Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2024 – 11:37 AM EST

PDB ID	:	3A11
Title	:	Crystal structure of ribose-1,5-bisphosphate isomerase from Thermococcus kodakaraensis KOD1
Authors	:	Nakamura, A.; Fujihashi, M.; Nishiba, Y.; Yoshida, S.; Yano, A.; Atomi, H.; Imanaka, T.; Miki, K.
Deposited on	:	2009-03-25
Resolution	:	2.50 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:

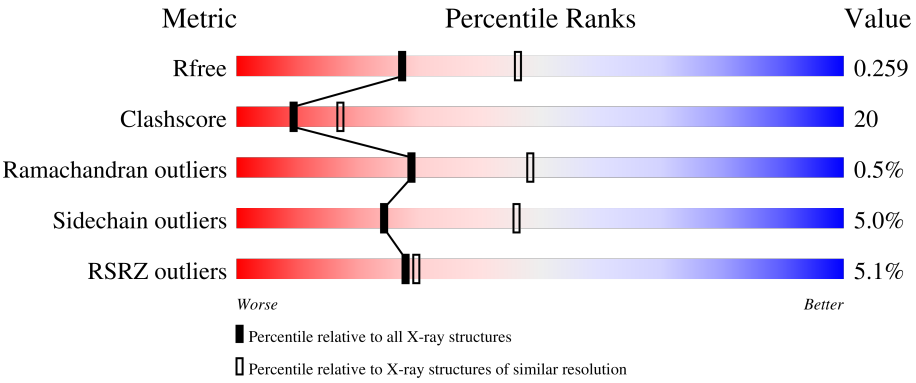
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.50 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	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	338	4% 63% 29% • 5%
1	B	338	% 66% 26% • 5%
1	C	338	14% 59% 33% • 6%
1	D	338	4% 64% 27% • 5%
1	E	338	% 64% 27% • 6%

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Mol	Chain	Length	Quality of chain
1	F	338	4% 55% 36% 6%

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	PEG	D	401	-	-	-	X

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 15535 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 Translation initiation factor eIF-2B, delta subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	320	Total	C	N	O	S	0	0	0
			2541	1631	428	470	12			
1	B	322	Total	C	N	O	S	0	0	0
			2556	1636	435	472	13			
1	C	317	Total	C	N	O	S	0	0	0
			2513	1613	424	464	12			
1	D	320	Total	C	N	O	S	0	0	0
			2531	1623	428	468	12			
1	E	317	Total	C	N	O	S	0	0	0
			2513	1613	424	464	12			
1	F	319	Total	C	N	O	S	0	0	0
			2529	1623	426	468	12			

There are 96 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-15	MET	-	expression tag	UNP Q5JFM9
A	-14	ASN	-	expression tag	UNP Q5JFM9
A	-13	HIS	-	expression tag	UNP Q5JFM9
A	-12	LYS	-	expression tag	UNP Q5JFM9
A	-11	VAL	-	expression tag	UNP Q5JFM9
A	-10	HIS	-	expression tag	UNP Q5JFM9
A	-9	HIS	-	expression tag	UNP Q5JFM9
A	-8	HIS	-	expression tag	UNP Q5JFM9
A	-7	HIS	-	expression tag	UNP Q5JFM9
A	-6	HIS	-	expression tag	UNP Q5JFM9
A	-5	HIS	-	expression tag	UNP Q5JFM9
A	-4	ILE	-	expression tag	UNP Q5JFM9
A	-3	GLU	-	expression tag	UNP Q5JFM9
A	-2	GLY	-	expression tag	UNP Q5JFM9
A	-1	ARG	-	expression tag	UNP Q5JFM9
A	0	HIS	-	expression tag	UNP Q5JFM9
B	-15	MET	-	expression tag	UNP Q5JFM9

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-14	ASN	-	expression tag	UNP Q5JFM9
B	-13	HIS	-	expression tag	UNP Q5JFM9
B	-12	LYS	-	expression tag	UNP Q5JFM9
B	-11	VAL	-	expression tag	UNP Q5JFM9
B	-10	HIS	-	expression tag	UNP Q5JFM9
B	-9	HIS	-	expression tag	UNP Q5JFM9
B	-8	HIS	-	expression tag	UNP Q5JFM9
B	-7	HIS	-	expression tag	UNP Q5JFM9
B	-6	HIS	-	expression tag	UNP Q5JFM9
B	-5	HIS	-	expression tag	UNP Q5JFM9
B	-4	ILE	-	expression tag	UNP Q5JFM9
B	-3	GLU	-	expression tag	UNP Q5JFM9
B	-2	GLY	-	expression tag	UNP Q5JFM9
B	-1	ARG	-	expression tag	UNP Q5JFM9
B	0	HIS	-	expression tag	UNP Q5JFM9
C	-15	MET	-	expression tag	UNP Q5JFM9
C	-14	ASN	-	expression tag	UNP Q5JFM9
C	-13	HIS	-	expression tag	UNP Q5JFM9
C	-12	LYS	-	expression tag	UNP Q5JFM9
C	-11	VAL	-	expression tag	UNP Q5JFM9
C	-10	HIS	-	expression tag	UNP Q5JFM9
C	-9	HIS	-	expression tag	UNP Q5JFM9
C	-8	HIS	-	expression tag	UNP Q5JFM9
C	-7	HIS	-	expression tag	UNP Q5JFM9
C	-6	HIS	-	expression tag	UNP Q5JFM9
C	-5	HIS	-	expression tag	UNP Q5JFM9
C	-4	ILE	-	expression tag	UNP Q5JFM9
C	-3	GLU	-	expression tag	UNP Q5JFM9
C	-2	GLY	-	expression tag	UNP Q5JFM9
C	-1	ARG	-	expression tag	UNP Q5JFM9
C	0	HIS	-	expression tag	UNP Q5JFM9
D	-15	MET	-	expression tag	UNP Q5JFM9
D	-14	ASN	-	expression tag	UNP Q5JFM9
D	-13	HIS	-	expression tag	UNP Q5JFM9
D	-12	LYS	-	expression tag	UNP Q5JFM9
D	-11	VAL	-	expression tag	UNP Q5JFM9
D	-10	HIS	-	expression tag	UNP Q5JFM9
D	-9	HIS	-	expression tag	UNP Q5JFM9
D	-8	HIS	-	expression tag	UNP Q5JFM9
D	-7	HIS	-	expression tag	UNP Q5JFM9
D	-6	HIS	-	expression tag	UNP Q5JFM9
D	-5	HIS	-	expression tag	UNP Q5JFM9

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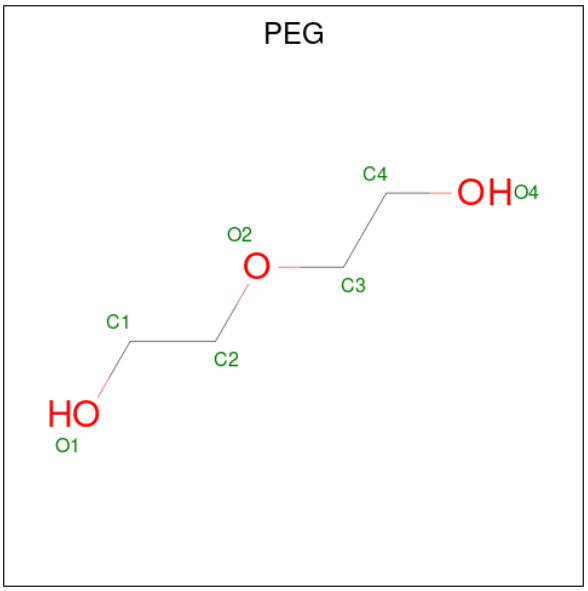
Chain	Residue	Modelled	Actual	Comment	Reference
D	-4	ILE	-	expression tag	UNP Q5JFM9
D	-3	GLU	-	expression tag	UNP Q5JFM9
D	-2	GLY	-	expression tag	UNP Q5JFM9
D	-1	ARG	-	expression tag	UNP Q5JFM9
D	0	HIS	-	expression tag	UNP Q5JFM9
E	-15	MET	-	expression tag	UNP Q5JFM9
E	-14	ASN	-	expression tag	UNP Q5JFM9
E	-13	HIS	-	expression tag	UNP Q5JFM9
E	-12	LYS	-	expression tag	UNP Q5JFM9
E	-11	VAL	-	expression tag	UNP Q5JFM9
E	-10	HIS	-	expression tag	UNP Q5JFM9
E	-9	HIS	-	expression tag	UNP Q5JFM9
E	-8	HIS	-	expression tag	UNP Q5JFM9
E	-7	HIS	-	expression tag	UNP Q5JFM9
E	-6	HIS	-	expression tag	UNP Q5JFM9
E	-5	HIS	-	expression tag	UNP Q5JFM9
E	-4	ILE	-	expression tag	UNP Q5JFM9
E	-3	GLU	-	expression tag	UNP Q5JFM9
E	-2	GLY	-	expression tag	UNP Q5JFM9
E	-1	ARG	-	expression tag	UNP Q5JFM9
E	0	HIS	-	expression tag	UNP Q5JFM9
F	-15	MET	-	expression tag	UNP Q5JFM9
F	-14	ASN	-	expression tag	UNP Q5JFM9
F	-13	HIS	-	expression tag	UNP Q5JFM9
F	-12	LYS	-	expression tag	UNP Q5JFM9
F	-11	VAL	-	expression tag	UNP Q5JFM9
F	-10	HIS	-	expression tag	UNP Q5JFM9
F	-9	HIS	-	expression tag	UNP Q5JFM9
F	-8	HIS	-	expression tag	UNP Q5JFM9
F	-7	HIS	-	expression tag	UNP Q5JFM9
F	-6	HIS	-	expression tag	UNP Q5JFM9
F	-5	HIS	-	expression tag	UNP Q5JFM9
F	-4	ILE	-	expression tag	UNP Q5JFM9
F	-3	GLU	-	expression tag	UNP Q5JFM9
F	-2	GLY	-	expression tag	UNP Q5JFM9
F	-1	ARG	-	expression tag	UNP Q5JFM9
F	0	HIS	-	expression tag	UNP Q5JFM9

- Molecule 2 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 7 4 3	0	0
2	B	1	Total C O 7 4 3	0	0
2	C	1	Total C O 7 4 3	0	0
2	D	1	Total C O 7 4 3	0	0
2	E	1	Total C O 7 4 3	0	0
2	F	1	Total C O 7 4 3	0	0

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Mg 1 1	0	0
3	E	1	Total Mg 1 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	59	Total O 59 59	0	0

