:ARG:HG3	2.13	0.49
1:H:191:PRO:HD2	1:H:194:ILE:HD12	1.94	0.49
1:M:216:HIS:HE1	1:M:218:TYR:HB3	1.78	0.49
1:C:338:PHE:CD2	1:D:340:VAL:HG13	2.46	0.49
1:F:92:GLU:HA	1:F:95:GLN:HG3	1.94	0.49
1:G:79:PRO:HD2	1:G:83:TRP:CD1	2.47	0.49
1:H:478:THR:HA	1:H:481:ILE:HD12	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:458:ASP:HB2	1:D:461:ILE:HB	1.94	0.49
1:I:308:PRO:HA	1:I:311:LEU:HD12	1.94	0.49
1:H:365:THR:HG22	1:I:364:ARG:HH11	1.76	0.49
1:M:137:LEU:HD13	1:M:143:VAL:HG23	1.93	0.49
1:B:216:HIS:CE1	1:B:218:TYR:HB3	2.47	0.49
1:E:120:TYR:OH	1:E:156:ASN:ND2	2.40	0.49
1:C:163:LEU:HA	1:C:166:TYR:CE2	2.48	0.49
1:J:79:PRO:HD2	1:J:83:TRP:CD1	2.48	0.49
1:L:308:PRO:HA	1:L:311:LEU:HD12	1.95	0.49
1:F:5:ARG:NH1	1:F:218:TYR:OH	2.46	0.49
1:F:467:LYS:NZ	1:G:459:PRO:HG2	2.27	0.49
1:H:137:LEU:HD13	1:H:143:VAL:HG23	1.95	0.49
1:B:28:GLU:HB3	1:B:163:LEU:HD22	1.95	0.48
1:A:437:GLN:OE1	1:A:437:GLN:N	2.41	0.48
1:G:43:PHE:HD2	1:G:136:GLN:HE22	1.61	0.48
1:I:370:THR:OG1	1:I:371:ALA:N	2.46	0.48
1:J:290:SER:HB3	1:K:344:VAL:HG21	1.94	0.48
1:K:250:PRO:HB3	1:K:407:GLN:HE21	1.78	0.48
1:D:163:LEU:HA	1:D:166:TYR:CE2	2.48	0.48
1:J:275:ASP:OD2	1:J:351:ARG:HD2	2.13	0.48
1:M:11:ASP:OD1	1:M:11:ASP:N	2.40	0.48
1:D:338:PHE:CD2	1:E:340:VAL:HG13	2.48	0.48
1:G:163:LEU:HA	1:G:166:TYR:CE2	2.48	0.48
1:J:89:SER:HB3	1:J:423:GLU:O	2.14	0.48
1:A:391:ILE:HD11	1:M:131:PHE:CG	2.48	0.48
1:F:300:VAL:HG12	1:F:327:ILE:HG12	1.95	0.48
1:I:60:ALA:HB1	1:J:272:TYR:HD1	1.77	0.48
1:K:332:LEU:CD1	1:K:334:LYS:HB2	2.44	0.48
1:G:73:LEU:HD21	1:G:388:VAL:HG23	1.96	0.48
1:L:59:GLN:HG3	1:L:280:GLU:OE1	2.13	0.48
1:L:248:ALA:HB2	1:L:406:LYS:HD3	1.95	0.48
1:G:89:SER:HB3	1:G:423:GLU:O	2.14	0.48
1:I:290:SER:HB3	1:J:344:VAL:HG21	1.95	0.48
1:I:162:ARG:NH2	1:J:259:LEU:HD22	2.26	0.48
1:C:142:ASN:OD1	1:C:255:ARG:HG3	2.14	0.48
1:D:293:SER:O	1:E:334:LYS:NZ	2.47	0.48
1:L:8:LEU:HD22	1:L:218:TYR:HB2	1.96	0.48
1:D:137:LEU:HD13	1:D:143:VAL:HG23	1.96	0.48
1:I:250:PRO:HB3	1:I:407:GLN:HE21	1.78	0.48
1:I:359:ASN:HB2	1:J:380:GLU:HB2	1.95	0.48
1:D:453:ALA:HA	1:D:456:ARG:HG3	1.96	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:228:ARG:HG2	1:G:244:TYR:CE2	2.49	0.47
1:H:371:ALA:HB2	1:I:372:GLU:HG3	1.94	0.47
1:A:479:SER:O	1:B:469:ARG:NH2	2.48	0.47
1:F:190:LEU:O	1:F:195:ARG:NH1	2.47	0.47
1:L:42:LEU:O	1:L:162:ARG:NH1	2.47	0.47
1:B:59:GLN:OE1	1:B:61:VAL:N	2.47	0.47
1:M:430:LEU:HD12	1:M:433:ILE:HD12	1.96	0.47
1:E:131:PHE:CG	1:F:391:ILE:HD11	2.50	0.47
1:F:332:LEU:HD13	1:F:334:LYS:HB2	1.96	0.47
1:G:308:PRO:HA	1:G:311:LEU:HD12	1.95	0.47
1:G:452:LEU:HD11	1:G:467:LYS:HE3	1.97	0.47
1:K:216:HIS:HB3	1:K:229:TYR:CE2	2.49	0.47
1:A:272:TYR:CE2	1:A:355:ALA:HB1	2.50	0.47
1:D:133:ALA:O	1:D:137:LEU:N	2.40	0.47
1:B:452:LEU:HD11	1:B:467:LYS:HE3	1.96	0.47
1:E:79:PRO:HD2	1:E:83:TRP:CD1	2.50	0.47
1:G:120:TYR:OH	1:G:156:ASN:ND2	2.34	0.47
1:H:142:ASN:ND2	1:H:264:TYR:HB3	2.30	0.47
1:J:430:LEU:HD12	1:J:433:ILE:HD12	1.95	0.47
1:J:73:LEU:HD21	1:J:388:VAL:HG23	1.95	0.47
1:B:241:ASP:N	1:B:241:ASP:OD1	2.46	0.47
1:I:163:LEU:HA	1:I:166:TYR:CE2	2.50	0.47
1:K:163:LEU:HA	1:K:166:TYR:CE2	2.49	0.47
1:A:73:LEU:HD21	1:A:388:VAL:HG23	1.96	0.47
1:F:216:HIS:HB3	1:F:229:TYR:CE2	2.50	0.47
1:F:310:ARG:HD3	1:F:320:VAL:HG13	1.97	0.47
1:L:133:ALA:O	1:L:137:LEU:N	2.36	0.47
1:M:142:ASN:ND2	1:M:264:TYR:HB3	2.30	0.47
1:C:309:ARG:HH11	1:C:309:ARG:HB2	1.80	0.47
1:B:357:MET:SD	1:B:357:MET:N	2.88	0.47
1:B:478:THR:HA	1:B:481:ILE:HD12	1.98	0.47
1:F:290:SER:HB3	1:G:344:VAL:HG21	1.95	0.47
1:L:192:GLU:HB2	1:M:221:GLU:OE2	2.15	0.47
1:I:437:GLN:OE1	1:I:437:GLN:N	2.40	0.46
1:E:137:LEU:HD13	1:E:143:VAL:HG23	1.97	0.46
1:G:365:THR:HG22	1:H:364:ARG:HH11	1.79	0.46
1:L:162:ARG:NH2	1:M:259:LEU:HD22	2.27	0.46
1:A:370:THR:OG1	1:A:371:ALA:N	2.48	0.46
1:D:120:TYR:OH	1:D:156:ASN:OD1	2.32	0.46
