WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Aug 22, 2023 – 09:18 PM EDT

PDB ID	:	3C9I
Title	:	Structure of P22 Tail-Needle GP26 Bound to Xenon Gas
Authors	:	Cingolani, G.; Olia, A.S.
Deposited on	:	2008-02-15
Resolution	:	1.95 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:

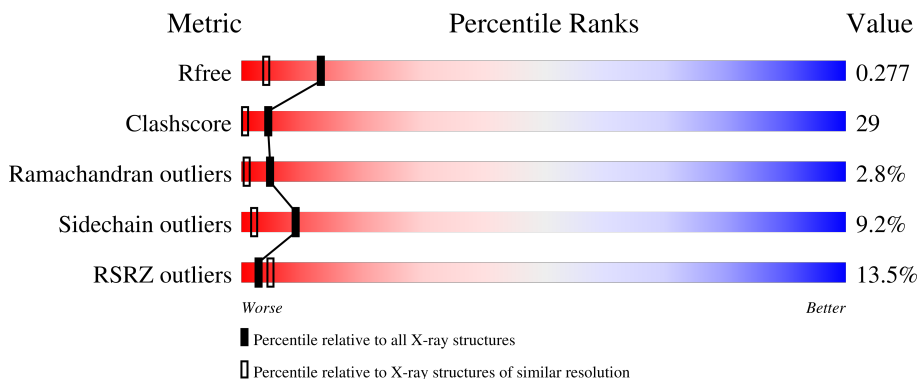|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 1.95 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.277
Clashscore		29
Ramachandran outliers		2.8%
Sidechain outliers		9.2%
RSRZ outliers		13.5%

Worse   *Better*

■ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	2580 (1.96-1.96)
Clashscore	141614	2705 (1.96-1.96)
Ramachandran outliers	138981	2678 (1.96-1.96)
Sidechain outliers	138945	2678 (1.96-1.96)
RSRZ outliers	127900	2539 (1.96-1.96)

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% 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	242	7% — 62% 26% 7% · ·
1	B	242	8% — 67% 29% ·
1	C	242	16% — 55% 32% 6% · ·
1	D	242	16% — 50% 33% 8% 9%
1	E	242	16% — 57% 31% 5% 7%

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Mol	Chain	Length	Quality of chain
1	F	242	14% 54% 32% .. 9%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	XE	A	7	-	-	X	-
2	XE	D	11	-	-	X	-
2	XE	D	14	-	-	X	-

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 11851 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 Tail needle protein gp26.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	233	Total	C	N	O	S	0	0	0
			1738	1065	311	360	2			
1	B	242	Total	C	N	O	S	0	0	0
			1800	1103	325	370	2			
1	C	233	Total	C	N	O	S	0	0	0
			1735	1063	311	359	2			
1	D	221	Total	C	N	O	S	0	0	0
			1645	1009	297	337	2			
1	E	226	Total	C	N	O	S	0	0	0
			1681	1029	307	343	2			
1	F	221	Total	C	N	O	S	0	0	0
			1644	1005	298	339	2			

There are 66 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	992	GLY	-	expression tag	UNP P35837
A	993	ALA	-	expression tag	UNP P35837
A	994	LEU	-	expression tag	UNP P35837
A	995	VAL	-	expression tag	UNP P35837
A	996	PRO	-	expression tag	UNP P35837
A	997	ARG	-	expression tag	UNP P35837
A	998	GLY	-	expression tag	UNP P35837
A	999	SER	-	expression tag	UNP P35837
A	1000	HIS	-	expression tag	UNP P35837
A	1169	VAL	LEU	engineered mutation	UNP P35837
A	1222	MET	LEU	engineered mutation	UNP P35837
B	992	GLY	-	expression tag	UNP P35837
B	993	ALA	-	expression tag	UNP P35837
B	994	LEU	-	expression tag	UNP P35837
B	995	VAL	-	expression tag	UNP P35837
B	996	PRO	-	expression tag	UNP P35837
B	997	ARG	-	expression tag	UNP P35837

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Chain	Residue	Modelled	Actual	Comment	Reference
B	998	GLY	-	expression tag	UNP P35837
B	999	SER	-	expression tag	UNP P35837
B	1000	HIS	-	expression tag	UNP P35837
B	1169	VAL	LEU	engineered mutation	UNP P35837
B	1222	MET	LEU	engineered mutation	UNP P35837
C	992	GLY	-	expression tag	UNP P35837
C	993	ALA	-	expression tag	UNP P35837
C	994	LEU	-	expression tag	UNP P35837
C	995	VAL	-	expression tag	UNP P35837
C	996	PRO	-	expression tag	UNP P35837
C	997	ARG	-	expression tag	UNP P35837
C	998	GLY	-	expression tag	UNP P35837
C	999	SER	-	expression tag	UNP P35837
C	1000	HIS	-	expression tag	UNP P35837
C	1169	VAL	LEU	engineered mutation	UNP P35837
C	1222	MET	LEU	engineered mutation	UNP P35837
D	992	GLY	-	expression tag	UNP P35837
D	993	ALA	-	expression tag	UNP P35837
D	994	LEU	-	expression tag	UNP P35837
D	995	VAL	-	expression tag	UNP P35837
D	996	PRO	-	expression tag	UNP P35837
D	997	ARG	-	expression tag	UNP P35837
D	998	GLY	-	expression tag	UNP P35837
D	999	SER	-	expression tag	UNP P35837
D	1000	HIS	-	expression tag	UNP P35837
D	1169	VAL	LEU	engineered mutation	UNP P35837
D	1222	MET	LEU	engineered mutation	UNP P35837
E	992	GLY	-	expression tag	UNP P35837
E	993	ALA	-	expression tag	UNP P35837
E	994	LEU	-	expression tag	UNP P35837
E	995	VAL	-	expression tag	UNP P35837
E	996	PRO	-	expression tag	UNP P35837
E	997	ARG	-	expression tag	UNP P35837
E	998	GLY	-	expression tag	UNP P35837
E	999	SER	-	expression tag	UNP P35837
E	1000	HIS	-	expression tag	UNP P35837
E	1169	VAL	LEU	engineered mutation	UNP P35837
E	1222	MET	LEU	engineered mutation	UNP P35837
F	992	GLY	-	expression tag	UNP P35837
F	993	ALA	-	expression tag	UNP P35837
F	994	LEU	-	expression tag	UNP P35837
F	995	VAL	-	expression tag	UNP P35837

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Chain	Residue	Modelled	Actual	Comment	Reference
F	996	PRO	-	expression tag	UNP P35837
F	997	ARG	-	expression tag	UNP P35837
F	998	GLY	-	expression tag	UNP P35837
F	999	SER	-	expression tag	UNP P35837
F	1000	HIS	-	expression tag	UNP P35837
F	1169	VAL	LEU	engineered mutation	UNP P35837
F	1222	MET	LEU	engineered mutation	UNP P35837

- Molecule 2 is XENON (three-letter code: XE) (formula: Xe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	6	Total Xe 6 6	0	0
2	C	1	Total Xe 1 1	0	0
2	D	6	Total Xe 6 6	0	0
2	F	1	Total Xe 1 1	0	0

- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Ca 1 1	0	0
3	D	1	Total Ca 1 1	0	0

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

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Cl 1 1	0	0
4	D	1	Total Cl 1 1	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	266	Total O 266 266	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	272	Total 272	O 272	0	0
5	C	277	Total 277	O 277	0	0
5	D	211	Total 211	O 211	0	0
5	E	275	Total 275	O 275	0	0
5	F	289	Total 289	O 289	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.
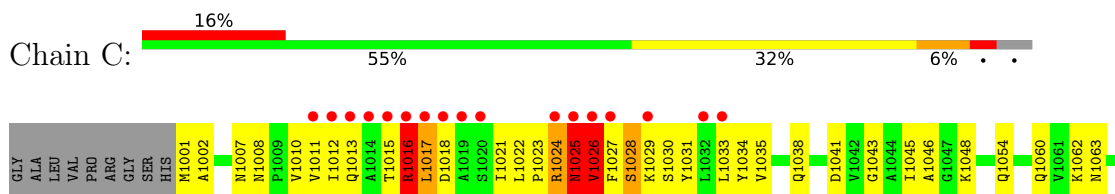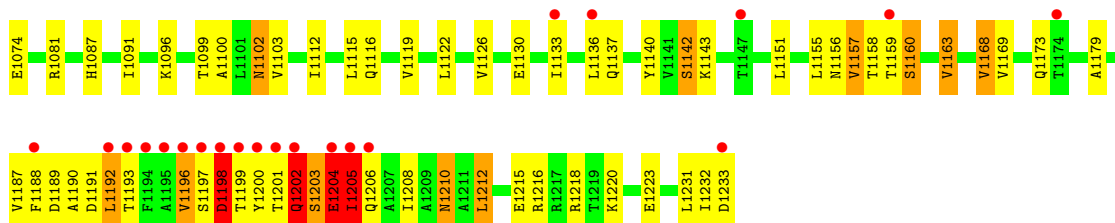
- Molecule 1: Tail needle protein gp26
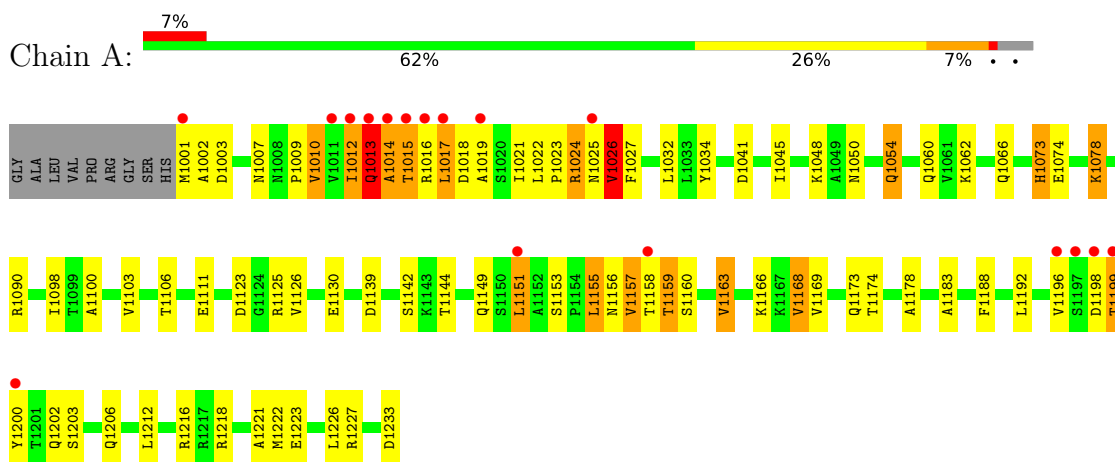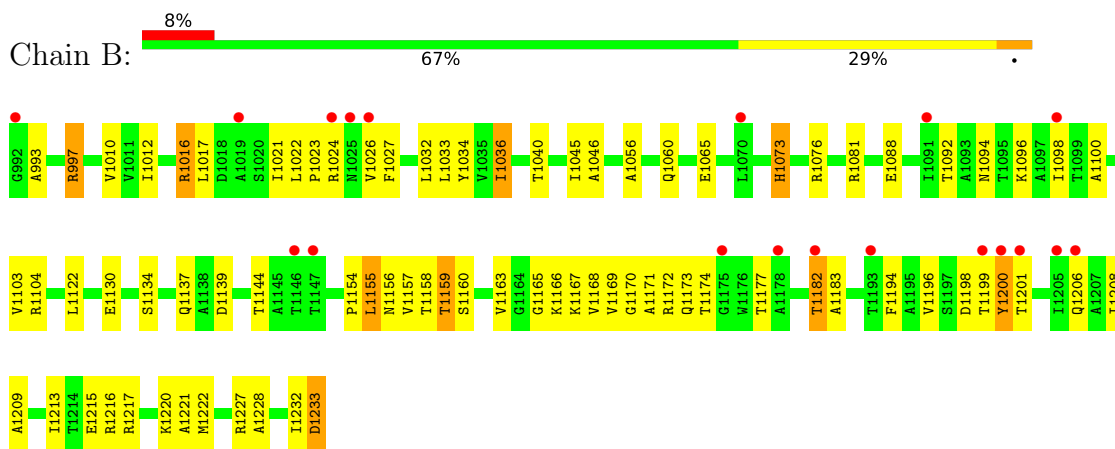
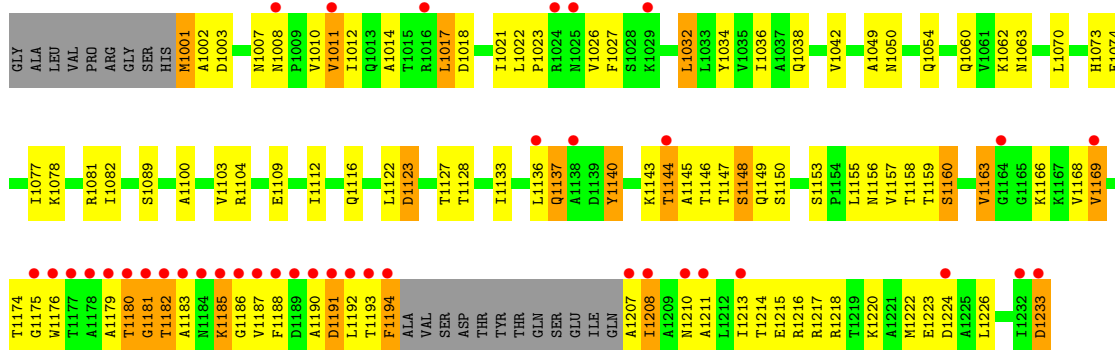- Molecule 1: Tail needle protein gp26

