



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 18, 2023 – 02:44 am GMT

PDB ID : 4D28
Title : Crystal structure of the kinase domain of CIPK24/SOS2
Authors : Gonzalez-Rubio, J.M.; Chaves-Sanjuan, A.; Sanchez-Barrena, M.J.; Albert, A.
Deposited on : 2014-05-08
Resolution : 3.30 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

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

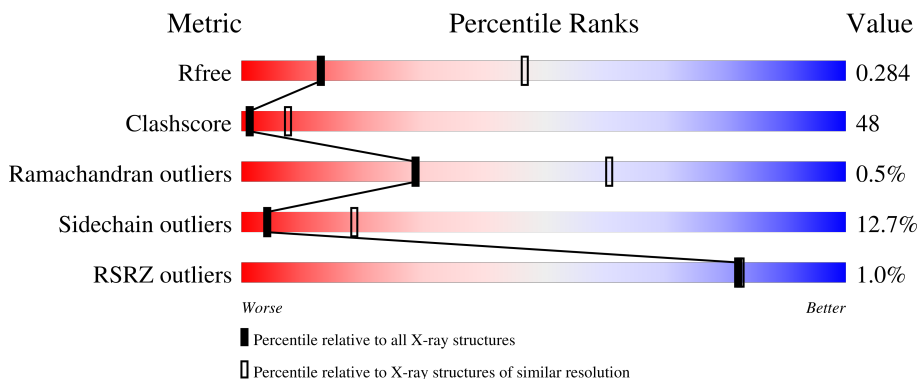
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.30 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	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	446	 27% 31% 5% 37%
1	B	446	 25% 31% 7% 37%
1	C	446	 24% 33% 5% 37%
1	D	446	 21% 35% 5% 39%

2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 8821 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 CBL-INTERACTING SERINE/THREONINE-PROTEIN KINASE 24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	274	Total 2192	C 1404	N 382	O 399	S 7	0	0	0
1	B	277	Total 2217	C 1419	N 388	O 403	S 7	0	0	0
1	C	279	Total 2234	C 1430	N 390	O 407	S 7	0	0	0
1	D	271	Total 2178	C 1397	N 379	O 395	S 7	0	0	0

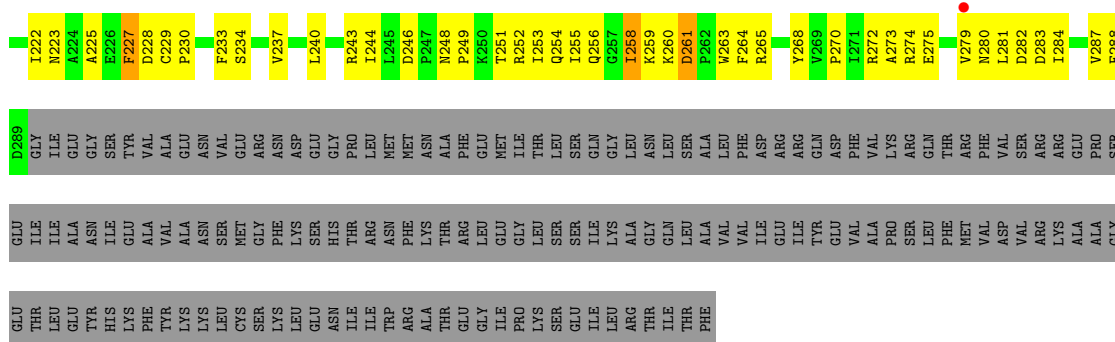
There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	81	LYS	PRO	engineered mutation	UNP Q9LDI3
A	107	LYS	GLU	engineered mutation	UNP Q9LDI3
A	109	ASP	SER	engineered mutation	UNP Q9LDI3
A	127	SER	CYS	engineered mutation	UNP Q9LDI3
A	167	ASN	ARG	conflict	UNP Q9LDI3
A	168	ASP	THR	engineered mutation	UNP Q9LDI3
A	228	ASP	SER	engineered mutation	UNP Q9LDI3
A	266	LYS	LEU	engineered mutation	UNP Q9LDI3
B	81	LYS	PRO	engineered mutation	UNP Q9LDI3
B	107	LYS	GLU	engineered mutation	UNP Q9LDI3
B	109	ASP	SER	engineered mutation	UNP Q9LDI3
B	127	SER	CYS	engineered mutation	UNP Q9LDI3
B	167	ASN	ARG	conflict	UNP Q9LDI3
B	168	ASP	THR	engineered mutation	UNP Q9LDI3
B	228	ASP	SER	engineered mutation	UNP Q9LDI3
B	266	LYS	LEU	engineered mutation	UNP Q9LDI3
C	81	LYS	PRO	engineered mutation	UNP Q9LDI3
C	107	LYS	GLU	engineered mutation	UNP Q9LDI3
C	109	ASP	SER	engineered mutation	UNP Q9LDI3
C	127	SER	CYS	engineered mutation	UNP Q9LDI3

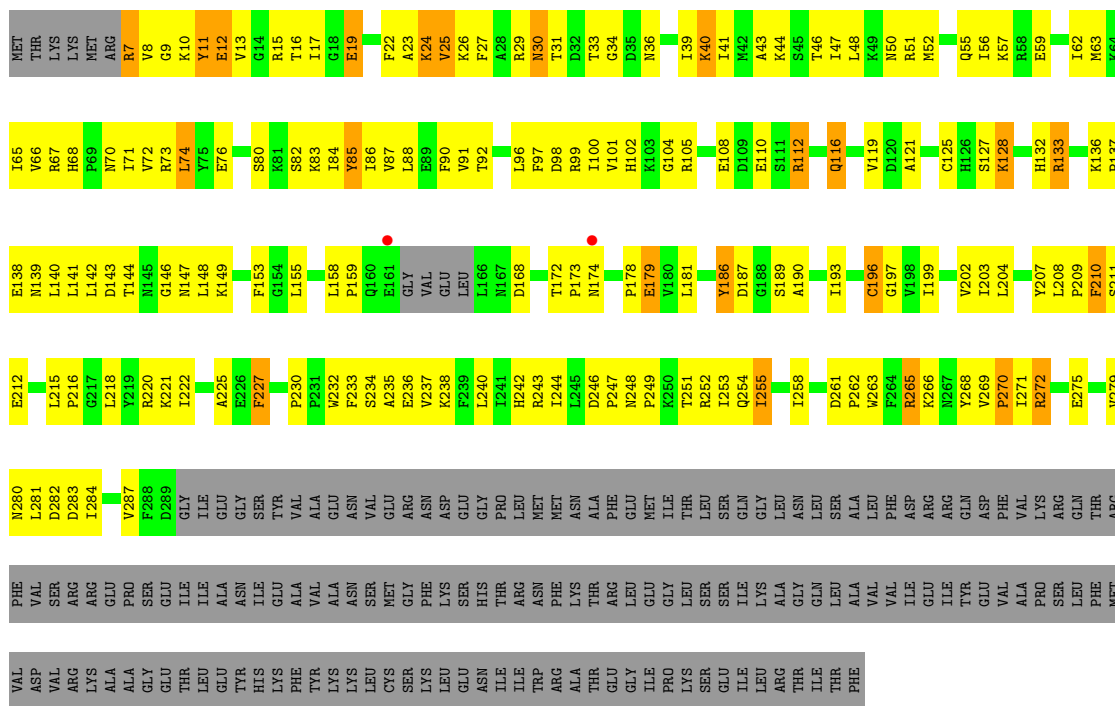
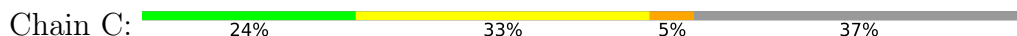
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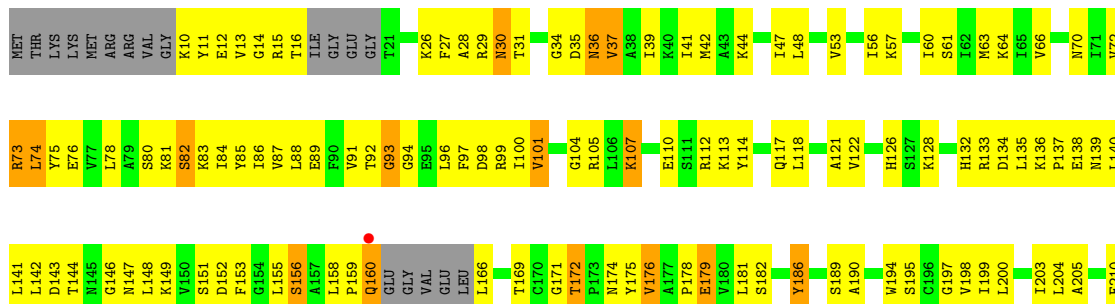
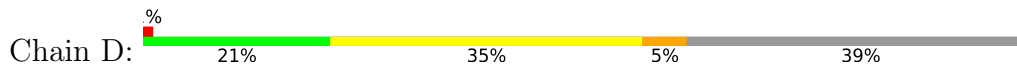
Chain	Residue	Modelled	Actual	Comment	Reference
C	167	ASN	ARG	conflict	UNP Q9LDI3
C	168	ASP	THR	engineered mutation	UNP Q9LDI3
C	228	ASP	SER	engineered mutation	UNP Q9LDI3
C	266	LYS	LEU	engineered mutation	UNP Q9LDI3
D	81	LYS	PRO	engineered mutation	UNP Q9LDI3
D	107	LYS	GLU	engineered mutation	UNP Q9LDI3
D	109	ASP	SER	engineered mutation	UNP Q9LDI3
D	127	SER	CYS	engineered mutation	UNP Q9LDI3
D	167	ASN	ARG	conflict	UNP Q9LDI3
D	168	ASP	THR	engineered mutation	UNP Q9LDI3
D	228	ASP	SER	engineered mutation	UNP Q9LDI3
D	266	LYS	LEU	engineered mutation	UNP Q9LDI3



● Molecule 1: CBL-INTERACTING SERINE/THREONINE-PROTEIN KINASE 24



● Molecule 1: CBL-INTERACTING SERINE/THREONINE-PROTEIN KINASE 24



S211	E212	T213	D214	L215	P216	G217	L218	Y219	R220	K221	I222	E226	F227	P230	P231	W232	F233	E236	V237	K238	F239	L240	I241	H242	R243	I244	L245	D246	F247	N248	P249	K250	T251	R252	I253	Q254	I255	Q256	G257	I258	K259	D261	P262	W263	F264	R265	K266	R267	Y268	V269	P270	E274	E275	E276									
GLN	THR	ARG	PHE	VAL	SER	ARG	ARG	GLU	PRO	SER	GLY	ILE	ILE	ALA	GLY	ASN	GLY	SER	TYR	VAL	VAL	ALA	GLU	ASN	ASN	VAL	VAL	GLU	GLY	ARG	ASN	ASP	GLU	GLY	THR	ILE	SER	SER	SER	GLN	GLY	LEU	ASN	LEU	LEU	SER	ALA	ALA	LEU	PHE	ASP	ILE	ARG	ARG	TYR	GLN	ASP	PHE	VAL	ALA	LYS	PRO	SER
E277	E278	V279	N280	L281	D282	D283	I284	V287	F288	D289	GLY	ILE	ILE	ALA	GLY	ASN	GLY	SER	TYR	VAL	VAL	ALA	GLU	ASN	ASN	VAL	VAL	GLU	GLY	ARG	ASN	ASP	GLU	GLY	THR	ILE	SER	SER	SER	GLN	GLY	LEU	ASN	LEU	LEU	SER	ALA	ALA	LEU	PHE	ASP	ILE	ARG	ARG	TYR	GLN	ASP	PHE	VAL	ALA	LYS	PRO	SER
LEU	PHE	MET	VAL	ASP	VAL	ARG	LYS	ALA	ALA	GLY	GLU	THR	LEU	GLU	TYR	HIS	LYS	PHE	TYR	LYS	LYS	TYR	LYS	LYS	LEU	LEU	CYS	SER	SER	LYS	LEU	GLU	ALA	ALA	THR	THR	LYS	ILE	ILE	PRO	LYS	SER	GLU	ILE	LEU	ARG	THR	ILE	THR	THR	PHE												