1:F:131:PHE:CG	1:G:391:ILE:HD11	2.50	0.46
1:F:79:PRO:HD2	1:F:83:TRP:CD1	2.50	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:60:ALA:HB1	1:G:272:TYR:HD1	1.78	0.46
1:M:250:PRO:HB3	1:M:407:GLN:NE2	2.29	0.46
1:E:61:VAL:HG21	1:E:279:LEU:HD21	1.96	0.46
1:L:27:TYR:OH	1:L:262:GLU:HG2	2.16	0.46
1:E:452:LEU:HD11	1:E:467:LYS:HE3	1.98	0.46
1:H:452:LEU:HD11	1:H:467:LYS:HE3	1.98	0.46
1:C:191:PRO:HD2	1:C:194:ILE:HD12	1.97	0.46
1:F:124:ASN:OD1	1:F:156:ASN:N	2.44	0.46
1:K:159:LYS:HE3	1:K:161:TYR:CZ	2.51	0.46
1:H:38:THR:HG22	1:H:62:GLY:HA3	1.97	0.46
1:I:332:LEU:HD13	1:I:334:LYS:HB2	1.97	0.46
1:J:228:ARG:HG2	1:J:244:TYR:CE2	2.51	0.46
1:J:194:ILE:HG12	1:J:237:VAL:HG13	1.97	0.46
1:K:142:ASN:HD22	1:K:163:LEU:HD12	1.81	0.46
1:K:332:LEU:HD13	1:K:334:LYS:HB2	1.98	0.46
1:D:73:LEU:HD21	1:D:388:VAL:HG23	1.97	0.46
1:D:27:TYR:OH	1:D:262:GLU:HG2	2.16	0.46
1:F:370:THR:OG1	1:F:371:ALA:N	2.47	0.46
1:F:73:LEU:HD21	1:F:388:VAL:HG23	1.97	0.46
1:G:309:ARG:NH1	1:G:309:ARG:HB2	2.30	0.46
1:M:216:HIS:CE1	1:M:218:TYR:HB3	2.51	0.46
1:A:241:ASP:N	1:A:241:ASP:OD1	2.43	0.45
1:A:380:GLU:HB2	1:M:359:ASN:HB2	1.97	0.45
1:I:88:ILE:HD11	1:I:107:ASP:HB2	1.97	0.45
1:I:458:ASP:HB2	1:I:461:ILE:HB	1.97	0.45
1:D:309:ARG:HH11	1:D:309:ARG:HB2	1.81	0.45
1:G:362:VAL:HG11	1:G:374:ILE:HG12	1.98	0.45
1:J:61:VAL:HG21	1:J:279:LEU:HD21	1.98	0.45
1:C:194:ILE:O	1:C:198:VAL:HG23	2.16	0.45
1:C:453:ALA:HA	1:C:456:ARG:HG3	1.99	0.45
1:J:370:THR:OG1	1:J:371:ALA:N	2.49	0.45
1:E:216:HIS:HB3	1:E:229:TYR:CE2	2.51	0.45
1:F:85:ARG:NH2	1:G:472:ASN:O	2.50	0.45
1:J:42:LEU:O	1:J:162:ARG:NH1	2.49	0.45
1:M:163:LEU:HA	1:M:166:TYR:CE2	2.52	0.45
1:B:437:GLN:N	1:B:437:GLN:OE1	2.41	0.45
1:A:131:PHE:CD1	1:B:391:ILE:HD11	2.51	0.45
1:A:309:ARG:HB2	1:A:309:ARG:HH11	1.82	0.45
1:C:39:ILE:HG21	1:D:271:GLU:HG2	1.99	0.45
1:E:305:ILE:HG12	1:E:323:ARG:HH21	1.82	0.45
1:F:228:ARG:HG2	1:F:244:TYR:CE2	2.52	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:479:SER:HB3	1:K:469:ARG:HH22	1.82	0.45
1:L:479:SER:HB3	1:M:469:ARG:HH22	1.82	0.45
1:A:121:ILE:HG23	1:A:126:TYR:HB2	1.98	0.45
1:A:163:LEU:HA	1:A:166:TYR:CE2	2.51	0.45
1:B:370:THR:OG1	1:B:371:ALA:N	2.50	0.45
1:C:293:SER:O	1:D:334:LYS:NZ	2.50	0.45
1:E:305:ILE:HG21	1:F:302:PRO:HG3	1.99	0.45
1:I:309:ARG:HH11	1:I:309:ARG:HB2	1.82	0.45
1:I:467:LYS:NZ	1:J:459:PRO:HG2	2.32	0.45
1:G:362:VAL:HG22	1:G:377:VAL:HG23	1.99	0.45
1:L:27:TYR:CD2	1:L:264:TYR:HB2	2.52	0.45
1:M:437:GLN:OE1	1:M:437:GLN:N	2.44	0.45
1:F:171:ASP:OD1	1:F:175:ASN:N	2.50	0.45
1:K:142:ASN:ND2	1:K:264:TYR:HB3	2.32	0.45
1:L:191:PRO:HD2	1:L:194:ILE:HD12	1.98	0.45
1:J:142:ASN:OD1	1:J:255:ARG:HG3	2.17	0.45
1:L:142:ASN:ND2	1:L:264:TYR:HB3	2.32	0.45
1:L:309:ARG:HH11	1:L:309:ARG:HB2	1.82	0.45
1:B:142:ASN:HD22	1:B:163:LEU:CD1	2.29	0.44
1:F:120:TYR:OH	1:F:156:ASN:OD1	2.32	0.44
1:F:163:LEU:HA	1:F:166:TYR:CE2	2.53	0.44
1:G:192:GLU:HG3	1:G:195:ARG:NH2	2.32	0.44
1:G:370:THR:OG1	1:G:371:ALA:N	2.51	0.44
1:G:453:ALA:HA	1:G:456:ARG:HG3	1.99	0.44
1:M:142:ASN:HD21	1:M:264:TYR:HB3	1.82	0.44
1:A:27:TYR:OH	1:A:262:GLU:HG2	2.17	0.44
1:J:373:GLU:O	1:J:377:VAL:HG22	2.17	0.44
1:J:6:THR:HA	1:J:10:GLU:HA	1.99	0.44
1:J:8:LEU:HD22	1:J:218:TYR:HB2	1.99	0.44
1:L:362:VAL:CG1	1:L:374:ILE:HG12	2.46	0.44
1:C:8:LEU:HD22	1:C:218:TYR:HB2	1.98	0.44
1:H:142:ASN:OD1	1:H:255:ARG:HG3	2.18	0.44
1:H:24:ARG:NH1	1:H:166:TYR:O	2.40	0.44
1:I:135:LYS:O	1:I:139:VAL:HG12	2.18	0.44
1:J:276:LEU:HD12	1:J:352:LEU:HD13	1.99	0.44
1:M:418:PRO:O	1:M:420:GLU:N	2.50	0.44
1:A:69:LEU:HD11	1:A:268:TYR:CE2	2.53	0.44
1:C:194:ILE:CG2	1:C:232:VAL:HG21	2.47	0.44
1:D:370:THR:OG1	1:D:371:ALA:N	2.51	0.44
1:G:142:ASN:HD21	1:G:264:TYR:HB3	1.83	0.44
1:H:266:ARG:HA	1:H:266:ARG:HD2	1.88	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:LYS:HE3	1:A:161:TYR:CZ	2.52	0.44