- Molecule 1: Tail needle protein gp26

• Molecule 1: Tail needle protein gp26
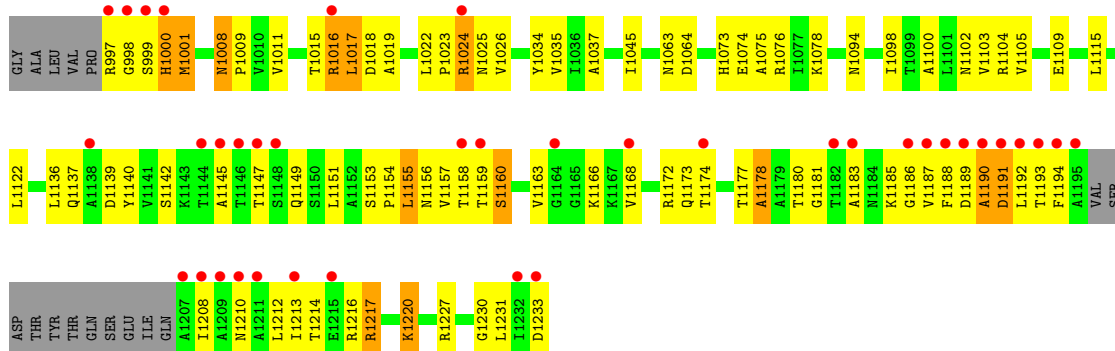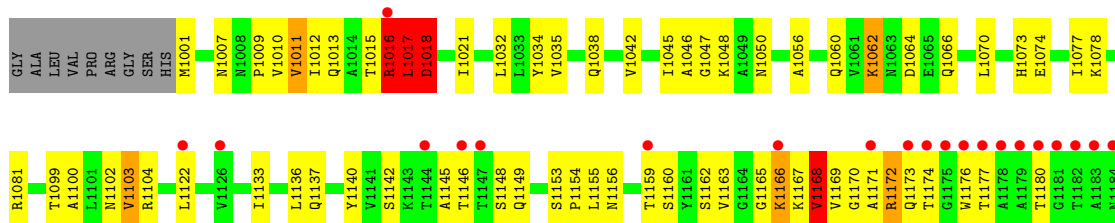
Chain D:

16%

50%   33%   8%   9%

• Molecule 1: Tail needle protein gp26

Chain E:

16%

57%   31%   5%   7%

• Molecule 1: Tail needle protein gp26

Chain F:

14%

54%   32%   9%
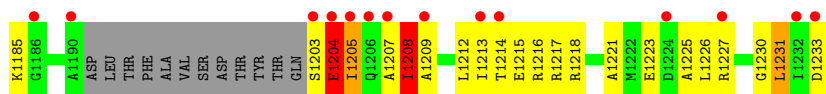
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	40.54Å 114.53Å 172.04Å 90.00° 91.01° 90.00°	Depositor
Resolution (Å)	20.00 – 1.95 14.99 – 1.95	Depositor EDS
% Data completeness (in resolution range)	92.5 (20.00-1.95) 91.5 (14.99-1.95)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.08	Depositor
$< I/\sigma(I) >$ [1]	2.17 (at 1.95Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.234 , 0.269 0.244 , 0.277	Depositor DCC
R_{free} test set	5233 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	21.8	Xtriage
Anisotropy	0.828	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 67.0	EDS
L-test for twinning [2]	$< \lvert L \rvert > = 0.51, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.028 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	11851	wwPDB-VP
Average B, all atoms (Å^2)	40.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.95% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< \lvert L \rvert >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	0.34	0/1755	0.57	0/2387
1	B	0.34	0/1819	0.61	0/2474
1	C	0.33	0/1752	0.69	2/2382 (0.1%)
1	D	0.43	2/1660 (0.1%)	0.62	1/2255 (0.0%)
1	E	0.31	0/1697	0.59	0/2304
1	F	0.32	0/1658	0.58	0/2250
All	All	0.35	2/10341 (0.0%)	0.61	3/14052 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	1169	VAL	CA-CB	8.12	1.71	1.54
1	D	1169	VAL	C-O	5.01	1.32	1.23

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	1205	ILE	N-CA-C	-7.39	91.05	111.00
1	C	1198	ASP	CB-CA-C	6.78	123.95	110.40
1	D	1180	THR	N-CA-C	5.60	126.12	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1738	0	1728	122	0
1	B	1800	0	1791	102	0
1	C	1735	0	1722	145	0
1	D	1645	0	1643	145	0
1	E	1681	0	1676	108	0
1	F	1644	0	1642	124	0
2	A	6	0	0	2	0
2	C	1	0	0	1	0
2	D	6	0	0	4	0
2	F	1	0	0	0	0
3	A	1	0	0	0	0
3	D	1	0	0	0	0
4	A	1	0	0	0	0
4	D	1	0	0	0	0
5	A	266	0	0	13	0
5	B	272	0	0	7	0
5	C	277	0	0	16	0
5	D	211	0	0	12	0
5	E	275	0	0	15	0
5	F	289	0	0	19	0
All	All	11851	0	10202	590	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 29.