4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	69.11Å 71.35Å 77.83Å 104.85° 100.32° 118.96°	Depositor
Resolution (Å)	70.23 – 3.30 70.23 – 3.30	Depositor EDS
% Data completeness (in resolution range)	90.8 (70.23-3.30) 90.8 (70.23-3.30)	Depositor EDS
R_{merge}	0.27	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.73 (at 3.33Å)	Xtrriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.271 , 0.283 0.275 , 0.284	Depositor DCC
R_{free} test set	810 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å ²)	72.5	Xtrriage
Anisotropy	0.128	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 20.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.26$	Xtrriage
Estimated twinning fraction	0.045 for k,h,-h-k-l 0.043 for -k,-h,-l 0.069 for -h,-k,h+k+l	Xtrriage
F_o, F_c correlation	0.87	EDS
Total number of atoms	8821	wwPDB-VP
Average B, all atoms (Å ²)	70.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.30	0/2236	0.56	0/3020
1	B	0.31	0/2263	0.56	0/3057
1	C	0.29	0/2280	0.54	0/3080
1	D	0.30	0/2223	0.54	0/3003
All	All	0.30	0/9002	0.55	0/12160

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	2192	0	2222	171	0
1	B	2217	0	2244	202	0
1	C	2234	0	2261	241	0
1	D	2178	0	2206	254	0
All	All	8821	0	8933	860	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 48.

