Full wwPDB X-ray Structure Validation Report ⓘ

Apr 28, 2024 – 06:35 pm BST

PDB ID	:	1VZ7
Title	:	Ornithine Acetyltransferase (ORF6 Gene Product - Clavulanic Acid Biosynthesis) from Streptomyces clavuligerus
Authors	:	Elkins, J.M.; Kershaw, N.J.; Schofield, C.J.
Deposited on	:	2004-05-14
Resolution	:	3.00 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:

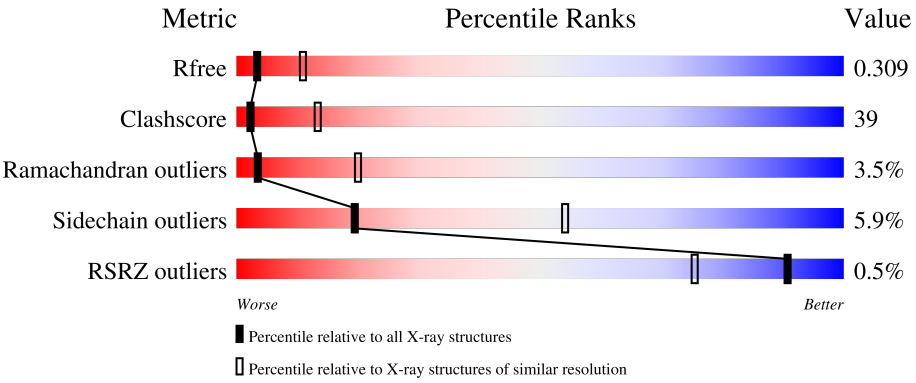
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.00 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	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

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	393	47% 46%
1	B	393	53% 40%
1	C	393	32% 56% 9%
1	D	393	33% 54% 7% 5%

2 Entry composition (i)

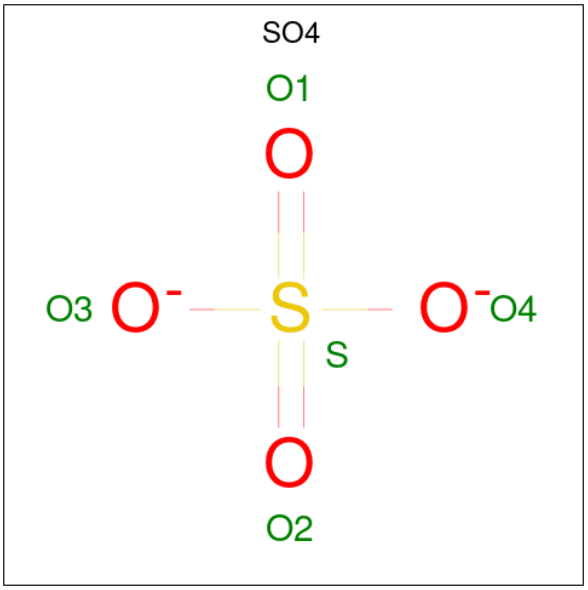
There are 2 unique types of molecules in this entry. The entry contains 10680 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 ORNITHINE ACETYL-TRANSFERASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	376	Total	C	N	O	S	0	0	0
			2708	1688	481	528	11			
1	B	376	Total	C	N	O	S	0	0	0
			2722	1694	482	535	11			
1	C	359	Total	C	N	O	S	0	0	0
			2567	1599	449	508	11			
1	D	374	Total	C	N	O	S	0	0	0
			2663	1660	469	523	11			

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		

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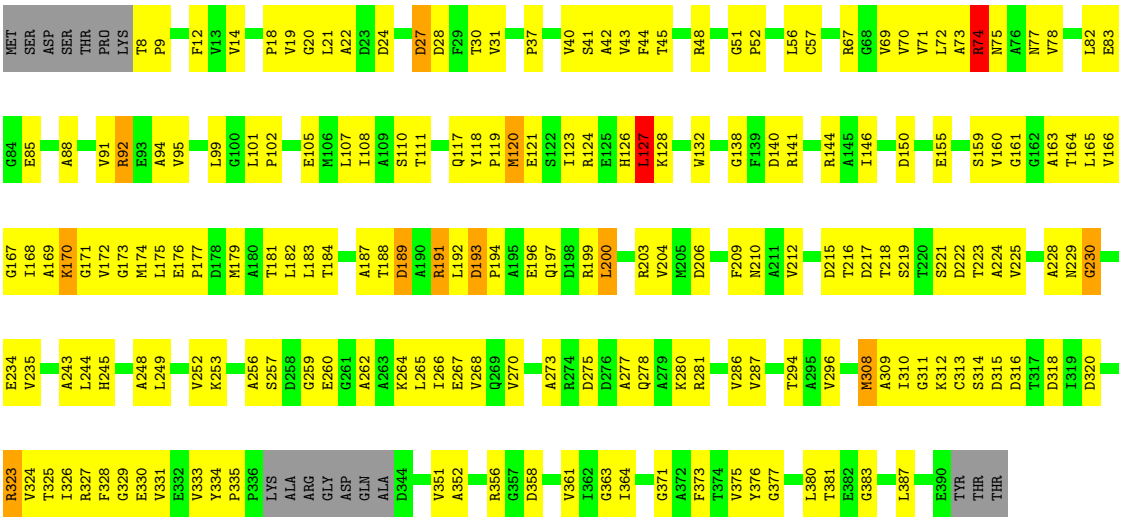
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total O S 5 4 1	0	0
2	D	1	Total O S 5 4 1	0	0

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.

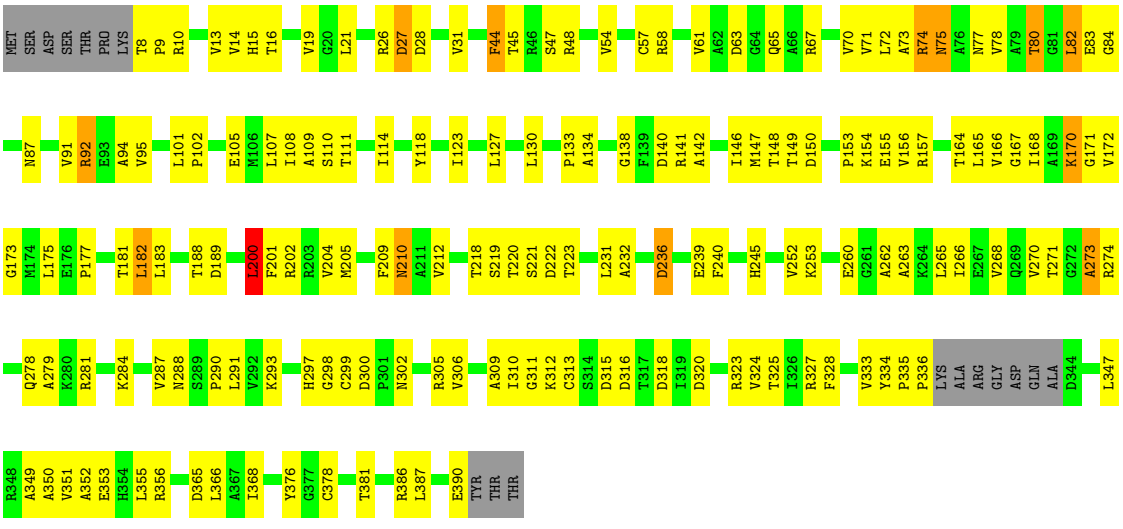
• Molecule 1: ORNITHINE ACETYL-TRANSFERASE

Chain A:



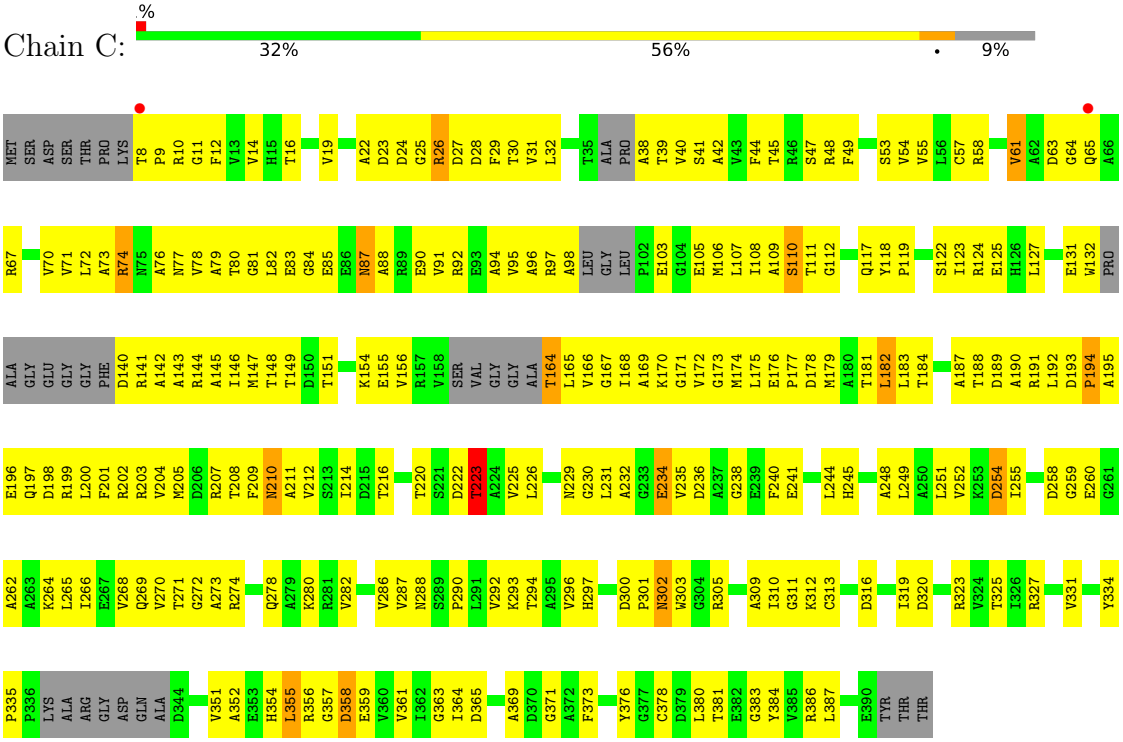
• Molecule 1: ORNITHINE ACETYL-TRANSFERASE

Chain B:



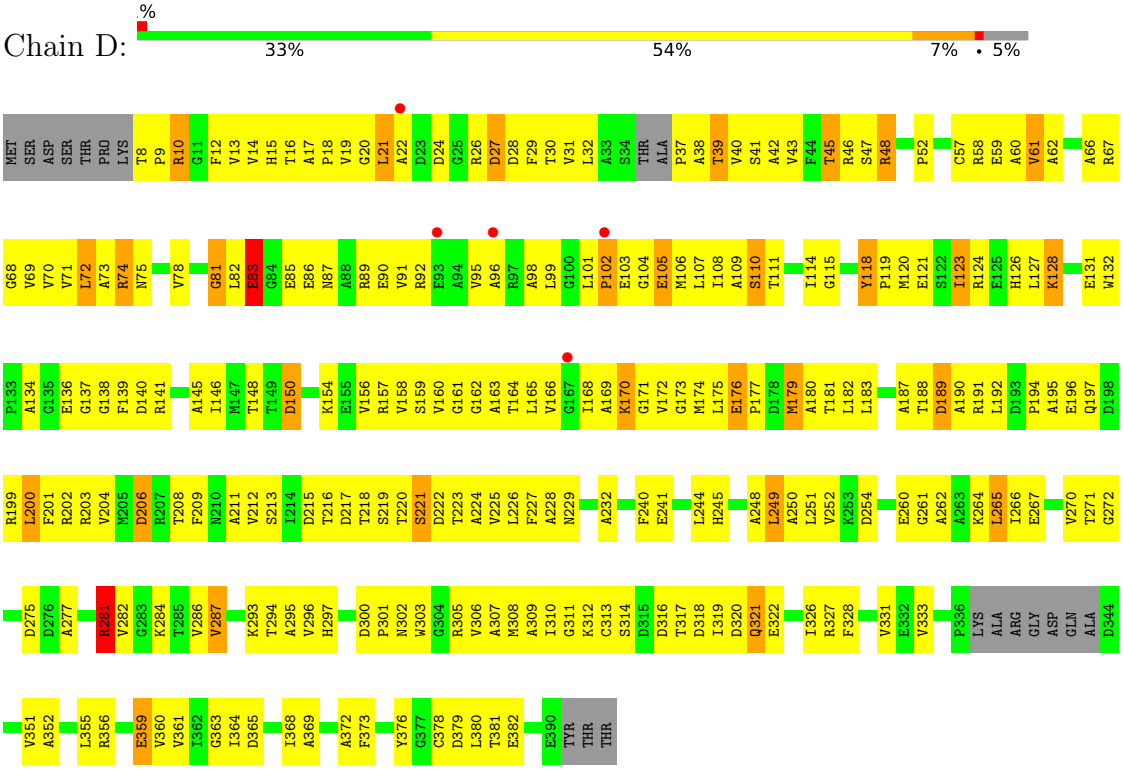
• Molecule 1: ORNITHINE ACETYL-TRANSFERASE

Chain C:



• Molecule 1: ORNITHINE ACETYL-TRANSFERASE

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	60.99Å 180.34Å 73.03Å 90.00° 89.88° 90.00°	Depositor
Resolution (Å)	67.69 – 3.00 67.69 – 2.74	Depositor EDS
% Data completeness (in resolution range)	93.5 (67.69-3.00) 93.0 (67.69-2.74)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.00 (at 2.73Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.223 , 0.313 0.221 , 0.309	Depositor DCC
R_{free} test set	2047 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	30.6	Xtriage
Anisotropy	0.564	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 11.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.27$	Xtriage
Estimated twinning fraction	0.248 for h,-k,-l	Xtriage
F_o,F_c correlation	0.89	EDS
Total number of atoms	10680	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 18.70% 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: SO4

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	0.39	0/2745	0.65	0/3738
1	B	0.39	0/2759	0.66	1/3756 (0.0%)
1	C	0.35	0/2595	0.62	0/3531
1	D	0.35	0/2697	0.61	0/3672
All	All	0.37	0/10796	0.64	1/14697 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	200	LEU	CA-CB-CG	5.09	127.01	115.30

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	2708	0	2638	184	0
1	B	2722	0	2652	149	0
1	C	2567	0	2477	238	0
1	D	2663	0	2574	267	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	5	0	0	0	0
2	D	5	0	0	0	0
All	All	10680	0	10341	816	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 39.

