Full wwPDB X-ray Structure Validation Report ⓘ

May 26, 2020 – 12:43 pm BST

PDB ID	:	2OAG
Title	:	Crystal structure of human dipeptidyl peptidase IV (DPPIV) with pyrrolidine-constrained phenethylamine 29g
Authors	:	Backes, B.J.; Longenecker, K.L.; Hamilton, G.L.; Stewart, K.D.; Lai, C.; Kopecka, H.
Deposited on	:	2006-12-15
Resolution	:	2.30 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 following versions of software and data (see references ⓘ) were used in the production of this report:

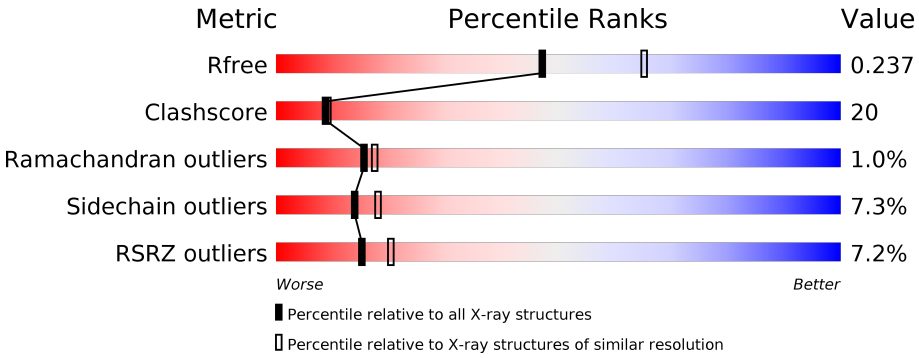
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.30 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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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 on 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	726	4% 67% 29% 5%
1	B	726	9% 68% 27% 5%
1	C	726	8% 64% 32% .
1	D	726	7% 64% 32% 5%

2 Entry composition

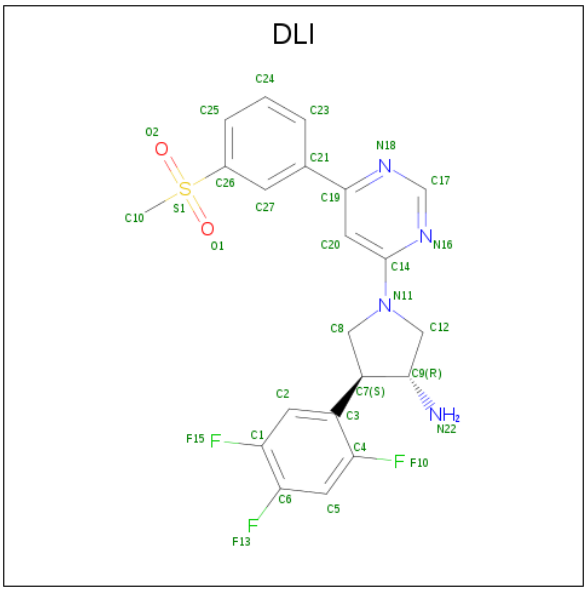
There are 3 unique types of molecules in this entry. The entry contains 27142 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Dipeptidyl peptidase 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	726	Total	C	N	O	S	0	0	0
			5949	3816	980	1127	26			
1	B	726	Total	C	N	O	S	0	0	0
			5949	3816	980	1127	26			
1	C	726	Total	C	N	O	S	0	0	0
			5949	3816	980	1127	26			
1	D	726	Total	C	N	O	S	0	0	0
			5949	3816	980	1127	26			

- Molecule 2 is (3R,4S)-1-{6-[3-(METHYLSULFONYL)PHENYL]PYRIMIDIN-4-YL}-4-(2,4,5-TRIFLUOROPHENYL)PYRROLIDIN-3-AMINE (three-letter code: DLI) (formula: $C_{21}H_{19}F_3N_4O_2S$).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	B	1	Total	C	F	N	O	S	0	0
			31	21	3	4	2	1		

- Molecule 3 is water.