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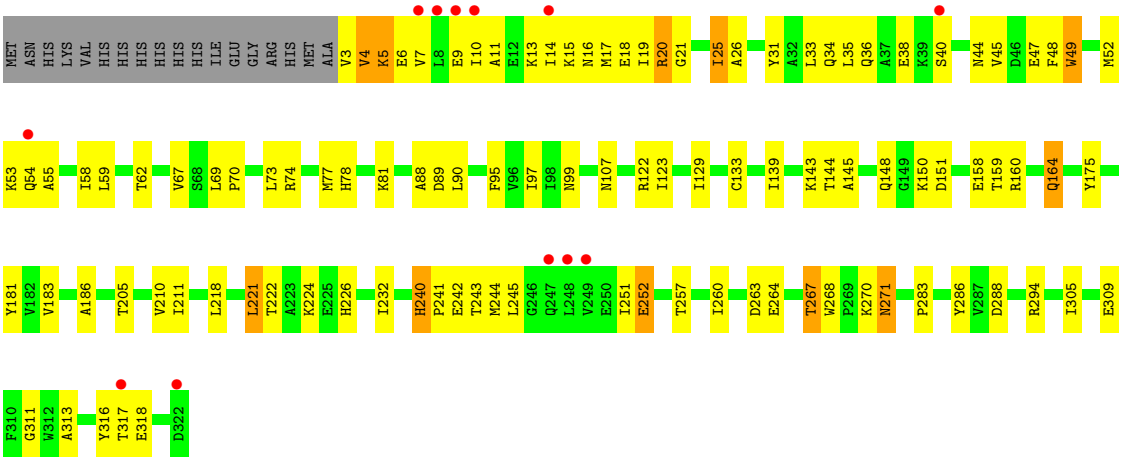
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	87	Total O 87 87	0	0
4	C	34	Total O 34 34	0	0
4	D	54	Total O 54 54	0	0
4	E	46	Total O 46 46	0	0
4	F	28	Total O 28 28	0	0

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.

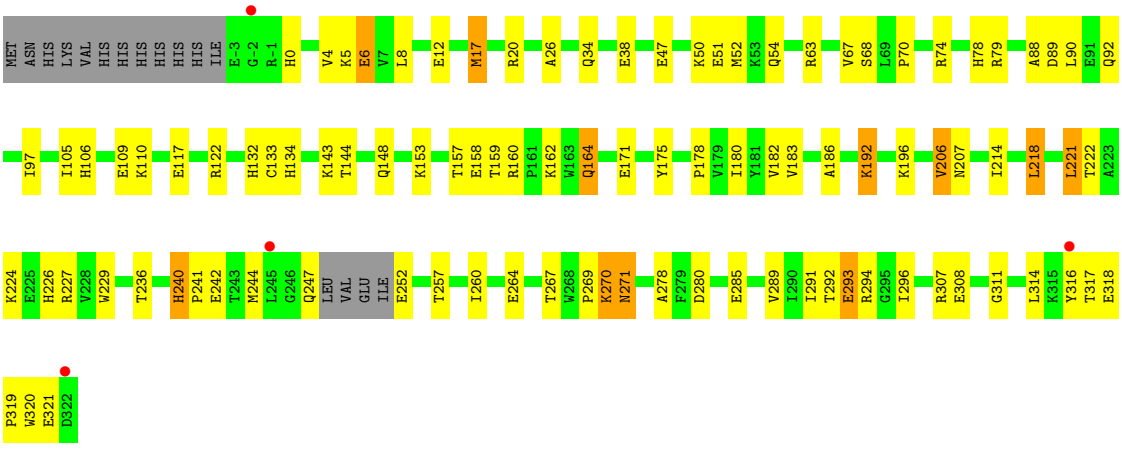
• Molecule 1: Translation initiation factor eIF-2B, delta subunit

Chain A:



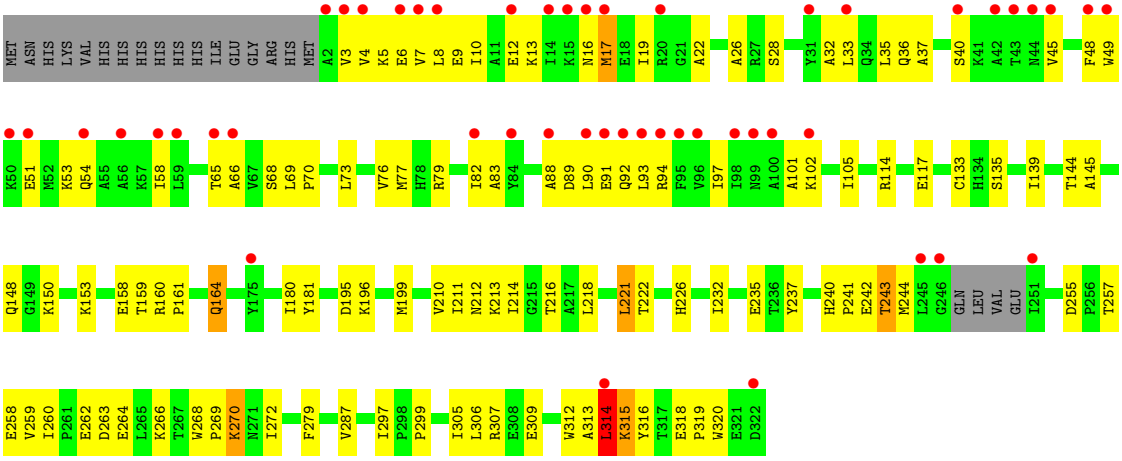
• Molecule 1: Translation initiation factor eIF-2B, delta subunit

Chain B:



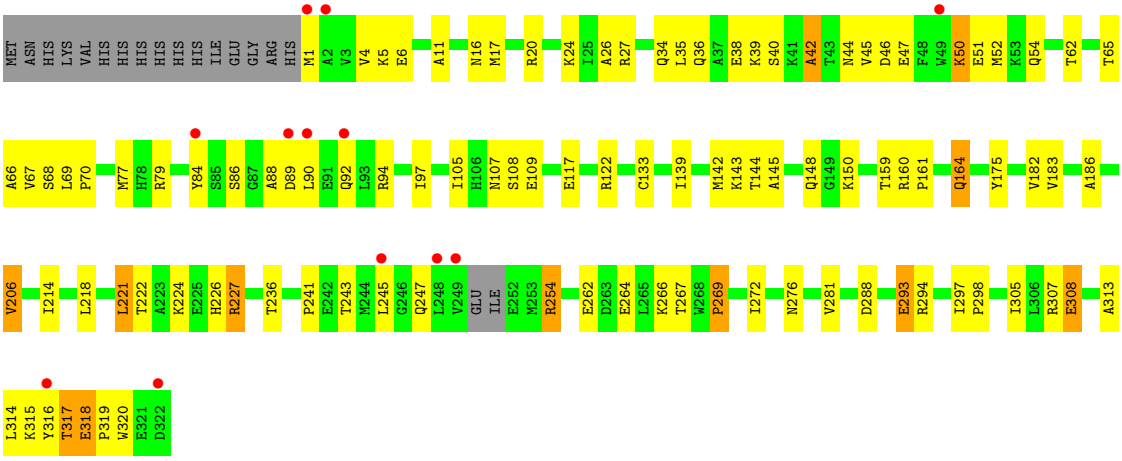
• Molecule 1: Translation initiation factor eIF-2B, delta subunit

Chain C:



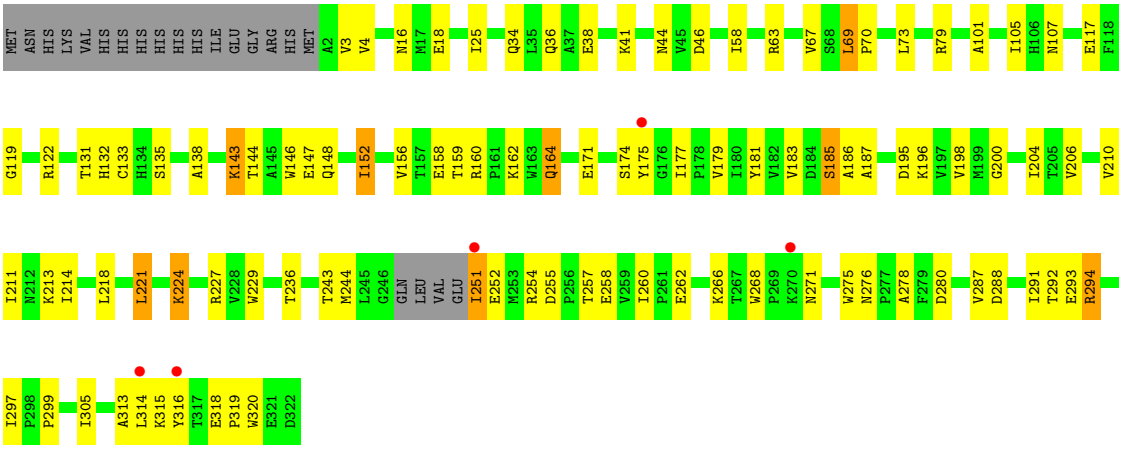
• Molecule 1: Translation initiation factor eIF-2B, delta subunit

Chain D:



• Molecule 1: Translation initiation factor eIF-2B, delta subunit

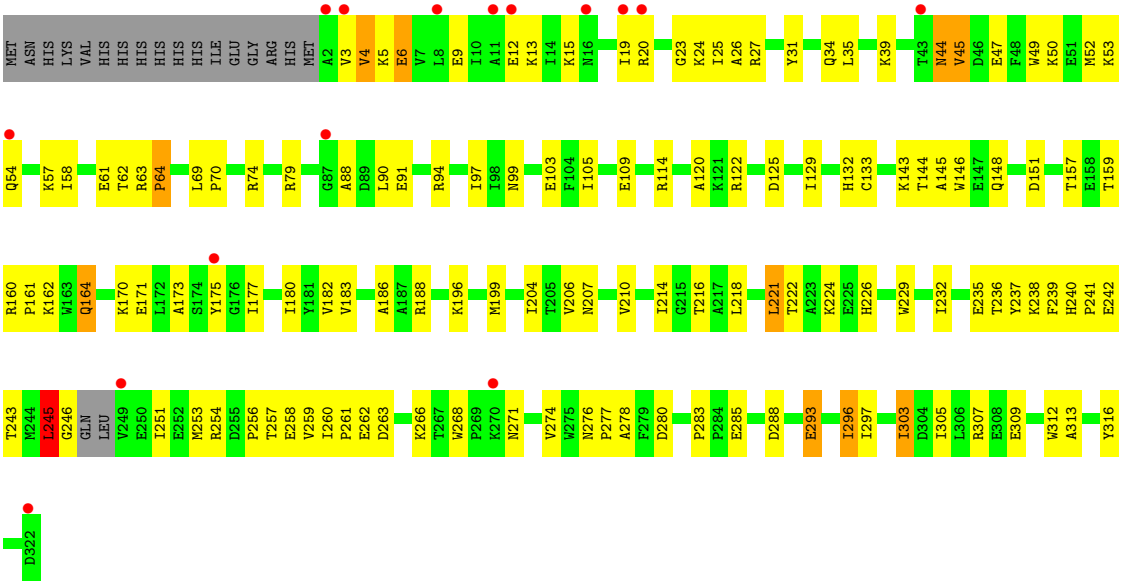
Chain E:



• Molecule 1: Translation initiation factor eIF-2B, delta subunit

Chain F:


4%
55%
36%
6%


MET ASN HIS LYS VAL HIS HIS HIS HIS HIS ILE GLU GLY ARG HIS MET A2 V3 V4 K5 E6 V7 L8 E9 I10 A11 E12 K13 T14 K15 N16 I19 R20 G23 K24 I25 A26 R27 Y31 Q34 L35 K39 T43 N44 V45 D46 E47 F48 W49 K50 E51 M52 K53
Q54 K57 I58 E61 T62 R63 P64 L69 P70 R74 R79 G87 A88 D89 L90 E91 R94 I97 I98 N99 E103 F104 I105 E109 R114 A120 K121 R122 D125 I129 H132 C133 K143 T144 A145 W146 E147 Q148 D151 T157 E158 T159
R160 P161 K162 W163 Q164 K170 E171 L172 A173 S174 Y175 G176 I177 I180 Y181 V182 V183 A186 A187 R188 K196 M199 I204 T205 V206 N207 V210 I214 G215 T216 A217 L218 L221 T222 A223 K224 E225 H226 W229 I232 E235 T236 Y237 K238 F239 H240 P241 E242
T243 M244 L245 G246 GLN LEU V249 E250 I251 E252 M253 R254 D255 P256 T257 E258 V259 I260 P261 E262 D263 K266 T267 W268 P269 K270 N271 V274 W275 N276 P277 A278 F279 D280 P283 P284 E285 D288 E293 I296 I297 I303 D304 I305 L306 R307 E308 E309 W312 A313 Y316
D322

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	117.29Å 130.81Å 132.81Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.66 – 2.50 43.66 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.8 (43.66-2.50) 99.9 (43.66-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.07	Depositor
$< I/\sigma(I) >$ [1]	4.54 (at 2.51Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.204 , 0.266 0.198 , 0.259	Depositor DCC
R_{free} test set	3638 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å^2)	37.2	Xtriage
Anisotropy	0.411	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 58.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.014 for -h,l,k	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	15535	wwPDB-VP
Average B, all atoms (Å^2)	45.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.23% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, PEG

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	0.35	0/2595	0.60	0/3514
1	B	0.37	0/2610	0.61	0/3530
1	C	0.31	0/2566	0.57	0/3473
1	D	0.34	0/2584	0.57	0/3498
1	E	0.31	0/2566	0.56	0/3473
1	F	0.32	0/2582	0.55	0/3495
All	All	0.34	0/15503	0.58	0/20983

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

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	2541	0	2583	112	0
1	B	2556	0	2591	106	0
1	C	2513	0	2553	115	0
1	D	2531	0	2566	97	0
1	E	2513	0	2553	95	0
1	F	2529	0	2568	133	0
2	A	7	0	10	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	7	0	10	2	0
2	C	7	0	10	0	0
2	D	7	0	10	2	0
2	E	7	0	10	1	0
2	F	7	0	10	2	0
3	B	1	0	0	0	0
3	E	1	0	0	0	0
4	A	59	0	0	1	0
4	B	87	0	0	2	0
4	C	34	0	0	3	0
4	D	54	0	0	2	0
4	E	46	0	0	2	0
4	F	28	0	0	0	0
All	All	15535	0	15474	605	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 20.