All (816) 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:45:THR:HB	1:C:222:ASP:HB2	1.25	1.17
1:C:22:ALA:HB2	1:C:74:ARG:HG2	1.28	1.11
1:C:352:ALA:HB1	1:C:356:ARG:HH12	1.20	1.02
1:A:179:MET:HE2	1:A:222:ASP:HB3	1.41	0.99
1:A:21:LEU:HD11	1:A:72:LEU:HB3	1.46	0.98
1:C:199:ARG:HH11	1:C:203:ARG:HH22	1.11	0.96
1:D:9:PRO:HB2	1:D:12:PHE:HB2	1.49	0.92
1:A:311:GLY:HA2	1:B:48:ARG:HB2	1.56	0.88
1:C:40:VAL:HG22	1:C:41:SER:H	1.38	0.88
1:C:352:ALA:HB1	1:C:356:ARG:NH1	1.91	0.85
1:D:265:LEU:HD22	1:D:359:GLU:HB3	1.57	0.85
1:C:151:THR:HB	1:C:258:ASP:OD1	1.78	0.84
1:C:169:ALA:HB2	1:C:251:LEU:HD13	1.57	0.84
1:A:48:ARG:NH2	1:C:23:ASP:O	2.09	0.84
1:D:45:THR:HB	1:D:222:ASP:HB2	1.59	0.84
1:A:73:ALA:O	1:A:74:ARG:HB2	1.78	0.83
1:D:19:VAL:HG23	1:D:29:PHE:HB2	1.58	0.83
1:D:66:ALA:HA	1:D:105:GLU:HB3	1.60	0.82
1:D:46:ARG:HD3	1:D:180:ALA:HB2	1.62	0.82
1:C:39:THR:HG21	1:C:194:PRO:HG3	1.59	0.82
1:A:170:LYS:HD2	1:A:183:LEU:HB2	1.61	0.81
1:D:169:ALA:HB2	1:D:251:LEU:HD13	1.62	0.81
1:D:226:LEU:HD12	1:D:227:PHE:H	1.44	0.81
1:A:160:VAL:HG21	1:A:243:ALA:HB2	1.63	0.80
1:C:47:SER:OG	1:C:220:THR:HG22	1.82	0.80
1:C:57:CYS:O	1:C:61:VAL:HG22	1.81	0.80
1:C:164:THR:O	1:C:188:THR:HA	1.83	0.78
1:A:19:VAL:HG11	1:A:123:ILE:HG12	1.64	0.78
1:B:71:VAL:HG22	1:B:109:ALA:HB3	1.66	0.78
1:A:155:GLU:HB3	1:A:168:ILE:HG22	1.66	0.77
1:C:48:ARG:HB2	1:D:311:GLY:HA2	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:157:ARG:HG2	1:B:166:VAL:HG22	1.65	0.77
1:C:119:PRO:HD2	1:C:123:ILE:HD11	1.65	0.76
1:C:71:VAL:HG22	1:C:109:ALA:HB3	1.65	0.76
1:A:270:VAL:HG22	1:A:364:ILE:HB	1.66	0.76
1:A:111:THR:HG21	1:A:170:LYS:HE2	1.68	0.75
1:A:172:VAL:O	1:A:260:GLU:HG3	1.87	0.75
1:A:179:MET:CE	1:A:182:LEU:HD12	2.17	0.75
1:B:67:ARG:NH1	1:B:101:LEU:HD21	2.01	0.75
1:D:92:ARG:HD2	1:D:106:MET:O	1.87	0.75
1:C:199:ARG:HH11	1:C:203:ARG:NH2	1.85	0.74
1:D:199:ARG:O	1:D:203:ARG:HB2	1.87	0.74
1:B:204:VAL:HG13	1:B:245:HIS:HA	1.70	0.74
1:C:319:ILE:HB	1:D:48:ARG:HD3	1.69	0.74
1:A:308:MET:HE1	1:A:312:LYS:HE2	1.69	0.74
1:B:48:ARG:HA	1:B:48:ARG:NE	2.01	0.73
1:D:182:LEU:HD22	1:D:183:LEU:N	2.03	0.73
1:A:31:VAL:HG22	1:A:70:VAL:HG23	1.71	0.73
1:C:209:PHE:O	1:C:212:VAL:HG12	1.89	0.73
1:A:45:THR:HB	1:A:222:ASP:HB2	1.70	0.73
1:D:78:VAL:HB	1:D:114:ILE:HG23	1.71	0.73
1:C:297:HIS:ND1	1:C:381:THR:HG22	2.04	0.72
1:C:325:THR:OG1	1:C:365:ASP:HB3	1.89	0.72
1:B:102:PRO:HG2	1:B:105:GLU:HB2	1.70	0.72
1:D:40:VAL:HG23	1:D:226:LEU:O	1.89	0.72
1:D:154:LYS:HB2	1:D:169:ALA:HB3	1.69	0.72
1:A:42:ALA:HB2	1:A:225:VAL:HG13	1.71	0.72
1:C:14:VAL:HG23	1:C:141:ARG:NH2	2.04	0.72
1:C:73:ALA:O	1:C:74:ARG:HB2	1.89	0.72
1:C:77:ASN:ND2	1:C:88:ALA:HB2	2.05	0.72
1:D:20:GLY:C	1:D:22:ALA:H	1.93	0.71
1:A:19:VAL:HG11	1:A:123:ILE:CG1	2.19	0.71
1:C:82:LEU:O	1:C:85:GLU:HB2	1.91	0.71
1:C:182:LEU:O	1:C:183:LEU:HD23	1.88	0.71
1:D:109:ALA:O	1:D:110:SER:HB2	1.89	0.71
1:D:16:THR:HG21	1:D:141:ARG:O	1.90	0.70
1:D:310:ILE:HD11	1:D:364:ILE:HD13	1.74	0.70
1:C:40:VAL:HG22	1:C:41:SER:N	2.05	0.70
1:C:38:ALA:HA	1:C:229:ASN:HA	1.73	0.70
1:A:181:THR:CG2	1:A:221:SER:HB2	2.22	0.70
1:D:164:THR:O	1:D:188:THR:HA	1.92	0.70
1:C:199:ARG:HD2	1:C:203:ARG:HH12	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:154:LYS:CB	1:D:169:ALA:HB3	2.22	0.69
1:D:181:THR:HA	1:D:219:SER:CB	2.22	0.69
1:D:219:SER:HB3	1:D:222:ASP:OD1	1.91	0.69
1:C:48:ARG:HD2	1:D:316:ASP:O	1.91	0.69
1:B:73:ALA:O	1:B:74:ARG:HB2	1.93	0.69
1:B:147:MET:HA	1:B:170:LYS:HG3	1.73	0.69
1:C:77:ASN:HD21	1:C:88:ALA:HB2	1.57	0.69
1:D:316:ASP:O	1:D:319:ILE:HG13	1.93	0.69
1:A:181:THR:HG21	1:A:221:SER:HB2	1.74	0.69
1:D:72:LEU:HD12	1:D:72:LEU:N	2.07	0.69
1:A:19:VAL:HG12	1:A:19:VAL:O	1.92	0.69
1:D:66:ALA:HA	1:D:105:GLU:CB	2.23	0.68
1:D:8:THR:N	1:D:9:PRO:HD2	2.09	0.68
1:C:273:ALA:HB1	1:C:278:GLN:HB3	1.75	0.68
1:C:38:ALA:HB2	1:C:229:ASN:HB3	1.74	0.68
1:C:27:ASP:HB3	1:C:145:ALA:HB2	1.75	0.68
1:C:189:ASP:HB2	1:C:232:ALA:HB2	1.76	0.68
1:D:177:PRO:HG2	1:D:209:PHE:O	1.93	0.68
1:C:22:ALA:CB	1:C:74:ARG:HG2	2.15	0.67
1:C:260:GLU:HB3	1:C:384:TYR:HD2	1.58	0.67
1:D:172:VAL:O	1:D:260:GLU:HG3	1.93	0.67
1:A:264:LYS:HD2	1:A:296:VAL:O	1.95	0.67
1:D:295:ALA:HB2	1:D:305:ARG:HH11	1.58	0.67
1:A:8:THR:CG2	1:A:164:THR:HG21	2.24	0.67
1:A:37:PRO:HA	1:A:67:ARG:HD3	1.76	0.67
1:B:67:ARG:CZ	1:B:101:LEU:HD21	2.24	0.67
1:C:202:ARG:HG3	1:C:202:ARG:HH11	1.60	0.67
1:D:82:LEU:O	1:D:86:GLU:HG3	1.94	0.67
1:B:13:VAL:HB	1:B:133:PRO:HG2	1.76	0.66
1:C:91:VAL:O	1:C:95:VAL:HG23	1.95	0.66
1:C:214:ILE:HG23	1:C:378:CYS:SG	2.34	0.66
1:A:179:MET:HE3	1:A:182:LEU:HD12	1.76	0.66
1:A:182:LEU:HD22	1:A:183:LEU:N	2.11	0.66
1:B:78:VAL:HG12	1:B:114:ILE:HG23	1.76	0.66
1:C:42:ALA:HA	1:C:201:PHE:HE2	1.61	0.66
1:C:61:VAL:HG23	1:C:61:VAL:O	1.96	0.66
1:D:13:VAL:O	1:D:32:LEU:HD12	1.95	0.66
1:D:71:VAL:HG22	1:D:109:ALA:HB3	1.78	0.66
1:B:8:THR:HB	1:B:164:THR:HG21	1.78	0.66
1:D:120:MET:O	1:D:124:ARG:HD2	1.96	0.66
1:D:43:VAL:CG2	1:D:224:ALA:HB3	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:295:ALA:HB2	1:D:305:ARG:NH1	2.11	0.65
1:B:177:PRO:HG2	1:B:209:PHE:O	1.96	0.65
1:A:70:VAL:HG13	1:A:108:ILE:HG13	1.77	0.65
1:C:118:TYR:HB3	1:C:123:ILE:CD1	2.27	0.65
1:D:8:THR:C	1:D:164:THR:HG21	2.17	0.65
1:B:80:THR:HB	1:B:84:GLY:HA3	1.78	0.65
1:D:39:THR:HG23	1:D:194:PRO:HG3	1.79	0.64
1:B:72:LEU:HD22	1:B:118:TYR:CZ	2.32	0.64
1:D:139:PHE:CE2	1:D:187:ALA:HB3	2.32	0.64
1:C:44:PHE:HB3	1:C:54:VAL:HG13	1.79	0.64
1:B:72:LEU:HD12	1:B:72:LEU:N	2.12	0.64
1:B:101:LEU:HD22	1:B:102:PRO:HD2	1.79	0.64
1:D:48:ARG:HG2	1:D:48:ARG:HH11	1.61	0.64
1:A:102:PRO:HG2	1:A:105:GLU:HB2	1.78	0.64
1:A:191:ARG:HH11	1:A:191:ARG:HG2	1.63	0.64
1:C:44:PHE:HD2	1:C:223:THR:HG1	1.46	0.64
1:D:200:LEU:HD11	1:D:240:PHE:HD2	1.63	0.64
1:A:176:GLU:OE1	1:A:216:THR:HA	1.98	0.63
1:C:14:VAL:HG23	1:C:141:ARG:CZ	2.28	0.63
1:B:19:VAL:CG2	1:B:123:ILE:HA	2.29	0.63
1:B:291:LEU:HB3	1:B:305:ARG:HD3	1.80	0.63
1:C:175:LEU:O	1:C:175:LEU:HD23	1.97	0.63
1:B:325:THR:OG1	1:B:365:ASP:HB3	1.98	0.63
1:D:265:LEU:C	1:D:265:LEU:HD23	2.19	0.63
1:D:316:ASP:HB2	1:D:319:ILE:HD11	1.79	0.63
1:B:253:LYS:HD2	1:B:265:LEU:HD11	1.79	0.63
1:D:282:VAL:O	1:D:286:VAL:HG23	1.99	0.63
1:B:313:CYS:HB3	1:B:316:ASP:OD1	1.97	0.63
1:C:148:THR:OG1	1:C:149:THR:N	2.31	0.63
1:B:175:LEU:HD23	1:B:175:LEU:C	2.19	0.62
1:D:139:PHE:CD2	1:D:166:VAL:HB	2.33	0.62
1:B:142:ALA:O	1:B:146:ILE:HG23	1.99	0.62
1:A:193:ASP:OD2	1:A:196:GLU:HG3	2.00	0.62
1:A:218:THR:H	1:B:312:LYS:HD3	1.63	0.62
1:B:54:VAL:O	1:B:58:ARG:HG3	2.00	0.62
1:B:70:VAL:HG13	1:B:108:ILE:HG13	1.81	0.62
1:C:358:ASP:O	1:C:359:GLU:HG3	1.99	0.62
1:C:260:GLU:HB3	1:C:384:TYR:CD2	2.34	0.62
1:A:14:VAL:HG12	1:A:141:ARG:HH12	1.65	0.62
1:A:177:PRO:HG2	1:A:209:PHE:O	1.99	0.62
1:C:297:HIS:CE1	1:C:381:THR:HG22	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:10:ARG:HH21	1:D:136:GLU:CD	2.04	0.61
1:B:262:ALA:HB2	1:B:378:CYS:SG	2.40	0.61
1:C:226:LEU:HG	1:C:226:LEU:O	2.01	0.61
1:D:182:LEU:HD22	1:D:183:LEU:H	1.64	0.61
1:C:292:VAL:O	1:C:296:VAL:HG23	2.01	0.61
1:C:39:THR:CG2	1:C:194:PRO:HG3	2.30	0.61
1:A:256:ALA:HB1	1:A:377:GLY:O	2.00	0.61
1:D:195:ALA:HB1	1:D:199:ARG:HH12	1.64	0.61
1:B:182:LEU:HD22	1:B:183:LEU:N	2.15	0.61
1:C:8:THR:N	1:C:9:PRO:HD2	2.16	0.61
1:C:271:THR:O	1:C:365:ASP:HA	2.00	0.61
1:A:82:LEU:O	1:A:83:GLU:C	2.40	0.60
1:D:58:ARG:C	1:D:60:ALA:H	2.04	0.60
1:B:170:LYS:HG2	1:B:171:GLY:N	2.16	0.60
1:D:92:ARG:HA	1:D:95:VAL:HG12	1.82	0.60
1:A:176:GLU:O	1:A:176:GLU:HG2	2.02	0.60
1:B:352:ALA:HB1	1:B:356:ARG:HH12	1.66	0.60
1:B:386:ARG:O	1:B:390:GLU:HG3	2.01	0.60
1:C:200:LEU:HD11	1:C:241:GLU:HA	1.84	0.60
1:B:300:ASP:OD1	1:B:302:ASN:HB2	2.02	0.60
1:D:156:VAL:O	1:D:166:VAL:HG13	2.02	0.59
1:D:318:ASP:OD2	1:D:368:ILE:HD13	2.02	0.59
1:D:170:LYS:HG2	1:D:171:GLY:N	2.17	0.59
1:A:31:VAL:CG2	1:A:70:VAL:HG23	2.32	0.59
1:B:273:ALA:CB	1:B:279:ALA:HB2	2.33	0.59
1:A:56:LEU:HD22	1:A:92:ARG:NH2	2.18	0.59
1:A:189:ASP:O	1:A:230:GLY:HA2	2.02	0.59
1:C:302:ASN:CG	1:C:305:ARG:HD2	2.23	0.59
1:D:226:LEU:HD12	1:D:227:PHE:N	2.16	0.59
1:D:352:ALA:O	1:D:356:ARG:HG3	2.03	0.59
1:A:316:ASP:O	1:B:48:ARG:HD2	2.02	0.59
1:B:141:ARG:HG3	1:B:141:ARG:HH11	1.66	0.58
1:C:190:ALA:HB1	1:C:235:VAL:HG22	1.85	0.58
1:D:74:ARG:H	1:D:148:THR:HG22	1.67	0.58
1:D:87:ASN:O	1:D:91:VAL:HG23	2.03	0.58
1:A:200:LEU:O	1:A:204:VAL:HG23	2.03	0.58
1:C:154:LYS:HB2	1:C:169:ALA:O	2.03	0.58
1:D:146:ILE:O	1:D:170:LYS:HG3	2.03	0.58
1:D:351:VAL:O	1:D:355:LEU:HB2	2.03	0.58
1:A:70:VAL:HG21	1:A:95:VAL:HG21	1.84	0.58
1:B:318:ASP:OD2	1:B:368:ILE:HG21	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:14:VAL:HG11	1:B:142:ALA:HB2	1.84	0.58
1:C:165:LEU:HD13	1:C:188:THR:HB	1.86	0.58
1:D:266:ILE:HD11	1:D:296:VAL:HG11	1.85	0.58
1:B:94:ALA:CB	1:B:127:LEU:HD13	2.34	0.58
1:D:92:ARG:HD2	1:D:107:LEU:HA	1.84	0.58
1:D:175:LEU:HD23	1:D:176:GLU:N	2.19	0.58
1:D:245:HIS:HE1	1:D:249:LEU:HD22	1.68	0.58
1:B:16:THR:HB	1:B:27:ASP:OD2	2.04	0.58