All (590) 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:D:1193:THR:HG21	1:F:1216:ARG:CD	1.60	1.32
1:A:1199:THR:HB	5:A:1472:HOH:O	1.45	1.16
1:C:1024:ARG:CD	1:C:1024:ARG:H	1.64	1.07
1:D:1193:THR:CG2	1:F:1216:ARG:HD2	1.86	1.06
1:C:1024:ARG:H	1:C:1024:ARG:HD2	1.00	1.05
1:C:1024:ARG:HD2	1:C:1024:ARG:N	1.64	1.05
1:F:1174:THR:HA	1:F:1233:ASP:HB2	1.44	0.99
1:B:1158:THR:HG22	1:B:1159:THR:HG23	1.43	0.98
1:E:1174:THR:HA	1:E:1233:ASP:HB2	1.46	0.98
1:D:1207:ALA:HB1	1:D:1210:ASN:HD22	1.29	0.95
1:F:1010:VAL:H	1:F:1050:ASN:HD21	1.03	0.95
1:E:1024:ARG:HH11	1:E:1024:ARG:HB3	1.30	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1024:ARG:HD2	1:B:1024:ARG:O	1.67	0.94
1:D:1156:ASN:HD21	1:F:1165:GLY:H	1.15	0.94
1:A:1023:PRO:HG3	1:C:1027:PHE:HB3	1.50	0.91
1:A:1023:PRO:CG	1:C:1027:PHE:HB3	2.02	0.90
1:B:1177:THR:HG22	5:B:1463:HOH:O	1.73	0.89
1:D:1193:THR:HG21	1:F:1216:ARG:HD2	0.90	0.86
1:C:1196:VAL:HG12	1:C:1197:SER:H	1.39	0.86
1:C:1204:GLU:HB2	5:C:1701:HOH:O	1.74	0.86
1:A:1142:SER:H	1:A:1149:GLN:HE22	1.23	0.85
1:A:1013:GLN:OE1	1:A:1013:GLN:HA	1.76	0.85
1:C:1012:ILE:C	1:C:1013:GLN:HG2	1.97	0.84
1:D:1193:THR:CG2	1:F:1216:ARG:CD	2.51	0.84
1:E:1183:ALA:HB2	1:E:1220:LYS:HE3	1.60	0.84
1:F:1017:LEU:O	1:F:1018:ASP:HB3	1.77	0.84
1:D:1191:ASP:O	1:D:1193:THR:HG23	1.78	0.84
1:E:1181:GLY:O	1:E:1220:LYS:HE2	1.76	0.84
1:A:1007:ASN:HD21	1:A:1054:GLN:NE2	1.75	0.83
1:C:1203:SER:O	1:C:1205:ILE:HG22	1.77	0.83
1:A:1007:ASN:HD21	1:A:1054:GLN:HE22	1.22	0.83
1:F:1015:THR:HG22	1:F:1016:ARG:CD	2.08	0.83
1:A:1168:VAL:HG12	1:A:1169:VAL:HG23	1.60	0.82
1:E:1142:SER:H	1:E:1149:GLN:HE22	1.23	0.82
1:D:1194:PHE:HA	1:D:1208:ILE:HG22	1.60	0.82
1:F:1015:THR:CG2	1:F:1016:ARG:HE	1.94	0.81
1:F:1010:VAL:H	1:F:1050:ASN:ND2	1.79	0.81
1:C:1159:THR:O	1:C:1160:SER:HB3	1.78	0.81
1:A:1016:ARG:HG2	5:A:1288:HOH:O	1.80	0.81
1:F:1015:THR:CG2	1:F:1016:ARG:NE	2.44	0.81
1:A:1017:LEU:C	1:A:1017:LEU:HD23	2.01	0.80
1:D:1089:SER:HA	5:D:1403:HOH:O	1.81	0.80
1:D:1185:LYS:HG3	1:F:1176:TRP:HA	1.61	0.80
1:C:1008:ASN:HB3	5:C:1704:HOH:O	1.81	0.79
1:E:1139:ASP:OD2	1:F:1142:SER:HB2	1.81	0.79
1:C:1212:LEU:HD22	1:C:1216:ARG:HD2	1.65	0.79
1:C:1196:VAL:HG12	1:C:1197:SER:N	1.98	0.79
1:F:1015:THR:HG22	1:F:1016:ARG:HD2	1.65	0.78
1:D:1213:ILE:HD11	1:E:1194:PHE:CE1	2.18	0.78
5:B:1249:HOH:O	1:C:1196:VAL:HG11	1.83	0.78
1:E:1078:LYS:HD2	5:E:1656:HOH:O	1.84	0.78
1:D:1023:PRO:HB2	1:D:1026:VAL:HG22	1.65	0.78
1:C:1168:VAL:HG13	1:C:1169:VAL:HG23	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:997:ARG:HA	5:E:1628:HOH:O	1.85	0.76
1:A:1017:LEU:HD23	1:A:1017:LEU:O	1.86	0.76
1:D:1011:VAL:HG13	1:D:1011:VAL:O	1.86	0.76
1:E:1075:ALA:HA	5:E:1656:HOH:O	1.84	0.76
1:A:1169:VAL:HG11	1:C:1168:VAL:HG11	1.66	0.76
1:D:1179:ALA:HA	1:E:1188:PHE:HB3	1.68	0.75
1:D:1176:TRP:HB2	1:D:1233:ASP:C	2.07	0.75
1:E:1104:ARG:HH12	1:F:1102:ASN:ND2	1.85	0.75
1:C:1201:THR:O	1:C:1202:GLN:HB2	1.87	0.75
1:A:1007:ASN:ND2	1:A:1054:GLN:NE2	2.35	0.75
1:A:1174:THR:HA	1:A:1233:ASP:OD1	1.87	0.74
1:B:1134:SER:HA	1:B:1137:GLN:HE21	1.52	0.74
1:A:1034:TYR:CZ	1:B:1017:LEU:HG	2.23	0.74
1:B:1166:LYS:HE2	1:B:1166:LYS:HA	1.70	0.74
1:A:1157:VAL:HG13	1:A:1158:THR:O	1.88	0.74
1:C:1029:LYS:CG	1:C:1030:SER:H	2.01	0.74
1:F:1015:THR:HG22	1:F:1016:ARG:NE	2.02	0.74
1:C:1015:THR:HG21	5:D:1410:HOH:O	1.88	0.73
2:D:11:XE:XE	1:F:1136:LEU:HD22	2.67	0.73
1:D:1183:ALA:HB1	1:D:1217:ARG:O	1.89	0.73
1:E:1016:ARG:NH2	5:E:1715:HOH:O	2.20	0.72
1:A:1198:ASP:O	1:A:1199:THR:HG23	1.88	0.72
1:F:1142:SER:H	1:F:1149:GLN:HE22	1.38	0.72
1:A:1126:VAL:O	1:A:1130:GLU:HG3	1.88	0.72
1:D:1208:ILE:HD11	2:D:14:XE:XE	2.68	0.72
1:C:1025:ASN:HA	5:C:1720:HOH:O	1.90	0.72
1:F:1162:SER:HB3	1:F:1167:LYS:HA	1.71	0.72
1:B:1100:ALA:O	1:B:1103:VAL:HG22	1.88	0.72
1:B:1104:ARG:HH12	1:C:1102:ASN:ND2	1.86	0.71
1:D:1176:TRP:NE1	1:E:1185:LYS:HD3	2.05	0.71
1:D:1136:LEU:HD11	1:E:1137:GLN:HG3	1.73	0.71
1:A:1155:LEU:HD23	1:A:1156:ASN:H	1.56	0.71
1:D:1163:VAL:HG23	1:E:1159:THR:HA	1.73	0.70
1:D:1183:ALA:HB2	1:D:1220:LYS:HG3	1.73	0.70
1:B:1016:ARG:NE	1:B:1016:ARG:H	1.89	0.70
1:D:1137:GLN:HA	1:D:1140:TYR:CD1	2.26	0.70
1:F:1227:ARG:NH1	5:F:1496:HOH:O	2.23	0.70
5:B:1494:HOH:O	1:C:1208:ILE:HG12	1.90	0.70
1:D:1185:LYS:HA	1:D:1218:ARG:NH1	2.07	0.69
1:A:1017:LEU:HB2	1:C:1034:TYR:CE2	2.27	0.69
1:A:1073:HIS:HD2	5:C:1669:HOH:O	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1226:LEU:HD21	1:F:1226:LEU:HD21	1.74	0.69
1:F:1209:ALA:O	1:F:1213:ILE:HG13	1.92	0.69
1:A:1157:VAL:HG21	1:B:1155:LEU:HB2	1.73	0.69
5:D:1260:HOH:O	1:F:1172:ARG:HA	1.92	0.69
1:C:1192:LEU:O	1:C:1192:LEU:HD22	1.93	0.69
1:C:1206:GLN:O	1:C:1210:ASN:HB2	1.93	0.69
1:D:1179:ALA:CB	1:D:1220:LYS:HD3	2.23	0.68
1:F:1077:ILE:HD11	5:F:1505:HOH:O	1.92	0.68
1:F:1208:ILE:HD13	1:F:1208:ILE:O	1.93	0.68
1:B:1200:TYR:HE2	1:C:1197:SER:HG	1.40	0.68
1:D:1122:LEU:HD21	1:E:1122:LEU:HB3	1.75	0.68
1:B:1183:ALA:HB1	1:B:1221:ALA:HB2	1.75	0.68
1:B:1032:LEU:O	1:B:1036:ILE:HG22	1.93	0.68
1:E:1074:GLU:HG3	1:E:1078:LYS:HE2	1.74	0.68
1:B:1073:HIS:HD2	5:C:1669:HOH:O	1.75	0.68
1:C:1013:GLN:HB2	1:D:1127:THR:HG21	1.76	0.68
1:C:1015:THR:HG22	1:D:1128:THR:OG1	1.94	0.68
1:D:1217:ARG:HH21	1:E:1191:ASP:HA	1.58	0.68
1:E:1212:LEU:O	1:E:1216:ARG:HG3	1.93	0.68
1:B:1168:VAL:HG13	1:B:1169:VAL:HG23	1.76	0.68
1:D:1155:LEU:HD11	1:E:1151:LEU:HD13	1.76	0.68
1:A:1009:PRO:HD3	5:A:1431:HOH:O	1.93	0.67
1:D:1156:ASN:HD21	1:F:1165:GLY:N	1.89	0.67
1:A:1012:ILE:O	1:A:1014:ALA:N	2.27	0.67
1:D:1003:ASP:H	1:D:1060:GLN:NE2	1.93	0.67
1:E:1163:VAL:HG21	1:F:1171:ALA:HA	1.77	0.67
1:A:1206:GLN:HG2	1:B:1196:VAL:HG11	1.77	0.66
2:A:7:XE:XE	1:B:1208:ILE:HG21	2.73	0.66
1:B:1159:THR:O	1:B:1160:SER:HB3	1.95	0.66
1:A:1100:ALA:O	1:A:1103:VAL:HG22	1.96	0.66
1:C:1100:ALA:O	1:C:1103:VAL:HG22	1.96	0.66
1:D:1194:PHE:CA	1:D:1208:ILE:HG22	2.25	0.66
1:D:1002:ALA:HA	1:D:1060:GLN:HE21	1.60	0.66
5:D:1409:HOH:O	1:E:1001:MET:HE3	1.95	0.66
1:C:1192:LEU:O	1:C:1192:LEU:HD13	1.96	0.65
1:D:1063:ASN:ND2	1:F:1062:LYS:HG2	2.11	0.65
1:A:1168:VAL:HG11	1:B:1169:VAL:HG11	1.78	0.65
1:A:1202:GLN:O	1:A:1206:GLN:HG3	1.97	0.65
1:A:1153:SER:O	1:C:1157:VAL:HG22	1.97	0.65
1:A:1023:PRO:HG3	1:C:1027:PHE:CB	2.26	0.65
2:D:11:XE:XE	1:E:1136:LEU:HD22	2.75	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1125:ARG:HD2	1:B:1130:GLU:OE1	1.96	0.65
1:C:1029:LYS:HG3	1:C:1030:SER:H	1.61	0.65
1:A:1142:SER:N	1:A:1149:GLN:HE22	1.94	0.64
1:A:1178:ALA:HA	1:A:1227:ARG:NH2	2.13	0.64
1:F:1159:THR:O	1:F:1160:SER:HB3	1.98	0.64
1:D:1207:ALA:HB1	1:D:1210:ASN:ND2	2.08	0.63
1:A:1155:LEU:HB2	1:C:1157:VAL:HG21	1.79	0.63
1:B:1045:ILE:HD11	1:C:1012:ILE:HG21	1.80	0.63
1:B:1200:TYR:CE2	1:C:1197:SER:OG	2.47	0.63
1:B:1024:ARG:O	1:B:1024:ARG:CD	2.43	0.63
1:D:1011:VAL:O	1:D:1011:VAL:CG1	2.47	0.63
1:A:1010:VAL:HG22	1:A:1050:ASN:OD1	1.99	0.63