All (860) 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:C:174:ASN:OD1	1:C:212:GLU:OE2	1.60	1.15
1:D:86:ILE:HG22	1:D:88:LEU:HD11	1.17	1.14
1:B:92:THR:OG1	1:B:144:THR:HG23	1.49	1.12
1:B:7:ARG:HD2	1:B:12:GLU:OE2	1.48	1.11
1:D:175:TYR:O	1:D:194:TRP:NE1	1.83	1.10
1:B:99:ARG:NH2	1:B:110:GLU:CD	2.04	1.10
1:C:243:ARG:CG	1:C:253:ILE:HD11	1.82	1.09
1:A:179:GLU:OE2	1:A:252:ARG:NH2	1.86	1.08
1:D:16:THR:HA	1:D:26:LYS:HG2	1.36	1.05
1:B:112:ARG:O	1:B:116:GLN:HG3	1.54	1.05
1:C:243:ARG:HG3	1:C:253:ILE:CG1	1.86	1.05
1:B:99:ARG:NH2	1:B:110:GLU:OE1	1.90	1.04
1:C:136:LYS:H	1:C:139:ASN:ND2	1.56	1.03
1:C:143:ASP:OD1	1:C:147:ASN:N	1.92	1.02
1:C:210:PHE:CD2	1:C:222:ILE:HG12	1.95	1.01
1:C:243:ARG:HG3	1:C:253:ILE:HD11	1.42	1.00
1:D:255:ILE:HD12	1:D:255:ILE:H	1.26	1.00
1:B:7:ARG:HD2	1:B:12:GLU:CD	1.81	0.99
1:C:243:ARG:HG3	1:C:253:ILE:CD1	1.92	0.99
1:C:281:LEU:O	1:C:284:ILE:N	1.96	0.99
1:B:281:LEU:O	1:B:284:ILE:N	1.96	0.98
1:B:99:ARG:NH2	1:B:110:GLU:OE2	1.96	0.97
1:C:179:GLU:OE2	1:C:252:ARG:NH1	1.96	0.97
1:C:210:PHE:HD2	1:C:222:ILE:HG12	1.28	0.97
1:D:281:LEU:O	1:D:284:ILE:N	1.96	0.97
1:D:86:ILE:HG22	1:D:88:LEU:CD1	1.95	0.97
1:B:7:ARG:CD	1:B:12:GLU:OE2	2.12	0.96
1:C:173:PRO:HD2	1:C:212:GLU:OE2	1.66	0.96
1:A:281:LEU:O	1:A:284:ILE:N	1.98	0.95
1:D:73:ARG:NH1	1:D:75:TYR:HA	1.81	0.95
1:A:41:ILE:HG12	1:A:85:TYR:HD1	1.29	0.95
1:A:51:ARG:HB3	1:A:52:MET:HE3	1.50	0.94
1:D:248:ASN:ND2	1:D:251:THR:HG23	1.80	0.94
1:C:255:ILE:HD12	1:C:255:ILE:H	1.30	0.94
1:D:44:LYS:HD2	1:D:80:SER:O	1.67	0.94
1:A:155:LEU:O	1:A:158:LEU:HB2	1.65	0.94
1:B:99:ARG:HH11	1:B:103:LYS:HZ2	1.15	0.94
1:D:29:ARG:HA	1:D:36:ASN:HA	1.47	0.93
1:B:17:ILE:HB	1:B:25:VAL:HB	1.50	0.93
1:C:212:GLU:O	1:C:215:LEU:CD2	2.17	0.93
1:C:248:ASN:ND2	1:C:251:THR:HG23	1.84	0.93
1:A:118:LEU:HD21	1:A:196:CYS:SG	2.10	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:7:ARG:HG3	1:B:7:ARG:HH11	1.35	0.91
1:A:243:ARG:HG2	1:A:253:ILE:HD12	1.53	0.91
1:D:15:ARG:HG2	1:D:26:LYS:CE	2.00	0.91
1:D:105:ARG:NH2	1:D:232:TRP:CG	2.39	0.90
1:C:99:ARG:CZ	1:C:110:GLU:OE2	2.20	0.90
1:D:64:LYS:HA	1:D:74:LEU:HD13	1.53	0.90
1:B:136:LYS:H	1:B:139:ASN:ND2	1.69	0.89
1:D:37:VAL:HG13	1:D:88:LEU:O	1.72	0.89
1:D:86:ILE:CG2	1:D:88:LEU:HD11	2.01	0.89
1:A:158:LEU:CD1	1:A:159:PRO:HD2	2.02	0.89
1:B:136:LYS:H	1:B:139:ASN:HD22	1.11	0.88
1:D:155:LEU:HA	1:D:158:LEU:HD23	1.54	0.88
1:C:133:ARG:HH11	1:C:133:ARG:HG2	1.38	0.88
1:A:8:VAL:N	1:A:11:TYR:O	2.07	0.88
1:C:243:ARG:NE	1:C:253:ILE:HD11	1.89	0.87
1:B:42:MET:CE	1:B:158:LEU:HD23	2.05	0.87
1:C:67:ARG:HE	1:C:73:ARG:HH21	1.20	0.87
1:B:100:ILE:CD1	1:B:106:LEU:HG	2.05	0.86
1:B:99:ARG:NH1	1:B:103:LYS:NZ	2.22	0.86
1:C:99:ARG:NH2	1:C:110:GLU:OE2	2.08	0.86
1:D:100:ILE:HG23	1:D:104:GLY:O	1.75	0.86
1:D:256:GLN:HG3	1:D:260:LYS:NZ	1.91	0.86
1:A:51:ARG:C	1:A:52:MET:HE3	1.97	0.85
1:B:43:ALA:HA	1:B:83:LYS:HG3	1.57	0.84
1:A:158:LEU:HD13	1:A:159:PRO:HD2	1.58	0.84
1:D:15:ARG:HA	1:D:26:LYS:HG2	1.59	0.84
1:D:15:ARG:HB3	1:D:16:THR:HG23	1.58	0.84
1:D:29:ARG:HB3	1:D:36:ASN:HB3	1.60	0.84
1:D:96:LEU:HD11	1:D:114:TYR:CD1	2.13	0.84
1:A:99:ARG:NH1	1:A:114:TYR:OH	2.10	0.84
1:B:51:ARG:HB3	1:B:52:MET:HE3	1.60	0.84
1:C:116:GLN:HG2	1:C:268:TYR:HD1	1.44	0.83
1:B:7:ARG:NH1	1:B:11:TYR:O	2.11	0.83
1:C:136:LYS:H	1:C:139:ASN:HD22	1.26	0.83
1:D:136:LYS:HB2	1:D:137:PRO:HD2	1.60	0.83
1:B:99:ARG:HH11	1:B:103:LYS:NZ	1.77	0.82
1:A:172:THR:HG22	1:D:169:THR:OG1	1.78	0.82
1:C:40:LYS:HB3	1:C:86:ILE:HB	1.60	0.82
1:D:64:LYS:HA	1:D:74:LEU:CD1	2.09	0.82
1:D:76:GLU:OE1	1:D:78:LEU:HD21	1.78	0.82
1:B:40:LYS:NZ	1:B:152:ASP:OD1	2.12	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:42:MET:SD	1:B:158:LEU:HD23	2.20	0.82
1:C:80:SER:OG	1:C:83:LYS:N	2.13	0.81
1:A:237:VAL:HG22	1:A:263:TRP:CE2	2.16	0.81
1:C:136:LYS:N	1:C:139:ASN:ND2	2.29	0.81
1:B:96:LEU:HD12	1:B:96:LEU:O	1.81	0.81
1:B:275:GLU:N	1:B:275:GLU:OE1	2.13	0.81
1:A:112:ARG:O	1:A:116:GLN:HG3	1.81	0.80
1:C:227:PHE:CZ	1:C:242:HIS:CD2	2.69	0.80
1:D:175:TYR:O	1:D:194:TRP:CD1	2.34	0.80
1:B:243:ARG:HG2	1:B:253:ILE:HB	1.63	0.79
1:C:70:ASN:O	1:C:149:LYS:HA	1.82	0.79
1:B:15:ARG:HB3	1:B:16:THR:HG22	1.63	0.79
1:D:197:GLY:CA	1:D:244:ILE:HG21	2.12	0.79
1:A:237:VAL:HG22	1:A:263:TRP:NE1	1.97	0.79
1:D:256:GLN:O	1:D:260:LYS:HD2	1.81	0.79
1:D:155:LEU:CA	1:D:158:LEU:HD23	2.12	0.78
1:C:212:GLU:O	1:C:215:LEU:HD23	1.82	0.78
1:B:7:ARG:HG3	1:B:7:ARG:NH1	1.96	0.78
1:D:74:LEU:H	1:D:74:LEU:HD12	1.47	0.78
1:B:136:LYS:HD3	1:B:139:ASN:HD21	1.47	0.78
1:C:155:LEU:O	1:C:158:LEU:HB2	1.84	0.78
1:C:243:ARG:CZ	1:C:253:ILE:HD11	2.14	0.78
1:C:246:ASP:O	1:C:252:ARG:NE	2.14	0.78
1:D:87:VAL:C	1:D:88:LEU:HD12	2.05	0.77
1:C:7:ARG:HD3	1:C:12:GLU:HA	1.67	0.77
1:C:25:VAL:HG12	1:C:40:LYS:HA	1.67	0.77
1:A:16:THR:HA	1:A:26:LYS:HG2	1.64	0.77
1:C:29:ARG:HB3	1:C:36:ASN:OD1	1.83	0.77
1:A:41:ILE:HG12	1:A:85:TYR:CD1	2.15	0.77
1:A:116:GLN:NE2	1:A:268:TYR:HB2	2.00	0.77
1:D:212:GLU:OE1	1:D:215:LEU:HD11	1.84	0.77
1:C:133:ARG:HG2	1:C:133:ARG:NH1	1.98	0.77
1:C:44:LYS:O	1:C:47:ILE:HG22	1.85	0.76
1:D:30:ASN:OD1	1:D:30:ASN:O	2.03	0.76
1:C:80:SER:HB3	1:C:85:TYR:HE1	1.48	0.76
1:B:237:VAL:HG22	1:B:263:TRP:CE2	2.21	0.76
1:B:210:PHE:CE1	1:B:227:PHE:HB3	2.21	0.76
1:B:281:LEU:HA	1:B:284:ILE:HG13	1.68	0.76
1:D:14:GLY:O	1:D:26:LYS:HD3	1.86	0.76
1:D:143:ASP:OD1	1:D:147:ASN:N	2.18	0.76
1:B:29:ARG:HA	1:B:36:ASN:HA	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:106:LEU:HD12	1:A:203:ILE:HG23	1.68	0.76
1:A:281:LEU:HD12	1:A:282:ASP:N	2.00	0.75
1:B:80:SER:OG	1:B:83:LYS:N	2.20	0.75
1:B:19:GLU:N	1:B:19:GLU:OE1	2.20	0.75
1:A:47:ILE:HG21	1:A:84:ILE:HD12	1.68	0.75
1:C:174:ASN:ND2	1:C:210:PHE:O	2.20	0.75
1:A:173:PRO:HB3	1:D:219:TYR:OH	1.87	0.74
1:D:30:ASN:N	1:D:35:ASP:O	2.18	0.74
1:A:237:VAL:CG2	1:A:263:TRP:NE1	2.50	0.74
1:D:281:LEU:HA	1:D:284:ILE:HG13	1.69	0.74
1:A:175:TYR:O	1:A:194:TRP:CD1	2.41	0.74
1:C:243:ARG:CG	1:C:253:ILE:CD1	2.56	0.74
1:C:25:VAL:HG12	1:C:40:LYS:CA	2.18	0.74
1:A:221:LYS:HE2	1:A:226:GLU:OE2	1.88	0.73
1:B:136:LYS:HG2	1:B:139:ASN:ND2	2.02	0.73
1:B:237:VAL:CG2	1:B:263:TRP:NE1	2.52	0.73
1:C:116:GLN:HG2	1:C:268:TYR:CD1	2.22	0.73
1:D:15:ARG:HB3	1:D:16:THR:CG2	2.18	0.73
1:D:256:GLN:HG3	1:D:260:LYS:HZ3	1.53	0.73
1:C:44:LYS:H	1:C:83:LYS:HA	1.53	0.73
1:C:136:LYS:O	1:C:139:ASN:ND2	2.20	0.73
1:D:195:SER:O	1:D:199:ILE:HD12	1.89	0.73
1:B:99:ARG:NH1	1:B:103:LYS:HZ3	1.86	0.72
1:B:138:GLU:OE1	1:B:138:GLU:N	2.16	0.72
1:D:261:ASP:OD1	1:D:263:TRP:N	2.23	0.72
1:C:193:ILE:O	1:C:197:GLY:N	2.20	0.72
1:A:69:PRO:HG3	1:A:271:ILE:HG21	1.69	0.72
1:D:190:ALA:O	1:D:252:ARG:NH1	2.22	0.72
1:D:155:LEU:HA	1:D:158:LEU:CD2	2.19	0.72
1:D:155:LEU:C	1:D:158:LEU:HD23	2.10	0.72
1:B:27:PHE:CD1	1:B:28:ALA:N	2.57	0.72
1:B:31:THR:O	1:B:34:GLY:N	2.21	0.72
1:C:74:LEU:HD13	1:C:87:VAL:O	1.90	0.72
1:B:92:THR:OG1	1:B:144:THR:CG2	2.36	0.72
1:C:25:VAL:HG12	1:C:40:LYS:N	2.05	0.72
1:B:175:TYR:CE1	1:B:198:VAL:HG12	2.25	0.71
1:C:25:VAL:CG1	1:C:40:LYS:HD2	2.19	0.71
1:B:77:VAL:C	1:B:78:LEU:HD23	2.10	0.71
1:C:243:ARG:CD	1:C:253:ILE:HD11	2.19	0.71
1:D:210:PHE:HB2	1:D:218:LEU:CD2	2.20	0.71
1:A:96:LEU:HA	1:A:142:LEU:HD11	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:136:LYS:N	1:B:139:ASN:ND2	2.38	0.70
1:B:237:VAL:CG2	1:B:263:TRP:CD1	2.74	0.70
1:C:212:GLU:O	1:C:215:LEU:HD22	1.91	0.70
1:C:29:ARG:HG3	1:C:29:ARG:O	1.90	0.70
1:B:7:ARG:NH2	1:B:9:GLY:O	2.24	0.70
1:A:281:LEU:HA	1:A:284:ILE:HG13	1.72	0.70
1:D:53:VAL:O	1:D:57:LYS:HG3	1.92	0.70
1:A:152:ASP:HA	1:A:155:LEU:HD22	1.74	0.70
1:D:15:ARG:HG2	1:D:26:LYS:CD	2.21	0.70
1:A:67:ARG:N	1:A:275:GLU:OE1	2.24	0.69
1:A:158:LEU:HD12	1:A:159:PRO:HD2	1.74	0.69
1:C:25:VAL:CG1	1:C:40:LYS:HA	2.22	0.69
1:C:25:VAL:HG13	1:C:40:LYS:HD2	1.75	0.69
1:D:15:ARG:HG2	1:D:26:LYS:HD3	1.73	0.69
1:C:97:PHE:CE2	1:C:202:VAL:HG11	2.27	0.69
1:C:247:PRO:O	1:C:252:ARG:NH2	2.25	0.69
1:C:47:ILE:HG21	1:C:84:ILE:CD1	2.22	0.69
1:A:17:ILE:N	1:A:25:VAL:O	2.25	0.69
1:A:39:ILE:HG22	1:A:41:ILE:HG13	1.75	0.69
1:A:143:ASP:OD1	1:A:147:ASN:N	2.26	0.69
1:B:15:ARG:CB	1:B:16:THR:HG22	2.23	0.69
1:B:42:MET:HE1	1:B:158:LEU:HD23	1.75	0.69
1:A:141:LEU:O	1:A:148:LEU:HD12	1.92	0.69
1:B:42:MET:O	1:B:83:LYS:HG2	1.93	0.69
1:B:7:ARG:NH1	1:B:8:VAL:O	2.23	0.68
1:A:51:ARG:HB3	1:A:52:MET:CE	2.22	0.68
1:D:76:GLU:OE1	1:D:78:LEU:CD2	2.40	0.68
1:C:243:ARG:CG	1:C:253:ILE:CG1	2.69	0.68
1:A:100:ILE:CD1	1:A:106:LEU:HG	2.24	0.68
1:A:259:LYS:HA	1:A:264:PHE:CD2	2.28	0.68
1:C:133:ARG:HH11	1:C:133:ARG:CG	2.06	0.68
1:B:27:PHE:CD1	1:B:27:PHE:C	2.67	0.68
1:C:67:ARG:HE	1:C:73:ARG:NH2	1.90	0.68
1:C:281:LEU:HA	1:C:284:ILE:HG13	1.76	0.68
1:D:155:LEU:O	1:D:158:LEU:HD23	1.94	0.68
1:D:64:LYS:O	1:D:73:ARG:NH2	2.27	0.67
1:D:88:LEU:HD12	1:D:88:LEU:N	2.09	0.67
1:A:215:LEU:HA	1:A:218:LEU:HB3	1.76	0.67
1:C:137:PRO:HG2	1:C:138:GLU:OE2	1.94	0.67
1:D:92:THR:O	1:D:94:GLY:N	2.27	0.67
1:B:134:ASP:OD2	1:B:136:LYS:NZ	2.19	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:55:GLN:HE21	1:A:157:ALA:HB2	1.59	0.67
1:A:62:ILE:O	1:A:66:VAL:HG23	1.94	0.67
1:B:143:ASP:OD1	1:B:147:ASN:N	2.28	0.67
1:D:105:ARG:NH2	1:D:232:TRP:CD2	2.62	0.67
1:D:230:PRO:HB3	1:D:232:TRP:CZ2	2.29	0.67
1:C:193:ILE:HG22	1:C:244:ILE:HG23	1.77	0.67
1:D:248:ASN:ND2	1:D:251:THR:CG2	2.56	0.67
1:D:197:GLY:HA3	1:D:244:ILE:HG21	1.75	0.67
1:D:217:GLY:O	1:D:220:ARG:HG2	1.95	0.67
1:B:248:ASN:OD1	1:B:249:PRO:N	2.29	0.66
1:C:19:GLU:HG3	1:C:24:LYS:HB3	1.76	0.66
1:B:47:ILE:HG21	1:B:84:ILE:HD12	1.78	0.66
1:D:136:LYS:HD2	1:D:138:GLU:OE1	1.94	0.66
1:B:179:GLU:OE2	1:B:252:ARG:NH1	2.28	0.66
1:D:118:LEU:O	1:D:122:VAL:HG23	1.95	0.66
1:D:210:PHE:HB2	1:D:218:LEU:HD21	1.78	0.66
1:A:237:VAL:HG22	1:A:263:TRP:CD1	2.30	0.66
1:A:64:LYS:HE3	1:A:76:GLU:HA	1.77	0.66
1:B:70:ASN:HD21	1:B:117:GLN:CD	1.99	0.66
1:C:237:VAL:HG22	1:C:263:TRP:CE2	2.30	0.66
1:C:68:HIS:CE1	1:C:70:ASN:HB2	2.31	0.66
1:D:72:VAL:CG2	1:D:149:LYS:HB3	2.26	0.66
1:A:17:ILE:HG12	1:A:25:VAL:HG12	1.76	0.66
1:D:80:SER:OG	1:D:83:LYS:N	2.25	0.66
1:D:39:ILE:HG22	1:D:41:ILE:HG13	1.78	0.66
1:A:179:GLU:HG2	1:A:249:PRO:HG3	1.78	0.66
1:D:236:GLU:OE2	1:D:262:PRO:HG2	1.94	0.65
1:A:78:LEU:HB3	1:A:85:TYR:HB2	1.77	0.65
1:C:25:VAL:HG12	1:C:39:ILE:C	2.17	0.65
1:C:235:ALA:HA	1:C:238:LYS:HE2	1.78	0.65
1:C:143:ASP:OD1	1:C:146:GLY:N	2.30	0.65
1:D:253:ILE:HG12	1:D:258:ILE:CG2	2.27	0.65
1:C:141:LEU:O	1:C:148:LEU:HD12	1.96	0.65
1:D:15:ARG:HG2	1:D:26:LYS:HE2	1.78	0.65
1:B:65:ILE:HD11	1:B:279:VAL:HB	1.79	0.65
1:B:136:LYS:CD	1:B:139:ASN:HD21	2.10	0.65
1:A:70:ASN:O	1:A:149:LYS:HA	1.96	0.65
1:A:30:ASN:N	1:A:35:ASP:O	2.30	0.65
1:C:193:ILE:HA	1:C:196:CYS:HB2	1.77	0.64
1:C:243:ARG:HG3	1:C:253:ILE:HG12	1.74	0.64
1:D:16:THR:HG22	1:D:26:LYS:HE2	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:17:ILE:HB	1:C:25:VAL:O	1.97	0.64
1:C:25:VAL:HA	1:C:39:ILE:O	1.97	0.64
1:C:227:PHE:HZ	1:C:242:HIS:CD2	2.13	0.64
1:D:199:ILE:O	1:D:203:ILE:HG13	1.97	0.64
1:C:44:LYS:N	1:C:83:LYS:HA	2.12	0.64
1:C:91:VAL:HG21	1:C:141:LEU:HB3	1.80	0.64
1:A:51:ARG:CB	1:A:52:MET:HE3	2.26	0.64
1:A:15:ARG:HB3	1:A:16:THR:CG2	2.28	0.63
1:C:116:GLN:CG	1:C:268:TYR:HD1	2.10	0.63
1:D:241:ILE:CG2	1:D:245:LEU:HD12	2.27	0.63
1:A:201:PHE:CD1	1:A:209:PRO:HG3	2.33	0.63
1:B:15:ARG:HB3	1:B:16:THR:CG2	2.27	0.63
1:C:27:PHE:HE1	1:C:90:PHE:CE2	2.16	0.63
1:D:44:LYS:N	1:D:82:SER:O	2.25	0.63
1:D:212:GLU:OE1	1:D:215:LEU:CD1	2.46	0.63
1:D:253:ILE:HG12	1:D:258:ILE:HG22	1.79	0.63
1:A:178:PRO:O	1:A:181:LEU:HB2	1.98	0.63
1:B:237:VAL:HG23	1:B:263:TRP:CD1	2.31	0.63
1:A:195:SER:O	1:A:199:ILE:HG13	1.98	0.63
1:B:237:VAL:HG22	1:B:263:TRP:NE1	2.12	0.63
1:C:243:ARG:CZ	1:C:253:ILE:CD1	2.75	0.63
1:D:107:LYS:CD	1:D:110:GLU:HB2	2.28	0.63
1:D:134:ASP:O	1:D:136:LYS:HG2	1.99	0.63
1:D:255:ILE:H	1:D:255:ILE:CD1	2.05	0.63
1:C:19:GLU:HB2	1:C:23:ALA:O	1.99	0.63
1:D:197:GLY:HA3	1:D:244:ILE:CG2	2.29	0.63
1:C:7:ARG:NH1	1:C:9:GLY:O	2.32	0.62
1:C:202:VAL:CG2	1:C:208:LEU:HD23	2.29	0.62
1:D:99:ARG:CZ	1:D:110:GLU:OE2	2.47	0.62
1:A:68:HIS:CG	1:A:69:PRO:HD2	2.34	0.62
1:B:61:SER:CB	1:B:284:ILE:HG12	2.29	0.62
1:A:106:LEU:HD12	1:A:203:ILE:CG2	2.30	0.62
1:D:28:ALA:O	1:D:36:ASN:HB2	1.99	0.62
1:D:113:LYS:HE2	1:D:117:GLN:HE22	1.63	0.62
1:B:139:ASN:HA	1:B:151:SER:OG	2.00	0.62
1:D:72:VAL:HG23	1:D:149:LYS:HB3	1.81	0.62
1:C:40:LYS:CB	1:C:86:ILE:HB	2.29	0.62
1:B:256:GLN:HG2	1:B:260:LYS:HE3	1.81	0.62
1:B:7:ARG:HH11	1:B:7:ARG:CG	2.10	0.61
1:D:15:ARG:HG2	1:D:26:LYS:NZ	2.14	0.61