All (605) 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:E:292:THR:HG22	1:E:294:ARG:H	1.13	1.09
1:C:164:GLN:H	1:C:164:GLN:HE21	1.06	1.02
1:B:270:LYS:HE3	1:B:270:LYS:H	1.21	0.99
1:C:218:LEU:HD22	1:D:218:LEU:HD22	1.46	0.97
1:B:292:THR:HG22	1:B:294:ARG:H	1.29	0.96
1:F:214:ILE:HD12	1:F:277:PRO:HG2	1.46	0.95
1:B:318:GLU:HG3	1:B:319:PRO:HD2	1.49	0.94
1:E:181:TYR:HB3	1:F:274:VAL:HG12	1.52	0.91
1:B:270:LYS:H	1:B:270:LYS:CE	1.84	0.91
1:E:186:ALA:HB2	1:F:214:ILE:HD11	1.53	0.91
1:D:164:GLN:H	1:D:164:GLN:HE21	1.14	0.88
1:E:211:ILE:HD11	1:E:244:MET:HG3	1.53	0.88
1:C:164:GLN:H	1:C:164:GLN:NE2	1.72	0.87
1:A:164:GLN:H	1:A:164:GLN:HE21	1.17	0.87
1:E:318:GLU:HG3	1:E:319:PRO:HD2	1.55	0.86
1:D:264:GLU:O	1:D:267:THR:HG22	1.74	0.86
1:F:199:MET:HE1	1:F:216:THR:HG23	1.59	0.84
1:E:164:GLN:H	1:E:164:GLN:HE21	1.26	0.84
1:D:288:ASP:OD2	2:D:401:PEG:H21	1.77	0.83
1:E:187:ALA:HB3	1:F:218:LEU:HD11	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294:ARG:HH21	1:C:315:LYS:HD2	1.47	0.79
1:D:69:LEU:HB3	1:D:70:PRO:HD3	1.65	0.79
1:D:224:LYS:HA	2:D:401:PEG:H12	1.65	0.78
1:C:8:LEU:HD12	1:C:8:LEU:H	1.48	0.77
1:A:313:ALA:HB3	1:A:316:TYR:HB2	1.66	0.77
1:A:271:ASN:HD22	1:A:271:ASN:H	1.31	0.76
1:C:10:ILE:HD12	1:C:32:ALA:HB2	1.67	0.76
1:F:3:VAL:HG21	1:F:58:ILE:HD12	1.68	0.76
1:A:243:THR:HG22	1:A:245:LEU:H	1.48	0.76
1:A:52:MET:HE1	1:A:97:ILE:HG21	1.67	0.76
1:B:244:MET:HB2	1:D:122:ARG:HH12	1.51	0.76
1:B:227:ARG:HE	1:E:227:ARG:HG2	1.51	0.76
1:C:164:GLN:HE21	1:C:164:GLN:N	1.84	0.76
1:F:256:PRO:HB3	1:F:274:VAL:HG23	1.68	0.76
1:F:259:VAL:HG12	1:F:260:ILE:HG13	1.68	0.75
1:A:251:ILE:HG22	1:A:252:GLU:N	2.01	0.75
1:A:33:LEU:HD11	1:A:73:LEU:HD12	1.69	0.74
1:D:247:GLN:CD	1:F:122:ARG:HG3	2.08	0.74
1:D:318:GLU:HG2	1:D:320:TRP:CZ2	2.22	0.74
1:B:89:ASP:OD2	1:B:92:GLN:HG3	1.88	0.74
1:E:254:ARG:HB2	1:E:276:ASN:ND2	2.02	0.74
1:D:164:GLN:H	1:D:164:GLN:NE2	1.85	0.74
1:A:164:GLN:HE21	1:A:164:GLN:N	1.86	0.74
1:B:318:GLU:HG2	1:B:320:TRP:CH2	2.23	0.73
1:A:251:ILE:HG22	1:A:252:GLU:H	1.53	0.73
1:A:5:LYS:HD3	1:A:5:LYS:N	2.03	0.73
1:A:183:VAL:HG21	1:B:160:ARG:HB3	1.69	0.73
1:F:164:GLN:H	1:F:164:GLN:HE21	1.36	0.73
1:A:224:LYS:HA	2:A:401:PEG:H41	1.70	0.73
1:B:270:LYS:HE3	1:B:270:LYS:N	2.01	0.73
1:C:297:ILE:HD13	1:C:305:ILE:HD11	1.70	0.72
1:A:139:ILE:HG22	1:A:143:LYS:HE2	1.71	0.72
1:A:221:LEU:HD13	1:B:221:LEU:HD13	1.71	0.71
1:D:297:ILE:HD13	1:D:305:ILE:HD11	1.71	0.71
1:B:318:GLU:HG2	1:B:320:TRP:CZ2	2.25	0.71
1:E:318:GLU:HG2	1:E:320:TRP:CH2	2.24	0.71
1:C:93:LEU:O	1:C:97:ILE:HG12	1.91	0.70
1:F:260:ILE:HD13	1:F:268:TRP:CH2	2.26	0.70
1:F:288:ASP:OD2	2:F:401:PEG:H32	1.91	0.70
1:E:69:LEU:HB3	1:E:70:PRO:HD3	1.74	0.70
1:F:171:GLU:HG2	1:F:175:TYR:HE2	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:251:ILE:HD12	1:F:251:ILE:H	1.55	0.70
1:F:224:LYS:HA	2:F:401:PEG:H41	1.74	0.70
1:F:160:ARG:HD2	1:F:161:PRO:HA	1.74	0.70
1:E:186:ALA:CB	1:F:214:ILE:HD11	2.20	0.70
1:B:264:GLU:O	1:B:267:THR:HB	1.92	0.70
1:C:257:THR:HA	1:C:260:ILE:O	1.92	0.70
1:B:47:GLU:O	1:B:51:GLU:HG3	1.91	0.69
1:E:211:ILE:CD1	1:E:244:MET:HG3	2.22	0.69
1:F:307:ARG:HD3	1:F:312:TRP:O	1.90	0.69
1:A:143:LYS:HD3	1:A:175:TYR:CE2	2.27	0.69
1:F:164:GLN:H	1:F:164:GLN:NE2	1.89	0.69
1:E:143:LYS:HE2	1:E:147:GLU:HG3	1.73	0.69
1:A:160:ARG:HD3	1:B:158:GLU:OE2	1.93	0.69
1:F:199:MET:CE	1:F:216:THR:HG23	2.23	0.68
1:C:76:VAL:HG23	1:C:77:MET:N	2.08	0.68
1:C:242:GLU:HG2	1:C:243:THR:H	1.58	0.68
1:A:144:THR:O	1:A:148:GLN:HG3	1.93	0.68
1:D:182:VAL:CG1	1:D:186:ALA:HB3	2.24	0.68
1:D:247:GLN:OE1	1:F:122:ARG:HG3	1.92	0.68
1:C:221:LEU:HD13	1:D:221:LEU:HD13	1.74	0.68
4:C:603:HOH:O	1:D:183:VAL:HG13	1.93	0.68
1:C:211:ILE:HD11	1:C:244:MET:HG2	1.77	0.67
1:C:270:LYS:HE3	1:C:270:LYS:H	1.60	0.67
1:F:114:ARG:HG3	1:F:114:ARG:HH11	1.59	0.67
1:D:243:THR:HG22	1:D:247:GLN:HG2	1.75	0.67
1:E:183:VAL:HG13	4:E:617:HOH:O	1.94	0.66
1:D:52:MET:HE2	1:D:97:ILE:HD13	1.78	0.66
1:A:210:VAL:HG21	1:A:232:ILE:HG13	1.78	0.66
1:A:305:ILE:HD11	1:C:314:LEU:HD12	1.76	0.66
1:C:144:THR:O	1:C:148:GLN:HG3	1.95	0.66
1:A:45:VAL:HG22	1:A:90:LEU:N	2.10	0.66
1:B:122:ARG:HE	1:F:246:GLY:HA2	1.61	0.66
1:E:255:ASP:OD2	1:E:257:THR:HB	1.96	0.66
1:C:145:ALA:O	1:C:150:LYS:HB2	1.95	0.65
1:B:132:HIS:HD2	1:B:157:THR:OG1	1.80	0.65
1:C:270:LYS:H	1:C:270:LYS:CE	2.09	0.65
1:E:160:ARG:HB3	1:F:183:VAL:HG21	1.79	0.65
1:B:17:MET:CE	1:B:63:ARG:HD2	2.25	0.65
1:B:247:GLN:HE22	1:B:252:GLU:HB2	1.60	0.65
1:B:236:THR:HG23	1:B:292:THR:HG23	1.79	0.65
1:F:13:LYS:HB3	1:F:19:ILE:HG13	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:13:LYS:HB3	1:C:19:ILE:HG12	1.79	0.65
1:C:195:ASP:O	1:C:196:LYS:HD2	1.97	0.64
1:B:164:GLN:H	1:B:164:GLN:HE21	1.45	0.64
1:F:235:GLU:OE1	1:F:238:LYS:HE3	1.97	0.64
1:D:89:ASP:H	1:D:92:GLN:NE2	1.96	0.64
1:C:4:VAL:HG22	1:C:6:GLU:H	1.61	0.64
1:B:182:VAL:HG13	1:B:186:ALA:HB3	1.80	0.64
1:E:133:CYS:HA	1:E:159:THR:HG21	1.79	0.64
1:D:44:ASN:O	1:D:90:LEU:HD13	1.98	0.63
1:D:164:GLN:HE21	1:D:164:GLN:N	1.92	0.63
1:F:49:TRP:NE1	1:F:53:LYS:HD3	2.12	0.63
1:A:164:GLN:H	1:A:164:GLN:NE2	1.94	0.63
1:A:317:THR:HG22	1:A:318:GLU:H	1.61	0.63
1:B:196:LYS:HD3	1:B:229:TRP:HB3	1.79	0.63
1:E:236:THR:HG23	1:E:292:THR:HG23	1.80	0.63
1:F:256:PRO:HB3	1:F:274:VAL:CG2	2.28	0.63
1:B:247:GLN:NE2	1:B:252:GLU:HB2	2.13	0.63
1:C:6:GLU:HB3	1:C:35:LEU:HD13	1.81	0.63
1:D:6:GLU:HB3	1:D:35:LEU:HD13	1.80	0.63
1:E:160:ARG:CB	1:F:183:VAL:HG21	2.29	0.63
1:F:3:VAL:HG21	1:F:58:ILE:CD1	2.28	0.63
1:A:251:ILE:CG2	1:A:252:GLU:H	2.11	0.63
1:A:52:MET:HB3	1:A:77:MET:HE1	1.79	0.63
1:C:89:ASP:OD1	1:C:92:GLN:HB2	1.99	0.63
1:B:317:THR:HB	1:B:321:GLU:HB2	1.79	0.62
1:A:305:ILE:CD1	1:C:314:LEU:HD12	2.30	0.62
1:F:133:CYS:HA	1:F:159:THR:HG21	1.82	0.62
1:E:44:ASN:HD21	1:E:46:ASP:HB2	1.63	0.62
1:A:70:PRO:HB2	1:A:74:ARG:HH12	1.65	0.62
1:E:41:LYS:HA	1:E:41:LYS:HE2	1.81	0.62
1:F:253:MET:HE2	1:F:277:PRO:HA	1.80	0.62
1:B:5:LYS:HG3	1:B:6:GLU:OE1	2.00	0.62
1:D:4:VAL:HG12	1:D:6:GLU:H	1.63	0.62
1:A:317:THR:HG22	1:A:318:GLU:N	2.15	0.61
1:B:34:GLN:O	1:B:38:GLU:HG3	1.99	0.61
1:D:45:VAL:HG22	1:D:90:LEU:N	2.15	0.61
1:E:214:ILE:HD12	1:E:280:ASP:HB3	1.82	0.61
1:E:318:GLU:HG2	1:E:320:TRP:CZ2	2.35	0.61
1:F:50:LYS:O	1:F:54:GLN:HG3	2.00	0.61
1:D:314:LEU:HD11	1:F:297:ILE:CG2	2.30	0.61
1:E:292:THR:HG22	1:E:294:ARG:N	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:254:ARG:HG3	1:F:278:ALA:HB2	1.81	0.61
1:A:240:HIS:CD2	1:A:241:PRO:HD2	2.35	0.61
1:D:314:LEU:HD11	1:F:297:ILE:HG21	1.81	0.61
1:A:70:PRO:HB2	1:A:74:ARG:NH1	2.16	0.61
1:E:292:THR:HG21	1:E:294:ARG:HG3	1.83	0.61
1:A:264:GLU:O	1:A:267:THR:HB	2.01	0.61
1:D:144:THR:O	1:D:148:GLN:HG3	2.00	0.61