1:B:1227:ARG:HD3	1:B:1233:ASP:O	1.99	0.63
1:D:1003:ASP:H	1:D:1060:GLN:HE22	1.46	0.63
1:F:1172:ARG:HB2	1:F:1230:GLY:O	1.99	0.63
1:D:1073:HIS:HE1	1:E:1074:GLU:OE1	1.81	0.63
1:C:1001:MET:CE	1:C:1063:ASN:HD22	2.11	0.62
1:A:1023:PRO:HG2	1:C:1027:PHE:HB3	1.78	0.62
1:D:1185:LYS:CG	1:F:1176:TRP:HA	2.28	0.62
1:C:1012:ILE:C	1:C:1013:GLN:CG	2.67	0.62
1:D:1192:LEU:C	1:D:1193:THR:HG23	2.20	0.62
1:E:1024:ARG:HH11	1:E:1024:ARG:CB	2.09	0.62
1:D:1007:ASN:OD1	1:D:1054:GLN:HG3	2.00	0.62
1:B:1092:THR:O	1:B:1096:LYS:HG2	2.01	0.61
1:A:1074:GLU:O	1:A:1078:LYS:HG2	2.00	0.61
1:A:1090:ARG:NH2	1:B:1088:GLU:OE2	2.33	0.61
1:E:1018:ASP:CG	1:E:1019:ALA:H	2.03	0.61
1:E:1163:VAL:CG2	1:F:1171:ALA:HA	2.31	0.61
1:D:1163:VAL:HG13	1:D:1168:VAL:HG21	1.83	0.61
1:B:1183:ALA:HB2	1:B:1220:LYS:HG3	1.81	0.61
1:B:1200:TYR:CD1	1:C:1200:TYR:HB2	2.36	0.61
1:C:1199:THR:C	1:C:1201:THR:H	2.04	0.61
1:D:1012:ILE:HD11	1:F:1045:ILE:HD11	1.83	0.61
1:E:1159:THR:O	1:E:1160:SER:CB	2.48	0.61
1:D:1049:ALA:HB1	1:F:1048:LYS:HG3	1.82	0.61
1:A:1012:ILE:O	1:A:1012:ILE:HG12	2.00	0.61
1:A:1106:THR:HG22	1:E:998:GLY:HA2	1.82	0.61
1:A:1012:ILE:O	1:A:1012:ILE:CG1	2.47	0.60
1:C:1136:LEU:HD22	2:C:4:XE:XE	2.79	0.60
2:A:7:XE:XE	1:C:1208:ILE:HG21	2.78	0.60
1:E:1159:THR:O	1:E:1160:SER:HB2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1038:GLN:HA	1:C:1041:ASP:OD2	2.01	0.60
1:F:1205:ILE:O	1:F:1208:ILE:HG22	2.01	0.60
1:A:1048:LYS:HB2	1:B:1010:VAL:HG21	1.82	0.60
1:B:1209:ALA:O	1:B:1213:ILE:HG13	2.00	0.60
1:A:1012:ILE:HD12	1:A:1015:THR:OG1	2.01	0.60
1:D:1193:THR:HG22	1:F:1216:ARG:NH1	2.16	0.60
1:C:1023:PRO:HB2	1:C:1026:VAL:CG1	2.31	0.60
1:C:1029:LYS:CG	1:C:1030:SER:N	2.65	0.60
1:F:1073:HIS:HB3	5:F:1505:HOH:O	1.99	0.60
1:F:1133:ILE:O	1:F:1137:GLN:HG3	2.01	0.60
1:F:1168:VAL:HG13	1:F:1169:VAL:HG23	1.84	0.60
1:C:1007:ASN:OD1	1:C:1054:GLN:HG3	2.02	0.60
1:D:1123:ASP:OD2	1:F:1122:LEU:HD11	2.01	0.60
1:D:1183:ALA:HB2	1:D:1220:LYS:CG	2.31	0.60
1:E:1177:THR:O	1:E:1178:ALA:HB3	2.02	0.60
1:A:1142:SER:H	1:A:1149:GLN:NE2	1.97	0.59
1:F:1159:THR:O	1:F:1159:THR:HG22	2.02	0.59
1:F:1074:GLU:OE2	1:F:1078:LYS:HE3	2.02	0.59
1:B:1163:VAL:HA	1:C:1157:VAL:O	2.03	0.59
1:D:1100:ALA:O	1:D:1103:VAL:HG22	2.02	0.59
1:B:1182:THR:HG22	1:C:1191:ASP:OD2	2.02	0.59
1:D:1185:LYS:HG3	1:F:1176:TRP:CG	2.38	0.59
1:E:1154:PRO:HG2	1:F:1148:SER:HB2	1.85	0.59
1:F:1100:ALA:O	1:F:1103:VAL:HG13	2.01	0.59
1:F:1174:THR:HA	1:F:1233:ASP:CB	2.27	0.59
1:A:1169:VAL:HG11	1:C:1168:VAL:CG1	2.33	0.59
1:F:1213:ILE:O	1:F:1217:ARG:HG3	2.03	0.58
1:A:1013:GLN:O	1:A:1014:ALA:CB	2.50	0.58
1:A:1017:LEU:HB2	1:C:1034:TYR:CZ	2.38	0.58
1:B:1206:GLN:NE2	1:C:1196:VAL:HG21	2.19	0.58
1:A:1183:ALA:HB1	1:A:1221:ALA:HB2	1.86	0.58
1:D:1194:PHE:CD1	1:D:1194:PHE:N	2.58	0.58
1:C:1202:GLN:O	1:C:1203:SER:C	2.41	0.58
1:E:1001:MET:HB2	5:E:1654:HOH:O	2.04	0.58
1:C:1168:VAL:CG1	1:C:1169:VAL:HG23	2.33	0.58
1:F:1168:VAL:CG1	1:F:1169:VAL:HG23	2.34	0.58
5:D:1260:HOH:O	1:F:1231:LEU:HA	2.02	0.58
1:E:1000:HIS:CD2	5:E:1452:HOH:O	2.56	0.58
1:D:1213:ILE:O	1:D:1217:ARG:HG2	2.03	0.58
1:D:1018:ASP:O	1:D:1021:ILE:HG12	2.04	0.58
1:A:1168:VAL:HG11	1:B:1169:VAL:CG1	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1163:VAL:CG2	1:E:1159:THR:HA	2.34	0.57
1:D:1136:LEU:HD21	1:E:1137:GLN:HG2	1.86	0.57
1:D:1179:ALA:HB3	1:D:1220:LYS:HD3	1.85	0.57
1:B:1012:ILE:O	1:B:1012:ILE:HG13	2.03	0.57
1:C:1024:ARG:O	1:C:1025:ASN:ND2	2.37	0.57
1:D:1179:ALA:HB3	1:D:1220:LYS:CD	2.34	0.57
1:D:1190:ALA:O	1:F:1216:ARG:HD3	2.04	0.57
1:B:1155:LEU:HD21	1:C:1151:LEU:HD13	1.86	0.57
1:A:1012:ILE:C	1:A:1014:ALA:H	2.07	0.57
1:A:1158:THR:C	5:A:1462:HOH:O	2.43	0.57
1:B:1016:ARG:H	1:B:1016:ARG:HE	1.50	0.57
1:A:1139:ASP:OD1	1:B:1144:THR:HG22	2.05	0.57
1:A:1173:GLN:NE2	1:B:1228:ALA:HB3	2.20	0.57
1:D:1215:GLU:OE2	1:F:1216:ARG:HA	2.05	0.57
1:C:1023:PRO:CB	1:C:1026:VAL:HG11	2.35	0.56
1:D:1077:ILE:HD11	5:F:1505:HOH:O	2.05	0.56
1:F:1204:GLU:OE1	1:F:1204:GLU:N	2.39	0.56
1:B:1206:GLN:HE21	1:B:1206:GLN:HA	1.70	0.56
5:B:1446:HOH:O	1:C:1187:VAL:HG23	2.05	0.56
1:C:1023:PRO:HB3	1:C:1026:VAL:HG11	1.86	0.56
1:E:1210:ASN:O	1:E:1214:THR:HG23	2.05	0.56
5:A:1462:HOH:O	1:B:1154:PRO:HA	2.06	0.56
1:A:1158:THR:O	1:A:1160:SER:N	2.39	0.56
1:D:1157:VAL:HG12	1:D:1158:THR:N	2.20	0.56
1:F:1204:GLU:HG3	5:F:1447:HOH:O	2.05	0.56
1:A:1012:ILE:C	1:A:1014:ALA:N	2.60	0.55
1:C:1002:ALA:HA	1:C:1060:GLN:HE21	1.69	0.55
1:F:1204:GLU:HA	5:F:1447:HOH:O	2.05	0.55
1:B:1036:ILE:HD12	5:B:1349:HOH:O	2.05	0.55
1:A:1159:THR:HB	5:A:1462:HOH:O	2.05	0.55
1:A:1212:LEU:HD13	1:A:1216:ARG:HD3	1.87	0.55
1:A:1163:VAL:HG21	1:B:1171:ALA:HA	1.89	0.55
1:B:1104:ARG:HH12	1:C:1102:ASN:HD21	1.53	0.55
1:B:1139:ASP:OD2	1:C:1142:SER:HB2	2.07	0.55
1:B:1168:VAL:HG22	1:C:1231:LEU:HD23	1.87	0.55
1:E:1078:LYS:HE3	5:E:1680:HOH:O	2.07	0.55
1:F:1207:ALA:O	1:F:1208:ILE:HB	2.07	0.55
1:F:1203:SER:N	5:F:1272:HOH:O	2.39	0.55
1:B:1157:VAL:CG1	1:B:1158:THR:N	2.70	0.55
1:A:1018:ASP:O	1:A:1019:ALA:HB3	2.07	0.55
1:A:1027:PHE:CE2	1:B:1027:PHE:HZ	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1215:GLU:OE1	1:F:1216:ARG:HG2	2.06	0.55
1:E:1194:PHE:HD2	1:E:1208:ILE:HG21	1.71	0.55
5:A:1433:HOH:O	1:C:1062:LYS:HE3	2.07	0.54
1:C:1015:THR:O	1:C:1016:ARG:C	2.45	0.54
1:A:1155:LEU:HD23	1:A:1156:ASN:N	2.21	0.54
1:A:1198:ASP:O	1:A:1199:THR:CG2	2.55	0.54
1:D:1070:LEU:HD21	1:F:1070:LEU:HD13	1.89	0.54
1:A:1013:GLN:OE1	1:A:1013:GLN:CA	2.54	0.54
1:C:1143:LYS:HE3	5:C:1634:HOH:O	2.07	0.54
1:C:1203:SER:O	1:C:1204:GLU:C	2.45	0.54
1:A:1023:PRO:HB2	1:A:1026:VAL:CG1	2.37	0.54
1:A:1173:GLN:HE22	1:B:1228:ALA:CB	2.21	0.54
1:D:1008:ASN:HB2	5:D:1398:HOH:O	2.06	0.54
1:E:1192:LEU:HD22	1:E:1194:PHE:CE2	2.43	0.54
1:D:1155:LEU:HD12	1:E:1149:GLN:O	2.08	0.54
1:E:1155:LEU:HD23	1:E:1156:ASN:H	1.73	0.54
1:C:1202:GLN:HA	1:C:1202:GLN:NE2	2.23	0.53
1:D:1022:LEU:HD11	1:D:1036:ILE:HD11	1.90	0.53
1:E:1037:ALA:HB1	1:F:1013:GLN:HB2	1.90	0.53
1:B:1206:GLN:HE21	1:C:1196:VAL:HG21	1.71	0.53
1:C:1024:ARG:CD	1:C:1024:ARG:N	2.41	0.53
1:D:1208:ILE:HD11	1:F:1208:ILE:HD12	1.91	0.53
1:F:1217:ARG:HD2	5:F:1299:HOH:O	2.08	0.53
1:A:1003:ASP:H	1:A:1060:GLN:NE2	2.06	0.53
1:D:1185:LYS:HD3	1:D:1185:LYS:N	2.23	0.53
1:E:1073:HIS:HE1	1:F:1074:GLU:OE1	1.92	0.53
1:B:1024:ARG:HD2	1:B:1024:ARG:C	2.20	0.53
1:D:1222:MET:O	1:D:1226:LEU:HG	2.09	0.53
1:A:1169:VAL:CG1	1:C:1168:VAL:HG11	2.38	0.53
1:B:1076:ARG:HH22	1:C:1074:GLU:CD	2.13	0.53
1:C:1202:GLN:HA	1:C:1202:GLN:HE21	1.74	0.53
1:A:1048:LYS:HB2	1:B:1010:VAL:CG2	2.39	0.52
1:B:1217:ARG:HA	1:C:1190:ALA:HB1	1.91	0.52
1:C:1001:MET:HE1	1:C:1063:ASN:HD22	1.73	0.52
1:C:1029:LYS:HG3	1:C:1030:SER:N	2.23	0.52
1:C:1159:THR:O	1:C:1160:SER:CB	2.50	0.52
1:A:1198:ASP:O	1:A:1198:ASP:OD1	2.27	0.52
1:D:1112:ILE:O	1:D:1116:GLN:HG3	2.09	0.52
1:F:1214:THR:HG22	5:F:1299:HOH:O	2.08	0.52
1:A:1212:LEU:HD12	1:B:1194:PHE:CE1	2.45	0.52