1:D:261:ASP:HB3	1:D:264:PHE:HB3	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:50:ASN:OD1	1:C:51:ARG:N	2.33	0.61
1:D:133:ARG:NH1	1:D:186:TYR:CZ	2.69	0.61
1:A:237:VAL:CG2	1:A:263:TRP:CD1	2.82	0.61
1:D:105:ARG:CZ	1:D:232:TRP:CD2	2.84	0.61
1:C:216:PRO:O	1:C:220:ARG:HG3	2.01	0.61
1:C:248:ASN:HD22	1:C:251:THR:HG23	1.64	0.61
1:D:107:LYS:HD3	1:D:110:GLU:HB2	1.82	0.61
1:C:29:ARG:HA	1:C:36:ASN:HA	1.81	0.61
1:B:58:ARG:O	1:B:62:ILE:HG13	2.01	0.61
1:B:136:LYS:N	1:B:139:ASN:HD22	1.92	0.60
1:B:246:ASP:OD2	1:B:251:THR:OG1	2.19	0.60
1:B:274:ARG:HA	1:B:275:GLU:OE1	2.01	0.60
1:A:172:THR:HB	1:A:174:ASN:OD1	2.01	0.60
1:D:105:ARG:CZ	1:D:232:TRP:CE2	2.84	0.60
1:D:158:LEU:N	1:D:158:LEU:HD22	2.16	0.60
1:C:246:ASP:OD2	1:C:251:THR:OG1	2.17	0.60
1:D:92:THR:OG1	1:D:144:THR:HG22	2.02	0.60
1:D:15:ARG:HA	1:D:26:LYS:CG	2.29	0.60
1:D:30:ASN:OD1	1:D:30:ASN:C	2.40	0.60
1:D:75:TYR:HE1	1:D:89:GLU:HB2	1.66	0.60
1:C:19:GLU:HB3	1:C:24:LYS:CB	2.31	0.60
1:A:80:SER:OG	1:A:83:LYS:N	2.31	0.60
1:B:100:ILE:HG23	1:B:104:GLY:O	2.02	0.60
1:B:61:SER:HB3	1:B:284:ILE:HG12	1.83	0.60
1:D:12:GLU:HB2	1:D:31:THR:HG22	1.82	0.60
1:B:175:TYR:CE1	1:B:198:VAL:CG1	2.85	0.59
1:C:202:VAL:HG21	1:C:208:LEU:HD23	1.81	0.59
1:C:243:ARG:HG3	1:C:253:ILE:HG13	1.81	0.59
1:D:246:ASP:OD2	1:D:251:THR:OG1	2.18	0.59
1:A:30:ASN:OD1	1:A:30:ASN:C	2.40	0.59
1:C:15:ARG:HB3	1:C:16:THR:HG23	1.85	0.59
1:C:136:LYS:N	1:C:139:ASN:HD21	1.98	0.59
1:C:137:PRO:HA	1:C:140:LEU:HD12	1.83	0.59
1:A:37:VAL:HG12	1:A:75:TYR:HE2	1.67	0.59
1:C:80:SER:HB3	1:C:85:TYR:CE1	2.35	0.59
1:A:29:ARG:NH1	1:A:34:GLY:HA2	2.17	0.59
1:B:237:VAL:HG22	1:B:263:TRP:CD1	2.38	0.59
1:C:92:THR:OG1	1:C:144:THR:HG22	2.03	0.59
1:C:187:ASP:OD1	1:C:189:SER:N	2.35	0.59
1:A:15:ARG:HB3	1:A:16:THR:HG23	1.84	0.59
1:A:136:LYS:HG3	1:A:138:GLU:OE1	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:214:ASP:OD1	1:B:217:GLY:N	2.30	0.59
1:C:30:ASN:OD1	1:C:33:THR:N	2.31	0.59
1:C:67:ARG:NE	1:C:73:ARG:HH21	1.96	0.59
1:C:247:PRO:C	1:C:252:ARG:HH21	2.06	0.59
1:C:15:ARG:HB3	1:C:16:THR:CG2	2.33	0.59
1:D:284:ILE:O	1:D:287:VAL:HG12	2.03	0.59
1:A:54:ASP:O	1:A:58:ARG:HG3	2.03	0.59
1:B:7:ARG:HD3	1:B:12:GLU:OE2	2.00	0.59
1:C:72:VAL:HG23	1:C:149:LYS:HB3	1.83	0.59
1:D:41:ILE:HG12	1:D:85:TYR:HD1	1.68	0.59
1:C:10:LYS:O	1:C:31:THR:HG23	2.04	0.58
1:C:86:ILE:HG22	1:C:88:LEU:HD21	1.85	0.58
1:A:99:ARG:NH2	1:A:110:GLU:OE1	2.36	0.58
1:C:97:PHE:O	1:C:101:VAL:HG23	2.02	0.58
1:D:91:VAL:HG21	1:D:141:LEU:HB3	1.85	0.58
1:A:52:MET:O	1:A:56:ILE:HG13	2.02	0.58
1:C:210:PHE:HD2	1:C:222:ILE:CG1	2.09	0.58
1:A:136:LYS:H	1:A:139:ASN:ND2	2.02	0.58
1:C:67:ARG:HG2	1:C:73:ARG:HE	1.67	0.58
1:C:186:TYR:HD1	1:C:186:TYR:H	1.52	0.58
1:B:155:LEU:O	1:B:158:LEU:HB2	2.04	0.58
1:C:112:ARG:HH21	1:C:266:LYS:CD	2.17	0.58
1:D:230:PRO:HG2	1:D:233:PHE:CE1	2.38	0.58
1:C:30:ASN:OD1	1:C:30:ASN:C	2.41	0.58
1:B:22:PHE:CE1	1:B:160:GLN:OE1	2.57	0.57
1:B:68:HIS:CG	1:B:69:PRO:HD2	2.39	0.57
1:D:100:ILE:CG2	1:D:104:GLY:O	2.51	0.57
1:A:172:THR:CG2	1:D:169:THR:OG1	2.49	0.57
1:B:62:ILE:O	1:B:66:VAL:HG23	2.04	0.57
1:B:256:GLN:CG	1:B:260:LYS:HE3	2.34	0.57
1:C:236:GLU:OE2	1:C:262:PRO:HG2	2.03	0.57
1:B:99:ARG:O	1:B:103:LYS:HG3	2.05	0.57
1:C:74:LEU:CD1	1:C:87:VAL:O	2.52	0.57
1:D:237:VAL:HG22	1:D:263:TRP:NE1	2.19	0.57
1:D:128:LYS:NZ	1:D:275:GLU:HG2	2.20	0.57
1:B:281:LEU:HD12	1:B:282:ASP:N	2.19	0.57
1:D:205:ALA:HB2	1:D:233:PHE:CZ	2.39	0.57
1:C:47:ILE:HG21	1:C:84:ILE:HD11	1.87	0.57
1:B:284:ILE:O	1:B:287:VAL:HG12	2.05	0.57
1:C:199:ILE:O	1:C:203:ILE:HG13	2.04	0.57
1:C:41:ILE:HG12	1:C:85:TYR:CD2	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:61:SER:HB3	1:A:284:ILE:HG12	1.87	0.57
1:C:19:GLU:CG	1:C:24:LYS:HB3	2.34	0.57
1:D:100:ILE:O	1:D:104:GLY:N	2.38	0.57
1:A:31:THR:O	1:A:34:GLY:N	2.38	0.57
1:A:66:VAL:O	1:A:67:ARG:HG2	2.04	0.57
1:A:131:TYR:HE2	1:A:189:SER:HB3	1.69	0.56
1:C:112:ARG:CB	1:C:112:ARG:HH11	2.18	0.56
1:D:281:LEU:HD12	1:D:282:ASP:N	2.20	0.56
1:C:215:LEU:N	1:C:216:PRO:HD2	2.20	0.56
1:A:138:GLU:CD	1:A:138:GLU:H	2.09	0.56
1:B:44:LYS:O	1:B:47:ILE:HG22	2.05	0.56
1:C:10:LYS:O	1:C:31:THR:CG2	2.53	0.56
1:C:207:TYR:OH	1:C:230:PRO:HG3	2.04	0.56
1:C:211:SER:O	1:C:218:LEU:HD13	2.05	0.56
1:B:70:ASN:O	1:B:149:LYS:HA	2.04	0.56
1:D:70:ASN:O	1:D:149:LYS:HA	2.04	0.56
1:B:116:GLN:NE2	1:B:268:TYR:HB2	2.19	0.56
1:C:100:ILE:HG23	1:C:104:GLY:O	2.05	0.56
1:D:210:PHE:CD2	1:D:222:ILE:HG12	2.40	0.56
1:D:210:PHE:CB	1:D:218:LEU:HD23	2.35	0.56
1:A:201:PHE:CG	1:A:209:PRO:HG3	2.41	0.56
1:B:96:LEU:HD12	1:B:96:LEU:C	2.25	0.56
1:C:227:PHE:CE1	1:C:242:HIS:CE1	2.93	0.56
1:C:247:PRO:C	1:C:252:ARG:NH2	2.59	0.56
1:D:28:ALA:O	1:D:36:ASN:CB	2.54	0.56
1:D:139:ASN:O	1:D:151:SER:OG	2.21	0.56
1:B:31:THR:C	1:B:34:GLY:H	2.08	0.56
1:D:98:ASP:O	1:D:101:VAL:HG12	2.05	0.56
1:D:175:TYR:CD2	1:D:198:VAL:HG11	2.41	0.56
1:B:136:LYS:CG	1:B:139:ASN:HD21	2.19	0.55
1:C:227:PHE:CZ	1:C:242:HIS:NE2	2.74	0.55
1:A:161:GLU:O	1:D:214:ASP:HB2	2.06	0.55
1:A:221:LYS:HG3	1:A:226:GLU:OE2	2.05	0.55
1:C:143:ASP:OD2	1:C:147:ASN:HB2	2.05	0.55
1:D:179:GLU:OE2	1:D:252:ARG:NH2	2.34	0.55
1:A:37:VAL:CG1	1:A:75:TYR:HE2	2.19	0.55
1:D:178:PRO:HA	1:D:181:LEU:HD12	1.89	0.55
1:D:256:GLN:HG3	1:D:260:LYS:HZ2	1.68	0.55
1:A:109:ASP:HA	1:A:112:ARG:NH1	2.22	0.55
1:D:15:ARG:HE	1:D:26:LYS:NZ	2.04	0.54
1:D:137:PRO:HA	1:D:140:LEU:HG	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:281:LEU:HD12	1:A:281:LEU:C	2.27	0.54
1:B:70:ASN:ND2	1:B:117:GLN:CD	2.60	0.54
1:C:105:ARG:HB2	1:C:204:LEU:O	2.07	0.54
1:C:210:PHE:CE2	1:C:222:ILE:HG12	2.42	0.54
1:C:112:ARG:HH21	1:C:266:LYS:HB2	1.73	0.54
1:C:19:GLU:HB3	1:C:24:LYS:HB2	1.89	0.54
1:A:243:ARG:HG3	1:A:253:ILE:HB	1.90	0.54
1:C:227:PHE:HZ	1:C:242:HIS:CG	2.25	0.54
1:D:136:LYS:HB2	1:D:137:PRO:CD	2.34	0.54
1:D:175:TYR:CD2	1:D:198:VAL:CG1	2.90	0.54
1:B:281:LEU:HD12	1:B:281:LEU:C	2.27	0.54
1:C:284:ILE:O	1:C:287:VAL:HG12	2.08	0.54
1:A:27:PHE:CD1	1:A:27:PHE:C	2.81	0.54
1:A:100:ILE:HD13	1:A:106:LEU:HG	1.90	0.54
1:C:8:VAL:HG12	1:C:13:VAL:CG2	2.38	0.54
1:B:136:LYS:CG	1:B:139:ASN:ND2	2.71	0.54
1:D:255:ILE:HD12	1:D:255:ILE:N	2.10	0.54
1:A:10:LYS:HE3	1:A:11:TYR:CE1	2.43	0.53
1:A:175:TYR:O	1:A:194:TRP:HD1	1.88	0.53
1:C:246:ASP:O	1:C:252:ARG:NH2	2.42	0.53
1:B:246:ASP:O	1:B:252:ARG:NH2	2.38	0.53
1:C:87:VAL:C	1:C:88:LEU:HD23	2.28	0.53
1:B:76:GLU:HG2	1:B:77:VAL:N	2.24	0.53
1:D:15:ARG:HG2	1:D:26:LYS:HZ3	1.72	0.53
1:B:30:ASN:OD1	1:B:31:THR:N	2.42	0.53
1:A:41:ILE:HG23	1:A:85:TYR:CE1	2.43	0.53
1:C:46:THR:HG22	1:C:159:PRO:HG2	1.91	0.53
1:D:91:VAL:HG23	1:D:91:VAL:O	2.09	0.53
1:A:14:GLY:O	1:A:26:LYS:HD3	2.09	0.53
1:B:33:THR:O	1:B:34:GLY:C	2.47	0.53
1:B:178:PRO:O	1:B:181:LEU:HB2	2.08	0.53
1:C:187:ASP:OD1	1:C:190:ALA:N	2.29	0.53
1:D:210:PHE:HB2	1:D:218:LEU:HD23	1.89	0.53
1:B:141:LEU:O	1:B:148:LEU:HD12	2.09	0.53
1:D:280:ASN:O	1:D:283:ASP:HB3	2.09	0.53
1:A:96:LEU:HA	1:A:142:LEU:CD1	2.37	0.53
1:C:8:VAL:HG12	1:C:13:VAL:HG21	1.91	0.53
1:D:15:ARG:NE	1:D:26:LYS:NZ	2.57	0.53
1:D:227:PHE:CZ	1:D:242:HIS:CE1	2.96	0.53
1:A:215:LEU:O	1:A:218:LEU:HB3	2.09	0.53
1:C:243:ARG:CG	1:C:253:ILE:HG13	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:261:ASP:O	1:D:265:ARG:HG3	2.09	0.53
1:A:15:ARG:HG2	1:A:26:LYS:CE	2.39	0.52
1:D:75:TYR:CE1	1:D:89:GLU:HB2	2.44	0.52
1:A:37:VAL:CG1	1:A:75:TYR:CE2	2.93	0.52
1:A:116:GLN:HE21	1:A:268:TYR:HB2	1.74	0.52
1:A:198:VAL:O	1:A:202:VAL:HG23	2.09	0.52
1:B:44:LYS:O	1:B:47:ILE:N	2.35	0.52
1:D:227:PHE:CD1	1:D:227:PHE:N	2.76	0.52
1:A:44:LYS:HD2	1:A:80:SER:O	2.10	0.52
1:A:126:HIS:CE1	1:A:189:SER:HA	2.45	0.52
1:D:44:LYS:HD3	1:D:81:LYS:O	2.09	0.52
1:A:143:ASP:OD2	1:A:147:ASN:HB2	2.10	0.52
1:A:248:ASN:HB3	1:A:251:THR:OG1	2.09	0.52
1:A:284:ILE:O	1:A:287:VAL:HG12	2.09	0.52
1:D:155:LEU:O	1:D:158:LEU:HB2	2.09	0.52
1:A:42:MET:CE	1:A:158:LEU:HD12	2.39	0.52
1:C:52:MET:O	1:C:56:ILE:HG13	2.10	0.52
1:D:159:PRO:C	1:D:160:GLN:HG3	2.29	0.52
1:A:15:ARG:HA	1:A:26:LYS:HD3	1.91	0.52
1:D:16:THR:HA	1:D:26:LYS:CG	2.25	0.52
1:D:243:ARG:CZ	1:D:253:ILE:HD12	2.40	0.52
1:B:99:ARG:HH11	1:B:99:ARG:CG	2.23	0.52
1:B:7:ARG:HH22	1:B:10:LYS:CA	2.23	0.52
1:B:78:LEU:HD23	1:B:78:LEU:N	2.25	0.52
1:A:117:GLN:OE1	1:A:148:LEU:HB3	2.10	0.51
1:A:136:LYS:H	1:A:139:ASN:HD22	1.57	0.51
1:A:259:LYS:HA	1:A:264:PHE:CE2	2.44	0.51
1:B:43:ALA:HA	1:B:83:LYS:CG	2.35	0.51
1:D:186:TYR:N	1:D:186:TYR:CD1	2.79	0.51
1:B:19:GLU:HG3	1:B:24:LYS:HG3	1.91	0.51
1:D:175:TYR:HD2	1:D:198:VAL:HB	1.75	0.51
1:C:108:GLU:HA	1:C:204:LEU:HD21	1.91	0.51
1:D:237:VAL:HG22	1:D:263:TRP:CE2	2.45	0.51
1:A:61:SER:CB	1:A:284:ILE:HG12	2.41	0.51
1:D:44:LYS:HB2	1:D:82:SER:C	2.30	0.51
1:D:227:PHE:HZ	1:D:242:HIS:CE1	2.28	0.51
1:B:281:LEU:O	1:B:282:ASP:C	2.49	0.51
1:D:97:PHE:CD1	1:D:100:ILE:HD12	2.45	0.51
1:A:148:LEU:HG	1:A:149:LYS:N	2.26	0.51
1:D:230:PRO:HB3	1:D:232:TRP:CE2	2.45	0.51
1:B:230:PRO:HD2	1:B:233:PHE:CD1	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:265:ARG:HH11	1:C:265:ARG:HG2	1.76	0.51
1:A:178:PRO:O	1:A:181:LEU:N	2.44	0.51
1:D:241:ILE:HG22	1:D:245:LEU:HD12	1.92	0.51
1:A:280:ASN:O	1:A:283:ASP:HB3	2.11	0.50
1:B:205:ALA:HB2	1:B:230:PRO:HG2	1.93	0.50
1:C:138:GLU:CD	1:C:138:GLU:H	2.14	0.50
1:C:209:PRO:HB2	1:C:210:PHE:CE1	2.46	0.50
1:C:234:SER:O	1:C:238:LYS:CG	2.60	0.50
1:D:70:ASN:HB2	1:D:121:ALA:HB2	1.92	0.50
1:C:247:PRO:CA	1:C:252:ARG:HH21	2.24	0.50
1:A:29:ARG:HH12	1:A:34:GLY:HA2	1.74	0.50
1:A:174:ASN:OD1	1:A:174:ASN:N	2.38	0.50
1:B:64:LYS:O	1:B:73:ARG:NH2	2.44	0.50
1:A:179:GLU:OE2	1:A:252:ARG:CZ	2.56	0.50
1:B:17:ILE:HG22	1:B:18:GLY:N	2.27	0.50
1:A:230:PRO:HD2	1:A:233:PHE:CE1	2.47	0.50
1:B:210:PHE:HE1	1:B:227:PHE:HB3	1.73	0.50
1:B:179:GLU:OE2	1:B:252:ARG:NH2	2.45	0.50
1:B:214:ASP:OD1	1:B:216:PRO:HG2	2.12	0.50
1:C:11:TYR:CD1	1:C:11:TYR:N	2.79	0.50
1:C:43:ALA:HA	1:C:83:LYS:HB3	1.94	0.50
1:C:112:ARG:NH2	1:C:266:LYS:HB2	2.25	0.50
1:B:248:ASN:OD1	1:B:248:ASN:C	2.50	0.50
1:C:85:TYR:N	1:C:85:TYR:CD1	2.79	0.50
1:C:227:PHE:CE1	1:C:242:HIS:NE2	2.80	0.50
1:C:230:PRO:O	1:C:233:PHE:HB2	2.11	0.50
1:D:96:LEU:HD11	1:D:114:TYR:CE1	2.45	0.50
1:D:236:GLU:O	1:D:239:PHE:N	2.44	0.50
1:B:7:ARG:HH22	1:B:10:LYS:C	2.15	0.49
1:D:231:PRO:HD2	1:D:232:TRP:CZ3	2.47	0.49
1:D:261:ASP:HB3	1:D:264:PHE:CB	2.41	0.49
1:B:55:GLN:HA	1:B:58:ARG:HG2	1.95	0.49
1:B:97:PHE:HA	1:B:100:ILE:HG12	1.93	0.49
1:B:167:ASN:OD1	1:B:168:ASP:N	2.46	0.49
1:C:234:SER:O	1:C:238:LYS:HG3	2.12	0.49
1:D:281:LEU:O	1:D:282:ASP:C	2.49	0.49
1:D:237:VAL:O	1:D:241:ILE:HG13	2.12	0.49
1:A:112:ARG:HH21	1:A:266:LYS:HD2	1.77	0.49
1:B:143:ASP:OD1	1:B:146:GLY:N	2.46	0.49
1:B:230:PRO:O	1:B:233:PHE:HB2	2.13	0.49
1:B:261:ASP:O	1:B:265:ARG:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:63:MET:O	1:D:66:VAL:N	2.42	0.49
1:D:158:LEU:CD2	1:D:158:LEU:H	2.25	0.49
1:D:204:LEU:CD1	1:D:237:VAL:HG11	2.43	0.49
1:B:53:VAL:O	1:B:57:LYS:HG3	2.12	0.49
1:C:27:PHE:CE1	1:C:90:PHE:CE2	3.00	0.49
1:D:30:ASN:O	1:D:34:GLY:N	2.46	0.49
1:B:7:ARG:NH1	1:B:11:TYR:C	2.66	0.49
1:C:19:GLU:OE1	1:C:19:GLU:N	2.46	0.49
1:C:187:ASP:HB3	1:C:190:ALA:HB3	1.94	0.49
1:A:91:VAL:HG21	1:A:141:LEU:HB3	1.94	0.49
1:C:280:ASN:O	1:C:283:ASP:HB3	2.12	0.49
1:C:281:LEU:HD12	1:C:282:ASP:N	2.27	0.49
1:D:36:ASN:O	1:D:36:ASN:ND2	2.39	0.49
1:D:88:LEU:CD1	1:D:88:LEU:N	2.76	0.49
1:D:158:LEU:HD22	1:D:158:LEU:H	1.76	0.49
1:A:30:ASN:ND2	1:A:33:THR:OG1	2.46	0.49
1:A:255:ILE:O	1:A:258:ILE:HG12	2.13	0.49
1:B:7:ARG:HA	1:B:13:VAL:H	1.78	0.49
1:D:132:HIS:O	1:D:156:SER:OG	2.24	0.49
1:D:175:TYR:O	1:D:176:VAL:C	2.51	0.49
1:D:197:GLY:HA2	1:D:244:ILE:HG21	1.93	0.49
1:D:205:ALA:HB2	1:D:233:PHE:HZ	1.77	0.49
1:C:67:ARG:CG	1:C:73:ARG:HE	2.26	0.49
1:D:74:LEU:HD12	1:D:74:LEU:N	2.23	0.49
1:D:141:LEU:O	1:D:148:LEU:HD12	2.12	0.49
1:A:51:ARG:O	1:A:52:MET:CE	2.61	0.48
1:A:281:LEU:O	1:A:282:ASP:C	2.50	0.48
1:C:253:ILE:HG22	1:C:254:GLN:O	2.12	0.48
1:B:51:ARG:CB	1:B:52:MET:HE3	2.39	0.48
1:B:67:ARG:O	1:B:273:ALA:HB1	2.13	0.48
1:B:138:GLU:H	1:B:138:GLU:CD	2.13	0.48
1:B:240:LEU:HD12	1:B:240:LEU:O	2.14	0.48
1:C:155:LEU:HA	1:C:158:LEU:HD13	1.94	0.48
1:C:178:PRO:O	1:C:181:LEU:HB2	2.12	0.48
1:D:72:VAL:HG22	1:D:149:LYS:HB3	1.94	0.48
1:C:63:MET:HG3	1:C:153:PHE:O	2.13	0.48
1:D:74:LEU:HD13	1:D:74:LEU:O	2.13	0.48
1:C:248:ASN:OD1	1:C:249:PRO:HD2	2.14	0.48
1:D:15:ARG:NE	1:D:26:LYS:HZ1	2.11	0.48
1:D:114:TYR:HE1	1:D:142:LEU:HD21	1.78	0.48
1:D:92:THR:C	1:D:94:GLY:H	2.17	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:266:LYS:O	1:D:268:TYR:N	2.47	0.48
1:A:66:VAL:HA	1:A:275:GLU:OE1	2.14	0.48