1:B:228:ARG:NH1	1:B:244:TYR:OH	2.51	0.44
1:C:370:THR:OG1	1:C:371:ALA:N	2.51	0.44
1:D:197:ALA:O	1:D:235:MET:HE1	2.18	0.44
1:H:257:VAL:HB	1:H:266:ARG:HB2	1.99	0.44
1:J:309:ARG:NH1	1:J:309:ARG:HB2	2.31	0.44
1:M:197:ALA:HB1	1:M:235:MET:HE3	1.99	0.44
1:B:453:ALA:HA	1:B:456:ARG:HG3	1.99	0.44
1:F:74:MET:SD	1:F:131:PHE:HB2	2.57	0.44
1:G:59:GLN:OE1	1:G:61:VAL:N	2.51	0.44
1:H:216:HIS:HB3	1:H:229:TYR:CE2	2.53	0.44
1:A:391:ILE:HD11	1:M:131:PHE:CD1	2.53	0.44
1:E:163:LEU:HA	1:E:166:TYR:CE2	2.53	0.44
1:E:449:TRP:CD1	1:E:467:LYS:HG2	2.52	0.44
1:H:370:THR:OG1	1:H:371:ALA:N	2.50	0.44
1:K:370:THR:OG1	1:K:371:ALA:N	2.50	0.44
1:L:135:LYS:O	1:L:139:VAL:HG12	2.17	0.44
1:L:163:LEU:HA	1:L:166:TYR:CE2	2.52	0.44
1:L:230:GLU:H	1:L:240:SER:HB2	1.82	0.44
1:D:162:ARG:HH22	1:E:259:LEU:HD22	1.82	0.44
1:E:59:GLN:HG3	1:E:280:GLU:OE1	2.18	0.44
1:E:69:LEU:HD23	1:E:69:LEU:HA	1.75	0.44
1:G:74:MET:SD	1:G:131:PHE:HB2	2.58	0.44
1:K:362:VAL:CG1	1:K:374:ILE:HG12	2.47	0.44
1:L:370:THR:OG1	1:L:371:ALA:N	2.51	0.44
1:M:142:ASN:HD22	1:M:163:LEU:HD12	1.83	0.44
1:M:8:LEU:HD22	1:M:218:TYR:HB2	1.99	0.44
1:A:228:ARG:HG2	1:A:244:TYR:CE2	2.53	0.43
1:A:89:SER:HB3	1:A:423:GLU:O	2.18	0.43
1:F:142:ASN:OD1	1:F:255:ARG:HG3	2.19	0.43
1:G:131:PHE:CD1	1:H:391:ILE:HD11	2.53	0.43
1:I:194:ILE:O	1:I:198:VAL:HG23	2.19	0.43
1:I:74:MET:SD	1:I:131:PHE:HB2	2.57	0.43
1:L:398:LEU:HD12	1:L:402:ARG:NH2	2.32	0.43
1:M:171:ASP:OD1	1:M:175:ASN:N	2.49	0.43
1:E:171:ASP:OD1	1:E:175:ASN:N	2.49	0.43
1:I:300:VAL:HG12	1:I:327:ILE:HG12	1.99	0.43
1:B:373:GLU:O	1:B:377:VAL:HG22	2.18	0.43
1:D:131:PHE:CG	1:E:391:ILE:HD11	2.54	0.43
1:D:371:ALA:HB2	1:E:372:GLU:HG3	1.99	0.43
1:E:250:PRO:HB3	1:E:407:GLN:NE2	2.33	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:191:PRO:HD2	1:F:194:ILE:HD12	2.00	0.43
1:I:103:LEU:HA	1:I:103:LEU:HD23	1.86	0.43
1:K:8:LEU:HD22	1:K:218:TYR:HB2	2.00	0.43
1:A:131:PHE:CG	1:B:391:ILE:HD11	2.54	0.43
1:C:309:ARG:NH1	1:C:309:ARG:HB2	2.34	0.43
1:H:159:LYS:HG3	1:H:160:LEU:N	2.33	0.43
1:K:405:LEU:HD23	1:K:405:LEU:HA	1.91	0.43
1:L:338:PHE:CD2	1:M:340:VAL:HG13	2.53	0.43
1:D:357:MET:SD	1:D:357:MET:N	2.91	0.43
1:E:142:ASN:OD1	1:E:255:ARG:HG3	2.18	0.43
1:E:275:ASP:OD2	1:E:351:ARG:HD2	2.18	0.43
1:E:309:ARG:HH11	1:E:309:ARG:HB2	1.83	0.43
1:E:398:LEU:HB3	1:E:402:ARG:HH22	1.83	0.43
1:G:6:THR:HA	1:G:10:GLU:HA	2.01	0.43
1:C:452:LEU:HD11	1:C:467:LYS:HE3	2.01	0.43
1:D:212:ASP:N	1:D:212:ASP:OD1	2.52	0.43
1:D:373:GLU:O	1:D:377:VAL:HG22	2.19	0.43
1:E:373:GLU:O	1:E:377:VAL:HG22	2.19	0.43
1:F:43:PHE:HD2	1:F:136:GLN:HE22	1.67	0.43
1:G:415:PRO:HB2	1:H:94:LYS:NZ	2.34	0.43
1:G:467:LYS:HZ3	1:H:459:PRO:HG2	1.82	0.43
1:G:479:SER:O	1:H:469:ARG:NH2	2.52	0.43
1:J:159:LYS:HG3	1:J:160:LEU:N	2.32	0.43
1:C:250:PRO:HB3	1:C:407:GLN:HE21	1.84	0.43
1:D:257:VAL:HB	1:D:266:ARG:HB2	2.01	0.43
1:H:163:LEU:HA	1:H:166:TYR:CE2	2.54	0.43
1:C:194:ILE:HG12	1:C:237:VAL:HG13	2.01	0.43
1:C:370:THR:HG23	1:C:373:GLU:H	1.83	0.43
1:D:126:TYR:HE2	1:D:404:LEU:HD11	1.83	0.43
1:F:309:ARG:HB2	1:F:309:ARG:HH11	1.84	0.43
1:I:6:THR:HA	1:I:10:GLU:HA	2.00	0.43
1:I:453:ALA:HA	1:I:456:ARG:HG3	2.01	0.43
1:K:20:LEU:HD21	1:K:169:GLN:NE2	2.34	0.43
1:H:276:LEU:HD12	1:H:352:LEU:HD13	2.00	0.42
1:H:418:PRO:O	1:H:420:GLU:N	2.51	0.42
1:H:290:SER:HB3	1:I:344:VAL:HG21	2.01	0.42
1:I:357:MET:N	1:I:357:MET:SD	2.92	0.42
1:L:276:LEU:HD12	1:L:352:LEU:HD13	2.01	0.42
1:I:452:LEU:CD1	1:I:467:LYS:HE3	2.49	0.42
1:K:309:ARG:HB2	1:K:309:ARG:HH11	1.85	0.42
1:K:371:ALA:CB	1:L:372:GLU:HG3	2.49	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:99:ASP:O	1:A:103:LEU:HB2	2.19	0.42
1:B:272:TYR:CE2	1:B:355:ALA:HB1	2.54	0.42
1:C:142:ASN:OD1	1:C:265:GLY:N	2.48	0.42
1:C:359:ASN:HB2	1:D:380:GLU:HB2	2.01	0.42
1:F:275:ASP:OD2	1:F:351:ARG:NH1	2.48	0.42
1:G:168:VAL:HG22	1:G:179:MET:HG2	2.02	0.42