1:C:1212:LEU:O	1:C:1216:ARG:HG2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1142:SER:H	1:E:1149:GLN:NE2	1.99	0.52
1:D:1217:ARG:NH2	1:E:1191:ASP:HA	2.24	0.52
1:B:1155:LEU:HD23	1:B:1156:ASN:N	2.24	0.52
1:E:1214:THR:HA	1:E:1217:ARG:HG3	1.92	0.52
1:A:1203:SER:HA	1:A:1206:GLN:OE1	2.09	0.52
1:D:1001:MET:SD	1:D:1001:MET:N	2.82	0.52
1:D:1185:LYS:CB	1:F:1176:TRP:CE3	2.93	0.52
1:E:1173:GLN:HG3	1:F:1225:ALA:HB1	1.92	0.52
1:C:1041:ASP:O	1:C:1045:ILE:HG13	2.09	0.52
1:F:1155:LEU:HD22	1:F:1156:ASN:H	1.74	0.52
1:F:1185:LYS:HG3	1:F:1221:ALA:HB1	1.92	0.52
1:B:1157:VAL:HG12	1:B:1158:THR:N	2.24	0.51
1:D:1179:ALA:O	1:D:1180:THR:OG1	2.21	0.51
1:D:1213:ILE:CD1	1:E:1194:PHE:CE1	2.93	0.51
1:D:1217:ARG:HA	1:D:1220:LYS:HB3	1.92	0.51
1:A:1017:LEU:C	1:A:1017:LEU:CD2	2.74	0.51
1:A:1023:PRO:HB2	1:A:1026:VAL:HG11	1.91	0.51
1:D:1010:VAL:HG12	1:D:1050:ASN:HD21	1.74	0.51
1:B:1056:ALA:O	1:B:1060:GLN:HG3	2.11	0.51
1:A:1200:TYR:HA	1:C:1200:TYR:CE2	2.46	0.51
1:E:1213:ILE:O	1:E:1217:ARG:HG2	2.10	0.51
1:F:1169:VAL:HG12	1:F:1170:GLY:N	2.26	0.51
1:D:1159:THR:O	1:D:1160:SER:HB3	2.10	0.51
1:F:1167:LYS:HG2	1:F:1168:VAL:N	2.26	0.51
1:A:1157:VAL:CG1	1:A:1158:THR:O	2.58	0.50
1:A:1166:LYS:HE2	1:B:1172:ARG:HB3	1.93	0.50
1:E:1154:PRO:HG2	1:F:1148:SER:CB	2.41	0.50
1:E:1157:VAL:CG1	1:E:1158:THR:N	2.75	0.50
1:C:1038:GLN:HG3	5:C:1474:HOH:O	2.10	0.50
1:C:1199:THR:O	1:C:1200:TYR:HB3	2.11	0.50
1:E:1076:ARG:NH2	1:F:1074:GLU:OE1	2.40	0.50
1:F:1159:THR:O	1:F:1159:THR:CG2	2.60	0.50
1:D:1213:ILE:CD1	1:E:1194:PHE:HE1	2.24	0.50
1:B:1081:ARG:O	1:B:1081:ARG:HD3	2.11	0.50
1:E:1104:ARG:HH12	1:F:1102:ASN:HD21	1.56	0.50
1:E:1189:ASP:OD2	1:E:1192:LEU:HD12	2.11	0.50
1:D:1143:LYS:HE3	1:F:1140:TYR:O	2.12	0.50
1:A:1045:ILE:HG22	1:C:1045:ILE:HG21	1.94	0.50
1:A:1198:ASP:O	1:A:1199:THR:OG1	2.29	0.50
1:C:1112:ILE:O	1:C:1116:GLN:HG3	2.12	0.50
1:D:1073:HIS:HD2	5:F:1234:HOH:O	1.95	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1001:MET:HB3	1:F:1064:ASP:OD1	2.12	0.50
1:C:1023:PRO:CB	1:C:1026:VAL:CG1	2.90	0.49
1:A:1198:ASP:O	1:A:1199:THR:CB	2.60	0.49
1:E:1189:ASP:OD1	1:E:1189:ASP:N	2.45	0.49
1:D:1014:ALA:HB3	5:F:1303:HOH:O	2.12	0.49
1:D:1183:ALA:CB	1:D:1217:ARG:O	2.59	0.49
1:E:1153:SER:HB2	1:F:1146:THR:O	2.12	0.49
1:B:1155:LEU:HD22	1:B:1157:VAL:HG23	1.93	0.49
1:A:1023:PRO:HG3	5:C:1522:HOH:O	2.11	0.49
1:D:1185:LYS:HG3	1:F:1176:TRP:CD2	2.47	0.49
1:A:1012:ILE:CD1	1:A:1015:THR:OG1	2.60	0.49
1:D:1026:VAL:HG23	1:D:1027:PHE:CD2	2.48	0.49
1:D:1176:TRP:CE2	1:E:1185:LYS:HD3	2.46	0.49
1:B:1122:LEU:HD21	1:C:1122:LEU:HB3	1.94	0.49
1:D:1179:ALA:HB1	1:D:1220:LYS:HD3	1.92	0.49
1:E:1186:GLY:HA3	5:E:1614:HOH:O	2.13	0.49
1:C:1208:ILE:N	1:C:1208:ILE:HD12	2.27	0.49
5:A:1462:HOH:O	1:B:1154:PRO:HG3	2.12	0.49
1:C:1197:SER:N	5:C:1678:HOH:O	2.44	0.49
1:A:1157:VAL:HG13	1:A:1158:THR:N	2.27	0.49
1:A:1157:VAL:O	1:C:1163:VAL:HA	2.13	0.49
1:A:1045:ILE:HD11	1:B:1046:ALA:HB2	1.95	0.48
1:B:1103:VAL:HG23	1:B:1104:ARG:N	2.28	0.48
1:E:1142:SER:N	1:E:1149:GLN:HE22	2.00	0.48
1:B:1215:GLU:HG3	1:C:1215:GLU:OE2	2.13	0.48
1:C:1016:ARG:O	1:C:1016:ARG:HG3	2.13	0.48
1:E:1018:ASP:CG	1:E:1019:ALA:N	2.66	0.48
1:B:1167:LYS:HZ1	1:B:1170:GLY:HA3	1.78	0.48
1:E:1210:ASN:ND2	5:E:1651:HOH:O	2.46	0.48
1:C:1012:ILE:O	1:C:1013:GLN:CG	2.61	0.48
1:C:1205:ILE:HG12	1:C:1205:ILE:O	2.12	0.48
1:E:1000:HIS:HD2	5:E:1452:HOH:O	1.94	0.48
1:F:1001:MET:SD	5:F:1467:HOH:O	2.60	0.48
1:A:1027:PHE:CE2	1:B:1027:PHE:CZ	3.02	0.48
1:C:1087:HIS:O	1:C:1091:ILE:HG13	2.13	0.48
1:D:1023:PRO:HB2	1:D:1026:VAL:CG2	2.40	0.48
1:D:1163:VAL:HA	1:E:1157:VAL:O	2.13	0.48
2:D:14:XE:XE	5:E:1595:HOH:O	3.10	0.48
1:F:1204:GLU:CD	1:F:1204:GLU:H	2.17	0.48
1:C:1188:PHE:CD1	1:C:1218:ARG:HD2	2.49	0.48
1:D:1186:GLY:HA2	1:F:1177:THR:HB	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1022:LEU:O	1:C:1024:ARG:NH1	2.47	0.48
1:D:1214:THR:OG1	1:F:1216:ARG:NH2	2.46	0.48
1:E:1173:GLN:O	1:E:1233:ASP:N	2.47	0.48
1:F:1099:THR:HG21	5:F:1414:HOH:O	2.14	0.48
1:F:1162:SER:HB2	1:F:1166:LYS:O	2.13	0.48
1:C:1232:ILE:O	1:C:1233:ASP:C	2.53	0.47
1:D:1181:GLY:O	1:D:1182:THR:HB	2.14	0.47
1:E:999:SER:O	1:E:1000:HIS:C	2.51	0.47
1:D:1032:LEU:O	1:D:1036:ILE:HG12	2.14	0.47
1:B:1017:LEU:CD2	1:B:1021:ILE:HD11	2.45	0.47
1:C:1015:THR:O	1:C:1016:ARG:O	2.31	0.47
1:E:1100:ALA:O	1:E:1103:VAL:HG22	2.14	0.47
1:A:1206:GLN:HG2	1:B:1196:VAL:CG1	2.43	0.47
1:E:1155:LEU:HD23	1:E:1156:ASN:N	2.30	0.47
1:F:1159:THR:O	1:F:1160:SER:CB	2.63	0.47
1:A:1173:GLN:HE22	1:B:1228:ALA:HB1	1.78	0.47
5:A:1462:HOH:O	1:B:1154:PRO:CA	2.60	0.47
1:D:1179:ALA:HB3	1:D:1220:LYS:HE2	1.96	0.47
1:D:1215:GLU:CD	1:F:1215:GLU:HG3	2.35	0.47
1:B:1206:GLN:NE2	1:B:1206:GLN:HA	2.30	0.47
1:C:1200:TYR:O	1:C:1200:TYR:CD1	2.67	0.47
1:E:997:ARG:NH2	5:E:1688:HOH:O	2.48	0.47
1:E:1019:ALA:HA	1:E:1022:LEU:HD12	1.96	0.47
1:F:1012:ILE:HD11	5:F:1400:HOH:O	2.15	0.47
1:F:1212:LEU:O	1:F:1216:ARG:HG3	2.14	0.47
5:D:1260:HOH:O	1:E:1168:VAL:HG13	2.14	0.47
1:E:1008:ASN:HB2	5:E:1721:HOH:O	2.14	0.47
1:A:1041:ASP:OD1	1:B:1012:ILE:HA	2.15	0.47
1:E:1157:VAL:HG12	1:E:1158:THR:N	2.29	0.47
1:A:1022:LEU:HD23	1:C:1031:TYR:CD1	2.49	0.46
1:C:1010:VAL:O	1:C:1010:VAL:CG1	2.63	0.46
1:E:1153:SER:HB3	1:F:1145:ALA:O	2.15	0.46
1:C:1115:LEU:O	1:C:1119:VAL:HG23	2.15	0.46
1:A:1166:LYS:CE	1:B:1172:ARG:HB3	2.46	0.46
1:D:1233:ASP:C	1:D:1233:ASP:OD1	2.54	0.46
1:E:1227:ARG:HD3	1:E:1233:ASP:O	2.16	0.46
1:A:1024:ARG:O	1:A:1025:ASN:HB2	2.16	0.46
5:D:1241:HOH:O	1:F:1180:THR:HG23	2.15	0.46
1:B:1045:ILE:CD1	1:C:1046:ALA:HB2	2.46	0.46
1:C:1012:ILE:O	1:C:1013:GLN:C	2.52	0.46
1:C:1205:ILE:O	1:C:1205:ILE:CG1	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1151:LEU:O	1:C:1158:THR:HG23	2.16	0.46
1:B:1167:LYS:NZ	1:B:1170:GLY:HA3	2.30	0.46
1:B:1094:ASN:O	1:B:1098:ILE:HG12	2.15	0.46
1:D:1074:GLU:OE2	1:D:1078:LYS:HE3	2.16	0.46
1:D:1153:SER:HB3	1:E:1145:ALA:O	2.15	0.46
1:E:1163:VAL:HG23	1:E:1163:VAL:O	2.15	0.46
1:B:1033:LEU:O	1:B:1036:ILE:HG23	2.16	0.46
1:C:1010:VAL:O	1:C:1010:VAL:HG13	2.15	0.46
1:D:1192:LEU:C	1:D:1193:THR:CG2	2.85	0.45
1:E:1105:VAL:O	1:E:1109:GLU:HG3	2.15	0.45
1:C:1099:THR:HB	5:C:1665:HOH:O	2.15	0.45
1:B:1200:TYR:CG	1:C:1200:TYR:HB2	2.50	0.45
1:D:1103:VAL:HG23	1:D:1104:ARG:N	2.31	0.45
1:E:1034:TYR:CZ	1:F:1017:LEU:HG	2.52	0.45
1:A:1021:ILE:HB	1:C:1030:SER:HB2	1.98	0.45
1:D:1163:VAL:HG13	1:D:1168:VAL:CG2	2.45	0.45
1:A:1045:ILE:CD1	1:B:1046:ALA:HB2	2.46	0.45
1:E:1000:HIS:NE2	1:E:1064:ASP:OD1	2.49	0.45
1:E:1172:ARG:HG3	1:E:1230:GLY:O	2.17	0.45
1:A:1062:LYS:O	1:A:1066:GLN:HG3	2.15	0.45
1:A:1158:THR:HG22	1:A:1159:THR:N	2.32	0.45
1:B:1200:TYR:HE2	1:C:1197:SER:OG	1.93	0.45
1:C:1096:LYS:NZ	5:C:1694:HOH:O	2.48	0.45
1:D:1034:TYR:CE2	1:E:1017:LEU:HG	2.52	0.45
1:A:1218:ARG:O	1:A:1222:MET:HG3	2.17	0.45
1:D:1017:LEU:HD13	1:D:1036:ILE:HD13	1.97	0.45