1:B:7:ARG:HG3	1:B:8:VAL:N	2.28	0.48
1:D:10:LYS:HE2	1:D:11:TYR:HE1	1.78	0.48
1:D:113:LYS:HE2	1:D:117:GLN:NE2	2.28	0.48
1:D:210:PHE:CE2	1:D:222:ILE:HG12	2.49	0.48
1:A:15:ARG:HG2	1:A:26:LYS:HE2	1.95	0.48
1:C:281:LEU:O	1:C:282:ASP:C	2.50	0.48
1:D:15:ARG:HE	1:D:26:LYS:HZ3	1.62	0.48
1:D:61:SER:CB	1:D:284:ILE:HG12	2.43	0.48
1:A:50:ASN:OD1	1:A:51:ARG:N	2.46	0.48
1:A:131:TYR:CE2	1:A:189:SER:HB3	2.49	0.48
1:B:280:ASN:O	1:B:283:ASP:HB3	2.13	0.48
1:C:39:ILE:HG22	1:C:41:ILE:HG13	1.95	0.48
1:C:97:PHE:HE2	1:C:202:VAL:HG11	1.78	0.48
1:D:266:LYS:HB3	1:D:267:ASN:HD22	1.79	0.48
1:C:96:LEU:HD13	1:C:142:LEU:HD21	1.96	0.48
1:A:221:LYS:CG	1:A:226:GLU:OE2	2.62	0.47
1:B:99:ARG:HH22	1:B:110:GLU:CD	1.89	0.47
1:C:246:ASP:O	1:C:252:ARG:CZ	2.61	0.47
1:D:28:ALA:O	1:D:36:ASN:CA	2.62	0.47
1:D:230:PRO:HD2	1:D:233:PHE:CD2	2.49	0.47
1:B:100:ILE:HD12	1:B:106:LEU:HG	1.93	0.47
1:B:47:ILE:HG21	1:B:84:ILE:CD1	2.43	0.47
1:C:281:LEU:HD12	1:C:281:LEU:C	2.35	0.47
1:D:44:LYS:CD	1:D:80:SER:O	2.53	0.47
1:A:15:ARG:HB3	1:A:16:THR:HG22	1.96	0.47
1:A:51:ARG:O	1:A:52:MET:HE3	2.14	0.47
1:C:67:ARG:NE	1:C:73:ARG:NH2	2.59	0.47
1:C:127:SER:OG	1:C:128:LYS:HE3	2.13	0.47
1:A:44:LYS:O	1:A:47:ILE:HG22	2.14	0.47
1:C:19:GLU:CB	1:C:24:LYS:CB	2.92	0.47
1:C:112:ARG:HG3	1:C:263:TRP:CH2	2.49	0.47
1:C:210:PHE:HE1	1:C:227:PHE:HB3	1.80	0.47
1:C:210:PHE:N	1:C:210:PHE:CD1	2.75	0.47
1:A:27:PHE:CD1	1:A:28:ALA:N	2.83	0.47
1:B:76:GLU:HG2	1:B:77:VAL:H	1.80	0.47
1:D:178:PRO:O	1:D:181:LEU:HB2	2.13	0.47
1:C:57:LYS:HG2	1:C:287:VAL:HG11	1.97	0.47
1:D:56:ILE:O	1:D:60:ILE:HG12	2.15	0.47
1:A:64:LYS:HE3	1:A:76:GLU:HG2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:78:LEU:CB	1:A:85:TYR:HB2	2.43	0.47
1:B:100:ILE:O	1:B:104:GLY:N	2.48	0.47
1:C:281:LEU:O	1:C:284:ILE:CA	2.63	0.47
1:D:78:LEU:HB2	1:D:85:TYR:HB2	1.97	0.47
1:B:237:VAL:HG22	1:B:263:TRP:CD2	2.50	0.47
1:A:229:CYS:SG	1:A:242:HIS:HE1	2.38	0.47
1:B:42:MET:SD	1:B:158:LEU:CD2	3.00	0.47
1:C:174:ASN:CG	1:C:208:LEU:HD13	2.35	0.47
1:C:132:HIS:C	1:C:133:ARG:HG3	2.36	0.46
1:C:227:PHE:HD1	1:C:227:PHE:O	1.97	0.46
1:D:142:LEU:HD22	1:D:146:GLY:O	2.14	0.46
1:B:16:THR:HA	1:B:26:LYS:HA	1.97	0.46
1:B:112:ARG:O	1:B:116:GLN:CG	2.45	0.46
1:B:175:TYR:CD1	1:B:198:VAL:HB	2.50	0.46
1:C:230:PRO:HB3	1:C:232:TRP:CH2	2.50	0.46
1:C:236:GLU:CD	1:C:262:PRO:HG2	2.36	0.46
1:D:64:LYS:HA	1:D:74:LEU:HD11	1.93	0.46
1:A:230:PRO:HD2	1:A:233:PHE:CD1	2.51	0.46
1:D:96:LEU:CD1	1:D:114:TYR:CD1	2.93	0.46
1:B:234:SER:OG	1:B:237:VAL:HG23	2.16	0.46
1:B:270:PRO:HG2	1:B:272:ARG:CZ	2.45	0.46
1:C:100:ILE:O	1:C:104:GLY:N	2.48	0.46
1:A:246:ASP:OD2	1:A:251:THR:OG1	2.30	0.46
1:B:27:PHE:CG	1:B:28:ALA:N	2.83	0.46
1:B:132:HIS:O	1:B:133:ARG:HB2	2.15	0.46
1:C:269:VAL:HA	1:C:270:PRO:HD2	1.77	0.46
1:D:236:GLU:OE1	1:D:239:PHE:HB3	2.15	0.46
1:D:281:LEU:HD12	1:D:281:LEU:C	2.36	0.46
1:A:161:GLU:HA	1:A:162:GLY:HA2	1.76	0.46
1:B:114:TYR:O	1:B:117:GLN:N	2.49	0.46
1:C:105:ARG:NH1	1:C:232:TRP:CD2	2.84	0.46
1:A:17:ILE:N	1:A:17:ILE:HD13	2.31	0.46
1:B:140:LEU:HD11	1:B:199:ILE:HD13	1.98	0.46
1:C:128:LYS:HA	1:C:128:LYS:HD3	1.73	0.46
1:D:10:LYS:HG3	1:D:11:TYR:HD1	1.81	0.46
1:D:158:LEU:CD2	1:D:158:LEU:N	2.78	0.46
1:D:171:GLY:HA3	1:D:172:THR:HA	1.64	0.46
1:D:236:GLU:OE1	1:D:236:GLU:HA	2.15	0.46
1:B:51:ARG:C	1:B:52:MET:HE3	2.37	0.46
1:C:80:SER:HG	1:C:83:LYS:H	1.55	0.46
1:C:186:TYR:N	1:C:186:TYR:CD1	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:209:PRO:HB2	1:C:210:PHE:CD1	2.50	0.46
1:C:221:LYS:O	1:C:225:ALA:N	2.49	0.46
1:D:44:LYS:HB2	1:D:83:LYS:N	2.31	0.46
1:D:266:LYS:HB3	1:D:267:ASN:ND2	2.31	0.46
1:D:268:TYR:O	1:D:269:VAL:HG23	2.16	0.46
1:A:68:HIS:CE1	1:A:70:ASN:HB2	2.50	0.45
1:B:99:ARG:HH11	1:B:99:ARG:HG3	1.80	0.45
1:C:112:ARG:HH21	1:C:266:LYS:HD2	1.79	0.45
1:C:230:PRO:HB3	1:C:232:TRP:CZ2	2.51	0.45
1:C:237:VAL:CG2	1:C:263:TRP:NE1	2.79	0.45
1:D:241:ILE:HG23	1:D:245:LEU:HD12	1.98	0.45
1:A:139:ASN:HA	1:A:151:SER:OG	2.15	0.45
1:C:112:ARG:HE	1:C:266:LYS:HB2	1.81	0.45
1:A:160:GLN:NE2	1:D:211:SER:HB2	2.32	0.45
1:A:29:ARG:HA	1:A:36:ASN:HA	1.98	0.45
1:D:99:ARG:NH2	1:D:110:GLU:OE2	2.50	0.45
1:B:178:PRO:O	1:B:181:LEU:N	2.47	0.45
1:C:19:GLU:CB	1:C:24:LYS:HB3	2.46	0.45
1:D:39:ILE:HG22	1:D:41:ILE:CG1	2.46	0.45
1:D:237:VAL:CG2	1:D:263:TRP:NE1	2.79	0.45
1:A:118:LEU:CD2	1:A:196:CYS:SG	2.94	0.45
1:A:210:PHE:CD2	1:A:222:ILE:HG12	2.51	0.45
1:B:50:ASN:OD1	1:B:51:ARG:N	2.49	0.45
1:C:240:LEU:HD13	1:C:261:ASP:CG	2.37	0.45
1:A:131:TYR:HB2	1:A:133:ARG:CZ	2.47	0.45
1:B:175:TYR:CD1	1:B:198:VAL:CG1	3.00	0.45
1:C:71:ILE:HD13	1:C:125:CYS:SG	2.57	0.45
1:C:279:VAL:HG12	1:C:280:ASN:OD1	2.17	0.45
1:A:207:TYR:OH	1:A:230:PRO:HG3	2.17	0.45
1:D:237:VAL:HG22	1:D:263:TRP:CD1	2.52	0.45
1:B:65:ILE:HD13	1:B:279:VAL:H	1.81	0.45
1:C:243:ARG:HG2	1:C:253:ILE:HD11	1.88	0.45
1:D:13:VAL:HA	1:D:28:ALA:CB	2.47	0.45
1:A:42:MET:O	1:A:83:LYS:HB3	2.17	0.44
1:B:258:ILE:O	1:B:261:ASP:HB3	2.17	0.44
1:C:25:VAL:HG13	1:C:40:LYS:CD	2.46	0.44
1:D:93:GLY:HA3	1:D:142:LEU:O	2.17	0.44
1:D:227:PHE:HZ	1:D:242:HIS:ND1	2.15	0.44
1:A:100:ILE:HG23	1:A:104:GLY:O	2.17	0.44
1:B:19:GLU:CB	1:B:24:LYS:HG3	2.47	0.44
1:B:134:ASP:O	1:B:135:LEU:C	2.55	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:187:ASP:HB2	1:B:190:ALA:HB3	1.99	0.44
1:C:62:ILE:O	1:C:66:VAL:HG23	2.18	0.44
1:A:15:ARG:CB	1:A:16:THR:HG22	2.47	0.44
1:B:80:SER:HG	1:B:83:LYS:H	1.56	0.44
1:C:16:THR:HA	1:C:26:LYS:HA	1.99	0.44
1:C:119:VAL:CG1	1:C:258:ILE:HD11	2.47	0.44
1:A:141:LEU:HB2	1:A:149:LYS:O	2.18	0.44
1:B:92:THR:CB	1:B:144:THR:HG23	2.44	0.44
1:B:240:LEU:HD12	1:B:244:ILE:HG13	1.99	0.44
1:C:74:LEU:C	1:C:74:LEU:HD12	2.37	0.44
1:D:64:LYS:N	1:D:74:LEU:HD11	2.32	0.44
1:D:210:PHE:HB3	1:D:218:LEU:HD23	1.98	0.44
1:D:253:ILE:HG21	1:D:258:ILE:HG22	2.00	0.44
1:D:48:LEU:HA	1:D:48:LEU:HD23	1.68	0.44
1:A:281:LEU:O	1:A:284:ILE:CA	2.64	0.44
1:B:42:MET:C	1:B:83:LYS:HG2	2.38	0.44
1:B:110:GLU:O	1:B:111:SER:C	2.56	0.44
1:A:8:VAL:HG12	1:A:11:TYR:O	2.17	0.44
1:B:80:SER:HG	1:B:83:LYS:N	2.13	0.44
1:C:240:LEU:O	1:C:244:ILE:HG13	2.17	0.44
1:D:236:GLU:O	1:D:237:VAL:C	2.54	0.44
1:D:253:ILE:HG21	1:D:258:ILE:CG2	2.47	0.44
1:A:96:LEU:HD12	1:A:96:LEU:O	2.17	0.44
1:C:99:ARG:HA	1:C:102:HIS:HD2	1.81	0.44
1:C:7:ARG:NH1	1:C:10:LYS:O	2.51	0.44
1:A:47:ILE:CG2	1:A:48:LEU:N	2.81	0.43
1:B:215:LEU:N	1:B:216:PRO:HD2	2.32	0.43
1:C:30:ASN:O	1:C:34:GLY:HA2	2.18	0.43
1:C:178:PRO:O	1:C:181:LEU:N	2.52	0.43
1:D:27:PHE:CE2	1:D:36:ASN:HB2	2.53	0.43
1:A:128:LYS:HA	1:A:128:LYS:HD3	1.69	0.43
1:C:86:ILE:HG22	1:C:88:LEU:CD2	2.47	0.43
1:C:148:LEU:HG	1:C:149:LYS:N	2.34	0.43
1:D:132:HIS:CE1	1:D:152:ASP:O	2.71	0.43
1:B:227:PHE:C	1:B:227:PHE:HD1	2.21	0.43
1:C:236:GLU:HB3	1:C:263:TRP:HB2	2.00	0.43
1:C:237:VAL:CG2	1:C:263:TRP:CE2	3.00	0.43
1:D:44:LYS:CB	1:D:82:SER:C	2.86	0.43
1:B:227:PHE:C	1:B:227:PHE:CD1	2.92	0.43
1:B:240:LEU:HD22	1:B:261:ASP:OD1	2.18	0.43
1:B:254:GLN:O	1:B:258:ILE:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:40:LYS:O	1:C:85:TYR:HA	2.19	0.43
1:C:74:LEU:HD11	1:C:76:GLU:O	2.18	0.43
1:D:99:ARG:NH1	1:D:114:TYR:OH	2.51	0.43
1:B:116:GLN:HA	1:B:264:PHE:CE1	2.53	0.43
1:D:126:HIS:CE1	1:D:189:SER:HA	2.54	0.43
1:A:51:ARG:C	1:A:52:MET:CE	2.77	0.43
1:B:8:VAL:HG12	1:B:13:VAL:CG2	2.49	0.43
1:C:41:ILE:CD1	1:C:85:TYR:HD2	2.31	0.43
1:C:112:ARG:NE	1:C:266:LYS:HB2	2.34	0.43
1:C:235:ALA:HA	1:C:238:LYS:HG3	2.01	0.43
1:A:39:ILE:CG2	1:A:41:ILE:HG13	2.48	0.43
1:A:92:THR:OG1	1:A:144:THR:HG22	2.19	0.43
1:C:24:LYS:HE2	1:C:26:LYS:HE3	2.00	0.43
1:C:133:ARG:NH1	1:C:186:TYR:CZ	2.87	0.43
1:D:158:LEU:HD13	1:D:158:LEU:HA	1.77	0.43
1:B:99:ARG:NH1	1:B:99:ARG:CG	2.81	0.42
1:B:145:ASN:ND2	1:B:145:ASN:O	2.52	0.42
1:B:205:ALA:O	1:B:207:TYR:CD2	2.72	0.42
1:D:253:ILE:CG2	1:D:258:ILE:CG2	2.96	0.42
1:A:240:LEU:O	1:A:244:ILE:HG13	2.18	0.42
1:B:22:PHE:CD1	1:B:22:PHE:N	2.82	0.42
1:D:136:LYS:H	1:D:139:ASN:HD22	1.67	0.42
1:D:253:ILE:HG12	1:D:258:ILE:HG23	1.97	0.42
1:A:201:PHE:CD1	1:A:201:PHE:C	2.91	0.42
1:B:174:ASN:ND2	1:B:210:PHE:O	2.52	0.42
1:C:71:ILE:HG13	1:C:121:ALA:HB1	2.02	0.42
1:D:105:ARG:HB2	1:D:204:LEU:O	2.20	0.42
1:D:254:GLN:O	1:D:258:ILE:HG23	2.19	0.42
1:B:71:ILE:HG13	1:B:121:ALA:HB1	2.00	0.42
1:B:109:ASP:HA	1:B:112:ARG:NH1	2.34	0.42
1:B:281:LEU:O	1:B:284:ILE:CA	2.63	0.42
1:C:179:GLU:HG2	1:C:249:PRO:HG3	2.01	0.42
1:D:230:PRO:CB	1:D:232:TRP:CE2	3.02	0.42
1:D:269:VAL:HA	1:D:270:PRO:HD3	1.89	0.42
1:A:210:PHE:CE1	1:A:227:PHE:HB3	2.54	0.42
1:A:265:ARG:NH1	1:B:145:ASN:OD1	2.52	0.42
1:B:116:GLN:HA	1:B:264:PHE:HE1	1.85	0.42
1:C:270:PRO:O	1:C:272:ARG:HG2	2.18	0.42
1:D:186:TYR:N	1:D:186:TYR:HD1	2.16	0.42
1:A:237:VAL:HG23	1:A:263:TRP:CD1	2.54	0.42
1:D:47:ILE:HG21	1:D:84:ILE:HD12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:70:ASN:ND2	1:B:117:GLN:OE1	2.52	0.42
1:B:70:ASN:HA	1:B:148:LEU:O	2.20	0.42
1:B:222:ILE:O	1:B:225:ALA:N	2.50	0.42
1:C:255:ILE:H	1:C:255:ILE:CD1	2.06	0.42
1:D:42:MET:HE1	1:D:158:LEU:HB3	2.01	0.42
1:D:256:GLN:CA	1:D:260:LYS:HZ2	2.32	0.42
1:A:137:PRO:HA	1:A:140:LEU:HD12	2.00	0.42
1:B:44:LYS:HG3	1:B:84:ILE:CG1	2.49	0.42
1:B:227:PHE:HD1	1:B:227:PHE:O	2.01	0.42
1:C:227:PHE:HE1	1:C:242:HIS:CE1	2.35	0.42
1:C:243:ARG:HG2	1:C:243:ARG:HH11	1.84	0.42
1:D:275:GLU:OE1	1:D:276:GLU:O	2.38	0.42
1:A:210:PHE:HE1	1:A:227:PHE:HB3	1.85	0.42
1:B:99:ARG:HG3	1:B:103:LYS:HZ2	1.85	0.42
1:B:279:VAL:HG12	1:B:280:ASN:OD1	2.20	0.42
1:C:7:ARG:HA	1:C:13:VAL:HG23	2.00	0.42
1:C:57:LYS:HG2	1:C:287:VAL:CG1	2.50	0.42
1:C:98:ASP:O	1:C:102:HIS:CD2	2.72	0.42
1:D:231:PRO:HG2	1:D:232:TRP:CE3	2.54	0.42
1:B:279:VAL:O	1:B:280:ASN:C	2.58	0.42
1:C:47:ILE:CG2	1:C:48:LEU:N	2.83	0.42
1:A:37:VAL:HG12	1:A:75:TYR:CE2	2.50	0.41
1:A:47:ILE:HD11	1:A:56:ILE:HG21	2.01	0.41
1:D:64:LYS:CA	1:D:74:LEU:HD11	2.50	0.41
1:D:200:LEU:HD12	1:D:200:LEU:O	2.20	0.41
1:B:131:TYR:CD1	1:B:131:TYR:N	2.88	0.41
1:D:136:LYS:HB2	1:D:138:GLU:OE1	2.20	0.41
1:A:173:PRO:HB3	1:D:219:TYR:HH	1.85	0.41
1:A:279:VAL:O	1:A:280:ASN:C	2.58	0.41
1:B:14:GLY:N	1:B:27:PHE:O	2.40	0.41
1:B:44:LYS:HG3	1:B:84:ILE:HG13	2.02	0.41
1:C:261:ASP:HA	1:C:262:PRO:HD2	1.82	0.41
1:D:78:LEU:HD23	1:D:78:LEU:HA	1.88	0.41
1:D:128:LYS:HZ3	1:D:275:GLU:HG2	1.85	0.41
1:D:227:PHE:HD1	1:D:227:PHE:O	2.03	0.41
1:B:74:LEU:HD21	1:B:86:ILE:HG23	2.02	0.41
1:B:181:LEU:HD12	1:B:223:ASN:ND2	2.35	0.41
1:D:236:GLU:CD	1:D:262:PRO:HG2	2.40	0.41
1:A:136:LYS:HG2	1:A:139:ASN:HD21	1.85	0.41
1:B:19:GLU:CG	1:B:24:LYS:HG3	2.51	0.41
1:D:138:GLU:CD	1:D:138:GLU:H	2.23	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:HIS:CE1	1:A:275:GLU:OE2	2.74	0.41
1:B:70:ASN:HD21	1:B:117:GLN:NE2	2.18	0.41
1:C:15:ARG:CB	1:C:16:THR:HG22	2.51	0.41
1:C:72:VAL:CG2	1:C:149:LYS:HB3	2.49	0.41
1:C:237:VAL:HG22	1:C:263:TRP:CD2	2.56	0.41
1:C:248:ASN:OD1	1:C:248:ASN:C	2.59	0.41
1:D:215:LEU:N	1:D:216:PRO:HD2	2.35	0.41
1:D:70:ASN:HA	1:D:148:LEU:O	2.21	0.41
1:D:279:VAL:HG12	1:D:280:ASN:OD1	2.21	0.41
1:A:45:SER:O	1:A:49:LYS:HD3	2.20	0.41
1:A:175:TYR:O	1:A:194:TRP:NE1	2.54	0.41
1:B:244:ILE:HA	1:B:253:ILE:HG22	2.03	0.41
1:B:259:LYS:HA	1:B:264:PHE:CE2	2.56	0.41
1:D:178:PRO:HA	1:D:181:LEU:CD1	2.51	0.41
1:D:210:PHE:CB	1:D:218:LEU:CD2	2.92	0.41
1:D:248:ASN:HA	1:D:249:PRO:HD2	1.91	0.41
1:D:256:GLN:HA	1:D:260:LYS:HZ2	1.86	0.41
1:C:215:LEU:O	1:C:216:PRO:C	2.58	0.41
1:D:74:LEU:HA	1:D:87:VAL:O	2.21	0.41
1:D:227:PHE:HD1	1:D:227:PHE:H	1.68	0.41
1:B:55:GLN:HA	1:B:58:ARG:CZ	2.51	0.40
1:C:55:GLN:O	1:C:59:GLU:HG3	2.21	0.40
1:C:133:ARG:NH1	1:C:186:TYR:CE2	2.89	0.40
1:D:279:VAL:O	1:D:280:ASN:C	2.59	0.40
1:A:169:THR:HB	1:D:212:GLU:HG2	2.02	0.40
1:C:119:VAL:HG11	1:C:258:ILE:HD11	2.03	0.40
1:B:100:ILE:CD1	1:B:106:LEU:CG	2.90	0.40
1:C:29:ARG:CB	1:C:36:ASN:OD1	2.60	0.40
1:C:234:SER:OG	1:C:237:VAL:HG23	2.21	0.40
1:D:47:ILE:HD11	1:D:288:PHE:CE2	2.56	0.40
1:A:248:ASN:OD1	1:A:248:ASN:C	2.58	0.40
1:B:8:VAL:HG22	1:B:9:GLY:N	2.37	0.40
1:D:92:THR:C	1:D:94:GLY:N	2.73	0.40
1:D:105:ARG:NH2	1:D:232:TRP:CD1	2.85	0.40
1:D:266:LYS:O	1:D:267:ASN:C	2.59	0.40
1:A:37:VAL:HG11	1:A:75:TYR:CD2	2.57	0.40
1:B:47:ILE:HG12	1:B:288:PHE:CE2	2.56	0.40
1:B:91:VAL:HG21	1:B:141:LEU:HB3	2.04	0.40
1:D:141:LEU:HD12	1:D:151:SER:OG	2.21	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	268/446 (60%)	254 (95%)	14 (5%)	0	100	100
1	B	273/446 (61%)	249 (91%)	23 (8%)	1 (0%)	34	66
1	C	275/446 (62%)	263 (96%)	11 (4%)	1 (0%)	34	66
1	D	265/446 (59%)	247 (93%)	15 (6%)	3 (1%)	14	45
All	All	1081/1784 (61%)	1013 (94%)	63 (6%)	5 (0%)	29	61