1:G:186:ALA:HA	1:G:210:THR:HA	2.00	0.42
1:H:241:ASP:N	1:H:241:ASP:OD1	2.46	0.42
1:I:99:ASP:O	1:I:103:LEU:HB2	2.19	0.42
1:C:228:ARG:HG2	1:C:244:TYR:CE2	2.55	0.42
1:C:216:HIS:HB3	1:C:229:TYR:CE2	2.54	0.42
1:F:310:ARG:NH1	1:F:321:THR:OG1	2.53	0.42
1:H:73:LEU:HD21	1:H:388:VAL:HG23	2.02	0.42
1:L:437:GLN:OE1	1:L:437:GLN:N	2.46	0.42
1:B:11:ASP:N	1:B:11:ASP:OD1	2.42	0.42
1:H:365:THR:HG22	1:I:364:ARG:NH1	2.35	0.42
1:L:300:VAL:HG12	1:L:327:ILE:HG12	2.02	0.42
1:M:74:MET:SD	1:M:131:PHE:HB2	2.60	0.42
1:M:241:ASP:N	1:M:241:ASP:OD1	2.47	0.42
1:M:370:THR:OG1	1:M:371:ALA:N	2.52	0.42
1:E:228:ARG:HG2	1:E:244:TYR:CE2	2.55	0.42
1:H:28:GLU:HB3	1:H:163:LEU:HD22	2.02	0.42
1:G:293:SER:O	1:H:334:LYS:NZ	2.53	0.42
1:I:39:ILE:HG21	1:J:271:GLU:HG2	2.02	0.42
1:M:142:ASN:OD1	1:M:255:ARG:HG3	2.19	0.42
1:B:137:LEU:HD13	1:B:143:VAL:HG23	2.02	0.42
1:C:340:VAL:O	1:C:344:VAL:HG23	2.20	0.42
1:C:357:MET:SD	1:C:357:MET:N	2.93	0.42
1:F:309:ARG:HB2	1:F:309:ARG:NH1	2.34	0.42
1:G:241:ASP:OD1	1:G:241:ASP:N	2.42	0.42
1:G:39:ILE:HB	1:G:42:LEU:HG	2.01	0.42
1:I:126:TYR:CE1	1:I:158:MET:HB2	2.55	0.42
1:E:389:TYR:OH	1:E:429:GLY:HA2	2.19	0.42
1:D:81:GLN:HG2	1:E:437:GLN:HG3	2.01	0.42
1:F:28:GLU:HB3	1:F:163:LEU:HD22	2.02	0.42
1:K:467:LYS:HZ3	1:L:459:PRO:HG2	1.85	0.42
1:F:42:LEU:O	1:F:162:ARG:NH1	2.53	0.42
1:F:61:VAL:HG21	1:F:279:LEU:HD21	2.02	0.42
1:H:216:HIS:HE1	1:H:218:TYR:HB3	1.83	0.42
1:I:167:VAL:HG12	1:I:180:VAL:O	2.20	0.42
1:B:309:ARG:HB2	1:B:309:ARG:HH11	1.85	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:371:ALA:CB	1:B:372:GLU:HG3	2.50	0.41
1:B:418:PRO:O	1:B:420:GLU:N	2.53	0.41
1:E:370:THR:OG1	1:E:371:ALA:N	2.53	0.41
1:F:362:VAL:HG22	1:F:377:VAL:HG23	2.01	0.41
1:G:131:PHE:CG	1:H:391:ILE:HD11	2.55	0.41
1:J:257:VAL:HB	1:J:266:ARG:HB2	2.01	0.41
1:K:332:LEU:HD13	1:K:334:LYS:H	1.85	0.41
1:C:417:LEU:HB3	1:C:418:PRO:HD2	2.02	0.41
1:D:142:ASN:HD21	1:D:264:TYR:HB3	1.84	0.41
1:D:338:PHE:CZ	1:D:342:LYS:HD2	2.55	0.41
1:F:89:SER:HB3	1:F:423:GLU:O	2.20	0.41
1:G:197:ALA:HB1	1:G:235:MET:HE3	2.01	0.41
1:H:32:GLN:HG3	1:H:43:PHE:CD1	2.56	0.41
1:A:28:GLU:HB3	1:A:163:LEU:HD22	2.02	0.41
1:I:133:ALA:O	1:I:137:LEU:N	2.45	0.41
1:K:59:GLN:HG3	1:K:280:GLU:OE1	2.19	0.41
1:K:371:ALA:HB2	1:L:372:GLU:HG3	2.01	0.41
1:M:373:GLU:O	1:M:377:VAL:HG22	2.21	0.41
1:C:458:ASP:HB2	1:C:461:ILE:HB	2.02	0.41
1:I:417:LEU:HB3	1:I:418:PRO:HD2	2.02	0.41
1:J:216:HIS:HB3	1:J:229:TYR:CE2	2.56	0.41
1:J:452:LEU:CD1	1:J:467:LYS:HE3	2.49	0.41
1:L:257:VAL:HB	1:L:266:ARG:HB2	2.02	0.41
1:F:338:PHE:CD2	1:G:340:VAL:HG13	2.55	0.41
1:G:266:ARG:HD2	1:G:266:ARG:HA	1.86	0.41
1:H:299:LEU:HD11	1:H:330:LEU:HD23	2.02	0.41
1:H:373:GLU:O	1:H:377:VAL:HG22	2.21	0.41
1:M:159:LYS:HG3	1:M:160:LEU:N	2.34	0.41
1:B:89:SER:HB3	1:B:423:GLU:O	2.20	0.41
1:C:332:LEU:HD13	1:C:334:LYS:HB2	2.02	0.41
1:I:142:ASN:HD22	1:I:163:LEU:CD1	2.32	0.41
1:L:142:ASN:OD1	1:L:255:ARG:HG3	2.20	0.41
1:A:79:PRO:HD2	1:A:83:TRP:CD1	2.55	0.41
1:H:437:GLN:N	1:H:437:GLN:OE1	2.42	0.41
1:J:214:TYR:CD1	1:J:214:TYR:N	2.89	0.41
1:A:59:GLN:HG3	1:A:280:GLU:OE1	2.20	0.41
1:B:362:VAL:CG1	1:B:374:ILE:HG12	2.50	0.41
1:C:398:LEU:HB3	1:C:402:ARG:HH22	1.86	0.41
1:D:452:LEU:CD1	1:D:467:LYS:HE3	2.51	0.41
1:G:135:LYS:O	1:G:139:VAL:HG12	2.21	0.41
1:G:142:ASN:OD1	1:G:255:ARG:HG3	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:332:LEU:HD13	1:H:334:LYS:HB2	2.02	0.41
1:H:131:PHE:CD1	1:I:391:ILE:HD11	2.55	0.41
1:D:309:ARG:NH1	1:D:309:ARG:HB2	2.36	0.41
1:E:197:ALA:O	1:E:235:MET:HE1	2.21	0.41
1:F:39:ILE:HB	1:F:42:LEU:HG	2.02	0.41
1:G:332:LEU:HD13	1:G:334:LYS:HB2	2.01	0.41
1:L:250:PRO:HB3	1:L:407:GLN:NE2	2.34	0.41
1:B:331:GLN:NE2	1:C:333:GLU:O	2.54	0.41
1:C:89:SER:HB3	1:C:423:GLU:O	2.21	0.41
1:F:266:ARG:HA	1:F:266:ARG:HD2	1.86	0.41
1:G:60:ALA:HB1	1:H:272:TYR:HD1	1.85	0.41