1:B:28:ASP:HB3	1:B:74:ARG:NH1	2.19	0.58
1:B:353:GLU:OE2	1:B:356:ARG:HD2	2.03	0.58
1:B:15:HIS:HB3	1:B:31:VAL:HB	1.85	0.57
1:C:55:VAL:O	1:C:58:ARG:HB2	2.04	0.57
1:D:139:PHE:HE2	1:D:187:ALA:HB3	1.69	0.57
1:B:94:ALA:HB1	1:B:127:LEU:HD13	1.84	0.57
1:C:9:PRO:HA	1:C:189:ASP:OD2	2.04	0.57
1:D:104:GLY:C	1:D:106:MET:H	2.08	0.57
1:D:111:THR:OG1	1:D:170:LYS:HE3	2.04	0.57
1:A:56:LEU:HD22	1:A:92:ARG:HH22	1.69	0.57
1:C:176:GLU:O	1:C:176:GLU:HG2	2.02	0.57
1:D:43:VAL:HG22	1:D:224:ALA:HB3	1.85	0.57
1:C:300:ASP:OD2	1:C:302:ASN:HB2	2.04	0.57
1:A:352:ALA:HB1	1:A:356:ARG:NH2	2.19	0.57
1:C:8:THR:N	1:C:9:PRO:CD	2.68	0.57
1:D:47:SER:OG	1:D:220:THR:HA	2.05	0.57
1:D:150:ASP:OD2	1:D:154:LYS:HE2	2.05	0.57
1:C:8:THR:C	1:C:164:THR:HG21	2.25	0.57
1:C:209:PHE:C	1:C:211:ALA:H	2.08	0.57
1:A:44:PHE:CD2	1:A:223:THR:HG23	2.40	0.56
1:A:320:ASP:O	1:A:324:VAL:HG23	2.05	0.56
1:A:352:ALA:HB1	1:A:356:ARG:HH21	1.69	0.56
1:B:153:PRO:C	1:B:154:LYS:HG3	2.26	0.56
1:B:181:THR:HG21	1:B:221:SER:HB2	1.86	0.56
1:C:31:VAL:HG22	1:C:70:VAL:HG23	1.87	0.56
1:C:202:ARG:HG3	1:C:202:ARG:NH1	2.20	0.56
1:D:157:ARG:CB	1:D:166:VAL:HG22	2.34	0.56
1:A:48:ARG:HB2	1:B:311:GLY:HA2	1.86	0.56
1:A:196:GLU:O	1:A:199:ARG:N	2.37	0.56
1:C:26:ARG:HB3	1:C:74:ARG:HH22	1.70	0.56
1:C:199:ARG:CD	1:C:203:ARG:HH12	2.18	0.56
1:A:166:VAL:HG12	1:A:167:GLY:N	2.21	0.56
1:A:173:GLY:HA3	1:A:260:GLU:OE2	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:268:VAL:HB	1:A:375:VAL:CG2	2.36	0.56
1:B:111:THR:OG1	1:B:170:LYS:HE3	2.06	0.56
1:A:191:ARG:HB3	1:A:234:GLU:HA	1.87	0.56
1:C:177:PRO:HG2	1:C:209:PHE:O	2.06	0.56
1:D:313:CYS:HB3	1:D:316:ASP:OD1	2.04	0.56
1:B:95:VAL:HG13	1:B:130:LEU:HD21	1.86	0.56
1:C:27:ASP:HB3	1:C:145:ALA:CB	2.34	0.56
1:D:67:ARG:N	1:D:105:GLU:O	2.38	0.56
1:D:181:THR:HA	1:D:219:SER:HB2	1.88	0.56
1:D:181:THR:HA	1:D:219:SER:OG	2.06	0.56
1:D:189:ASP:HA	1:D:229:ASN:OD1	2.05	0.56
1:A:229:ASN:OD1	1:A:229:ASN:O	2.24	0.56
1:C:190:ALA:HB1	1:C:235:VAL:CG2	2.36	0.56
1:C:249:LEU:HD12	1:C:249:LEU:O	2.06	0.56
1:D:17:ALA:O	1:D:29:PHE:HB3	2.04	0.56
1:D:31:VAL:HA	1:D:69:VAL:O	2.06	0.56
1:B:200:LEU:HD11	1:B:240:PHE:HD2	1.71	0.56
1:C:119:PRO:CD	1:C:123:ILE:HD11	2.35	0.56
1:A:309:ALA:O	1:A:312:LYS:HB2	2.06	0.55
1:C:90:GLU:OE2	1:C:124:ARG:HG2	2.04	0.55
1:A:8:THR:N	1:A:9:PRO:HD2	2.20	0.55
1:B:284:LYS:HA	1:B:287:VAL:HG12	1.88	0.55
1:C:9:PRO:HB2	1:C:12:PHE:CD2	2.42	0.55
1:C:40:VAL:CG2	1:C:41:SER:H	2.16	0.55
1:C:44:PHE:HD2	1:C:223:THR:OG1	1.88	0.55
1:C:175:LEU:HD12	1:C:182:LEU:HB2	1.88	0.55
1:A:144:ARG:HG3	1:A:144:ARG:HH11	1.72	0.55
1:B:67:ARG:NH1	1:B:101:LEU:CD2	2.68	0.55
1:C:386:ARG:HG3	1:C:386:ARG:HH11	1.71	0.55
1:B:61:VAL:HG12	1:B:107:LEU:HD21	1.88	0.55
1:C:179:MET:HE1	1:C:222:ASP:HB3	1.87	0.55
1:D:26:ARG:HD2	1:D:27:ASP:N	2.21	0.55
1:A:169:ALA:HB2	1:A:184:THR:OG1	2.06	0.55
1:D:15:HIS:O	1:D:16:THR:HG23	2.06	0.55
1:D:26:ARG:HH11	1:D:145:ALA:HA	1.71	0.55
1:C:111:THR:HG21	1:C:170:LYS:HE2	1.87	0.55
1:C:192:LEU:HD12	1:C:197:GLN:OE1	2.07	0.55
1:A:12:PHE:CZ	1:A:229:ASN:ND2	2.74	0.55
1:A:30:THR:HG23	1:A:71:VAL:HB	1.89	0.55
1:A:72:LEU:N	1:A:72:LEU:HD12	2.21	0.55
1:B:182:LEU:HD22	1:B:182:LEU:C	2.26	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:10:ARG:HB3	1:D:189:ASP:HB3	1.88	0.54
1:D:219:SER:HB3	1:D:222:ASP:CG	2.28	0.54
1:A:267:GLU:HG3	1:A:376:TYR:CE2	2.43	0.54
1:B:200:LEU:HD23	1:B:200:LEU:C	2.28	0.54
1:C:53:SER:O	1:C:57:CYS:SG	2.60	0.54
1:C:173:GLY:O	1:C:174:MET:C	2.46	0.54
1:D:8:THR:O	1:D:164:THR:HG21	2.07	0.54
1:D:39:THR:CG2	1:D:194:PRO:HG3	2.37	0.54
1:B:9:PRO:HD3	1:B:166:VAL:HG23	1.90	0.54
1:B:10:ARG:HG3	1:B:10:ARG:HH11	1.73	0.54
1:D:169:ALA:O	1:D:170:LYS:HB2	2.08	0.54
1:D:176:GLU:OE1	1:D:216:THR:HA	2.07	0.54
1:A:179:MET:CE	1:A:222:ASP:HB3	2.26	0.54
1:B:48:ARG:HA	1:B:48:ARG:HE	1.68	0.54
1:B:265:LEU:HD23	1:B:265:LEU:C	2.27	0.54
1:A:165:LEU:HD12	1:A:187:ALA:O	2.08	0.54
1:B:202:ARG:HG3	1:B:202:ARG:HH11	1.71	0.54
1:C:334:TYR:HA	1:C:335:PRO:C	2.27	0.54
1:D:20:GLY:C	1:D:22:ALA:N	2.60	0.54
1:A:9:PRO:HD3	1:A:166:VAL:HG23	1.90	0.54
1:A:204:VAL:HG21	1:A:244:LEU:HD23	1.89	0.54
1:C:216:THR:HG22	1:C:288:ASN:CG	2.28	0.54
1:D:46:ARG:HD3	1:D:180:ALA:CB	2.36	0.54
1:D:163:ALA:CB	1:D:190:ALA:HB2	2.37	0.54
1:D:37:PRO:O	1:D:229:ASN:HB3	2.08	0.54
1:D:73:ALA:HA	1:D:111:THR:HG23	1.90	0.54
1:D:300:ASP:OD2	1:D:302:ASN:HB2	2.08	0.54
1:B:92:ARG:HH11	1:B:92:ARG:HB3	1.73	0.53
1:D:9:PRO:HD2	1:D:137:GLY:HA2	1.89	0.53
1:D:42:ALA:HB3	1:D:61:VAL:HG21	1.91	0.53
1:D:175:LEU:HD23	1:D:175:LEU:C	2.29	0.53
1:D:40:VAL:HG11	1:D:61:VAL:HG12	1.90	0.53
1:D:74:ARG:NH1	1:D:74:ARG:HG2	2.23	0.53
1:C:71:VAL:C	1:C:72:LEU:HD12	2.29	0.53
1:D:321:GLN:HG2	1:D:321:GLN:O	2.07	0.53
1:A:70:VAL:CG1	1:A:108:ILE:HG13	2.38	0.53
1:D:281:ARG:HG2	1:D:281:ARG:HH11	1.72	0.53
1:D:111:THR:CB	1:D:170:LYS:HE3	2.38	0.53
1:D:250:ALA:O	1:D:254:ASP:OD1	2.25	0.53
1:A:20:GLY:C	1:A:22:ALA:H	2.12	0.53
1:A:37:PRO:CA	1:A:67:ARG:HD3	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:266:ILE:HG12	1:A:296:VAL:HG11	1.91	0.53
1:B:177:PRO:CG	1:B:209:PHE:O	2.57	0.53
1:D:40:VAL:HG22	1:D:41:SER:N	2.23	0.53
1:B:75:ASN:HD22	1:B:77:ASN:H	1.54	0.53
1:A:51:GLY:HA3	1:A:78:VAL:HG22	1.90	0.53
1:B:320:ASP:O	1:B:324:VAL:HG23	2.09	0.53
1:C:72:LEU:HD12	1:C:72:LEU:N	2.24	0.53
1:C:90:GLU:O	1:C:94:ALA:HB2	2.09	0.53
1:D:20:GLY:O	1:D:22:ALA:N	2.42	0.53
1:A:170:LYS:C	1:A:170:LYS:HD3	2.28	0.53
1:C:14:VAL:HG12	1:C:32:LEU:HD13	1.89	0.53
1:A:14:VAL:HG12	1:A:141:ARG:NH1	2.22	0.53
1:A:160:VAL:HG21	1:A:243:ALA:CB	2.38	0.52
1:A:179:MET:HE1	1:A:182:LEU:HD12	1.89	0.52
1:B:260:GLU:HG2	1:B:387:LEU:HD22	1.91	0.52
1:C:71:VAL:HG11	1:C:146:ILE:HG22	1.91	0.52
1:C:316:ASP:O	1:D:48:ARG:HD2	2.09	0.52
1:C:103:GLU:C	1:C:105:GLU:H	2.13	0.52
1:C:184:THR:HG21	1:C:209:PHE:CZ	2.45	0.52
1:C:327:ARG:HB2	1:C:331:VAL:O	2.10	0.52
1:A:57:CYS:SG	1:A:108:ILE:O	2.67	0.52
1:C:208:THR:O	1:C:211:ALA:HB3	2.09	0.52
1:C:286:VAL:HA	1:C:309:ALA:HB1	1.90	0.52
1:C:351:VAL:O	1:C:354:HIS:HB3	2.10	0.52
1:D:154:LYS:N	1:D:154:LYS:HD2	2.25	0.52
1:B:31:VAL:HG22	1:B:70:VAL:HG23	1.92	0.52
1:D:43:VAL:CG2	1:D:179:MET:HB3	2.40	0.52
1:D:300:ASP:C	1:D:302:ASN:H	2.13	0.52
1:B:8:THR:N	1:B:9:PRO:HD2	2.25	0.52
1:C:140:ASP:HA	1:C:155:GLU:OE2	2.10	0.52
1:D:19:VAL:HG23	1:D:29:PHE:CB	2.37	0.52
1:D:26:ARG:NH2	1:D:74:ARG:HE	2.07	0.52
1:D:173:GLY:O	1:D:174:MET:C	2.48	0.52
1:A:160:VAL:HG12	1:A:235:VAL:HG11	1.91	0.51
1:A:352:ALA:CB	1:A:356:ARG:HH21	2.22	0.51
1:B:306:VAL:O	1:B:310:ILE:HG13	2.10	0.51
1:D:81:GLY:O	1:D:85:GLU:HB2	2.10	0.51
1:A:175:LEU:C	1:A:175:LEU:HD23	2.31	0.51
1:C:236:ASP:OD2	1:C:238:GLY:N	2.43	0.51
1:A:14:VAL:HB	1:A:138:GLY:HA3	1.93	0.51
1:A:329:GLY:HA2	1:A:361:VAL:HB	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:309:ALA:O	1:B:312:LYS:HB2	2.09	0.51
1:C:22:ALA:HB3	1:C:74:ARG:NH1	2.25	0.51
1:C:320:ASP:HB3	1:C:323:ARG:HG3	1.92	0.51
1:B:347:LEU:C	1:B:349:ALA:H	2.13	0.51
1:D:212:VAL:HG22	1:D:213:SER:N	2.25	0.51
1:C:144:ARG:O	1:C:147:MET:HE2	2.11	0.51
1:D:8:THR:N	1:D:9:PRO:CD	2.74	0.51
1:D:111:THR:HG21	1:D:170:LYS:HE2	1.92	0.51
1:A:51:GLY:CA	1:A:78:VAL:HG22	2.40	0.51
1:B:297:HIS:ND1	1:B:381:THR:HG22	2.26	0.51
1:C:182:LEU:C	1:C:182:LEU:HD13	2.31	0.51
1:C:16:THR:HB	1:C:27:ASP:OD1	2.09	0.51
1:C:269:GLN:OE1	1:C:361:VAL:HG11	2.11	0.51
1:D:225:VAL:HG12	1:D:226:LEU:N	2.25	0.51
1:B:67:ARG:NH2	1:B:101:LEU:HD21	2.26	0.51
1:C:28:ASP:OD2	1:C:28:ASP:N	2.44	0.51
1:C:94:ALA:CB	1:C:127:LEU:HD13	2.41	0.51
1:C:179:MET:CE	1:C:222:ASP:HB3	2.41	0.51
1:B:271:THR:O	1:B:365:ASP:HA	2.11	0.50
1:C:199:ARG:HD2	1:C:203:ARG:HH22	1.76	0.50
1:D:73:ALA:HA	1:D:111:THR:CG2	2.41	0.50
1:D:92:ARG:NH2	1:D:103:GLU:HG2	2.26	0.50
1:D:96:ALA:HB1	1:D:102:PRO:O	2.11	0.50
1:D:320:ASP:C	1:D:322:GLU:H	2.14	0.50
1:A:140:ASP:HA	1:A:155:GLU:OE1	2.12	0.50
1:C:9:PRO:HB2	1:C:12:PHE:HD2	1.76	0.50
1:C:184:THR:HG21	1:C:209:PHE:CE2	2.47	0.50
1:A:48:ARG:HD2	1:B:316:ASP:O	2.12	0.50
1:A:179:MET:HE2	1:A:222:ASP:CB	2.27	0.50
1:D:70:VAL:HG13	1:D:108:ILE:HG13	1.94	0.50
1:D:124:ARG:O	1:D:127:LEU:HB2	2.11	0.50
1:D:173:GLY:HA3	1:D:260:GLU:OE2	2.11	0.50
1:D:305:ARG:O	1:D:308:MET:HB3	2.11	0.50
1:C:63:ASP:OD2	1:C:65:GLN:HB3	2.12	0.50
1:D:146:ILE:HD11	1:D:169:ALA:O	2.10	0.50
1:A:69:VAL:HA	1:A:107:LEU:O	2.11	0.50
1:A:212:VAL:HB	1:A:252:VAL:HG13	1.93	0.50
1:B:45:THR:HB	1:B:222:ASP:HB2	1.94	0.50
1:B:140:ASP:HA	1:B:155:GLU:OE2	2.11	0.50
1:C:189:ASP:CB	1:C:232:ALA:HB2	2.41	0.50
1:D:72:LEU:HD22	1:D:118:TYR:CZ	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:266:ILE:CD1	1:D:296:VAL:HG11	2.42	0.50
1:A:20:GLY:C	1:A:22:ALA:N	2.62	0.50
1:B:80:THR:CB	1:B:84:GLY:HA3	2.42	0.50
1:B:273:ALA:HB3	1:B:279:ALA:HB2	1.93	0.50
1:A:334:TYR:HA	1:A:335:PRO:C	2.31	0.50
1:C:169:ALA:HB2	1:C:251:LEU:HB3	1.94	0.50
1:A:217:ASP:OD2	1:B:290:PRO:HD2	2.12	0.49
1:A:383:GLY:O	1:A:387:LEU:HG	2.12	0.49
1:B:253:LYS:CD	1:B:265:LEU:HD11	2.42	0.49
1:C:265:LEU:HD23	1:C:266:ILE:N	2.27	0.49