1:D:269:PRO:HD2	1:D:272:ILE:HD12	1.83	0.61
1:D:79:ARG:HH21	1:D:79:ARG:HG3	1.66	0.61
1:F:105:ILE:O	1:F:109:GLU:HG3	2.00	0.61
1:F:188:ARG:HA	1:F:222:THR:HG21	1.83	0.61
1:A:251:ILE:HG22	1:A:252:GLU:HG2	1.83	0.60
1:B:89:ASP:H	1:B:92:GLN:NE2	1.99	0.60
4:C:604:HOH:O	1:D:182:VAL:HG13	2.02	0.60
1:B:89:ASP:CG	1:B:92:GLN:HE21	2.05	0.60
1:E:144:THR:O	1:E:148:GLN:HG3	2.00	0.59
1:A:5:LYS:HG2	1:A:6:GLU:OE2	2.01	0.59
1:C:10:ILE:HG21	1:C:28:SER:HB3	1.84	0.59
1:C:211:ILE:CD1	1:C:244:MET:HG2	2.32	0.59
1:A:271:ASN:HD22	1:A:271:ASN:N	1.93	0.59
1:B:314:LEU:HB3	1:D:294:ARG:HB3	1.85	0.59
1:C:76:VAL:HG23	1:C:77:MET:H	1.67	0.59
1:F:129:ILE:CD1	1:F:196:LYS:HB2	2.33	0.59
1:F:144:THR:O	1:F:148:GLN:HG3	2.03	0.59
1:B:206:VAL:HG13	1:B:241:PRO:HA	1.84	0.59
1:C:221:LEU:HD11	1:D:221:LEU:HD22	1.83	0.59
1:A:5:LYS:HD3	1:A:5:LYS:H	1.66	0.58
1:B:79:ARG:HG3	1:B:79:ARG:HH11	1.68	0.58
1:B:244:MET:HB2	1:D:122:ARG:NH1	2.18	0.58
1:E:143:LYS:O	1:E:147:GLU:HG3	2.04	0.58
1:B:227:ARG:HG2	1:E:227:ARG:CG	2.34	0.58
1:F:307:ARG:HH21	1:F:307:ARG:HG3	1.68	0.58
1:A:52:MET:HE2	1:A:97:ILE:HD13	1.85	0.58
1:B:143:LYS:HD3	1:B:175:TYR:CE2	2.38	0.58
1:B:182:VAL:CG1	1:B:186:ALA:HB3	2.34	0.58
1:F:120:ALA:HB1	1:F:148:GLN:OE1	2.04	0.58
1:F:313:ALA:HB3	1:F:316:TYR:CD2	2.39	0.58
1:F:251:ILE:HD12	1:F:251:ILE:N	2.19	0.57
1:C:49:TRP:NE1	1:C:53:LYS:HE3	2.19	0.57
1:E:292:THR:CG2	1:E:293:GLU:N	2.67	0.57
1:E:34:GLN:O	1:E:38:GLU:HG3	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:206:VAL:CG1	1:E:243:THR:HG22	2.34	0.57
1:F:235:GLU:HG2	1:F:237:TYR:CZ	2.39	0.57
1:E:236:THR:HG23	1:E:292:THR:CG2	2.34	0.57
1:F:240:HIS:HD2	1:F:241:PRO:HD2	1.68	0.57
1:B:67:VAL:HG23	1:B:240:HIS:CE1	2.40	0.57
1:E:183:VAL:HG12	1:E:185:SER:H	1.69	0.57
1:A:70:PRO:O	1:A:74:ARG:HG3	2.04	0.57
1:A:294:ARG:NH2	1:C:315:LYS:HD2	2.19	0.57
1:B:164:GLN:H	1:B:164:GLN:NE2	2.01	0.57
1:E:171:GLU:O	1:E:174:SER:HB3	2.05	0.57
1:A:31:TYR:CE2	1:A:35:LEU:HD11	2.39	0.57
1:A:251:ILE:CG2	1:A:252:GLU:N	2.66	0.57
1:C:54:GLN:O	1:C:58:ILE:HG13	2.05	0.57
1:F:199:MET:HE1	1:F:216:THR:HA	1.87	0.57
1:E:211:ILE:HD11	1:E:244:MET:CG	2.30	0.57
1:B:143:LYS:HD3	1:B:175:TYR:CZ	2.40	0.56
1:B:285:GLU:CD	1:B:285:GLU:H	2.08	0.56
1:C:222:THR:O	1:C:226:HIS:HD2	1.87	0.56
1:F:242:GLU:HG2	1:F:243:THR:N	2.20	0.56
1:D:6:GLU:HG3	1:D:39:LYS:HD2	1.86	0.56
1:E:292:THR:CG2	1:E:294:ARG:HG3	2.35	0.56
1:F:70:PRO:O	1:F:74:ARG:HG3	2.04	0.56
1:F:143:LYS:HZ3	1:F:143:LYS:HB2	1.69	0.56
1:A:34:GLN:O	1:A:38:GLU:HG3	2.05	0.56
1:B:17:MET:HE2	1:B:63:ARG:HD2	1.86	0.56
1:C:3:VAL:CG1	1:C:8:LEU:HD11	2.35	0.56
4:D:636:HOH:O	1:F:296:ILE:HD13	2.06	0.56
1:F:235:GLU:HA	1:F:293:GLU:OE1	2.06	0.56
1:A:271:ASN:H	1:A:271:ASN:ND2	2.03	0.56
1:F:114:ARG:HG3	1:F:114:ARG:NH1	2.21	0.56
1:B:70:PRO:HB2	1:B:74:ARG:NH1	2.20	0.56
1:E:138:ALA:HB1	1:E:198:VAL:HG12	1.87	0.56
1:F:260:ILE:HD12	1:F:274:VAL:HG11	1.88	0.55
1:C:82:ILE:HG23	1:C:83:ALA:N	2.21	0.55
1:D:40:SER:HB3	1:D:94:ARG:NH2	2.22	0.55
1:E:224:LYS:HE2	1:E:227:ARG:NH1	2.21	0.55
1:F:271:ASN:N	1:F:271:ASN:HD22	2.04	0.55
1:A:3:VAL:HG11	1:A:55:ALA:HA	1.88	0.55
1:E:195:ASP:O	1:E:196:LYS:HG3	2.06	0.55
1:A:218:LEU:HD22	1:B:218:LEU:HD22	1.89	0.55
1:D:297:ILE:HD13	1:D:305:ILE:CD1	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:44:ASN:C	1:F:44:ASN:HD22	2.08	0.55
1:C:4:VAL:HG12	1:C:36:GLN:OE1	2.07	0.55
1:D:133:CYS:HA	1:D:159:THR:HG21	1.88	0.55
1:C:270:LYS:H	1:C:270:LYS:CD	2.19	0.55
1:B:183:VAL:HG22	4:B:611:HOH:O	2.07	0.54
1:A:21:GLY:O	1:A:25:ILE:HG23	2.08	0.54
1:B:17:MET:HE1	1:B:63:ARG:HD2	1.89	0.54
1:B:17:MET:O	1:B:20:ARG:NH2	2.40	0.54
1:D:145:ALA:O	1:D:150:LYS:HB2	2.07	0.54
1:F:222:THR:O	1:F:226:HIS:HD2	1.89	0.54
1:A:107:ASN:HD21	1:C:315:LYS:HE2	1.72	0.54
1:D:313:ALA:HB3	1:D:315:LYS:HE3	1.90	0.54
1:F:99:ASN:O	1:F:103:GLU:HG3	2.07	0.54
1:A:67:VAL:HG13	1:A:240:HIS:CD2	2.42	0.54
1:A:243:THR:HG22	1:A:244:MET:N	2.23	0.54
1:E:4:VAL:HG22	1:E:36:GLN:OE1	2.07	0.54
1:F:20:ARG:O	1:F:24:LYS:HE3	2.08	0.54
1:A:49:TRP:CE3	1:A:49:TRP:HA	2.43	0.54
1:B:192:LYS:NZ	1:B:192:LYS:HB3	2.23	0.54
1:F:305:ILE:O	1:F:309:GLU:HB2	2.07	0.54
1:D:42:ALA:HB2	1:D:51:GLU:OE2	2.08	0.53
1:C:221:LEU:CD1	1:D:221:LEU:HD22	2.37	0.53
1:A:3:VAL:HG11	1:A:58:ILE:HD12	1.90	0.53
1:B:314:LEU:O	1:D:294:ARG:HD3	2.07	0.53
1:D:77:MET:HB3	1:D:319:PRO:HB2	1.90	0.53
1:A:158:GLU:HG3	1:A:181:TYR:OH	2.09	0.53
1:E:16:ASN:OD1	1:E:18:GLU:HG3	2.08	0.53
1:C:213:LYS:HD3	1:C:214:ILE:H	1.74	0.53
1:D:247:GLN:HG3	1:F:122:ARG:HE	1.74	0.53
1:C:8:LEU:HD12	1:C:8:LEU:N	2.21	0.53
1:F:6:GLU:O	1:F:9:GLU:HB3	2.08	0.53
1:A:15:LYS:C	1:A:17:MET:H	2.12	0.53
1:A:52:MET:CE	1:A:97:ILE:HD13	2.39	0.53
1:B:153:LYS:HD3	1:B:180:ILE:HD11	1.90	0.53
1:C:4:VAL:CG1	1:C:7:VAL:HG23	2.39	0.53
1:E:143:LYS:NZ	1:E:175:TYR:HB3	2.23	0.53
1:E:162:LYS:HZ3	1:E:258:GLU:HB3	1.74	0.53
1:F:146:TRP:CG	1:F:177:ILE:HG12	2.44	0.53
1:F:254:ARG:HB2	1:F:276:ASN:ND2	2.23	0.53
1:B:292:THR:HG22	1:B:293:GLU:N	2.24	0.52
1:C:242:GLU:HG2	1:C:243:THR:N	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:132:HIS:CB	1:F:199:MET:HE3	2.38	0.52
1:B:133:CYS:HA	1:B:159:THR:HG21	1.90	0.52
1:D:143:LYS:HD2	1:D:175:TYR:CZ	2.45	0.52
1:D:318:GLU:CG	1:D:320:TRP:CZ2	2.93	0.52
1:E:158:GLU:HG3	1:E:181:TYR:OH	2.09	0.52
1:F:307:ARG:HG3	1:F:307:ARG:NH2	2.25	0.52
1:A:160:ARG:HB3	1:B:183:VAL:HG21	1.90	0.52
1:D:79:ARG:HG3	1:D:79:ARG:NH2	2.25	0.52
1:F:4:VAL:HG12	1:F:5:LYS:N	2.25	0.52
1:B:67:VAL:HG23	1:B:240:HIS:ND1	2.25	0.52
1:D:254:ARG:HB2	1:D:276:ASN:ND2	2.25	0.52
1:B:50:LYS:O	1:B:54:GLN:HG3	2.10	0.52
1:E:254:ARG:HH11	1:E:254:ARG:HG3	1.75	0.52
1:A:294:ARG:HB2	1:C:314:LEU:HD13	1.92	0.52
1:C:164:GLN:NE2	1:C:164:GLN:N	2.51	0.52
1:D:227:ARG:HH11	1:D:227:ARG:HB3	1.75	0.52
1:E:196:LYS:HG2	1:E:229:TRP:HB3	1.92	0.52
1:A:54:GLN:O	1:A:58:ILE:HG13	2.10	0.52
1:D:222:THR:O	1:D:226:HIS:HD2	1.92	0.52
1:C:161:PRO:HB3	1:C:259:VAL:HG22	1.92	0.52
1:F:236:THR:N	1:F:293:GLU:OE1	2.34	0.52
1:A:183:VAL:HG21	1:B:160:ARG:CB	2.38	0.52
1:D:105:ILE:O	1:D:109:GLU:HG3	2.09	0.52
1:A:45:VAL:HG22	1:A:90:LEU:H	1.75	0.51
1:C:79:ARG:HG3	1:C:79:ARG:HH11	1.74	0.51
1:A:69:LEU:HB3	1:A:70:PRO:CD	2.41	0.51
1:A:205:THR:HG21	1:A:244:MET:HG2	1.91	0.51
1:C:287:VAL:HG13	1:C:299:PRO:HG2	1.93	0.51
1:C:235:GLU:HG3	1:C:237:TYR:CZ	2.46	0.51
1:A:6:GLU:HA	1:A:9:GLU:HG2	1.91	0.51
1:A:123:ILE:HD12	1:A:129:ILE:HD11	1.92	0.51
1:B:224:LYS:HE3	1:B:227:ARG:HH12	1.76	0.51
1:E:297:ILE:HD13	1:E:305:ILE:CD1	2.40	0.51
1:F:257:THR:HG23	1:F:261:PRO:HA	1.92	0.51
1:B:236:THR:HG23	1:B:292:THR:CG2	2.40	0.51
1:D:262:GLU:O	1:D:266:LYS:HG3	2.10	0.51
1:F:171:GLU:HG2	1:F:175:TYR:CE2	2.42	0.51
1:F:61:GLU:HA	1:F:64:PRO:HG3	1.92	0.51
1:A:44:ASN:HB3	1:A:47:GLU:HB3	1.93	0.51