1:H:142:ASN:HD22	1:H:163:LEU:CD1	2.33	0.41
1:I:309:ARG:HB2	1:I:309:ARG:NH1	2.36	0.41
1:I:449:TRP:HZ3	1:J:466:ILE:HD13	1.86	0.41
1:K:479:SER:HB3	1:L:469:ARG:HH22	1.85	0.41
1:C:59:GLN:HG3	1:C:280:GLU:OE1	2.21	0.41
1:D:153:SER:HB3	1:D:413:GLN:NE2	2.36	0.41
1:D:142:ASN:ND2	1:D:264:TYR:HB3	2.36	0.41
1:E:332:LEU:HD13	1:E:334:LYS:HB2	2.02	0.41
1:E:458:ASP:HB2	1:E:461:ILE:HB	2.02	0.41
1:K:142:ASN:HD21	1:K:264:TYR:HB3	1.85	0.41
1:L:478:THR:HA	1:L:481:ILE:HD12	2.03	0.41
1:A:332:LEU:HD13	1:A:334:LYS:HB2	2.03	0.40
1:B:24:ARG:NH1	1:B:166:TYR:O	2.45	0.40
1:D:39:ILE:HG21	1:E:271:GLU:HG2	2.03	0.40
1:G:216:HIS:HB3	1:G:229:TYR:CE2	2.56	0.40
1:G:430:LEU:HD12	1:G:433:ILE:HD12	2.01	0.40
1:H:126:TYR:CE1	1:H:158:MET:HB2	2.56	0.40
1:H:306:THR:HG23	1:H:322:GLY:HA3	2.04	0.40
1:H:113:VAL:HG11	1:H:405:LEU:HD21	2.02	0.40
1:K:250:PRO:HB3	1:K:407:GLN:NE2	2.36	0.40
1:K:162:ARG:NH2	1:L:259:LEU:HD22	2.34	0.40
1:A:216:HIS:HE1	1:A:218:TYR:HB3	1.86	0.40
1:D:250:PRO:HB3	1:D:407:GLN:HE21	1.86	0.40
1:E:159:LYS:HE3	1:E:161:TYR:CZ	2.56	0.40
1:F:404:LEU:HA	1:F:404:LEU:HD23	1.88	0.40
1:F:417:LEU:HB3	1:F:418:PRO:HD2	2.02	0.40
1:F:452:LEU:CD1	1:F:467:LYS:HE3	2.51	0.40
1:H:135:LYS:O	1:H:139:VAL:HG12	2.21	0.40
1:J:371:ALA:HB2	1:K:372:GLU:HG3	2.04	0.40
1:J:418:PRO:O	1:J:420:GLU:N	2.54	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:452:LEU:CD1	1:K:467:LYS:HE3	2.51	0.40
1:M:216:HIS:HB3	1:M:229:TYR:CE2	2.57	0.40
1:A:417:LEU:HB3	1:A:418:PRO:HD2	2.03	0.40
1:B:371:ALA:HB2	1:C:372:GLU:HG3	2.03	0.40
1:D:449:TRP:CD1	1:D:467:LYS:HG2	2.56	0.40
1:D:61:VAL:HG21	1:D:279:LEU:HD21	2.03	0.40
1:E:362:VAL:HG22	1:E:377:VAL:HG23	2.02	0.40
1:H:120:TYR:OH	1:H:156:ASN:ND2	2.45	0.40
1:K:256:MET:HB3	1:K:266:ARG:O	2.22	0.40
1:M:187:PHE:HA	1:M:190:LEU:HD12	2.03	0.40
1:B:73:LEU:HD21	1:B:388:VAL:HG23	2.03	0.40
1:F:147:LEU:O	1:F:407:GLN:NE2	2.48	0.40
1:G:216:HIS:HE1	1:G:218:TYR:HB3	1.87	0.40
1:G:278:SER:O	1:G:282:LEU:HB2	2.21	0.40
1:K:171:ASP:OD1	1:K:175:ASN:N	2.53	0.40
1:K:197:ALA:O	1:K:235:MET:HE1	2.21	0.40
1:K:266:ARG:HA	1:K:266:ARG:HD2	1.84	0.40
1:K:373:GLU:O	1:K:377:VAL:HG22	2.21	0.40
1:L:415:PRO:HB2	1:M:94:LYS:NZ	2.36	0.40
1:G:362:VAL:CG1	1:G:374:ILE:HG12	2.51	0.40
1:J:458:ASP:HB2	1:J:461:ILE:HB	2.02	0.40
1:J:99:ASP:O	1:J:103:LEU:HB2	2.21	0.40
1:L:266:ARG:HA	1:L:266:ARG:HD2	1.87	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:15:SER:OG	1:D:95:GLN:OE1[4_555]	2.15	0.05
1:B:193:ASP:OD2	1:M:309:ARG:NH1[4_455]	2.17	0.03

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	469/536 (88%)	423 (90%)	45 (10%)	1 (0%)	47	78
1	B	469/536 (88%)	424 (90%)	43 (9%)	2 (0%)	34	69
1	C	469/536 (88%)	420 (90%)	46 (10%)	3 (1%)	25	61
1	D	469/536 (88%)	420 (90%)	47 (10%)	2 (0%)	34	69
1	E	469/536 (88%)	421 (90%)	45 (10%)	3 (1%)	25	61
1	F	469/536 (88%)	421 (90%)	45 (10%)	3 (1%)	25	61
1	G	469/536 (88%)	420 (90%)	48 (10%)	1 (0%)	47	78
1	H	469/536 (88%)	421 (90%)	45 (10%)	3 (1%)	25	61
1	I	469/536 (88%)	421 (90%)	46 (10%)	2 (0%)	34	69
1	J	469/536 (88%)	421 (90%)	45 (10%)	3 (1%)	25	61
1	K	469/536 (88%)	422 (90%)	46 (10%)	1 (0%)	47	78
1	L	469/536 (88%)	420 (90%)	48 (10%)	1 (0%)	47	78
1	M	469/536 (88%)	423 (90%)	44 (9%)	2 (0%)	34	69
All	All	6097/6968 (88%)	5477 (90%)	593 (10%)	27 (0%)	34	69

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	M	419	LYS
1	A	419	LYS
1	B	419	LYS
1	C	419	LYS
1	D	419	LYS
1	E	419	LYS
1	F	419	LYS
1	G	419	LYS
1	H	419	LYS
1	I	419	LYS
1	J	419	LYS
1	K	419	LYS
1	L	419	LYS
1	C	363	GLN
1	M	363	GLN
1	D	363	GLN
1	E	363	GLN
1	F	363	GLN
1	I	363	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	J	363	GLN
1	H	363	GLN
1	J	203	GLY
1	B	203	GLY
1	E	203	GLY
1	H	203	GLY
1	C	203	GLY
1	F	203	GLY

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	A	400/442 (90%)	391 (98%)	9 (2%)	50 71