1:D:1144:THR:HA	5:D:1379:HOH:O	2.16	0.45
1:D:1188:PHE:CE2	1:D:1190:ALA:HA	2.51	0.45
1:F:1007:ASN:O	1:F:1009:PRO:HD3	2.17	0.45
1:B:1076:ARG:NH2	1:C:1074:GLU:OE1	2.50	0.45
1:D:1002:ALA:HA	1:D:1060:GLN:NE2	2.28	0.45
1:E:1208:ILE:C	1:E:1210:ASN:N	2.69	0.45
1:F:1227:ARG:HD3	5:F:1440:HOH:O	2.17	0.45
1:A:1226:LEU:HD22	1:B:1222:MET:HE2	1.99	0.45
1:D:1215:GLU:OE2	1:F:1215:GLU:HG3	2.17	0.45
1:B:1040:THR:HA	5:B:1482:HOH:O	2.17	0.45
1:D:1109:GLU:OE1	1:F:1104:ARG:HD2	2.17	0.45
1:D:1150:SER:HA	1:F:1156:ASN:O	2.17	0.45
1:D:1214:THR:HA	1:D:1217:ARG:HD2	1.98	0.45
1:A:1222:MET:HE1	1:C:1223:GLU:HA	1.99	0.44
1:B:1073:HIS:HE1	1:C:1074:GLU:OE1	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1081:ARG:O	1:D:1081:ARG:HD3	2.17	0.44
1:A:1155:LEU:CD2	1:A:1156:ASN:N	2.80	0.44
1:A:1188:PHE:CD1	1:A:1218:ARG:HD2	2.52	0.44
1:C:1126:VAL:O	1:C:1130:GLU:HG3	2.18	0.44
1:D:1176:TRP:CD1	1:E:1185:LYS:HD3	2.51	0.44
1:E:1155:LEU:CD2	1:E:1156:ASN:N	2.80	0.44
1:E:1208:ILE:C	1:E:1208:ILE:HD12	2.38	0.44
1:F:1205:ILE:O	1:F:1205:ILE:HG13	2.16	0.44
1:A:1212:LEU:CD1	1:A:1216:ARG:HD3	2.47	0.44
1:B:1165:GLY:H	1:C:1156:ASN:HD21	1.66	0.44
1:F:1001:MET:HA	5:F:1421:HOH:O	2.18	0.44
1:F:1047:GLY:HA2	5:F:1283:HOH:O	2.17	0.44
1:C:1025:ASN:ND2	1:C:1025:ASN:O	2.42	0.44
1:D:1159:THR:O	1:D:1160:SER:CB	2.64	0.44
1:C:1133:ILE:O	1:C:1137:GLN:HG3	2.17	0.44
1:C:1197:SER:OG	1:C:1198:ASP:N	2.47	0.44
1:D:1017:LEU:HG	1:F:1034:TYR:CZ	2.52	0.44
1:E:1025:ASN:O	1:E:1025:ASN:CG	2.55	0.44
1:B:1045:ILE:HD13	1:C:1046:ALA:HB2	2.00	0.44
5:D:1288:HOH:O	1:F:1154:PRO:HD3	2.17	0.44
1:F:1215:GLU:O	1:F:1218:ARG:HB3	2.18	0.44
1:D:1157:VAL:HG12	1:D:1158:THR:H	1.81	0.44
1:D:1185:LYS:HB3	1:F:1176:TRP:CE3	2.52	0.44
1:A:1223:GLU:OE1	1:A:1227:ARG:NH2	2.46	0.44
1:D:1185:LYS:HB3	1:F:1176:TRP:CZ3	2.53	0.44
1:D:1213:ILE:HD13	1:D:1216:ARG:HD3	2.00	0.44
1:B:1173:GLN:O	1:B:1232:ILE:HA	2.18	0.43
1:B:1199:THR:O	1:B:1200:TYR:C	2.57	0.43
1:D:1168:VAL:CG1	1:E:1231:LEU:HD23	2.48	0.43
1:A:1002:ALA:HA	1:A:1060:GLN:HE21	1.83	0.43
1:B:1200:TYR:CD1	1:C:1200:TYR:HD2	2.36	0.43
1:E:1180:THR:HG22	1:E:1181:GLY:N	2.32	0.43
1:B:1173:GLN:HG3	5:B:1334:HOH:O	2.17	0.43
1:E:1045:ILE:CD1	1:F:1046:ALA:HB2	2.48	0.43
1:E:1045:ILE:HD11	1:F:1046:ALA:HB2	2.00	0.43
1:A:1026:VAL:HG22	1:A:1027:PHE:CD2	2.53	0.43
1:B:997:ARG:O	1:B:997:ARG:HG3	2.17	0.43
1:A:1016:ARG:HA	1:A:1016:ARG:HD3	1.71	0.43
1:D:1193:THR:HB	1:D:1211:ALA:CB	2.49	0.43
1:F:1017:LEU:HD11	1:F:1035:VAL:HG12	1.99	0.43
1:A:1001:MET:N	5:A:1424:HOH:O	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1015:THR:O	1:A:1016:ARG:HB2	2.19	0.43
1:A:1163:VAL:CG2	1:B:1171:ALA:HA	2.48	0.43
1:D:1174:THR:HG22	1:D:1175:GLY:N	2.33	0.43
1:C:1013:GLN:HB3	5:C:1675:HOH:O	2.18	0.43
1:C:1081:ARG:O	1:C:1081:ARG:HD3	2.18	0.43
1:C:1143:LYS:NZ	5:C:1637:HOH:O	2.51	0.43
1:C:1233:ASP:CG	1:C:1233:ASP:O	2.56	0.43
1:C:1017:LEU:CD1	1:C:1035:VAL:HG13	2.48	0.43
1:D:1145:ALA:O	1:F:1153:SER:HB3	2.19	0.43
1:D:1217:ARG:O	1:D:1220:LYS:HB3	2.17	0.43
1:C:1199:THR:C	1:C:1201:THR:N	2.71	0.43
1:C:1200:TYR:CD1	1:C:1200:TYR:C	2.92	0.43
1:D:1082:ILE:HG12	5:D:1375:HOH:O	2.19	0.43
1:D:1146:THR:O	1:F:1153:SER:HB2	2.18	0.43
1:F:1015:THR:HG21	1:F:1016:ARG:NE	2.32	0.43
1:F:1169:VAL:CG1	1:F:1170:GLY:N	2.82	0.43
1:A:1015:THR:HB	1:A:1016:ARG:H	1.35	0.42
1:D:1157:VAL:O	1:F:1163:VAL:HA	2.19	0.42
1:E:997:ARG:HG3	1:E:999:SER:HB2	2.01	0.42
1:A:1098:ILE:HG12	1:B:1098:ILE:CD1	2.48	0.42
1:C:1196:VAL:CG1	1:C:1197:SER:N	2.71	0.42
1:D:1179:ALA:HB3	1:D:1220:LYS:CE	2.47	0.42
1:E:1073:HIS:HD2	5:F:1234:HOH:O	2.01	0.42
1:E:1094:ASN:O	1:E:1098:ILE:HG13	2.19	0.42
1:A:1168:VAL:CG1	1:A:1169:VAL:HG23	2.40	0.42
1:D:1183:ALA:HA	1:D:1217:ARG:HB2	2.00	0.42
5:A:1249:HOH:O	1:E:1000:HIS:HB2	2.19	0.42
1:B:1216:ARG:CZ	1:C:1192:LEU:HD11	2.49	0.42
1:D:1194:PHE:HB3	5:D:1417:HOH:O	2.18	0.42
1:F:1038:GLN:O	1:F:1042:VAL:HG23	2.19	0.42
1:F:1081:ARG:O	1:F:1081:ARG:HD3	2.19	0.42
1:C:1029:LYS:HG2	1:C:1030:SER:H	1.82	0.42
1:F:1017:LEU:HD23	1:F:1021:ILE:HD11	2.01	0.42
1:A:1200:TYR:HD1	1:C:1200:TYR:CD2	2.37	0.42
5:A:1255:HOH:O	1:E:998:GLY:HA3	2.19	0.42
1:D:1104:ARG:NH1	1:E:1102:ASN:OD1	2.51	0.42
1:E:1189:ASP:O	1:E:1190:ALA:C	2.57	0.42
1:E:1190:ALA:O	1:E:1191:ASP:CB	2.67	0.42
1:A:1013:GLN:O	1:A:1014:ALA:HB3	2.20	0.42
1:F:1056:ALA:O	1:F:1060:GLN:HG3	2.19	0.42
1:A:1010:VAL:HG13	1:C:1048:LYS:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1222:MET:CE	1:C:1223:GLU:HA	2.50	0.42
1:D:1191:ASP:HB3	1:F:1217:ARG:HE	1.85	0.42
1:A:1073:HIS:CD2	5:C:1669:HOH:O	2.60	0.41
1:D:1017:LEU:HD23	1:D:1021:ILE:HD11	2.01	0.41
1:A:1218:ARG:HG3	1:A:1218:ARG:HH11	1.84	0.41
1:F:1066:GLN:O	1:F:1070:LEU:HB2	2.19	0.41
1:C:1013:GLN:CB	1:D:1127:THR:HG21	2.48	0.41
1:C:1017:LEU:HD23	1:C:1021:ILE:HD11	2.02	0.41
1:B:1027:PHE:HB2	1:B:1032:LEU:HD13	2.02	0.41
1:C:1011:VAL:HA	5:C:1516:HOH:O	2.21	0.41
1:D:1157:VAL:HG22	1:E:1151:LEU:HD22	2.01	0.41
1:C:1023:PRO:HD2	1:C:1027:PHE:CZ	2.55	0.41
1:D:1063:ASN:CG	1:F:1062:LYS:HG2	2.40	0.41
1:E:1213:ILE:O	1:E:1217:ARG:CG	2.68	0.41
1:C:1028:SER:HB2	1:C:1029:LYS:H	1.66	0.41
1:D:1038:GLN:O	1:D:1042:VAL:HG23	2.21	0.41
1:C:1173:GLN:HB3	5:C:1520:HOH:O	2.20	0.41
1:D:1133:ILE:O	1:D:1136:LEU:N	2.54	0.41
1:E:1008:ASN:HD22	1:E:1009:PRO:HD2	1.84	0.41
1:E:1023:PRO:HB2	1:E:1026:VAL:HG22	2.03	0.41
1:E:1115:LEU:HD23	5:E:1559:HOH:O	2.20	0.41
1:F:1174:THR:HG23	5:F:1259:HOH:O	2.20	0.41
1:F:1176:TRP:CE3	1:F:1223:GLU:OE1	2.74	0.41
1:A:1196:VAL:HG23	1:A:1196:VAL:O	2.21	0.41
1:B:1022:LEU:HA	1:B:1023:PRO:HD3	1.85	0.41
1:C:1012:ILE:CD1	1:C:1043:GLY:HA2	2.51	0.41
1:A:1024:ARG:NH2	5:A:1450:HOH:O	2.53	0.41
1:B:1034:TYR:CD1	1:B:1034:TYR:C	2.95	0.41
1:D:1027:PHE:HB2	1:D:1032:LEU:CD1	2.51	0.41
1:D:1156:ASN:ND2	1:F:1165:GLY:H	1.98	0.41
1:E:1174:THR:HG22	5:E:1490:HOH:O	2.20	0.41
1:B:1159:THR:O	1:B:1160:SER:CB	2.62	0.40
1:C:1179:ALA:O	1:C:1220:LYS:HE2	2.21	0.40
1:D:1183:ALA:HB2	1:D:1220:LYS:HB3	2.03	0.40
1:D:1062:LYS:HG2	1:E:1063:ASN:CG	2.42	0.40
1:D:1185:LYS:HG3	1:F:1176:TRP:CA	2.42	0.40
1:A:1026:VAL:HG21	1:C:1026:VAL:CG2	2.50	0.40
1:D:1147:THR:O	1:D:1148:SER:O	2.39	0.40
1:D:1157:VAL:CG1	1:D:1158:THR:N	2.85	0.40
1:D:1176:TRP:HB2	1:D:1233:ASP:O	2.21	0.40
1:B:1174:THR:HB	1:B:1233:ASP:OD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1017:LEU:O	1:A:1017:LEU:CD2	2.65	0.40
1:B:1166:LYS:HA	1:B:1166:LYS:CE	2.46	0.40
1:C:1023:PRO:HA	1:C:1024:ARG:HH11	1.87	0.40
1:F:1011:VAL:O	1:F:1011:VAL:HG22	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	231/242 (96%)	219 (95%)	7 (3%)	5 (2%)	6	1
1	B	240/242 (99%)	231 (96%)	5 (2%)	4 (2%)	9	2
1	C	231/242 (96%)	206 (89%)	13 (6%)	12 (5%)	2	0
1	D	217/242 (90%)	197 (91%)	14 (6%)	6 (3%)	5	1
1	E	222/242 (92%)	208 (94%)	9 (4%)	5 (2%)	6	1
1	F	217/242 (90%)	205 (94%)	6 (3%)	6 (3%)	5	1
All	All	1358/1452 (94%)	1266 (93%)	54 (4%)	38 (3%)	5	1