1:A:49:TRP:HA	1:A:49:TRP:HE3	1.74	0.51
1:C:8:LEU:H	1:C:8:LEU:CD1	2.20	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:79:ARG:HH11	1:E:79:ARG:HG3	1.76	0.51
1:D:27:ARG:HD3	1:D:108:SER:OG	2.11	0.51
1:E:67:VAL:O	1:E:70:PRO:HD2	2.11	0.51
1:B:214:ILE:HD12	1:B:280:ASP:HB3	1.94	0.50
1:C:48:PHE:O	1:C:51:GLU:HB3	2.10	0.50
1:C:319:PRO:HG2	1:C:320:TRP:CE3	2.47	0.50
1:D:182:VAL:HG12	1:D:186:ALA:HB3	1.94	0.50
1:E:206:VAL:HG12	1:E:243:THR:HG22	1.92	0.50
1:F:44:ASN:ND2	1:F:47:GLU:H	2.09	0.50
1:E:186:ALA:HB2	1:F:214:ILE:CD1	2.34	0.50
1:E:213:LYS:HD3	1:E:278:ALA:O	2.10	0.50
1:E:292:THR:HG22	1:E:293:GLU:N	2.27	0.50
1:C:69:LEU:HB3	1:C:70:PRO:CD	2.42	0.50
1:F:45:VAL:HG22	1:F:90:LEU:N	2.27	0.50
1:C:49:TRP:CD1	1:C:53:LYS:HE3	2.47	0.50
1:F:45:VAL:HG11	1:F:88:ALA:O	2.12	0.50
1:A:44:ASN:HB3	1:A:47:GLU:CB	2.41	0.50
1:F:207:ASN:ND2	1:F:245:LEU:HD22	2.26	0.50
1:B:316:TYR:OH	1:D:107:ASN:ND2	2.44	0.50
1:C:69:LEU:HB3	1:C:70:PRO:HD3	1.93	0.50
1:D:20:ARG:O	1:D:24:LYS:HE2	2.12	0.50
1:C:13:LYS:CB	1:C:19:ILE:HG12	2.42	0.50
1:A:6:GLU:HA	1:A:9:GLU:OE2	2.12	0.49
1:A:164:GLN:N	1:A:164:GLN:NE2	2.54	0.49
1:A:181:TYR:CE2	1:B:260:ILE:HD11	2.47	0.49
1:B:314:LEU:HD11	1:D:297:ILE:CG2	2.42	0.49
1:C:4:VAL:HG13	1:C:7:VAL:HG23	1.93	0.49
1:C:76:VAL:CG2	1:C:77:MET:N	2.74	0.49
1:C:270:LYS:HD2	1:C:270:LYS:N	2.27	0.49
1:E:251:ILE:HD13	1:E:251:ILE:N	2.27	0.49
1:E:260:ILE:HG13	1:E:268:TRP:CH2	2.47	0.49
1:A:17:MET:HG2	1:A:20:ARG:HD2	1.93	0.49
1:E:143:LYS:HZ2	1:E:175:TYR:HB3	1.76	0.49
1:F:63:ARG:N	1:F:64:PRO:HD3	2.27	0.49
1:F:222:THR:HG22	1:F:226:HIS:CD2	2.47	0.49
1:F:293:GLU:CD	1:F:293:GLU:H	2.15	0.49
1:E:152:ILE:HD13	1:E:152:ILE:H	1.77	0.49
1:A:243:THR:HG22	1:A:244:MET:H	1.77	0.49
1:B:292:THR:CG2	1:B:293:GLU:N	2.75	0.49
1:D:45:VAL:HG11	1:D:88:ALA:O	2.13	0.49
1:B:285:GLU:HG3	4:D:604:HOH:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:251:ILE:HG12	1:E:252:GLU:N	2.27	0.49
1:F:196:LYS:HD3	1:F:229:TRP:HB3	1.94	0.49
1:A:9:GLU:O	1:A:13:LYS:HG3	2.13	0.49
1:C:10:ILE:CG2	1:C:28:SER:HB3	2.43	0.49
1:E:25:ILE:HD11	1:E:63:ARG:HH11	1.77	0.49
1:F:313:ALA:HB3	1:F:316:TYR:HD2	1.76	0.49
1:C:212:ASN:O	1:C:279:PHE:HB3	2.12	0.49
1:E:135:SER:OG	1:E:200:GLY:HA3	2.13	0.49
1:A:4:VAL:HG13	1:A:36:GLN:OE1	2.12	0.48
1:F:242:GLU:HG2	1:F:243:THR:H	1.77	0.48
1:A:10:ILE:O	1:A:14:ILE:HG13	2.13	0.48
1:A:267:THR:HG22	1:A:268:TRP:HD1	1.78	0.48
1:C:255:ASP:O	1:C:258:GLU:HB2	2.12	0.48
1:D:182:VAL:HG11	1:D:186:ALA:HB3	1.95	0.48
1:F:69:LEU:HB3	1:F:70:PRO:CD	2.43	0.48
1:B:314:LEU:HD22	1:D:294:ARG:O	2.13	0.48
1:C:5:LYS:O	1:C:9:GLU:HB2	2.14	0.48
1:C:76:VAL:CG2	1:C:77:MET:H	2.26	0.48
1:D:40:SER:HB3	1:D:94:ARG:HH21	1.79	0.48
1:F:23:GLY:HA3	1:F:27:ARG:HH12	1.78	0.48
1:B:162:LYS:HE2	1:B:164:GLN:OE1	2.13	0.48
1:A:211:ILE:HD13	1:A:251:ILE:HD11	1.95	0.48
1:A:145:ALA:O	1:A:150:LYS:HB2	2.13	0.48
1:B:78:HIS:CE1	1:B:311:GLY:HA3	2.48	0.48
1:C:133:CYS:HA	1:C:159:THR:HG21	1.95	0.48
1:D:4:VAL:HG12	1:D:6:GLU:HG2	1.96	0.48
1:F:162:LYS:HE2	1:F:164:GLN:OE1	2.13	0.48
1:C:102:LYS:HD3	1:C:102:LYS:O	2.14	0.48
1:C:101:ALA:O	1:C:105:ILE:HG13	2.14	0.48
1:C:314:LEU:O	1:C:316:TYR:N	2.46	0.48
1:E:314:LEU:H	1:E:314:LEU:HD23	1.77	0.48
1:C:269:PRO:HD2	1:C:272:ILE:HD12	1.95	0.47
1:D:4:VAL:CG1	1:D:6:GLU:HG2	2.43	0.47
1:A:159:THR:O	1:A:159:THR:HG22	2.12	0.47
1:C:307:ARG:HG2	1:C:312:TRP:O	2.13	0.47
1:E:156:VAL:HG23	1:E:179:VAL:HG13	1.96	0.47
1:B:105:ILE:O	1:B:109:GLU:HG3	2.14	0.47
1:C:3:VAL:HG13	1:C:8:LEU:HD11	1.96	0.47
1:F:253:MET:CE	1:F:277:PRO:HA	2.44	0.47
1:A:186:ALA:HA	1:B:214:ILE:HD11	1.96	0.47
1:B:291:ILE:HD13	1:B:296:ILE:HG12	1.94	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:270:LYS:CD	1:C:270:LYS:N	2.77	0.47
1:F:9:GLU:O	1:F:12:GLU:HB2	2.14	0.47
1:A:17:MET:C	1:A:19:ILE:H	2.16	0.47
1:D:52:MET:CE	1:D:97:ILE:HG21	2.45	0.47
1:D:182:VAL:HG12	1:D:183:VAL:N	2.29	0.47
1:A:257:THR:HA	1:A:260:ILE:O	2.14	0.47
1:B:79:ARG:HG3	1:B:79:ARG:NH1	2.30	0.47
1:B:278:ALA:HA	4:B:668:HOH:O	2.14	0.47
1:F:20:ARG:HA	1:F:25:ILE:HD11	1.97	0.47
1:A:45:VAL:HG11	1:A:88:ALA:O	2.15	0.47
1:B:70:PRO:HB2	1:B:74:ARG:HH12	1.80	0.47
1:F:199:MET:HE1	1:F:216:THR:CG2	2.39	0.47
1:A:122:ARG:CZ	1:C:243:THR:HG22	2.45	0.46
1:C:49:TRP:HA	1:C:49:TRP:CE3	2.50	0.46
1:C:65:THR:HG23	1:C:66:ALA:N	2.30	0.46
1:D:45:VAL:HG22	1:D:90:LEU:HB2	1.96	0.46
1:F:271:ASN:N	1:F:271:ASN:ND2	2.62	0.46
1:E:3:VAL:HG21	1:E:58:ILE:HD12	1.98	0.46
1:B:78:HIS:CG	1:B:311:GLY:HA3	2.50	0.46
1:B:247:GLN:HG3	1:B:247:GLN:O	2.15	0.46
4:E:619:HOH:O	1:F:182:VAL:HG23	2.15	0.46
1:F:132:HIS:HB2	1:F:199:MET:HE3	1.97	0.46
1:B:206:VAL:CG1	1:B:241:PRO:HA	2.44	0.46
1:C:16:ASN:O	1:C:17:MET:HB2	2.16	0.46
1:E:294:ARG:HE	1:E:294:ARG:C	2.19	0.46
1:C:318:GLU:HG3	1:C:319:PRO:HD2	1.97	0.46
1:C:241:PRO:HA	1:C:306:LEU:CD1	2.46	0.46
1:F:31:TYR:CZ	1:F:35:LEU:HD21	2.51	0.46
1:F:129:ILE:HD12	1:F:196:LYS:HB2	1.98	0.46
1:D:84:TYR:C	1:D:86:SER:H	2.19	0.46
1:F:4:VAL:CG1	1:F:5:LYS:N	2.78	0.46
1:C:262:GLU:O	1:C:266:LYS:HG2	2.16	0.46
1:F:162:LYS:HB2	1:F:164:GLN:HE22	1.81	0.46
1:A:211:ILE:HG21	1:A:251:ILE:HD12	1.97	0.46
1:F:260:ILE:HD13	1:F:268:TRP:CZ3	2.51	0.46
1:C:263:ASP:OD2	1:C:264:GLU:N	2.49	0.45
1:D:42:ALA:HA	1:D:47:GLU:OE2	2.16	0.45
1:D:52:MET:HE1	1:D:97:ILE:HG21	1.98	0.45
1:C:40:SER:HB2	1:C:51:GLU:OE2	2.16	0.45
1:D:36:GLN:O	1:D:40:SER:HB2	2.16	0.45
1:D:236:THR:N	1:D:293:GLU:OE2	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:254:ARG:HG3	1:E:254:ARG:NH1	2.31	0.45
1:E:318:GLU:CG	1:E:319:PRO:HD2	2.36	0.45
1:F:170:LYS:O	1:F:173:ALA:HB3	2.17	0.45
1:B:0:HIS:HE1	1:B:51:GLU:OE2	2.00	0.45
1:B:289:VAL:HB	1:B:296:ILE:HG23	1.98	0.45
1:C:8:LEU:O	1:C:12:GLU:HG3	2.16	0.45
1:D:16:ASN:O	1:D:17:MET:HB2	2.17	0.45
2:E:401:PEG:H21	2:E:401:PEG:H42	1.73	0.45
1:F:253:MET:HE2	1:F:277:PRO:CA	2.46	0.45
1:D:77:MET:CB	1:D:319:PRO:HB2	2.46	0.45
1:E:271:ASN:HD21	1:F:173:ALA:CA	2.30	0.45
1:A:95:PHE:O	1:A:99:ASN:HB2	2.17	0.45
1:E:195:ASP:C	1:E:196:LYS:HG3	2.37	0.45
1:A:25:ILE:HG13	1:A:26:ALA:N	2.27	0.45
1:A:25:ILE:HD11	1:A:69:LEU:HB2	1.99	0.45
1:C:45:VAL:HG11	1:C:88:ALA:O	2.16	0.45
1:F:57:LYS:O	1:F:61:GLU:HG3	2.17	0.45
1:A:11:ALA:HB1	1:A:62:THR:HG21	1.99	0.45
1:B:89:ASP:H	1:B:92:GLN:HE21	1.63	0.45
1:C:49:TRP:HA	1:C:49:TRP:HE3	1.82	0.45
1:D:34:GLN:O	1:D:38:GLU:HG3	2.17	0.45
1:F:206:VAL:CG1	1:F:241:PRO:HA	2.46	0.45
1:B:224:LYS:HD2	2:B:401:PEG:H31	1.98	0.45
1:C:214:ILE:HD11	1:D:186:ALA:HA	1.99	0.45
1:D:317:THR:O	1:D:317:THR:HG22	2.17	0.45
1:A:107:ASN:HD21	1:C:315:LYS:CE	2.30	0.45
1:D:307:ARG:HD2	1:D:308:GLU:OE1	2.17	0.45
1:E:262:GLU:O	1:E:266:LYS:HG3	2.17	0.45
1:F:6:GLU:N	1:F:6:GLU:OE1	2.49	0.45
1:F:91:GLU:OE1	1:F:94:ARG:NH1	2.50	0.45