1	B	400/442 (90%)	391 (98%)	9 (2%)	50 71
1	C	400/442 (90%)	390 (98%)	10 (2%)	47 70
1	D	400/442 (90%)	389 (97%)	11 (3%)	43 67
1	E	400/442 (90%)	391 (98%)	9 (2%)	50 71
1	F	400/442 (90%)	391 (98%)	9 (2%)	50 71
1	G	400/442 (90%)	392 (98%)	8 (2%)	55 75
1	H	400/442 (90%)	389 (97%)	11 (3%)	43 67
1	I	400/442 (90%)	388 (97%)	12 (3%)	41 65
1	J	400/442 (90%)	390 (98%)	10 (2%)	47 70
1	K	400/442 (90%)	391 (98%)	9 (2%)	50 71
1	L	400/442 (90%)	390 (98%)	10 (2%)	47 70
1	M	400/442 (90%)	391 (98%)	9 (2%)	50 71
All	All	5200/5746 (90%)	5074 (98%)	126 (2%)	49 71

All (126) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	59	GLN
1	A	147	LEU
1	A	151	GLU
1	A	182	ARG
1	A	228	ARG
1	A	255	ARG
1	A	277	ARG
1	A	390	SER
1	B	59	GLN
1	B	147	LEU
1	B	151	GLU
1	B	182	ARG
1	B	228	ARG
1	B	231	GLU
1	B	255	ARG
1	B	277	ARG
1	B	390	SER
1	C	22	ASN
1	C	59	GLN
1	C	147	LEU
1	C	151	GLU
1	C	182	ARG
1	C	228	ARG
1	C	231	GLU
1	C	255	ARG
1	C	315	GLN
1	C	427	SER
1	D	22	ASN
1	D	43	PHE
1	D	59	GLN
1	D	69	LEU
1	D	147	LEU
1	D	151	GLU
1	D	182	ARG
1	D	228	ARG
1	D	231	GLU
1	D	255	ARG
1	D	390	SER
1	E	59	GLN
1	E	69	LEU
1	E	147	LEU
1	E	151	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	182	ARG
1	E	228	ARG
1	E	231	GLU
1	E	255	ARG
1	E	390	SER
1	F	59	GLN
1	F	147	LEU
1	F	151	GLU
1	F	182	ARG
1	F	228	ARG
1	F	231	GLU
1	F	255	ARG
1	F	277	ARG
1	F	390	SER
1	G	59	GLN
1	G	147	LEU
1	G	182	ARG
1	G	228	ARG
1	G	231	GLU
1	G	255	ARG
1	G	277	ARG
1	G	309	ARG
1	H	23	ASP
1	H	59	GLN
1	H	147	LEU
1	H	182	ARG
1	H	228	ARG
1	H	231	GLU
1	H	255	ARG
1	H	277	ARG
1	H	293	SER
1	H	390	SER
1	H	427	SER
1	I	22	ASN
1	I	23	ASP
1	I	59	GLN
1	I	132	GLU
1	I	147	LEU
1	I	151	GLU
1	I	182	ARG
1	I	228	ARG
1	I	231	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	I	255	ARG
1	I	260	ASP
1	I	390	SER
1	J	22	ASN
1	J	43	PHE
1	J	59	GLN
1	J	147	LEU
1	J	182	ARG
1	J	208	ASP
1	J	228	ARG
1	J	260	ASP
1	J	277	ARG
1	J	390	SER
1	K	22	ASN
1	K	59	GLN
1	K	69	LEU
1	K	147	LEU
1	K	182	ARG
1	K	228	ARG
1	K	231	GLU
1	K	255	ARG
1	K	390	SER
1	L	22	ASN
1	L	59	GLN
1	L	147	LEU
1	L	151	GLU
1	L	182	ARG
1	L	228	ARG
1	L	255	ARG
1	L	260	ASP
1	L	309	ARG
1	L	390	SER
1	M	22	ASN
1	M	23	ASP
1	M	59	GLN
1	M	147	LEU
1	M	182	ARG
1	M	228	ARG
1	M	231	GLU
1	M	255	ARG
1	M	390	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such

sidechains are listed below:

Mol	Chain	Res	Type
1	A	184	GLN
1	B	184	GLN
1	B	331	GLN
1	C	156	ASN
1	F	184	GLN
1	J	184	GLN
1	J	216	HIS
1	L	184	GLN
1	M	136	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

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, 95th 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 ²)	Q<0.9
1	A	473/536 (88%)	0.30	31 (6%) 18 14	68, 139, 224, 386	1 (0%)
1	B	473/536 (88%)	0.27	26 (5%) 25 21	72, 141, 242, 294	1 (0%)
1	C	473/536 (88%)	0.40	49 (10%) 6 6	76, 144, 247, 328	1 (0%)
1	D	473/536 (88%)	0.43	40 (8%) 10 9	90, 160, 263, 353	1 (0%)
1	E	473/536 (88%)	0.57	46 (9%) 7 7	89, 164, 258, 310	1 (0%)
1	F	473/536 (88%)	0.32	32 (6%) 17 13	81, 164, 240, 285	1 (0%)
1	G	473/536 (88%)	0.19	29 (6%) 21 17	78, 149, 242, 341	1 (0%)
1	H	473/536 (88%)	0.23	22 (4%) 31 27	76, 137, 229, 294	1 (0%)
1	I	473/536 (88%)	0.19	26 (5%) 25 21	75, 129, 232, 316	1 (0%)
1	J	473/536 (88%)	0.32	42 (8%) 9 8	67, 128, 233, 363	1 (0%)
1	K	473/536 (88%)	0.30	32 (6%) 17 13	65, 132, 236, 321	1 (0%)
1	L	473/536 (88%)	0.33	34 (7%) 15 12	68, 138, 237, 287	1 (0%)
1	M	473/536 (88%)	0.21	29 (6%) 21 17	66, 141, 231, 329	1 (0%)
All	All	6149/6968 (88%)	0.31	438 (7%) 16 12	65, 145, 240, 386	13 (0%)

All (438) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	48	ASP	10.9
1	A	48	ASP	9.8
1	B	454	PRO	9.8
1	C	454	PRO	9.3
1	B	463	LEU	9.2
1	K	463	LEU	9.1
1	D	463	LEU	8.8
1	D	454	PRO	8.7
1	L	47	SER	7.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	M	102	GLY	7.6