All (38) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1014	ALA
1	A	1159	THR
1	A	1199	THR
1	B	1200	TYR
1	C	1016	ARG
1	C	1196	VAL
1	C	1198	ASP
1	C	1203	SER

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Mol	Chain	Res	Type
1	C	1204	GLU
1	D	1137	GLN
1	D	1148	SER
1	D	1182	THR
1	D	1191	ASP
1	E	1160	SER
1	F	1016	ARG
1	F	1208	ILE
1	A	1013	GLN
1	B	1159	THR
1	C	1028	SER
1	C	1202	GLN
1	F	1204	GLU
1	B	1201	THR
1	C	1160	SER
1	C	1189	ASP
1	B	993	ALA
1	C	1025	ASN
1	C	1026	VAL
1	C	1193	THR
1	D	1187	VAL
1	E	1000	HIS
1	F	1017	LEU
1	E	1178	ALA
1	E	1190	ALA
1	F	1018	ASP
1	D	1181	GLY
1	E	1191	ASP
1	A	1026	VAL
1	F	1168	VAL

5.3.2   Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	184/190 (97%)	164 (89%)	20 (11%)	6	1

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	190/190 (100%)	180 (95%)	10 (5%)	22	10
1	C	183/190 (96%)	163 (89%)	20 (11%)	6	1
1	D	173/190 (91%)	155 (90%)	18 (10%)	7	1
1	E	176/190 (93%)	160 (91%)	16 (9%)	9	2
1	F	173/190 (91%)	158 (91%)	15 (9%)	10	2
All	All	1079/1140 (95%)	980 (91%)	99 (9%)	9	2

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1010	VAL
1	A	1012	ILE
1	A	1013	GLN
1	A	1015	THR
1	A	1017	LEU
1	A	1024	ARG
1	A	1026	VAL
1	A	1032	LEU
1	A	1054	GLN
1	A	1073	HIS
1	A	1078	LYS
1	A	1111	GLU
1	A	1123	ASP
1	A	1144	THR
1	A	1151	LEU
1	A	1155	LEU
1	A	1157	VAL
1	A	1163	VAL
1	A	1168	VAL
1	A	1192	LEU
1	B	997	ARG
1	B	1016	ARG
1	B	1026	VAL
1	B	1036	ILE
1	B	1065	GLU
1	B	1073	HIS
1	B	1155	LEU
1	B	1182	THR
1	B	1198	ASP
1	B	1233	ASP

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Mol	Chain	Res	Type
1	C	1016	ARG
1	C	1017	LEU
1	C	1018	ASP
1	C	1024	ARG
1	C	1025	ASN
1	C	1026	VAL
1	C	1033	LEU
1	C	1102	ASN
1	C	1140	TYR
1	C	1142	SER
1	C	1155	LEU
1	C	1157	VAL
1	C	1163	VAL
1	C	1168	VAL
1	C	1192	LEU
1	C	1202	GLN
1	C	1204	GLU
1	C	1205	ILE
1	C	1210	ASN
1	C	1212	LEU
1	D	1001	MET
1	D	1011	VAL
1	D	1017	LEU
1	D	1032	LEU
1	D	1123	ASP
1	D	1140	TYR
1	D	1144	THR
1	D	1149	GLN
1	D	1160	SER
1	D	1163	VAL
1	D	1166	LYS
1	D	1169	VAL
1	D	1185	LYS
1	D	1194	PHE
1	D	1208	ILE
1	D	1223	GLU
1	D	1224	ASP
1	D	1233	ASP
1	E	1001	MET
1	E	1008	ASN
1	E	1011	VAL
1	E	1015	THR

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Mol	Chain	Res	Type
1	E	1016	ARG
1	E	1017	LEU
1	E	1024	ARG
1	E	1035	VAL
1	E	1140	TYR
1	E	1147	THR
1	E	1155	LEU
1	E	1166	LYS
1	E	1187	VAL
1	E	1193	THR
1	E	1217	ARG
1	E	1220	LYS
1	F	1011	VAL
1	F	1016	ARG
1	F	1017	LEU
1	F	1018	ASP
1	F	1032	LEU
1	F	1062	LYS
1	F	1103	VAL
1	F	1166	LYS
1	F	1168	VAL
1	F	1172	ARG
1	F	1173	GLN
1	F	1204	GLU
1	F	1205	ILE
1	F	1208	ILE
1	F	1231	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (51) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1008	ASN
1	A	1038	GLN
1	A	1054	GLN
1	A	1060	GLN
1	A	1073	HIS
1	A	1116	GLN
1	A	1131	ASN
1	A	1149	GLN
1	A	1173	GLN
1	A	1202	GLN
1	A	1210	ASN