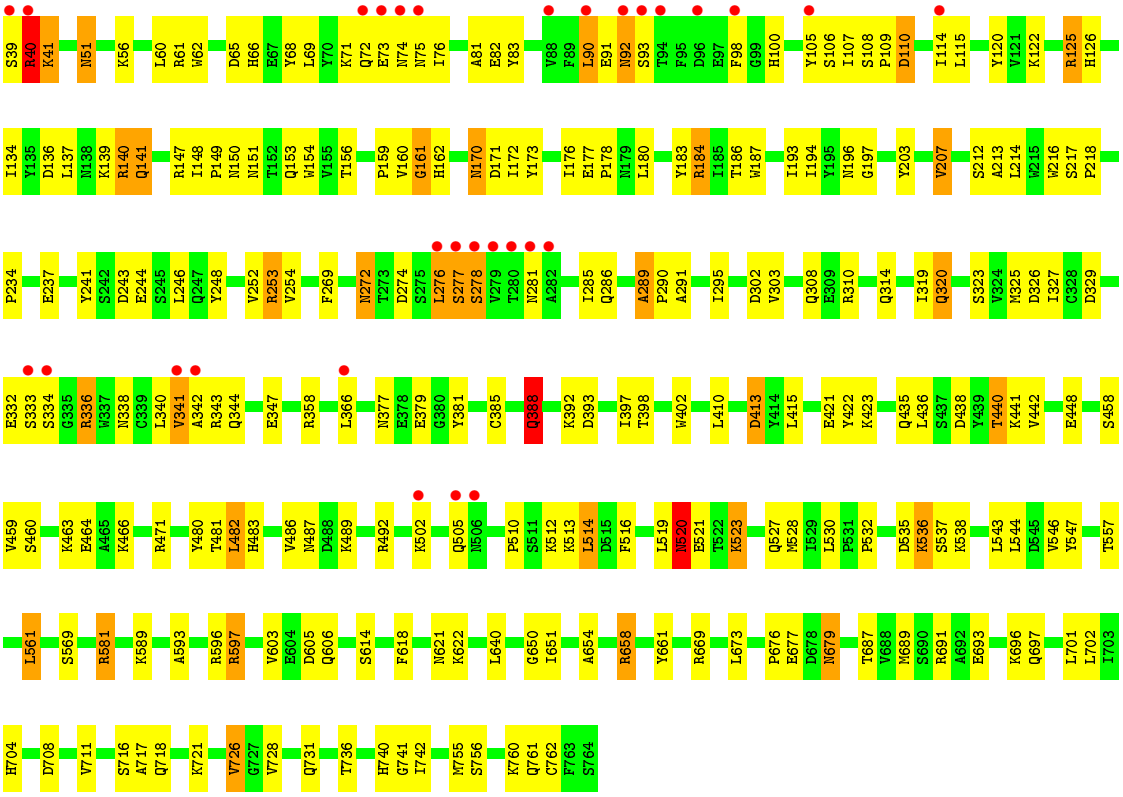
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	946	Total O 946 946	0	0
3	B	844	Total O 844 844	0	0
3	C	768	Total O 768 768	0	0
3	D	757	Total O 757 757	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA 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.