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	93	GLY
1	B	23	ALA
1	D	176	VAL
1	D	267	ASN
1	C	270	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	239/388 (62%)	217 (91%)	22 (9%)	9	31
1	B	241/388 (62%)	198 (82%)	43 (18%)	2	8
1	C	243/388 (63%)	214 (88%)	29 (12%)	5	21
1	D	238/388 (61%)	210 (88%)	28 (12%)	5	21
All	All	961/1552 (62%)	839 (87%)	122 (13%)	4	19

All (122) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	17	ILE
1	A	24	LYS
1	A	45	SER
1	A	49	LYS
1	A	63	MET
1	A	65	ILE
1	A	73	ARG
1	A	76	GLU
1	A	78	LEU
1	A	128	LYS
1	A	153	PHE
1	A	158	LEU
1	A	161	GLU
1	A	174	ASN
1	A	179	GLU
1	A	210	PHE
1	A	212	GLU
1	A	215	LEU
1	A	221	LYS
1	A	229	CYS
1	A	242	HIS
1	A	272	ARG
1	B	7	ARG
1	B	12	GLU
1	B	16	THR
1	B	19	GLU
1	B	21	THR
1	B	22	PHE
1	B	25	VAL
1	B	42	MET
1	B	47	ILE
1	B	49	LYS
1	B	52	MET
1	B	55	GLN
1	B	65	ILE
1	B	67	ARG
1	B	73	ARG
1	B	74	LEU
1	B	78	LEU
1	B	83	LYS
1	B	88	LEU
1	B	96	LEU