1:A:120:MET:HB3	1:A:124:ARG:NH1	2.27	0.49
1:C:96:ALA:O	1:C:98:ALA:N	2.45	0.49
1:A:9:PRO:CD	1:A:166:VAL:HG23	2.42	0.49
1:A:181:THR:HA	1:A:219:SER:CB	2.42	0.49
1:B:334:TYR:HA	1:B:335:PRO:C	2.32	0.49
1:D:66:ALA:HA	1:D:105:GLU:CA	2.43	0.49
1:D:99:LEU:CB	1:D:101:LEU:HD12	2.43	0.49
1:B:352:ALA:HB1	1:B:356:ARG:NH1	2.28	0.49
1:D:138:GLY:C	1:D:140:ASP:H	2.15	0.49
1:A:294:THR:HG23	1:A:380:LEU:HD23	1.94	0.49
1:A:41:SER:HB2	1:A:197:GLN:HE21	1.77	0.49
1:A:174:MET:HB2	1:B:291:LEU:HD11	1.95	0.49
1:D:212:VAL:HG23	1:D:376:TYR:O	2.12	0.49
1:A:83:GLU:HG2	1:A:117:GLN:OE1	2.13	0.49
1:D:327:ARG:HB2	1:D:331:VAL:O	2.13	0.49
1:B:200:LEU:HD23	1:B:201:PHE:N	2.28	0.49
1:C:42:ALA:HB2	1:C:225:VAL:HG13	1.93	0.49
1:D:92:ARG:HA	1:D:95:VAL:CG1	2.42	0.49
1:C:357:GLY:O	1:C:359:GLU:N	2.46	0.49
1:B:67:ARG:HH12	1:B:101:LEU:HD21	1.77	0.48
1:B:205:MET:O	1:B:210:ASN:HB2	2.13	0.48
1:D:294:THR:HG22	1:D:380:LEU:HB3	1.93	0.48
1:A:75:ASN:O	1:A:110:SER:OG	2.31	0.48
1:A:286:VAL:HG21	1:A:364:ILE:CD1	2.43	0.48
1:B:281:ARG:NH2	1:B:316:ASP:OD2	2.25	0.48
1:C:189:ASP:C	1:C:232:ALA:HB3	2.34	0.48
1:D:9:PRO:HB2	1:D:12:PHE:CB	2.32	0.48
1:D:10:ARG:NH2	1:D:136:GLU:OE1	2.42	0.48
1:D:69:VAL:N	1:D:106:MET:SD	2.86	0.48
1:D:267:GLU:HG3	1:D:376:TYR:CE2	2.48	0.48
1:C:31:VAL:HG12	1:C:32:LEU:N	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:146:ILE:HD13	1:D:168:ILE:HD12	1.95	0.48
1:A:91:VAL:O	1:A:95:VAL:HG23	2.13	0.48
1:D:82:LEU:O	1:D:83:GLU:C	2.51	0.48
1:B:47:SER:OG	1:B:220:THR:HG22	2.13	0.48
1:C:311:GLY:O	1:C:313:CYS:N	2.47	0.48
1:B:189:ASP:CG	1:B:232:ALA:HB2	2.33	0.48
1:B:268:VAL:HG12	1:B:270:VAL:HG23	1.95	0.48
1:D:131:GLU:O	1:D:132:TRP:C	2.52	0.48
1:C:165:LEU:HD12	1:C:187:ALA:O	2.14	0.48
1:C:166:VAL:HG12	1:C:167:GLY:N	2.29	0.48
1:D:28:ASP:OD1	1:D:29:PHE:N	2.47	0.48
1:A:204:VAL:HG13	1:A:245:HIS:HA	1.95	0.48
1:B:141:ARG:HG3	1:B:141:ARG:NH1	2.29	0.48
1:D:68:GLY:C	1:D:106:MET:SD	2.92	0.48
1:A:294:THR:CG2	1:A:380:LEU:HD23	2.44	0.48
1:B:273:ALA:HA	1:B:278:GLN:OE1	2.14	0.48
1:B:347:LEU:C	1:B:349:ALA:N	2.68	0.48
1:D:72:LEU:HD22	1:D:118:TYR:OH	2.14	0.48
1:D:202:ARG:HG3	1:D:202:ARG:HH11	1.78	0.48
1:D:271:THR:O	1:D:365:ASP:HA	2.14	0.48
1:D:154:LYS:HE2	1:D:170:LYS:HA	1.94	0.47
1:D:170:LYS:HG2	1:D:171:GLY:H	1.78	0.47
1:D:170:LYS:O	1:D:182:LEU:HD23	2.14	0.47
1:D:160:VAL:O	1:D:162:GLY:N	2.46	0.47
1:D:328:PHE:HB2	1:D:351:VAL:HG13	1.95	0.47
1:A:197:GLN:HA	1:A:200:LEU:CD2	2.44	0.47
1:B:138:GLY:O	1:B:141:ARG:HG2	2.15	0.47
1:B:172:VAL:O	1:B:260:GLU:HB2	2.14	0.47
1:C:61:VAL:HG11	1:C:107:LEU:HD21	1.95	0.47
1:A:40:VAL:HG22	1:A:41:SER:N	2.30	0.47
1:A:196:GLU:O	1:A:197:GLN:C	2.52	0.47
1:B:72:LEU:HD22	1:B:118:TYR:CE1	2.48	0.47
1:C:169:ALA:CB	1:C:251:LEU:HD13	2.37	0.47
1:D:163:ALA:HB2	1:D:190:ALA:HB2	1.97	0.47
1:D:281:ARG:NH1	1:D:316:ASP:OD2	2.47	0.47
1:B:154:LYS:O	1:B:168:ILE:HA	2.14	0.47
1:C:70:VAL:HG13	1:C:108:ILE:HG13	1.97	0.47
1:C:211:ALA:O	1:C:376:TYR:N	2.35	0.47
1:D:114:ILE:HG22	1:D:115:GLY:N	2.28	0.47
1:D:271:THR:HA	1:D:372:ALA:HB2	1.97	0.47
1:A:204:VAL:CG1	1:A:245:HIS:HA	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:48:ARG:CZ	1:D:317:THR:HA	2.45	0.47
1:D:165:LEU:HD21	1:D:244:LEU:HA	1.96	0.47
1:D:301:PRO:CA	1:D:355:LEU:HD22	2.45	0.47
1:D:318:ASP:O	1:D:368:ILE:HD11	2.15	0.47
1:C:282:VAL:O	1:C:286:VAL:HG23	2.15	0.47
1:B:75:ASN:O	1:B:110:SER:OG	2.32	0.47
1:B:328:PHE:CD2	1:B:333:VAL:HG21	2.50	0.47
1:C:264:LYS:HD2	1:C:296:VAL:O	2.15	0.47
1:D:43:VAL:HG23	1:D:224:ALA:HB3	1.97	0.47
1:A:161:GLY:C	1:A:163:ALA:H	2.17	0.47
1:B:202:ARG:HG3	1:B:202:ARG:NH1	2.30	0.47
1:C:40:VAL:HG12	1:C:64:GLY:C	2.35	0.47
1:C:386:ARG:NH1	1:D:382:GLU:CD	2.69	0.47
1:D:92:ARG:HH21	1:D:103:GLU:HG2	1.79	0.46
1:D:328:PHE:CD1	1:D:355:LEU:HD11	2.50	0.46
1:A:21:LEU:CD1	1:A:72:LEU:HB3	2.32	0.46
1:A:85:GLU:O	1:A:88:ALA:HB3	2.14	0.46
1:A:170:LYS:CD	1:A:183:LEU:HB2	2.39	0.46
1:A:323:ARG:HH11	1:A:323:ARG:HB3	1.79	0.46
1:B:73:ALA:O	1:B:74:ARG:HD3	2.15	0.46
1:B:366:LEU:O	1:B:368:ILE:HG13	2.15	0.46
1:C:169:ALA:CB	1:C:251:LEU:HB3	2.46	0.46
1:C:208:THR:HG21	1:C:248:ALA:HB3	1.96	0.46
1:A:72:LEU:HD22	1:A:118:TYR:CE1	2.51	0.46
1:A:123:ILE:O	1:A:124:ARG:C	2.53	0.46
1:C:14:VAL:HG23	1:C:14:VAL:O	2.16	0.46
1:C:70:VAL:HG12	1:C:107:LEU:O	2.15	0.46
1:C:111:THR:OG1	1:C:181:THR:HB	2.15	0.46
1:A:119:PRO:O	1:A:121:GLU:N	2.48	0.46
1:A:278:GLN:HA	1:A:281:ARG:NH1	2.30	0.46
1:C:143:ALA:HB2	1:C:168:ILE:CG2	2.45	0.46
1:C:386:ARG:HH12	1:D:382:GLU:CD	2.18	0.46
1:D:60:ALA:C	1:D:62:ALA:H	2.18	0.46
1:D:83:GLU:C	1:D:83:GLU:OE2	2.53	0.46
1:D:272:GLY:HA2	1:D:369:ALA:O	2.15	0.46
1:C:49:PHE:O	1:C:220:THR:HB	2.16	0.46
1:D:21:LEU:HD23	1:D:119:PRO:HD3	1.96	0.46
1:D:264:LYS:HD3	1:D:360:VAL:CG2	2.45	0.46
1:A:67:ARG:HB2	1:A:101:LEU:HD13	1.97	0.46
1:A:71:VAL:C	1:A:72:LEU:HD12	2.36	0.46
1:B:82:LEU:O	1:B:83:GLU:C	2.53	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:320:ASP:HB3	1:B:323:ARG:HG3	1.96	0.46
1:D:212:VAL:HB	1:D:252:VAL:HG13	1.97	0.46
1:D:74:ARG:HG2	1:D:74:ARG:HH11	1.81	0.46
1:D:158:VAL:HG12	1:D:159:SER:N	2.30	0.46
1:A:19:VAL:O	1:A:19:VAL:CG1	2.63	0.46
1:D:139:PHE:HD2	1:D:166:VAL:CG1	2.29	0.46
1:A:179:MET:HE1	1:A:182:LEU:CD1	2.46	0.46
1:C:16:THR:HG21	1:C:141:ARG:HG3	1.98	0.46
1:C:170:LYS:HD2	1:C:183:LEU:HB2	1.97	0.46
1:D:99:LEU:HB2	1:D:101:LEU:HD12	1.98	0.46
1:A:278:GLN:HG3	1:A:281:ARG:HH12	1.81	0.46
1:B:44:PHE:N	1:B:44:PHE:CD1	2.83	0.46
1:B:171:GLY:O	1:B:175:LEU:CD1	2.64	0.46
1:B:298:GLY:O	1:B:299:CYS:HB2	2.15	0.46
1:C:170:LYS:HD3	1:C:170:LYS:C	2.36	0.46
1:C:230:GLY:C	1:C:232:ALA:H	2.18	0.46
1:D:169:ALA:O	1:D:170:LYS:CB	2.64	0.46
1:B:71:VAL:C	1:B:72:LEU:HD12	2.36	0.45
1:B:173:GLY:HA3	1:B:260:GLU:OE1	2.15	0.45
1:B:265:LEU:HD23	1:B:266:ILE:N	2.31	0.45
1:C:30:THR:CG2	1:C:142:ALA:HA	2.45	0.45
1:C:260:GLU:HA	1:C:260:GLU:OE1	2.16	0.45
1:D:181:THR:CG2	1:D:221:SER:HB2	2.47	0.45
1:D:188:THR:HG21	1:D:240:PHE:CE1	2.51	0.45
1:A:249:LEU:O	1:A:253:LYS:HG2	2.16	0.45
1:B:263:ALA:HB2	1:B:381:THR:HG21	1.98	0.45
1:C:30:THR:HG23	1:C:142:ALA:HA	1.99	0.45
1:A:159:SER:O	1:A:160:VAL:HG23	2.16	0.45
1:A:9:PRO:HA	1:A:189:ASP:OD2	2.16	0.45
1:B:75:ASN:HD22	1:B:75:ASN:C	2.20	0.45
1:C:94:ALA:HB1	1:C:127:LEU:HD13	1.97	0.45
1:C:96:ALA:C	1:C:98:ALA:N	2.70	0.45
1:D:52:PRO:HB3	1:D:85:GLU:OE2	2.16	0.45
1:B:71:VAL:HA	1:B:109:ALA:O	2.15	0.45
1:B:148:THR:OG1	1:B:149:THR:N	2.50	0.45
1:C:169:ALA:HB2	1:C:251:LEU:CD1	2.39	0.45
1:D:38:ALA:HB1	1:D:228:ALA:C	2.36	0.45
1:D:217:ASP:O	1:D:218:THR:C	2.54	0.45
1:A:275:ASP:OD1	1:A:277:ALA:N	2.50	0.45
1:A:326:ILE:HB	1:A:334:TYR:HB3	1.97	0.45
1:A:327:ARG:NH1	1:A:363:GLY:HA3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:181:THR:CG2	1:B:221:SER:HB2	2.47	0.45
1:C:61:VAL:CG1	1:C:107:LEU:HD11	2.47	0.45
1:C:290:PRO:HG2	1:D:215:ASP:O	2.17	0.45
1:D:58:ARG:O	1:D:60:ALA:N	2.49	0.45
1:A:175:LEU:HD23	1:A:175:LEU:O	2.17	0.45
1:A:217:ASP:HA	1:B:312:LYS:HD3	1.99	0.45
1:A:318:ASP:OD2	1:A:318:ASP:N	2.45	0.45
1:C:176:GLU:O	1:C:176:GLU:CG	2.65	0.45
1:C:327:ARG:HG2	1:C:363:GLY:HA3	1.99	0.45
1:D:200:LEU:HD23	1:D:201:PHE:N	2.32	0.45
1:D:328:PHE:HE2	1:D:333:VAL:HG21	1.82	0.45
1:B:57:CYS:SG	1:B:108:ILE:O	2.75	0.45
1:C:22:ALA:HB2	1:C:74:ARG:CG	2.21	0.45
1:C:214:ILE:HD13	1:C:259:GLY:HA2	1.99	0.45
1:C:302:ASN:ND2	1:C:305:ARG:HD2	2.32	0.45
1:D:21:LEU:HD21	1:D:118:TYR:HD1	1.82	0.45
1:D:293:LYS:NZ	1:D:380:LEU:HD13	2.32	0.45
1:B:274:ARG:NH1	1:B:318:ASP:OD1	2.50	0.44
1:C:71:VAL:HG22	1:C:109:ALA:CB	2.41	0.44
1:C:175:LEU:CD1	1:C:182:LEU:HB2	2.45	0.44
1:D:43:VAL:HG23	1:D:179:MET:HB3	1.98	0.44
1:D:48:ARG:HG2	1:D:48:ARG:NH1	2.27	0.44
1:D:297:HIS:HB2	1:D:379:ASP:HB2	1.99	0.44
1:A:164:THR:HG22	1:A:165:LEU:N	2.32	0.44
1:A:181:THR:HG23	1:A:221:SER:HB2	1.96	0.44
1:A:206:ASP:HA	1:A:210:ASN:HB2	1.99	0.44
1:B:188:THR:HG23	1:B:188:THR:O	2.17	0.44
1:B:253:LYS:CE	1:B:376:TYR:CE2	3.00	0.44
1:D:18:PRO:HD3	1:D:27:ASP:OD2	2.17	0.44
1:D:22:ALA:HB3	1:D:74:ARG:NH1	2.32	0.44
1:D:160:VAL:C	1:D:162:GLY:H	2.20	0.44
1:D:177:PRO:CG	1:D:209:PHE:O	2.63	0.44
1:D:204:VAL:HG11	1:D:245:HIS:HA	1.99	0.44
1:A:99:LEU:HB3	1:A:132:TRP:CZ2	2.53	0.44
1:A:191:ARG:HH11	1:A:191:ARG:CG	2.30	0.44
1:B:8:THR:CB	1:B:164:THR:HG21	2.47	0.44
1:B:201:PHE:O	1:B:205:MET:HG2	2.17	0.44
1:C:9:PRO:N	1:C:164:THR:HG21	2.33	0.44
1:C:118:TYR:HB3	1:C:123:ILE:HD11	1.97	0.44
1:C:268:VAL:HG12	1:C:270:VAL:HG23	1.98	0.44
1:D:39:THR:HB	1:D:197:GLN:OE1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:82:LEU:HD23	1:A:83:GLU:N	2.33	0.44
1:A:94:ALA:HB1	1:A:127:LEU:HD22	1.99	0.44
1:C:199:ARG:HD2	1:C:203:ARG:NH1	2.30	0.44
1:D:57:CYS:SG	1:D:108:ILE:O	2.76	0.44
1:D:297:HIS:ND1	1:D:381:THR:HG22	2.33	0.44
1:A:8:THR:HG21	1:A:164:THR:HG21	1.99	0.44
1:B:83:GLU:HG2	1:B:87:ASN:HD21	1.81	0.44
1:C:108:ILE:O	1:C:108:ILE:HG23	2.17	0.44
1:C:192:LEU:HD11	1:C:240:PHE:CE2	2.53	0.44
1:C:196:GLU:O	1:C:200:LEU:CB	2.65	0.44
1:C:204:VAL:HG11	1:C:244:LEU:HG	2.00	0.44