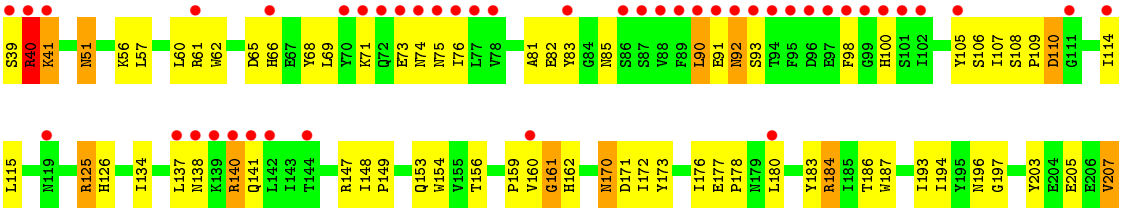
- Molecule 1: Dipeptidyl peptidase 4

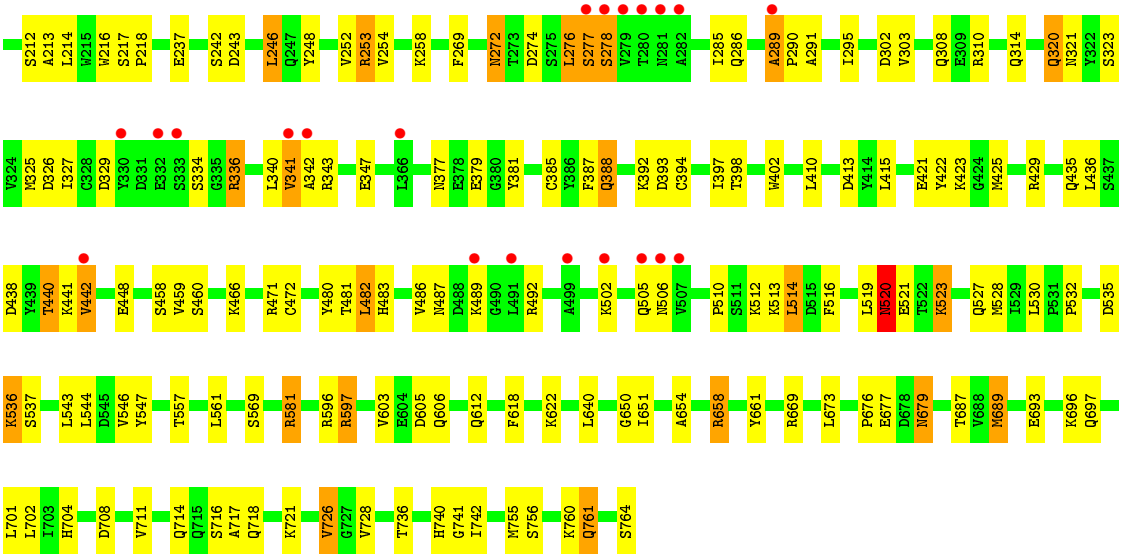
Chain A:



- Molecule 1: Dipeptidyl peptidase 4

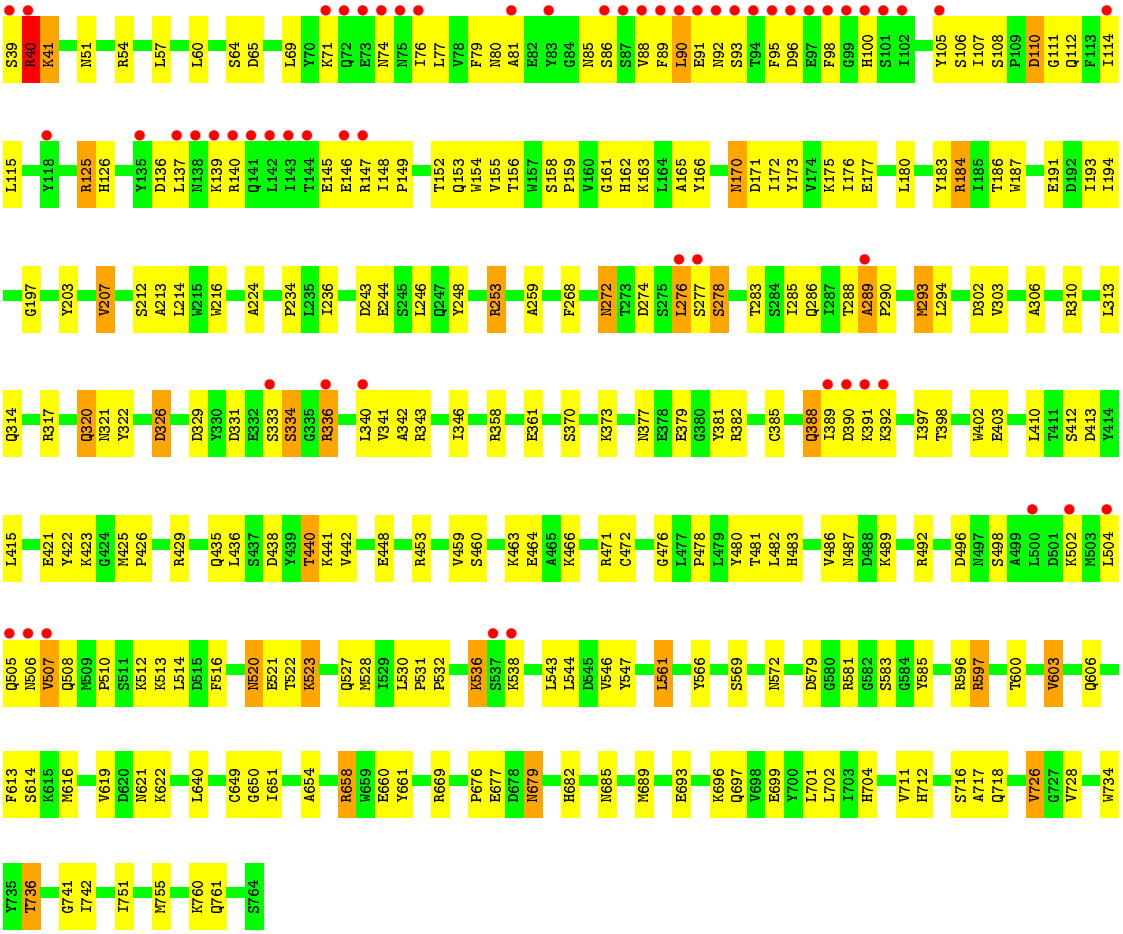
Chain B:





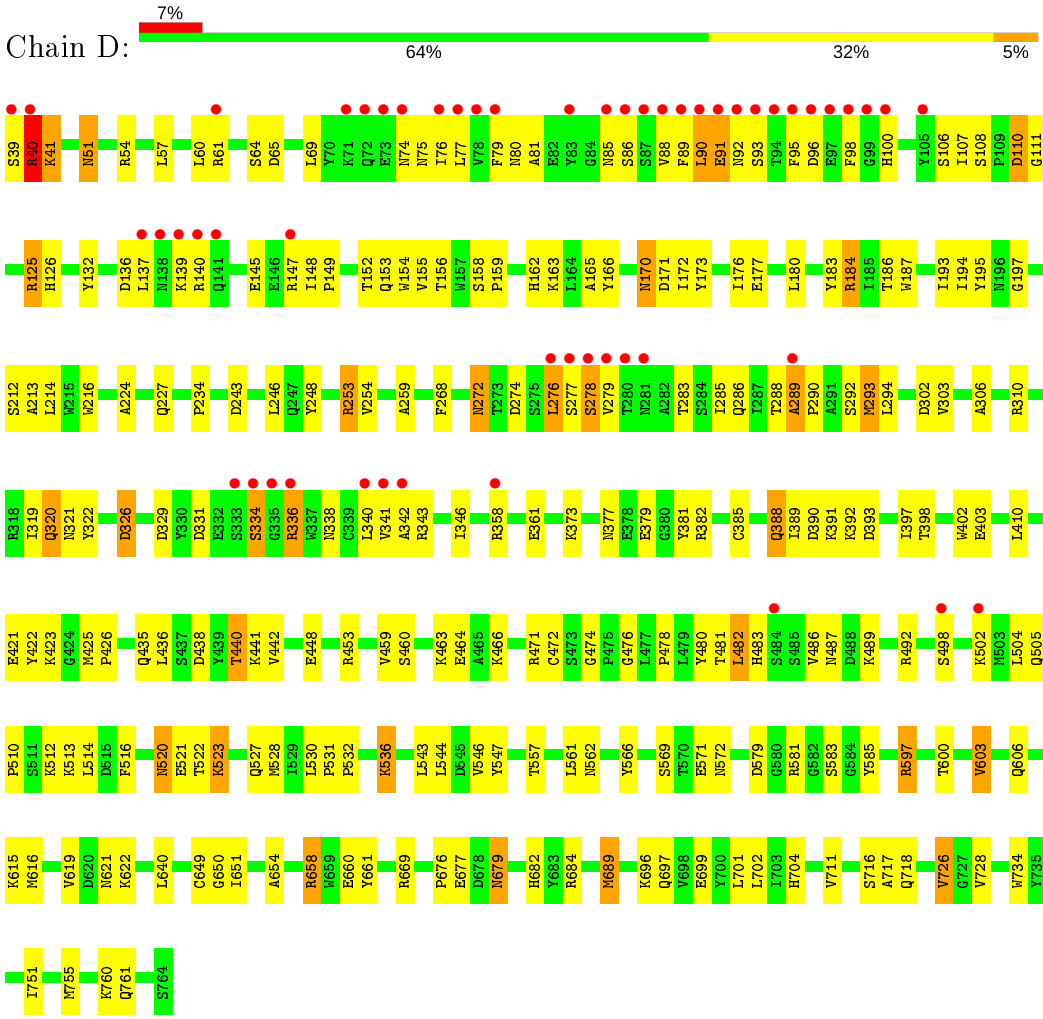
- Molecule 1: Dipeptidyl peptidase 4

Chain C:



- Molecule 1: Dipeptidyl peptidase 4

Chain D:


7%
64%
32%
5%
S39 R40 K41 N51 R54 L57 L60 R61 S64 D65 L69 Y70 K71 Q72 E73 N74 N75 I76 L77 V78 F79 N80 A81 E82 Y83 G84 N85 S86 S87 V88 F89 L90 E91 N92 S93 T94 F95 D96 E97 F98 G99 H100 Y105 S106 I107 S108 P109 D110 G111 G112 F113 I114 L115
R125 H126 Y132 D136 L137 N138 K139 R140 Q141 E145 E146 R147 I148 P149 T152 Q153 W154 V155 T156 W157 S158 P159 H162 K163 L164 A165 Y166 N170 D171 I172 Y173 I176 E177 L180 Y183 R184 I185 T186 W187 I193 I194 Y195 N196 G197 Y203 V207
S212 A213 L214 W215 W216 A224 Q227 P234 D243 L246 Q247 Y248 R253 V254 A259 F268 N272 T273 D274 S275 L276 S277 S278 V279 T280 N281 A282 T283 S284 I285 Q286 I287 T288 A289 P290 A291 S292 M293 L294 D302 V303 A306 R310 L313 Q314 R317
R318 I319 Q320 N321 Y322 D326 D329 Y330 D331 E332 S333 S334 G335 R336 W337 N338 C339 L340 V341 A342 R343 I346 R358 E361 K373 N377 E378 E379 G380 Y381 R382 C385 Q388 I389 D390 K391 K392 D393 I397 T398 W402 E403 L410 D413 Y414 L415
E421 Y422 K423 G424 M425 P426 Q435 L436 S437 D438 Y439 T440 K441 V442 E448 R453 V459 S460 K463 E464 A465 K466 R471 C472 S473 G474 P475 G476 L477 P478 L479 Y480 T481 L482 H483 S484 S485 V486 N487 D488 K489 R492 S498 K502 M503 L504 Q505 N506 V507 Q508 M509
P510 S511 K512 K513 L514 D515 F516 N520 E521 T522 K523 Q527 M528 I529 L530 P531 P532 K536 L543 L544 D545 V546 Y547 T557 L561 N562 Y566 S569 T570 E571 N572 D579 G580 R581 G582 S583 G584 Y585 R597 T600 V603 Q606 R611 Q612 F613 S614
K615 M616 V619 D620 N621 K622 L640 C649 G650 I651 A654 R658 W659 E660 Y661 R669 P676 E677 D678 N679 H682 Y683 R684 M689 K696 Q697 V698 E699 Y700 L701 L702 I703 H704 V711 S716 A717 Q718 V726 G727 V728 W734 Y735 T736 G741 I742
I751 M755 K760 Q761 S764