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Mol	Chain	Res	Type
1	B	99	ARG
1	B	103	LYS
1	B	105	ARG
1	B	110	GLU
1	B	136	LYS
1	B	145	ASN
1	B	153	PHE
1	B	155	LEU
1	B	160	GLN
1	B	168	ASP
1	B	170	CYS
1	B	172	THR
1	B	179	GLU
1	B	182	SER
1	B	186	TYR
1	B	213	THR
1	B	215	LEU
1	B	227	PHE
1	B	228	ASP
1	B	229	CYS
1	B	255	ILE
1	B	258	ILE
1	B	261	ASP
1	C	7	ARG
1	C	11	TYR
1	C	12	GLU
1	C	19	GLU
1	C	22	PHE
1	C	24	LYS
1	C	25	VAL
1	C	30	ASN
1	C	40	LYS
1	C	65	ILE
1	C	74	LEU
1	C	82	SER
1	C	85	TYR
1	C	112	ARG
1	C	116	GLN
1	C	128	LYS
1	C	133	ARG
1	C	168	ASP
1	C	172	THR

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Mol	Chain	Res	Type
1	C	179	GLU
1	C	186	TYR
1	C	196	CYS
1	C	210	PHE
1	C	227	PHE
1	C	255	ILE
1	C	265	ARG
1	C	271	ILE
1	C	272	ARG
1	C	275	GLU
1	D	30	ASN
1	D	36	ASN
1	D	37	VAL
1	D	73	ARG
1	D	74	LEU
1	D	82	SER
1	D	101	VAL
1	D	107	LYS
1	D	112	ARG
1	D	135	LEU
1	D	153	PHE
1	D	156	SER
1	D	160	GLN
1	D	166	LEU
1	D	172	THR
1	D	174	ASN
1	D	179	GLU
1	D	182	SER
1	D	186	TYR
1	D	213	THR
1	D	218	LEU
1	D	226	GLU
1	D	227	PHE
1	D	236	GLU
1	D	253	ILE
1	D	260	LYS
1	D	267	ASN
1	D	275	GLU