1:B:144:THR:O	1:B:148:GLN:HG3	2.17	0.44
1:C:26:ALA:HB2	1:C:68:SER:HB2	1.98	0.44
1:C:35:LEU:C	1:C:37:ALA:N	2.71	0.44
1:C:221:LEU:HD13	1:D:221:LEU:CD1	2.43	0.44
1:E:143:LYS:HE2	1:E:147:GLU:CG	2.46	0.44
1:F:210:VAL:HG21	1:F:232:ILE:HG13	1.99	0.44
1:B:207:ASN:OD1	1:D:298:PRO:HB3	2.16	0.44
1:F:23:GLY:O	1:F:26:ALA:HB3	2.17	0.44
1:B:70:PRO:O	1:B:74:ARG:HG3	2.18	0.44
1:B:78:HIS:CD2	1:B:311:GLY:HA3	2.53	0.44
1:C:33:LEU:HD11	1:C:73:LEU:HG	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:206:VAL:HG13	1:D:241:PRO:HA	1.98	0.44
1:B:206:VAL:HG13	1:B:241:PRO:C	2.36	0.44
1:C:79:ARG:C	1:C:82:ILE:HG22	2.37	0.44
1:D:26:ALA:HB2	1:D:68:SER:HB2	1.99	0.44
1:E:314:LEU:H	1:E:314:LEU:CD2	2.29	0.44
1:F:239:PHE:N	1:F:239:PHE:CD2	2.84	0.44
1:B:26:ALA:HB2	1:B:68:SER:HB2	2.00	0.44
1:B:153:LYS:HD3	1:B:180:ILE:CD1	2.47	0.44
1:D:1:MET:HA	1:D:54:GLN:HE21	1.82	0.44
1:E:164:GLN:HE21	1:E:164:GLN:N	2.05	0.44
1:A:15:LYS:C	1:A:17:MET:N	2.71	0.44
1:A:59:LEU:O	1:A:69:LEU:HD21	2.18	0.44
1:E:177:ILE:O	1:E:179:VAL:HG23	2.18	0.44
1:E:181:TYR:CE2	1:F:260:ILE:HD11	2.52	0.44
1:F:15:LYS:HB2	1:F:62:THR:HB	1.99	0.44
1:D:45:VAL:HG12	1:D:45:VAL:O	2.18	0.44
1:F:182:VAL:HG22	1:F:186:ALA:HB3	1.98	0.44
1:C:241:PRO:HA	1:C:306:LEU:HD13	2.00	0.44
1:E:159:THR:O	1:E:159:THR:HG22	2.18	0.44
1:E:204:ILE:HD12	1:E:210:VAL:HG22	2.00	0.44
1:F:297:ILE:HD13	1:F:305:ILE:CD1	2.48	0.44
1:A:133:CYS:HA	1:A:159:THR:HG21	2.00	0.43
1:C:114:ARG:O	1:C:117:GLU:HB3	2.18	0.43
1:D:89:ASP:CG	1:D:90:LEU:N	2.72	0.43
1:B:50:LYS:HE3	1:B:50:LYS:HB2	1.86	0.43
1:C:135:SER:O	1:C:139:ILE:HG13	2.18	0.43
1:E:160:ARG:HB2	1:F:183:VAL:HG21	2.01	0.43
1:F:125:ASP:OD1	1:F:151:ASP:N	2.48	0.43
1:E:268:TRP:HD1	1:E:268:TRP:H	1.64	0.43
1:B:52:MET:HG2	1:B:97:ILE:CD1	2.48	0.43
1:B:88:ALA:HB1	1:B:92:GLN:HB2	2.00	0.43
1:C:158:GLU:HG3	1:C:181:TYR:OH	2.17	0.43
1:C:160:ARG:HB3	1:C:161:PRO:HA	2.00	0.43
1:E:221:LEU:HD13	1:F:221:LEU:HD13	2.01	0.43
1:E:297:ILE:HD13	1:E:305:ILE:HD11	2.00	0.43
1:A:6:GLU:HA	1:A:9:GLU:CG	2.48	0.43
1:A:16:ASN:HB2	1:A:18:GLU:HG3	2.00	0.43
1:A:224:LYS:HG3	1:A:286:TYR:CD1	2.54	0.43
1:C:35:LEU:C	1:C:37:ALA:H	2.22	0.43
1:C:153:LYS:HE2	1:C:180:ILE:HD11	1.99	0.43
1:E:313:ALA:HB3	1:E:315:LYS:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:52:MET:CE	1:F:97:ILE:HG21	2.49	0.43
1:F:263:ASP:HA	1:F:266:LYS:CD	2.48	0.43
1:F:283:PRO:HB3	1:F:285:GLU:OE2	2.19	0.43
1:B:307:ARG:HG3	1:B:307:ARG:HH11	1.83	0.43
1:C:40:SER:H	1:C:94:ARG:NH2	2.16	0.43
1:E:131:THR:OG1	1:E:132:HIS:N	2.52	0.43
1:A:271:ASN:N	1:A:271:ASN:ND2	2.64	0.43
1:B:292:THR:HG23	1:B:293:GLU:OE1	2.19	0.43
1:E:119:GLY:CA	1:E:291:ILE:HD13	2.48	0.43
1:A:288:ASP:OD1	2:A:401:PEG:H31	2.19	0.43
1:B:153:LYS:HA	1:B:178:PRO:HG2	1.99	0.43
1:D:46:ASP:O	1:D:50:LYS:HB2	2.18	0.43
1:F:204:ILE:HD12	1:F:210:VAL:HG22	2.01	0.43
1:A:69:LEU:O	1:A:73:LEU:HD22	2.19	0.43
1:B:134:HIS:HE1	1:B:171:GLU:OE1	2.02	0.43
1:C:319:PRO:HG2	1:C:320:TRP:HE3	1.84	0.43
1:D:65:THR:O	1:D:66:ALA:C	2.56	0.43
1:A:4:VAL:HG22	1:A:7:VAL:HG23	2.01	0.42
1:C:314:LEU:HD23	1:C:314:LEU:HA	1.82	0.42
1:D:318:GLU:HG3	1:D:320:TRP:CH2	2.54	0.42
1:E:146:TRP:HB2	1:E:152:ILE:HD11	2.01	0.42
1:A:48:PHE:HB2	1:A:90:LEU:CD1	2.49	0.42
1:C:318:GLU:HG2	1:C:320:TRP:CZ2	2.53	0.42
1:D:4:VAL:HG12	1:D:5:LYS:N	2.33	0.42
1:D:139:ILE:HA	1:D:142:MET:HE3	2.01	0.42
1:A:17:MET:C	1:A:19:ILE:N	2.73	0.42
1:A:160:ARG:CB	1:B:183:VAL:HG21	2.49	0.42
1:E:275:TRP:CH2	1:F:180:ILE:HD13	2.55	0.42
1:A:78:HIS:CG	1:A:311:GLY:HA3	2.54	0.42
1:C:4:VAL:CG2	1:C:6:GLU:HG2	2.50	0.42
1:E:268:TRP:CD1	1:E:268:TRP:N	2.88	0.42
1:F:143:LYS:HD3	1:F:175:TYR:CE1	2.54	0.42
1:C:268:TRP:HA	1:C:269:PRO:HD3	1.88	0.42
1:C:313:ALA:O	1:C:316:TYR:HB2	2.18	0.42
1:D:245:LEU:HA	1:D:281:VAL:HG11	2.02	0.42
1:A:49:TRP:NE1	1:A:53:LYS:HE3	2.34	0.42
1:C:211:ILE:HD11	1:C:244:MET:CG	2.48	0.42
1:C:270:LYS:H	1:C:270:LYS:HD2	1.85	0.42
1:E:152:ILE:HD13	1:E:152:ILE:N	2.34	0.42
1:A:36:GLN:O	1:A:40:SER:HB2	2.20	0.42
1:B:257:THR:HA	1:B:260:ILE:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:182:VAL:CG1	1:D:183:VAL:N	2.83	0.42
1:A:267:THR:O	1:A:267:THR:CG2	2.67	0.42
1:B:222:THR:O	1:B:226:HIS:HD2	2.01	0.42
1:E:69:LEU:HB3	1:E:70:PRO:CD	2.46	0.42
1:F:303:ILE:O	1:F:307:ARG:HG2	2.19	0.42
1:A:52:MET:HG3	1:A:97:ILE:CD1	2.50	0.42
1:D:11:ALA:HB1	1:D:62:THR:CG2	2.50	0.42
1:D:44:ASN:C	1:D:90:LEU:HD13	2.40	0.42
1:D:164:GLN:NE2	1:D:164:GLN:N	2.61	0.42
1:F:132:HIS:HA	1:F:157:THR:OG1	2.19	0.42
1:F:162:LYS:HD3	1:F:258:GLU:OE2	2.20	0.42
1:B:206:VAL:HG22	1:B:242:GLU:O	2.19	0.41
1:E:143:LYS:HZ2	1:E:175:TYR:CB	2.33	0.41
1:F:129:ILE:HD13	1:F:196:LYS:HB2	2.02	0.41
1:A:49:TRP:CZ2	1:A:81:LYS:HA	2.56	0.41
1:A:283:PRO:HD2	1:A:286:TYR:CD2	2.55	0.41
1:C:199:MET:CE	1:C:216:THR:HG23	2.51	0.41
1:E:146:TRP:HE3	1:E:152:ILE:HD13	1.84	0.41
1:E:288:ASP:O	1:E:299:PRO:HD3	2.20	0.41
1:F:44:ASN:C	1:F:44:ASN:ND2	2.74	0.41
1:A:222:THR:O	1:A:226:HIS:HD2	2.04	0.41
1:B:8:LEU:O	1:B:12:GLU:HG2	2.20	0.41
1:B:314:LEU:HB3	1:D:294:ARG:CB	2.48	0.41
1:D:67:VAL:O	1:D:70:PRO:HD2	2.20	0.41
1:D:318:GLU:HA	1:D:319:PRO:HD3	1.96	0.41
1:A:49:TRP:CE2	1:A:53:LYS:HE3	2.56	0.41
1:B:224:LYS:HA	2:B:401:PEG:H31	2.02	0.41
1:C:33:LEU:HD13	1:C:76:VAL:HG21	2.02	0.41
1:F:239:PHE:N	1:F:239:PHE:HD2	2.18	0.41
1:F:31:TYR:CE2	1:F:35:LEU:HD11	2.56	0.41
1:F:132:HIS:HB3	1:F:199:MET:CE	2.51	0.41
1:A:16:ASN:CB	1:A:18:GLU:HG3	2.50	0.41
1:A:183:VAL:HG22	4:A:603:HOH:O	2.21	0.41
1:B:4:VAL:HG12	1:B:6:GLU:HG2	2.03	0.41
1:B:227:ARG:HG2	1:E:227:ARG:HG2	2.02	0.41
1:B:269:PRO:C	1:B:271:ASN:N	2.74	0.41
1:C:90:LEU:O	1:C:94:ARG:HB2	2.21	0.41
1:C:210:VAL:HG21	1:C:232:ILE:HG13	2.03	0.41
1:F:31:TYR:O	1:F:34:GLN:N	2.54	0.41
1:F:206:VAL:HG22	1:F:242:GLU:O	2.21	0.41
1:B:106:HIS:O	1:B:110:LYS:HG2	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:145:ALA:O	1:F:148:GLN:HB2	2.20	0.40
1:F:235:GLU:HG2	1:F:237:TYR:OH	2.21	0.40
1:B:227:ARG:HE	1:E:227:ARG:CG	2.28	0.40
1:B:291:ILE:CD1	1:B:296:ILE:HG12	2.52	0.40
1:C:7:VAL:C	1:C:9:GLU:N	2.75	0.40
1:C:65:THR:HG23	1:C:66:ALA:H	1.85	0.40
1:D:160:ARG:HD2	1:D:161:PRO:HA	2.02	0.40
1:C:22:ALA:HB2	4:C:625:HOH:O	2.20	0.40
1:C:90:LEU:HD21	1:C:94:ARG:HH11	1.87	0.40
1:E:101:ALA:O	1:E:105:ILE:HG13	2.22	0.40
1:F:45:VAL:HG13	1:F:90:LEU:HA	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	318/338 (94%)	302 (95%)	14 (4%)	2 (1%)	25	43
1	B	318/338 (94%)	307 (96%)	11 (4%)	0	100	100
1	C	313/338 (93%)	287 (92%)	24 (8%)	2 (1%)	25	43
1	D	316/338 (94%)	296 (94%)	18 (6%)	2 (1%)	25	43
1	E	313/338 (93%)	301 (96%)	12 (4%)	0	100	100
1	F	315/338 (93%)	289 (92%)	23 (7%)	3 (1%)	15	28
All	All	1893/2028 (93%)	1782 (94%)	102 (5%)	9 (0%)	29	48