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	120.01Å 126.22Å 127.56Å 90.00° 96.51° 90.00°	Depositor
Resolution (Å)	50.00 – 2.30 49.26 – 2.30	Depositor EDS
% Data completeness (in resolution range)	97.5 (50.00-2.30) 97.5 (49.26-2.30)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.12 (at 2.29Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.197 , 0.240 0.196 , 0.237	Depositor DCC
R_{free} test set	8153 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	32.3	Xtriage
Anisotropy	0.285	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 67.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	27142	wwPDB-VP
Average B, all atoms (Å^2)	39.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.57% 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: DLI

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	0.31	0/6120	0.64	2/8321 (0.0%)
1	B	0.30	0/6120	0.64	2/8321 (0.0%)
1	C	0.29	0/6120	0.61	0/8321
1	D	0.29	0/6120	0.61	0/8321
All	All	0.30	0/24480	0.62	4/33284 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	341	VAL	N-CA-C	-5.53	96.08	111.00
1	B	341	VAL	N-CA-C	-5.38	96.49	111.00
1	A	388	GLN	N-CA-C	-5.21	96.92	111.00
1	B	388	GLN	N-CA-C	-5.05	97.35	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5949	0	5667	251	0
1	B	5949	0	5667	227	0
1	C	5949	0	5667	246	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	5949	0	5667	250	0
2	B	31	0	19	1	0
3	A	946	0	0	54	0
3	B	844	0	0	31	0
3	C	768	0	0	44	0
3	D	757	0	0	42	0
All	All	27142	0	22687	953	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 20.