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

Mol	Chain	Res	Type
1	A	55	GLN
1	A	116	GLN
1	A	139	ASN
1	A	145	ASN
1	A	184	GLN
1	A	223	ASN
1	A	242	HIS
1	B	68	HIS
1	B	70	ASN
1	B	116	GLN
1	B	139	ASN
1	B	160	GLN
1	B	223	ASN
1	B	242	HIS
1	B	256	GLN
1	C	102	HIS
1	C	139	ASN
1	D	102	HIS
1	D	126	HIS
1	D	139	ASN
1	D	167	ASN
1	D	223	ASN
1	D	242	HIS
1	D	267	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	274/446 (61%)	-0.25	3 (1%) 80 81	40, 61, 100, 124	0
1	B	277/446 (62%)	-0.20	2 (0%) 87 88	39, 64, 125, 146	0
1	C	279/446 (62%)	-0.17	2 (0%) 87 88	44, 65, 121, 136	0
1	D	271/446 (60%)	-0.23	4 (1%) 73 72	47, 67, 109, 132	0
All	All	1101/1784 (61%)	-0.21	11 (0%) 82 82	39, 64, 116, 146	0

All (11) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	18	GLY	3.7
1	B	279	VAL	3.3
1	A	212	GLU	2.5
1	D	160	GLN	2.4
1	A	278	GLU	2.3
1	D	277	GLU	2.3
1	D	274	ARG	2.2
1	C	161	GLU	2.2
1	C	174	ASN	2.1
1	A	23	ALA	2.1
1	D	275	GLU	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

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.