1	M	48	ASP	7.6
1	I	454	PRO	7.5
1	K	467	LYS	7.3
1	K	466	ILE	7.3
1	J	457	ASP	7.2
1	K	459	PRO	7.0
1	A	102	GLY	7.0
1	J	467	LYS	7.0
1	C	463	LEU	6.7
1	C	422	VAL	6.7
1	J	454	PRO	6.6
1	L	454	PRO	6.6
1	I	459	PRO	6.6
1	H	454	PRO	6.5
1	L	48	ASP	6.5
1	E	421	ALA	6.4
1	A	47	SER	6.1
1	B	467	LYS	6.1
1	I	451	ALA	5.9
1	J	48	ASP	5.9
1	D	47	SER	5.8
1	B	48	ASP	5.8
1	K	454	PRO	5.8
1	J	463	LEU	5.7
1	K	48	ASP	5.6
1	A	451	ALA	5.6
1	E	230	GLU	5.6
1	C	466	ILE	5.5
1	C	461	ILE	5.4
1	M	106	VAL	5.4
1	I	461	ILE	5.4
1	A	454	PRO	5.3
1	J	102	GLY	5.3
1	C	467	LYS	5.3
1	F	454	PRO	5.2
1	K	461	ILE	5.2
1	M	101	ASP	5.1
1	J	459	PRO	5.0
1	J	466	ILE	5.0
1	L	451	ALA	4.9
1	L	467	LYS	4.9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	3	GLU	4.9
1	J	451	ALA	4.9
1	C	421	ALA	4.9
1	K	451	ALA	4.8
1	L	459	PRO	4.7
1	L	102	GLY	4.7
1	J	101	ASP	4.7
1	H	102	GLY	4.7
1	A	463	LEU	4.7
1	J	461	ILE	4.7
1	I	478	THR	4.6
1	L	421	ALA	4.6
1	D	462	ASN	4.6
1	J	205	LYS	4.5
1	B	365	THR	4.5
1	K	419	LYS	4.5
1	L	463	LEU	4.4
1	E	419	LYS	4.4
1	C	365	THR	4.4
1	H	451	ALA	4.3
1	E	48	ASP	4.2
1	B	366	GLY	4.2
1	E	417	LEU	4.2
1	B	457	ASP	4.2
1	B	47	SER	4.1
1	D	467	LYS	4.1
1	F	467	LYS	4.1
1	H	455	MET	4.0
1	L	92	GLU	4.0
1	M	92	GLU	4.0
1	D	471	ALA	4.0
1	K	462	ASN	4.0
1	K	421	ALA	4.0
1	I	467	LYS	4.0
1	B	466	ILE	4.0
1	E	216	HIS	4.0
1	A	452	LEU	4.0
1	C	106	VAL	4.0
1	I	102	GLY	4.0
1	H	421	ALA	3.9
1	C	457	ASP	3.9
1	D	457	ASP	3.9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	178	GLN	3.9
1	J	209	GLU	3.9
1	I	48	ASP	3.9
1	M	419	LYS	3.9
1	A	467	LYS	3.9
1	J	47	SER	3.9
1	E	467	LYS	3.8
1	M	103	LEU	3.8
1	B	461	ILE	3.8
1	D	101	ASP	3.8
1	G	48	ASP	3.8
1	G	319	PHE	3.8
1	C	96	LEU	3.8
1	M	455	MET	3.8
1	A	455	MET	3.7
1	D	450	ALA	3.7
1	M	422	VAL	3.7
1	C	367	GLU	3.7
1	A	461	ILE	3.7
1	M	47	SER	3.7
1	C	478	THR	3.7
1	B	459	PRO	3.7
1	C	459	PRO	3.7
1	A	478	THR	3.7
1	G	102	GLY	3.7
1	C	470	ILE	3.7
1	D	365	THR	3.6
1	C	419	LYS	3.6
1	J	453	ALA	3.6
1	M	456	ARG	3.6
1	D	8	LEU	3.6
1	E	8	LEU	3.5
1	E	4	LYS	3.5
1	E	225	GLU	3.5
1	K	422	VAL	3.5
1	E	459	PRO	3.5
1	F	230	GLU	3.5
1	D	102	GLY	3.5
1	C	230	GLU	3.5
1	H	463	LEU	3.5
1	M	368	ARG	3.4
1	H	417	LEU	3.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	K	102	GLY	3.4
1	M	463	LEU	3.4
1	J	96	LEU	3.4
1	I	306	THR	3.4
1	L	211	ILE	3.3
1	E	463	LEU	3.3
1	B	417	LEU	3.3
1	C	306	THR	3.3
1	M	458	ASP	3.3
1	I	47	SER	3.3
1	D	443	GLU	3.3
1	D	98	SER	3.3
1	F	366	GLY	3.3
1	D	46	ASP	3.3
1	L	422	VAL	3.3
1	G	367	GLU	3.3
1	G	467	LYS	3.3
1	E	99	ASP	3.2
1	G	457	ASP	3.2
1	D	367	GLU	3.2
1	H	416	GLU	3.2
1	F	102	GLY	3.2
1	F	421	ALA	3.2
1	J	187	PHE	3.2
1	I	221	GLU	3.2
1	H	364	ARG	3.2
1	B	478	THR	3.2
1	D	421	ALA	3.2
1	G	169	GLN	3.2
1	G	454	PRO	3.2
1	K	481	ILE	3.2
1	J	323	ARG	3.1
1	E	454	PRO	3.1
1	G	179	MET	3.1
1	L	461	ILE	3.1
1	E	169	GLN	3.1
1	D	178	GLN	3.1
1	A	365	THR	3.1
1	E	7	GLY	3.1
1	J	106	VAL	3.1
1	M	420	GLU	3.1
1	J	363	GLN	3.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	47	SER	3.1
1	E	418	PRO	3.0
1	I	416	GLU	3.0
1	L	368	ARG	3.0
1	I	46	ASP	3.0
1	K	457	ASP	3.0
1	M	467	LYS	3.0
1	J	462	ASN	3.0
1	L	106	VAL	3.0
1	A	459	PRO	3.0
1	H	47	SER	3.0
1	D	208	ASP	3.0
1	L	208	ASP	3.0
1	E	232	VAL	3.0
1	L	205	LYS	3.0
1	D	466	ILE	3.0
1	D	45	LYS	3.0
1	K	47	SER	3.0
1	C	198	VAL	3.0
1	K	21	LYS	3.0
1	C	451	ALA	2.9
1	G	178	GLN	3.0
1	I	453	ALA	2.9
1	D	459	PRO	2.9
1	J	421	ALA	2.9
1	M	421	ALA	2.9
1	H	367	GLU	2.9
1	M	208	ASP	2.9
1	J	481	ILE	2.9
1	A	101	ASP	2.9
1	G	365	THR	2.9
1	C	364	ARG	2.9
1	K	470	ILE	2.9
1	B	369	VAL	2.9
1	G	461	ILE	2.9
1	F	367	GLU	2.8
1	F	455	MET	2.8
1	J	306	THR	2.8
1	F	88	ILE	2.8
1	G	366	GLY	2.8
1	G	458	ASP	2.8
1	G	3	GLU	2.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	102	GLY	2.8
1	E	235	MET	2.8
1	H	448	ALA	2.8
1	E	229	TYR	2.8
1	G	417	LEU	2.8
1	F	208	ASP	2.8
1	E	231	GLU	2.8
1	L	462	ASN	2.8