All (953) 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:289:ALA:HB1	1:C:290:PRO:HA	1.36	1.06
1:B:334:SER:HB3	1:B:336:ARG:HE	1.16	1.06
1:D:289:ALA:HB1	1:D:290:PRO:HA	1.35	1.04
1:A:334:SER:HB3	1:A:336:ARG:HE	1.18	1.03
1:A:289:ALA:HB1	1:A:290:PRO:HA	1.42	1.01
1:D:621:ASN:HB3	3:D:843:HOH:O	1.62	0.99
1:B:289:ALA:HB1	1:B:290:PRO:HA	1.42	0.96
1:A:736:THR:HG22	3:B:4007:HOH:O	1.67	0.94
1:A:289:ALA:HB1	1:A:290:PRO:CA	1.99	0.92
1:A:334:SER:HB3	1:A:336:ARG:NE	1.87	0.90
1:B:334:SER:HB3	1:B:336:ARG:NE	1.85	0.90
1:B:289:ALA:HB1	1:B:290:PRO:CA	2.01	0.90
1:B:172:ILE:H	1:B:186:THR:HG22	1.38	0.88
1:D:176:ILE:HD11	1:D:276:LEU:HD21	1.54	0.88
1:C:176:ILE:HD11	1:C:276:LEU:HD21	1.54	0.88
1:C:76:ILE:HD12	1:C:90:LEU:HD11	1.56	0.88
1:C:253:ARG:HH22	1:D:253:ARG:HH22	1.20	0.87
1:D:76:ILE:HD12	1:D:90:LEU:HD11	1.57	0.87
1:A:172:ILE:H	1:A:186:THR:HG22	1.39	0.87
1:C:172:ILE:H	1:C:186:THR:HG22	1.38	0.86
1:D:614:SER:HB2	3:D:843:HOH:O	1.76	0.85
1:D:334:SER:HB3	1:D:336:ARG:HE	1.41	0.84
1:A:338:ASN:HB3	3:A:1471:HOH:O	1.76	0.84
1:C:621:ASN:HB3	3:C:1173:HOH:O	1.77	0.84
1:D:289:ALA:HB1	1:D:290:PRO:CA	2.07	0.84
1:C:726:VAL:HG12	1:C:728:VAL:HG23	1.60	0.84
1:A:253:ARG:HH22	1:B:253:ARG:HH22	1.24	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:LEU:HB3	3:A:1446:HOH:O	1.79	0.83
1:A:281:ASN:HB2	3:A:1217:HOH:O	1.78	0.83
1:D:276:LEU:HD22	1:D:276:LEU:H	1.41	0.83
1:C:276:LEU:HD22	1:C:276:LEU:H	1.42	0.83
1:D:172:ILE:H	1:D:186:THR:HG22	1.40	0.83
1:C:334:SER:HB3	1:C:336:ARG:HE	1.41	0.83
1:A:487:ASN:HB2	3:A:907:HOH:O	1.79	0.82
3:A:776:HOH:O	1:B:736:THR:HG22	1.78	0.82
1:C:289:ALA:HB1	1:C:290:PRO:CA	2.08	0.82
1:D:726:VAL:HG12	1:D:728:VAL:HG23	1.59	0.82
1:A:76:ILE:HD12	1:A:90:LEU:HD11	1.61	0.82
1:B:76:ILE:HD12	1:B:90:LEU:HD11	1.62	0.81
1:A:341:VAL:O	1:A:342:ALA:HB3	1.80	0.80
1:A:140:ARG:HG2	1:A:140:ARG:HH11	1.45	0.80
1:B:140:ARG:HG2	1:B:140:ARG:HH11	1.46	0.80
1:C:528:MET:HE3	1:C:530:LEU:HD21	1.63	0.80
1:A:691:ARG:NH1	3:A:1584:HOH:O	2.14	0.80
1:A:762:CYS:HB2	3:A:1267:HOH:O	1.83	0.79
1:C:272:ASN:HD22	1:C:274:ASP:H	1.31	0.79
1:D:334:SER:HB3	1:D:336:ARG:NE	1.98	0.78
1:A:726:VAL:HG12	1:A:728:VAL:HG23	1.66	0.78
1:B:489:LYS:NZ	1:B:489:LYS:HB3	1.99	0.78
1:C:334:SER:HB3	1:C:336:ARG:NE	1.99	0.78
1:A:489:LYS:HB3	1:A:489:LYS:NZ	1.99	0.78
1:A:51:ASN:HB2	3:A:1110:HOH:O	1.84	0.77