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Mol	Chain	Res	Type
1	B	1008	ASN
1	B	1073	HIS
1	B	1131	ASN
1	B	1137	GLN
1	B	1202	GLN
1	B	1206	GLN
1	B	1210	ASN
1	C	1008	ASN
1	C	1038	GLN
1	C	1060	GLN
1	C	1102	ASN
1	C	1131	ASN
1	C	1156	ASN
1	C	1202	GLN
1	C	1206	GLN
1	C	1210	ASN
1	D	1013	GLN
1	D	1060	GLN
1	D	1073	HIS
1	D	1094	ASN
1	D	1131	ASN
1	D	1132	ASN
1	D	1156	ASN
1	D	1210	ASN
1	E	1000	HIS
1	E	1008	ASN
1	E	1073	HIS
1	E	1094	ASN
1	E	1131	ASN
1	E	1137	GLN
1	E	1149	GLN
1	E	1173	GLN
1	F	1025	ASN
1	F	1050	ASN
1	F	1094	ASN
1	F	1102	ASN
1	F	1118	ASN
1	F	1131	ASN
1	F	1149	GLN
1	F	1210	ASN

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 ⓘ

Of 18 ligands modelled in this entry, 18 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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 ⓘ

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	233/242 (96%)	0.59	17 (7%)	15	23	15, 33, 63, 99	0
1	B	242/242 (100%)	0.64	19 (7%)	12	19	10, 34, 60, 88	0
1	C	233/242 (96%)	0.93	38 (16%)	1	2	13, 33, 86, 112	0
1	D	221/242 (91%)	1.12	39 (17%)	1	1	18, 38, 80, 97	0
1	E	226/242 (93%)	1.00	38 (16%)	1	2	10, 37, 78, 98	0
1	F	221/242 (91%)	0.89	35 (15%)	2	2	18, 35, 73, 91	0
All	All	1376/1452 (94%)	0.86	186 (13%)	3	5	10, 35, 75, 112	0

All (186) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	998	GLY	10.8
1	D	1183	ALA	9.8
1	C	1201	THR	7.8
1	A	1013	GLN	7.8
1	F	1204	GLU	7.6
1	D	1193	THR	7.6
1	E	1208	ILE	7.5
1	C	1015	THR	7.3
1	C	1199	THR	7.1
1	C	1024	ARG	7.0
1	D	1182	THR	6.8
1	A	1016	ARG	6.4
1	E	997	ARG	6.3
1	E	1159	THR	6.2
1	D	1207	ALA	6.0
1	E	1194	PHE	5.9
1	A	1014	ALA	5.7
1	E	1193	THR	5.7
1	F	1206	GLN	5.6

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Mol	Chain	Res	Type	RSRZ
1	B	992	GLY	5.4
1	C	1017	LEU	5.4
1	D	1189	ASP	5.3
1	C	1019	ALA	5.3
1	C	1202	GLN	5.3
1	D	1179	ALA	5.2
1	D	1187	VAL	5.2
1	E	1195	ALA	5.0
1	F	1186	GLY	5.0
1	E	1192	LEU	4.9
1	F	1174	THR	4.8
1	D	1176	TRP	4.8
1	C	1197	SER	4.7
1	C	1012	ILE	4.7
1	F	1205	ILE	4.7
1	F	1159	THR	4.6
1	E	1188	PHE	4.5
1	E	1000	HIS	4.5
1	E	1187	VAL	4.5
1	D	1136	LEU	4.4
1	D	1184	ASN	4.4
1	C	1198	ASP	4.4
1	A	1197	SER	4.3
1	C	1020	SER	4.3
1	D	1190	ALA	4.3
1	C	1033	LEU	4.3
1	C	1014	ALA	4.2
1	D	1191	ASP	4.2
1	C	1192	LEU	4.2
1	D	1192	LEU	4.2
1	D	1144	THR	4.1
1	F	1176	TRP	4.1
1	D	1180	THR	4.1
1	C	1025	ASN	4.0
1	E	1189	ASP	4.0
1	B	1024	ARG	4.0
1	A	1012	ILE	4.0
1	D	1185	LYS	4.0
1	D	1178	ALA	4.0
1	D	1208	ILE	3.9
1	E	1190	ALA	3.9
1	D	1233	ASP	3.8

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Mol	Chain	Res	Type	RSRZ
1	D	1211	ALA	3.8
1	D	1169	VAL	3.8
1	E	1144	THR	3.8
1	E	1209	ALA	3.8
1	F	1183	ALA	3.7
1	D	1186	GLY	3.7
1	D	1194	PHE	3.7
1	B	1200	TYR	3.6
1	C	1027	PHE	3.6
1	C	1205	ILE	3.5
1	B	1025	ASN	3.4
1	B	1205	ILE	3.4
1	E	999	SER	3.4
1	A	1017	LEU	3.4
1	D	1175	GLY	3.4
1	C	1013	GLN	3.4
1	F	1213	ILE	3.3
1	C	1016	ARG	3.3
1	E	1191	ASP	3.3
1	D	1164	GLY	3.3
1	A	1158	THR	3.3
1	F	1178	ALA	3.3
1	B	1206	GLN	3.3
1	D	1232	ILE	3.3
1	B	1098	ILE	3.2
1	F	1179	ALA	3.2
1	F	1190	ALA	3.2
1	B	1178	ALA	3.1
1	F	1180	THR	3.1
1	C	1193	THR	3.0
1	A	1011	VAL	3.0
1	A	1151	LEU	3.0
1	D	1024	ARG	3.0
1	C	1195	ALA	3.0
1	C	1194	PHE	3.0
1	E	1233	ASP	3.0
1	F	1203	SER	3.0
1	C	1206	GLN	2.9
1	A	1025	ASN	2.9
1	E	1210	ASN	2.9
1	D	1188	PHE	2.9
1	E	1146	THR	2.9

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Mol	Chain	Res	Type	RSRZ
1	E	1016	ARG	2.9
1	C	1011	VAL	2.9
1	C	1233	ASP	2.8
1	F	1146	THR	2.8
1	F	1233	ASP	2.8
1	C	1026	VAL	2.8
1	D	1011	VAL	2.8
1	C	1018	ASP	2.8
1	E	1024	ARG	2.8
1	E	1213	ILE	2.7
1	D	1008	ASN	2.7
1	F	1224	ASP	2.7
1	E	1147	THR	2.7
1	D	1025	ASN	2.7
1	A	1198	ASP	2.6
1	D	1181	GLY	2.6
1	C	1200	TYR	2.6
1	F	1175	GLY	2.6
1	B	1175	GLY	2.6
1	E	1186	GLY	2.6
1	F	1122	LEU	2.6
1	B	1199	THR	2.6
1	E	1148	SER	2.5
1	C	1029	LYS	2.5
1	F	1166	LYS	2.5
1	C	1188	PHE	2.5
1	A	1200	TYR	2.5
1	A	1015	THR	2.5
1	E	1207	ALA	2.5
1	F	1207	ALA	2.5
1	F	1126	VAL	2.5
1	A	1196	VAL	2.5
1	E	1138	ALA	2.4
1	F	1181	GLY	2.4
1	F	1232	ILE	2.4
1	C	1174	THR	2.4
1	F	1147	THR	2.4
1	F	1182	THR	2.4
1	C	1196	VAL	2.4
1	F	1227	ARG	2.4
1	F	1144	THR	2.4
1	F	1016	ARG	2.3

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Mol	Chain	Res	Type	RSRZ
1	F	1184	ASN	2.3
1	E	1232	ILE	2.3
1	D	1138	ALA	2.3
1	C	1136	LEU	2.3
1	C	1159	THR	2.3
1	A	1001	MET	2.3
1	A	1019	ALA	2.3
1	B	1146	THR	2.3
1	F	1214	THR	2.3
1	E	1164	GLY	2.3
1	E	1174	THR	2.3
1	D	1224	ASP	2.3
1	A	1199	THR	2.2
1	C	1147	THR	2.2
1	E	1145	ALA	2.2
1	E	1183	ALA	2.2
1	F	1171	ALA	2.2
1	B	1026	VAL	2.2
1	B	1091	ILE	2.2
1	E	1158	THR	2.2
1	C	1032	LEU	2.2
1	D	1210	ASN	2.2
1	E	1182	THR	2.1
1	D	1177	THR	2.1
1	F	1177	THR	2.1
1	D	1213	ILE	2.1
1	B	1019	ALA	2.1
1	C	1204	GLU	2.1
1	E	1168	VAL	2.1
1	D	1016	ARG	2.1
1	F	1209	ALA	2.1
1	D	1029	LYS	2.1
1	B	1070	LEU	2.1
1	B	1147	THR	2.0
1	B	1182	THR	2.0
1	B	1201	THR	2.0
1	E	1215	GLU	2.0
1	C	1133	ILE	2.0
1	F	1173	GLN	2.0
1	E	1211	ALA	2.0
1	B	1193	THR	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	XE	D	14	1/1	0.75	0.12	122,122,122,122	0
2	XE	D	11	1/1	0.77	0.12	121,121,121,121	0
2	XE	A	7	1/1	0.92	0.06	96,96,96,96	0
2	XE	F	10	1/1	0.94	0.04	65,65,65,65	0
4	CL	D	4	1/1	0.97	0.11	33,33,33,33	0
3	CA	A	1	1/1	0.98	0.07	21,21,21,21	0
2	XE	D	13	1/1	0.99	0.05	35,35,35,35	0
2	XE	C	4	1/1	0.99	0.06	73,73,73,73	0
2	XE	D	8	1/1	0.99	0.02	33,33,33,33	0
2	XE	A	1234	1/1	0.99	0.05	59,59,59,59	0
4	CL	A	2	1/1	0.99	0.13	28,28,28,28	0
2	XE	D	12	1/1	0.99	0.02	35,35,35,35	0
2	XE	A	5	1/1	1.00	0.05	33,33,33,33	0
2	XE	D	9	1/1	1.00	0.04	32,32,32,32	0
2	XE	A	6	1/1	1.00	0.04	31,31,31,31	0
3	CA	D	3	1/1	1.00	0.10	23,23,23,23	0
2	XE	A	1235	1/1	1.00	0.05	34,34,34,34	0
2	XE	A	3	1/1	1.00	0.03	39,39,39,39	0

6.5 Other polymers ⓘ

There are no such residues in this entry.