1:C:320:ASP:HB3	1:C:323:ARG:CG	2.47	0.44
1:D:26:ARG:NH1	1:D:145:ALA:HA	2.31	0.44
1:D:200:LEU:HD12	1:D:241:GLU:HB2	1.99	0.44
1:D:206:ASP:O	1:D:373:PHE:HZ	1.98	0.44
1:C:156:VAL:HG12	1:C:167:GLY:O	2.17	0.44
1:C:171:GLY:O	1:C:255:ILE:HG23	2.17	0.44
1:D:309:ALA:O	1:D:312:LYS:HB2	2.16	0.44
1:A:22:ALA:HB2	1:A:74:ARG:HG2	1.99	0.44
1:A:70:VAL:O	1:A:108:ILE:HA	2.18	0.44
1:B:155:GLU:HA	1:B:167:GLY:O	2.18	0.44
1:C:83:GLU:HB3	1:C:117:GLN:HE22	1.83	0.44
1:C:177:PRO:HB3	1:C:179:MET:HE3	1.98	0.44
1:D:58:ARG:C	1:D:60:ALA:N	2.71	0.44
1:D:72:LEU:HD22	1:D:118:TYR:CE1	2.52	0.44
1:A:92:ARG:HH11	1:A:92:ARG:HB3	1.82	0.44
1:A:199:ARG:HG2	1:A:203:ARG:NH1	2.32	0.44
1:C:19:VAL:HG13	1:C:29:PHE:HB2	2.00	0.44
1:A:308:MET:CE	1:A:312:LYS:HE2	2.44	0.43
1:B:91:VAL:HG12	1:B:91:VAL:O	2.18	0.43
1:B:351:VAL:O	1:B:355:LEU:HD23	2.18	0.43
1:C:294:THR:O	1:C:297:HIS:HB3	2.18	0.43
1:D:248:ALA:C	1:D:250:ALA:H	2.21	0.43
1:D:300:ASP:HA	1:D:301:PRO:HD2	1.91	0.43
1:D:316:ASP:HB2	1:D:319:ILE:CD1	2.45	0.43
1:C:165:LEU:HA	1:C:187:ALA:O	2.18	0.43
1:A:44:PHE:HD2	1:A:223:THR:HG23	1.83	0.43
1:B:164:THR:HG22	1:B:165:LEU:N	2.33	0.43
1:C:179:MET:CE	1:C:182:LEU:HD12	2.48	0.43
1:C:207:ARG:CZ	1:C:373:PHE:CD2	3.00	0.43
1:C:293:LYS:HZ2	1:C:380:LEU:HB2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:73:ALA:O	1:D:74:ARG:HB2	2.19	0.43
1:D:154:LYS:CG	1:D:169:ALA:HB3	2.48	0.43
1:C:79:ALA:HB1	1:D:303:TRP:HH2	1.84	0.43
1:C:172:VAL:HG11	1:C:258:ASP:O	2.18	0.43
1:C:179:MET:H	1:C:179:MET:HG2	1.53	0.43
1:C:310:ILE:HD11	1:C:364:ILE:HD13	2.00	0.43
1:A:188:THR:HG22	1:A:228:ALA:HA	2.00	0.43
1:A:273:ALA:N	1:A:371:GLY:O	2.52	0.43
1:B:297:HIS:CE1	1:B:381:THR:HG22	2.53	0.43
1:C:80:THR:HB	1:C:84:GLY:HA3	2.00	0.43
1:C:301:PRO:HB3	1:C:355:LEU:HD13	2.01	0.43
1:A:9:PRO:HG2	1:A:12:PHE:CD2	2.54	0.43
1:A:52:PRO:HD2	1:A:77:ASN:O	2.19	0.43
1:C:200:LEU:HD21	1:C:240:PHE:HD2	1.83	0.43
1:D:183:LEU:CD2	1:D:223:THR:HB	2.49	0.43
1:C:274:ARG:HA	1:C:369:ALA:HB3	2.00	0.43
1:D:89:ARG:C	1:D:91:VAL:H	2.22	0.43
1:D:200:LEU:HD23	1:D:200:LEU:C	2.39	0.43
1:B:352:ALA:CB	1:B:356:ARG:HH12	2.31	0.43
1:D:126:HIS:O	1:D:128:LYS:N	2.52	0.43
1:A:170:LYS:HG2	1:A:171:GLY:N	2.34	0.43
1:A:310:ILE:HD11	1:A:364:ILE:HD13	2.00	0.43
1:B:350:ALA:C	1:B:352:ALA:N	2.71	0.43
1:C:205:MET:HA	1:C:205:MET:CE	2.49	0.43
1:D:9:PRO:CD	1:D:137:GLY:HA2	2.48	0.43
1:D:40:VAL:HG22	1:D:41:SER:H	1.82	0.43
1:D:52:PRO:HB3	1:D:85:GLU:HG2	2.01	0.43
1:D:310:ILE:HD11	1:D:364:ILE:CD1	2.45	0.43
1:A:172:VAL:HB	1:A:259:GLY:HA2	2.01	0.43
1:B:19:VAL:HG12	1:B:28:ASP:OD1	2.18	0.43
1:C:192:LEU:HB2	1:C:197:GLN:OE1	2.19	0.43
1:A:9:PRO:HG2	1:A:12:PHE:HD2	1.84	0.42
1:A:257:SER:N	1:A:265:LEU:HD12	2.34	0.42
1:C:11:GLY:O	1:C:12:PHE:CG	2.72	0.42
1:C:357:GLY:C	1:C:359:GLU:H	2.22	0.42
1:D:275:ASP:OD1	1:D:277:ALA:HB3	2.19	0.42
1:A:248:ALA:O	1:A:252:VAL:HG23	2.20	0.42
1:C:122:SER:O	1:C:125:GLU:N	2.51	0.42
1:A:43:VAL:CG2	1:A:224:ALA:HB3	2.49	0.42
1:A:170:LYS:HD3	1:A:170:LYS:O	2.19	0.42
1:D:328:PHE:CE2	1:D:333:VAL:HG21	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:280:LYS:HG3	1:A:373:PHE:CE1	2.54	0.42
1:B:75:ASN:ND2	1:B:77:ASN:H	2.17	0.42
1:C:301:PRO:O	1:C:303:TRP:N	2.52	0.42
1:D:39:THR:C	1:D:197:GLN:HE22	2.22	0.42
1:D:202:ARG:HG3	1:D:202:ARG:NH1	2.34	0.42
1:D:295:ALA:HB2	1:D:305:ARG:HD2	2.02	0.42
1:A:197:GLN:HA	1:A:200:LEU:HD21	2.00	0.42
1:B:21:LEU:HD22	1:B:75:ASN:HB3	2.01	0.42
1:C:87:ASN:HD22	1:C:87:ASN:HA	1.61	0.42
1:C:166:VAL:N	1:C:187:ALA:O	2.36	0.42
1:C:216:THR:CG2	1:C:288:ASN:CG	2.88	0.42
1:D:39:THR:HG21	1:D:194:PRO:HA	2.02	0.42
1:D:265:LEU:HD23	1:D:266:ILE:N	2.32	0.42
1:A:144:ARG:HG3	1:A:144:ARG:NH1	2.33	0.42
1:B:156:VAL:HG22	1:B:157:ARG:N	2.35	0.42
1:D:170:LYS:HD2	1:D:183:LEU:HB2	2.02	0.42
1:D:176:GLU:O	1:D:176:GLU:HG2	2.18	0.42
1:A:155:GLU:CB	1:A:168:ILE:HG22	2.44	0.42
1:C:42:ALA:HB2	1:C:225:VAL:HA	2.01	0.42
1:C:193:ASP:C	1:C:195:ALA:H	2.23	0.42
1:C:386:ARG:NH1	1:D:382:GLU:OE1	2.44	0.42
1:D:163:ALA:HB1	1:D:190:ALA:HB2	2.01	0.42
1:D:260:GLU:O	1:D:262:ALA:N	2.53	0.42
1:A:126:HIS:O	1:A:128:LYS:N	2.53	0.42
1:A:189:ASP:HA	1:A:229:ASN:O	2.19	0.42
1:B:13:VAL:HB	1:B:133:PRO:CG	2.46	0.42
1:C:320:ASP:HB3	1:C:323:ARG:CD	2.49	0.42
1:D:306:VAL:HG11	1:D:326:ILE:HG23	2.02	0.42
1:B:219:SER:HB3	1:B:222:ASP:OD2	2.19	0.42
1:B:302:ASN:OD1	1:B:305:ARG:N	2.38	0.42
1:C:204:VAL:HG22	1:C:245:HIS:HB2	2.01	0.42
1:D:139:PHE:CZ	1:D:187:ALA:HB3	2.55	0.42
1:D:270:VAL:HA	1:D:364:ILE:O	2.20	0.42
1:D:308:MET:SD	1:D:308:MET:C	2.98	0.42
1:A:8:THR:HG22	1:A:164:THR:HG21	1.99	0.42
1:A:176:GLU:O	1:A:176:GLU:CG	2.62	0.42
1:C:209:PHE:C	1:C:211:ALA:N	2.72	0.42
1:C:245:HIS:HD2	1:C:245:HIS:O	2.03	0.42
1:D:21:LEU:CD2	1:D:119:PRO:HD3	2.49	0.42
1:D:262:ALA:HB1	1:D:378:CYS:HB2	2.01	0.42
1:D:264:LYS:HD3	1:D:360:VAL:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:360:VAL:HG12	1:D:361:VAL:N	2.35	0.42
1:A:215:ASP:C	1:A:216:THR:HG23	2.40	0.41
1:B:101:LEU:HD23	1:B:101:LEU:HA	1.73	0.41
1:D:267:GLU:HG3	1:D:376:TYR:CD2	2.55	0.41
1:D:318:ASP:O	1:D:368:ILE:CD1	2.68	0.41
1:A:308:MET:HE3	1:B:218:THR:O	2.20	0.41
1:A:313:CYS:O	1:A:315:ASP:N	2.53	0.41
1:A:330:GLU:OE1	1:A:330:GLU:HA	2.20	0.41
1:B:209:PHE:O	1:B:212:VAL:HG12	2.20	0.41
1:C:49:PHE:CE2	1:D:307:ALA:HB1	2.55	0.41
1:D:164:THR:HB	1:D:189:ASP:OD2	2.20	0.41
1:A:331:VAL:HB	1:A:351:VAL:CG2	2.50	0.41
1:C:123:ILE:H	1:C:123:ILE:HG13	1.55	0.41
1:C:175:LEU:HD22	1:C:214:ILE:HG13	2.03	0.41
1:C:316:ASP:O	1:D:48:ARG:CD	2.68	0.41
1:D:15:HIS:CG	1:D:16:THR:N	2.88	0.41
1:D:301:PRO:HA	1:D:355:LEU:CD2	2.50	0.41
1:A:181:THR:HA	1:A:219:SER:HB3	2.01	0.41
1:A:262:ALA:HA	1:A:381:THR:HG23	2.02	0.41
1:C:9:PRO:O	1:C:10:ARG:C	2.59	0.41
1:D:119:PRO:C	1:D:121:GLU:H	2.24	0.41
1:A:31:VAL:HG22	1:A:70:VAL:HA	2.03	0.41
1:A:264:LYS:CD	1:A:296:VAL:HG12	2.50	0.41
1:C:196:GLU:O	1:C:200:LEU:HB2	2.21	0.41
1:C:266:ILE:HG12	1:C:296:VAL:HG11	2.01	0.41
1:D:14:VAL:HB	1:D:138:GLY:HA3	2.02	0.41
1:D:104:GLY:C	1:D:106:MET:N	2.73	0.41
1:D:209:PHE:HZ	1:D:251:LEU:HD12	1.86	0.41
1:D:327:ARG:NH1	1:D:363:GLY:HA3	2.35	0.41
1:B:183:LEU:HD22	1:B:223:THR:HB	2.01	0.41
1:B:253:LYS:HE3	1:B:376:TYR:CE2	2.56	0.41
1:C:208:THR:OG1	1:C:209:PHE:N	2.51	0.41
1:D:52:PRO:HG3	1:D:85:GLU:HA	2.03	0.41
1:A:219:SER:OG	1:A:222:ASP:OD1	2.35	0.41
1:C:165:LEU:HD12	1:C:187:ALA:C	2.41	0.41
1:C:301:PRO:O	1:C:302:ASN:C	2.59	0.41
1:D:9:PRO:HA	1:D:164:THR:HG21	2.03	0.41
1:D:208:THR:O	1:D:211:ALA:HB3	2.21	0.41
1:B:288:ASN:HA	1:B:293:LYS:HD2	2.02	0.41
1:C:92:ARG:O	1:C:106:MET:HG2	2.20	0.41
1:C:383:GLY:O	1:C:387:LEU:HG	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:75:ASN:C	1:D:111:THR:O	2.59	0.41
1:D:191:ARG:O	1:D:192:LEU:HG	2.19	0.41
1:A:146:ILE:CD1	1:A:170:LYS:HB3	2.50	0.41
1:A:268:VAL:HB	1:A:375:VAL:HG23	2.02	0.41
1:C:78:VAL:O	1:C:79:ALA:HB3	2.21	0.41
1:C:109:ALA:O	1:C:110:SER:HB2	2.21	0.41
1:C:191:ARG:O	1:C:234:GLU:HA	2.21	0.41
1:C:212:VAL:HB	1:C:252:VAL:HG13	2.03	0.41
1:D:123:ILE:O	1:D:124:ARG:C	2.59	0.41
1:A:19:VAL:HG11	1:A:123:ILE:HG13	2.02	0.41
1:A:328:PHE:CE2	1:A:333:VAL:HG21	2.56	0.41
1:A:334:TYR:CD1	1:A:335:PRO:HA	2.56	0.41
1:C:199:ARG:NH1	1:C:199:ARG:HB3	2.36	0.41
1:D:284:LYS:HA	1:D:287:VAL:HG12	2.02	0.41
1:C:131:GLU:O	1:C:132:TRP:O	2.40	0.40
1:C:140:ASP:C	1:C:142:ALA:N	2.75	0.40
1:C:193:ASP:HB3	1:C:196:GLU:HG3	2.02	0.40
1:B:236:ASP:OD1	1:B:239:GLU:HG3	2.22	0.40
1:C:76:ALA:HB2	1:C:112:GLY:N	2.36	0.40
1:D:19:VAL:HG21	1:D:29:PHE:CD1	2.56	0.40
1:D:89:ARG:C	1:D:91:VAL:N	2.74	0.40
1:D:209:PHE:C	1:D:211:ALA:H	2.24	0.40
1:D:320:ASP:C	1:D:322:GLU:N	2.74	0.40
1:A:126:HIS:C	1:A:128:LYS:H	2.24	0.40
1:A:192:LEU:HD13	1:A:197:GLN:HG3	2.03	0.40
1:B:72:LEU:N	1:B:72:LEU:CD1	2.83	0.40
1:B:212:VAL:HB	1:B:252:VAL:HG13	2.04	0.40
1:B:335:PRO:HA	1:B:336:PRO:HD3	1.98	0.40
1:C:172:VAL:CG1	1:C:258:ASP:O	2.69	0.40
1:C:205:MET:SD	1:C:209:PHE:HD2	2.44	0.40
1:C:236:ASP:OD2	1:C:236:ASP:C	2.58	0.40
1:C:251:LEU:O	1:C:254:ASP:HB2	2.22	0.40
1:C:251:LEU:HA	1:C:254:ASP:HB2	2.04	0.40
1:D:18:PRO:HB3	1:D:26:ARG:C	2.41	0.40
1:D:293:LYS:HE2	1:D:380:LEU:HB2	2.02	0.40
1:B:57:CYS:O	1:B:61:VAL:HG13	2.20	0.40
1:A:264:LYS:HB3	1:A:264:LYS:HE3	1.79	0.40
1:A:268:VAL:HB	1:A:375:VAL:HG22	2.04	0.40
1:C:24:ASP:O	1:C:25:GLY:C	2.60	0.40
1:C:83:GLU:HB3	1:C:117:GLN:NE2	2.37	0.40
1:C:168:ILE:O	1:C:168:ILE:HG13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:210:ASN:O	1:C:280:LYS:CE	2.70	0.40
1:C:272:GLY:N	1:C:371:GLY:O	2.53	0.40
1:D:30:THR:HG22	1:D:31:VAL:N	2.37	0.40
1:D:70:VAL:HG13	1:D:108:ILE:CB	2.51	0.40
1:D:162:GLY:O	1:D:232:ALA:HB1	2.21	0.40
1:D:316:ASP:CB	1:D:319:ILE:HD11	2.48	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	370/393 (94%)	319 (86%)	42 (11%)	9 (2%)	6 29
1	B	370/393 (94%)	326 (88%)	41 (11%)	3 (1%)	19 57
1	C	345/393 (88%)	267 (77%)	63 (18%)	15 (4%)	2 15
1	D	366/393 (93%)	276 (75%)	66 (18%)	24 (7%)	1 6
All	All	1451/1572 (92%)	1188 (82%)	212 (15%)	51 (4%)	3 20