1	C	319	PHE	2.8
1	C	462	ASN	2.8
1	F	101	ASP	2.8
1	M	454	PRO	2.8
1	D	422	VAL	2.8
1	B	106	VAL	2.7
1	F	456	ARG	2.7
1	C	179	MET	2.7
1	B	102	GLY	2.7
1	A	231	GLU	2.7
1	D	28	GLU	2.7
1	J	211	ILE	2.7
1	C	231	GLU	2.7
1	J	452	LEU	2.7
1	A	46	ASP	2.7
1	A	311	LEU	2.7
1	A	481	ILE	2.7
1	C	178	GLN	2.7
1	J	367	GLU	2.7
1	C	456	ARG	2.7
1	H	101	ASP	2.7
1	H	103	LEU	2.7
1	K	96	LEU	2.7
1	C	458	ASP	2.7
1	D	451	ALA	2.7
1	E	221	GLU	2.7
1	F	464	ALA	2.7
1	L	466	ILE	2.7
1	M	233	GLU	2.7
1	A	232	VAL	2.7
1	D	464	ALA	2.6
1	A	238	GLN	2.6
1	C	202	GLY	2.6
1	B	455	MET	2.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	366	GLY	2.6
1	E	12	GLY	2.6
1	F	451	ALA	2.6
1	E	213	VAL	2.6
1	M	478	THR	2.6
1	J	419	LYS	2.6
1	G	421	ALA	2.6
1	C	194	ILE	2.6
1	I	457	ASP	2.6
1	J	478	THR	2.6
1	A	466	ILE	2.6
1	C	48	ASP	2.6
1	C	453	ALA	2.6
1	M	99	ASP	2.6
1	H	415	PRO	2.6
1	M	457	ASP	2.6
1	M	481	ILE	2.6
1	J	455	MET	2.6
1	D	368	ARG	2.6
1	K	99	ASP	2.5
1	E	179	MET	2.5
1	F	457	ASP	2.5
1	H	422	VAL	2.5
1	L	458	ASP	2.5
1	B	367	GLU	2.5
1	C	232	VAL	2.5
1	I	363	GLN	2.5
1	E	88	ILE	2.5
1	I	466	ILE	2.5
1	L	416	GLU	2.5
1	I	463	LEU	2.5
1	A	187	PHE	2.5
1	B	101	ASP	2.5
1	L	417	LEU	2.5
1	C	233	GLU	2.5
1	K	106	VAL	2.5
1	K	460	ASP	2.4
1	I	365	THR	2.4
1	D	6	THR	2.4
1	D	411	THR	2.4
1	K	220	ASP	2.4
1	E	367	GLU	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	450	ALA	2.4
1	G	47	SER	2.4
1	L	478	THR	2.4
1	D	470	ILE	2.4
1	E	17	TYR	2.4
1	E	368	ARG	2.4
1	F	463	LEU	2.4
1	K	92	GLU	2.4
1	K	312	THR	2.4
1	E	9	ALA	2.4
1	L	216	HIS	2.4
1	C	187	PHE	2.4
1	K	464	ALA	2.4
1	K	453	ALA	2.4
1	J	206	LYS	2.4
1	B	364	ARG	2.4
1	B	451	ALA	2.4
1	M	89	SER	2.4
1	C	481	ILE	2.4
1	D	373	GLU	2.4
1	G	466	ILE	2.4
1	F	260	ASP	2.4
1	I	229	TYR	2.4
1	K	458	ASP	2.4
1	L	212	ASP	2.4
1	J	470	ILE	2.3
1	H	46	ASP	2.3
1	F	481	ILE	2.3
1	E	464	ALA	2.3
1	H	106	VAL	2.3
1	F	99	ASP	2.3
1	J	321	THR	2.3
1	K	306	THR	2.3
1	C	45	LYS	2.3
1	J	178	GLN	2.3
1	E	226	TYR	2.3
1	H	190	LEU	2.3
1	L	457	ASP	2.3
1	L	233	GLU	2.3
1	G	216	HIS	2.3
1	J	13	ALA	2.3
1	B	470	ILE	2.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	194	ILE	2.3
1	L	423	GLU	2.3
1	E	5	ARG	2.3
1	I	448	ALA	2.3
1	J	450	ALA	2.3
1	F	368	ARG	2.3
1	J	12	GLY	2.3
1	L	105	LYS	2.3
1	E	453	ALA	2.3
1	H	419	LYS	2.3
1	F	231	GLU	2.2
1	A	177	LEU	2.2
1	D	481	ILE	2.2
1	E	13	ALA	2.2
1	H	462	ASN	2.2
1	D	453	ALA	2.2
1	C	99	ASP	2.2
1	E	11	ASP	2.2
1	C	3	GLU	2.2
1	B	298	GLY	2.2
1	C	455	MET	2.2
1	J	207	ALA	2.2
1	F	449	TRP	2.2
1	E	219	LEU	2.2
1	I	481	ILE	2.2
1	G	206	LYS	2.2
1	G	231	GLU	2.2
1	F	207	ALA	2.2
1	L	206	LYS	2.2
1	F	233	GLU	2.2
1	J	365	THR	2.2
1	L	453	ALA	2.2
1	G	233	GLU	2.2
1	F	8	LEU	2.2
1	C	203	GLY	2.2
1	K	19	ARG	2.2
1	K	179	MET	2.2
1	C	206	LYS	2.2
1	M	209	GLU	2.2
1	G	45	LYS	2.2
1	I	103	LEU	2.2
1	L	419	LYS	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	7	GLY	2.2
1	F	47	SER	2.2
1	F	48	ASP	2.2
1	A	244	TYR	2.2
1	L	231	GLU	2.2
1	F	452	LEU	2.1
1	M	462	ASN	2.1
1	G	205	LYS	2.1
1	E	420	GLU	2.1
1	M	3	GLU	2.1
1	A	448	ALA	2.1
1	A	213	VAL	2.1
1	C	452	LEU	2.1
1	E	218	TYR	2.1
1	F	198	VAL	2.1
1	B	3	GLU	2.1
1	L	28	GLU	2.1
1	D	311	LEU	2.1
1	B	458	ASP	2.1
1	D	211	ILE	2.1
1	C	201	GLN	2.1
1	A	458	ASP	2.1
1	E	214	TYR	2.1
1	A	366	GLY	2.1
1	B	449	TRP	2.1
1	C	424	PRO	2.1
1	G	149	GLU	2.1
1	D	207	ALA	2.1
1	F	476	ILE	2.1
1	F	365	THR	2.1
1	M	451	ALA	2.1
1	G	419	LYS	2.1
1	A	367	GLU	2.1
1	A	327	ILE	2.1
1	K	420	GLU	2.1
1	I	219	LEU	2.0
1	C	443	GLU	2.0
1	A	323	ARG	2.0
1	H	466	ILE	2.0
1	J	449	TRP	2.0
1	C	326	ASP	2.0
1	E	6	THR	2.0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	204	GLU	2.0
1	I	106	VAL	2.0
1	J	233	GLU	2.0
1	G	451	ALA	2.0
1	I	327	ILE	2.0
1	J	456	ARG	2.0
1	F	326	ASP	2.0
1	G	448	ALA	2.0
1	E	224	GLY	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 monosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.