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4	VAL

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Mol	Chain	Res	Type
1	F	245	LEU
1	A	252	GLU
1	D	42	ALA
1	C	314	LEU
1	C	315	LYS
1	F	4	VAL
1	F	64	PRO
1	D	269	PRO

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	268/284 (94%)	253 (94%)	15 (6%)	21	40
1	B	268/284 (94%)	254 (95%)	14 (5%)	23	44
1	C	264/284 (93%)	255 (97%)	9 (3%)	37	63
1	D	265/284 (93%)	252 (95%)	13 (5%)	25	47
1	E	264/284 (93%)	248 (94%)	16 (6%)	18	36
1	F	266/284 (94%)	253 (95%)	13 (5%)	25	47
All	All	1595/1704 (94%)	1515 (95%)	80 (5%)	24	46

All (80) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	LYS
1	A	20	ARG
1	A	25	ILE
1	A	49	TRP
1	A	89	ASP
1	A	151	ASP
1	A	164	GLN
1	A	221	LEU
1	A	240	HIS
1	A	242	GLU

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Mol	Chain	Res	Type
1	A	263	ASP
1	A	267	THR
1	A	270	LYS
1	A	271	ASN
1	A	309	GLU
1	B	6	GLU
1	B	17	MET
1	B	90	LEU
1	B	117	GLU
1	B	164	GLN
1	B	192	LYS
1	B	206	VAL
1	B	218	LEU
1	B	221	LEU
1	B	240	HIS
1	B	270	LYS
1	B	271	ASN
1	B	293	GLU
1	B	308	GLU
1	C	17	MET
1	C	91	GLU
1	C	164	GLN
1	C	221	LEU
1	C	240	HIS
1	C	243	THR
1	C	270	LYS
1	C	309	GLU
1	C	314	LEU
1	D	50	LYS
1	D	117	GLU
1	D	164	GLN
1	D	206	VAL
1	D	214	ILE
1	D	221	LEU
1	D	227	ARG
1	D	254	ARG
1	D	293	GLU
1	D	308	GLU
1	D	316	TYR
1	D	317	THR
1	D	318	GLU
1	E	69	LEU

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Mol	Chain	Res	Type
1	E	73	LEU
1	E	107	ASN
1	E	117	GLU
1	E	122	ARG
1	E	143	LYS
1	E	152	ILE
1	E	164	GLN
1	E	185	SER
1	E	218	LEU
1	E	221	LEU
1	E	224	LYS
1	E	251	ILE
1	E	287	VAL
1	E	294	ARG
1	E	316	TYR
1	F	6	GLU
1	F	39	LYS
1	F	44	ASN
1	F	45	VAL
1	F	79	ARG
1	F	164	GLN
1	F	221	LEU
1	F	245	LEU
1	F	262	GLU
1	F	280	ASP
1	F	293	GLU
1	F	296	ILE
1	F	303	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	ASN
1	A	107	ASN
1	A	134	HIS
1	A	164	GLN
1	A	207	ASN
1	A	226	HIS
1	A	240	HIS
1	A	271	ASN
1	B	0	HIS
1	B	54	GLN

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Mol	Chain	Res	Type
1	B	92	GLN
1	B	132	HIS
1	B	134	HIS
1	B	164	GLN
1	B	226	HIS
1	B	247	GLN
1	B	271	ASN
1	C	92	GLN
1	C	106	HIS
1	C	164	GLN
1	C	226	HIS
1	D	34	GLN
1	D	92	GLN
1	D	99	ASN
1	D	107	ASN
1	D	134	HIS
1	D	164	GLN
1	D	189	HIS
1	D	226	HIS
1	D	247	GLN
1	E	44	ASN
1	E	164	GLN
1	E	226	HIS
1	F	44	ASN
1	F	54	GLN
1	F	164	GLN
1	F	189	HIS
1	F	207	ASN
1	F	226	HIS
1	F	240	HIS
1	F	271	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 (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 2 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	PEG	E	401	-	6,6,6	0.53	0	5,5,5	0.49	0
2	PEG	D	401	-	6,6,6	0.54	0	5,5,5	0.37	0
2	PEG	B	401	-	6,6,6	0.54	0	5,5,5	0.41	0
2	PEG	C	401	-	6,6,6	0.53	0	5,5,5	0.44	0
2	PEG	A	401	-	6,6,6	0.53	0	5,5,5	0.42	0
2	PEG	F	401	-	6,6,6	0.52	0	5,5,5	0.46	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PEG	E	401	-	-	1/4/4/4	-
2	PEG	D	401	-	-	1/4/4/4	-
2	PEG	B	401	-	-	0/4/4/4	-
2	PEG	C	401	-	-	0/4/4/4	-
2	PEG	A	401	-	-	0/4/4/4	-
2	PEG	F	401	-	-	0/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	E	401	PEG	C4-C3-O2-C2
2	D	401	PEG	C4-C3-O2-C2

There are no ring outliers.

5 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	401	PEG	1	0
2	D	401	PEG	2	0
2	B	401	PEG	2	0
2	A	401	PEG	2	0
2	F	401	PEG	2	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	320/338 (94%)	0.13	12 (3%) 40 43	14, 36, 87, 104	0
1	B	322/338 (95%)	-0.17	4 (1%) 79 80	12, 29, 56, 82	0
1	C	317/338 (93%)	0.56	49 (15%) 2 1	20, 51, 109, 122	0
1	D	320/338 (94%)	0.17	12 (3%) 40 43	16, 37, 78, 115	0
1	E	317/338 (93%)	-0.00	5 (1%) 72 74	24, 42, 68, 92	0
1	F	319/338 (94%)	0.26	15 (4%) 31 33	25, 48, 79, 111	0
All	All	1915/2028 (94%)	0.16	97 (5%) 28 29	12, 41, 86, 122	0

All (97) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	248	LEU	7.2
1	C	93	LEU	7.0
1	D	249	VAL	6.2
1	C	3	VAL	5.9
1	C	49	TRP	5.6
1	C	94	ARG	4.2
1	A	8	LEU	4.0
1	C	246	GLY	4.0
1	D	92	GLN	4.0
1	C	90	LEU	4.0
1	C	2	ALA	4.0
1	C	31	TYR	3.9
1	D	1	MET	3.9
1	C	14	ILE	3.9
1	A	10	ILE	3.8
1	E	316	TYR	3.8
1	C	322	ASP	3.8
1	F	249	VAL	3.7
1	A	14	ILE	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	33	LEU	3.7
1	F	16	ASN	3.6
1	A	54	GLN	3.6
1	C	91	GLU	3.6
1	D	316	TYR	3.6
1	C	42	ALA	3.5
1	C	48	PHE	3.5
1	E	251	ILE	3.4
1	C	65	THR	3.4
1	C	92	GLN	3.4
1	C	245	LEU	3.4
1	D	245	LEU	3.3
1	A	248	LEU	3.3
1	C	98	ILE	3.3
1	C	17	MET	3.3
1	C	12	GLU	3.2
1	C	95	PHE	3.1
1	D	89	ASP	3.1
1	C	45	VAL	3.0
1	C	96	VAL	3.0
1	C	56	ALA	3.0
1	C	100	ALA	3.0
1	C	54	GLN	2.9
1	E	314	LEU	2.9
1	C	58	ILE	2.9
1	F	322	ASP	2.9
1	F	43	THR	2.9
1	D	49	TRP	2.8
1	C	20	ARG	2.8
1	A	322	ASP	2.8
1	C	43	THR	2.8
1	E	175	TYR	2.7
1	D	322	ASP	2.7
1	D	2	ALA	2.7
1	C	59	LEU	2.7
1	C	40	SER	2.7
1	A	247	GLN	2.7
1	B	322	ASP	2.7
1	C	251	ILE	2.6
1	C	88	ALA	2.6
1	C	15	LYS	2.6
1	C	44	ASN	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	50	LYS	2.6
1	A	249	VAL	2.6
1	F	175	TYR	2.6
1	F	12	GLU	2.6
1	B	316	TYR	2.5
1	F	19	ILE	2.5
1	D	90	LEU	2.5
1	C	7	VAL	2.5
1	B	245	LEU	2.4
1	F	8	LEU	2.4
1	C	82	ILE	2.4
1	F	2	ALA	2.4
1	C	66	ALA	2.4
1	B	-2	GLY	2.4
1	C	51	GLU	2.4
1	A	7	VAL	2.3
1	C	4	VAL	2.3
1	F	54	GLN	2.3
1	A	317	THR	2.3
1	F	11	ALA	2.3
1	F	87	GLY	2.2
1	F	270	LYS	2.2
1	C	84	TYR	2.2
1	C	175	TYR	2.2
1	A	40	SER	2.2
1	C	6	GLU	2.2
1	C	8	LEU	2.2
1	C	314	LEU	2.2
1	A	9	GLU	2.2
1	C	16	ASN	2.1
1	E	270	LYS	2.1
1	D	84	TYR	2.1
1	C	102	LYS	2.1
1	C	99	ASN	2.1
1	F	3	VAL	2.0
1	F	20	ARG	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)

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, 95^{th} 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	PEG	D	401	7/7	0.72	0.41	48,49,62,62	0
2	PEG	C	401	7/7	0.74	0.38	49,59,63,67	0
2	PEG	F	401	7/7	0.79	0.30	45,53,64,64	0
2	PEG	E	401	7/7	0.80	0.36	51,53,55,55	0
2	PEG	B	401	7/7	0.80	0.31	56,58,60,62	0
2	PEG	A	401	7/7	0.83	0.35	40,51,58,59	0
3	MG	E	411	1/1	0.91	0.50	56,56,56,56	0
3	MG	B	411	1/1	0.96	0.51	51,51,51,51	0

6.5 Other polymers (i)

There are no such residues in this entry.