All (51) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	120	MET
1	A	314	SER
1	C	358	ASP
1	D	24	ASP
1	D	128	LYS
1	A	230	GLY
1	B	231	LEU
1	C	81	GLY
1	C	97	ARG

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Mol	Chain	Res	Type
1	C	178	ASP
1	C	234	GLU
1	C	302	ASN
1	C	312	LYS
1	D	21	LEU
1	D	59	GLU
1	D	81	GLY
1	D	102	PRO
1	D	123	ILE
1	D	161	GLY
1	D	170	LYS
1	D	176	GLU
1	A	24	ASP
1	A	74	ARG
1	A	127	LEU
1	B	134	ALA
1	C	210	ASN
1	C	223	THR
1	C	231	LEU
1	C	262	ALA
1	D	105	GLU
1	D	110	SER
1	D	314	SER
1	D	321	GLN
1	A	27	ASP
1	C	194	PRO
1	D	83	GLU
1	D	98	ALA
1	D	261	GLY
1	D	281	ARG
1	A	18	PRO
1	B	273	ALA
1	C	67	ARG
1	C	110	SER
1	D	27	ASP
1	D	90	GLU
1	D	134	ALA
1	D	249	LEU
1	A	194	PRO
1	D	118	TYR
1	C	61	VAL
1	D	61	VAL

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	266/301 (88%)	250 (94%)	16 (6%)	19 53
1	B	270/301 (90%)	252 (93%)	18 (7%)	16 49
1	C	253/301 (84%)	243 (96%)	10 (4%)	31 68
1	D	259/301 (86%)	241 (93%)	18 (7%)	15 48
All	All	1048/1204 (87%)	986 (94%)	62 (6%)	19 54

All (62) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	27	ASP
1	A	28	ASP
1	A	74	ARG
1	A	92	ARG
1	A	127	LEU
1	A	150	ASP
1	A	170	LYS
1	A	189	ASP
1	A	191	ARG
1	A	193	ASP
1	A	200	LEU
1	A	287	VAL
1	A	308	MET
1	A	323	ARG
1	A	325	THR
1	A	358	ASP
1	B	26	ARG
1	B	27	ASP
1	B	44	PHE
1	B	63	ASP
1	B	65	GLN
1	B	74	ARG
1	B	75	ASN
1	B	80	THR

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Mol	Chain	Res	Type
1	B	82	LEU
1	B	92	ARG
1	B	150	ASP
1	B	170	LYS
1	B	182	LEU
1	B	200	LEU
1	B	210	ASN
1	B	236	ASP
1	B	315	ASP
1	B	327	ARG
1	C	26	ARG
1	C	74	ARG
1	C	87	ASN
1	C	164	THR
1	C	182	LEU
1	C	198	ASP
1	C	223	THR
1	C	254	ASP
1	C	287	VAL
1	C	355	LEU
1	D	10	ARG
1	D	39	THR
1	D	45	THR
1	D	48	ARG
1	D	72	LEU
1	D	74	ARG
1	D	83	GLU
1	D	150	ASP
1	D	179	MET
1	D	189	ASP
1	D	196	GLU
1	D	200	LEU
1	D	206	ASP
1	D	221	SER
1	D	265	LEU
1	D	281	ARG
1	D	287	VAL
1	D	359	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	87	ASN
1	A	229	ASN
1	A	245	HIS
1	A	321	GLN
1	A	388	ASN
1	B	65	GLN
1	B	75	ASN
1	B	87	ASN
1	B	321	GLN
1	C	65	GLN
1	C	87	ASN
1	C	245	HIS
1	C	321	GLN
1	D	65	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

4 ligands are modelled in this entry.

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	SO4	B	1391	-	4,4,4	0.28	0	6,6,6	0.13	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	SO4	D	1391	-	4,4,4	0.29	0	6,6,6	0.09	0
2	SO4	C	1391	-	4,4,4	0.24	0	6,6,6	0.16	0
2	SO4	A	1391	-	4,4,4	0.28	0	6,6,6	0.10	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	D	1
1	A	1
1	B	1
1	C	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	D	180:ALA	C	181:THR	N	16.57
1	A	180:ALA	C	181:THR	N	16.55
1	B	180:ALA	C	181:THR	N	16.32
1	C	180:ALA	C	181:THR	N	16.13

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	376/393 (95%)	-0.85	0	100	100	2, 11, 38, 80	0
1	B	376/393 (95%)	-0.86	0	100	100	2, 9, 39, 63	0
1	C	359/393 (91%)	-0.64	2 (0%)	89	72	2, 29, 70, 100	0
1	D	374/393 (95%)	-0.42	5 (1%)	77	51	2, 35, 85, 108	0
All	All	1485/1572 (94%)	-0.69	7 (0%)	91	75	2, 18, 67, 108	0

All (7) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	22	ALA	6.2
1	D	96	ALA	3.6
1	D	102	PRO	2.9
1	D	167	GLY	2.7
1	C	8	THR	2.4
1	C	65	GLN	2.2
1	D	93	GLU	2.1

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

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

6.3 Carbohydrates

There are no monosaccharides in this entry.

6.4 Ligands

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	SO4	A	1391	5/5	0.94	0.18	31,31,31,31	0
2	SO4	D	1391	5/5	0.95	0.11	43,43,43,43	0
2	SO4	C	1391	5/5	0.97	0.15	39,39,39,39	0
2	SO4	B	1391	5/5	0.98	0.11	28,28,28,28	0

6.5 Other polymers

There are no such residues in this entry.