1:A:39:SER:HB2	1:A:40:ARG:HE	1.50	0.77
1:B:341:VAL:O	1:B:342:ALA:HB3	1.86	0.76
1:B:138:ASN:HA	3:B:4664:HOH:O	1.85	0.76
1:C:272:ASN:ND2	1:C:274:ASP:H	1.83	0.76
1:D:106:SER:HB3	1:D:115:LEU:HB3	1.67	0.76
1:B:39:SER:HB2	1:B:40:ARG:HE	1.50	0.76
1:C:276:LEU:H	1:C:276:LEU:CD2	1.99	0.76
1:D:276:LEU:H	1:D:276:LEU:CD2	1.98	0.76
1:D:272:ASN:ND2	1:D:274:ASP:H	1.84	0.76
1:C:717:ALA:O	1:D:736:THR:HG21	1.86	0.75
1:D:272:ASN:HD22	1:D:274:ASP:H	1.33	0.75
1:B:160:VAL:HG23	1:B:161:GLY:H	1.51	0.75
1:B:272:ASN:HD22	1:B:274:ASP:H	1.33	0.75
1:C:736:THR:HG21	1:D:717:ALA:O	1.86	0.75
1:C:358:ARG:NH1	3:C:1424:HOH:O	2.20	0.75
1:D:528:MET:HE3	1:D:530:LEU:HD21	1.67	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:106:SER:HB3	1:C:115:LEU:HB3	1.67	0.74
1:B:726:VAL:HG12	1:B:728:VAL:HG23	1.67	0.74
1:D:40:ARG:HA	3:D:1013:HOH:O	1.87	0.74
1:A:171:ASP:OD1	1:A:186:THR:HG23	1.87	0.74
1:B:243:ASP:HB3	3:B:4287:HOH:O	1.87	0.74
1:B:171:ASP:OD1	1:B:186:THR:HG23	1.86	0.74
1:D:184:ARG:NH1	1:D:187:TRP:HA	2.03	0.73
1:C:184:ARG:NH1	1:C:187:TRP:HA	2.03	0.73
1:A:160:VAL:HG23	1:A:161:GLY:H	1.54	0.73
1:C:538:LYS:HG2	3:C:1456:HOH:O	1.90	0.72
1:A:736:THR:CG2	1:B:721:LYS:HB2	2.19	0.72
1:D:54:ARG:HG2	3:D:1051:HOH:O	1.89	0.72
1:C:41:LYS:HB2	3:C:1002:HOH:O	1.91	0.71
1:D:114:ILE:CD1	1:D:137:LEU:HD21	2.21	0.71
1:D:361:GLU:HG2	3:D:789:HOH:O	1.90	0.71
1:A:721:LYS:HB2	1:B:736:THR:HG21	1.71	0.71
1:B:693:GLU:OE1	1:B:696:LYS:HE2	1.91	0.71
1:A:693:GLU:OE1	1:A:696:LYS:HE2	1.91	0.70
1:A:721:LYS:HB2	1:B:736:THR:CG2	2.20	0.70
1:C:114:ILE:CD1	1:C:137:LEU:HD21	2.22	0.70
1:D:614:SER:HA	1:D:619:VAL:HB	1.74	0.70
1:A:289:ALA:HB2	3:A:1302:HOH:O	1.90	0.70
1:C:676:PRO:HG2	1:C:677:GLU:OE2	1.91	0.70
1:A:697:GLN:HG3	3:A:1370:HOH:O	1.90	0.70
1:B:272:ASN:ND2	1:B:274:ASP:H	1.90	0.70
1:C:528:MET:CE	1:C:530:LEU:HD21	2.21	0.70
1:D:528:MET:CE	1:D:530:LEU:HD21	2.21	0.70
1:A:193:ILE:HG22	1:A:194:ILE:HG13	1.74	0.69
1:A:392:LYS:HB3	3:A:992:HOH:O	1.91	0.69
1:B:410:LEU:HD13	1:B:415:LEU:HD23	1.73	0.69
1:C:614:SER:HA	1:C:619:VAL:HB	1.74	0.69
1:B:193:ILE:HG22	1:B:194:ILE:HG13	1.74	0.69
1:D:171:ASP:OD1	1:D:186:THR:HG23	1.93	0.69
1:A:272:ASN:HD22	1:A:274:ASP:H	1.39	0.69
1:C:171:ASP:OD1	1:C:186:THR:HG23	1.92	0.69
1:D:676:PRO:HG2	1:D:677:GLU:OE2	1.91	0.69
1:A:341:VAL:O	1:A:342:ALA:CB	2.42	0.68
1:A:410:LEU:HD13	1:A:415:LEU:HD23	1.75	0.68
1:A:366:LEU:HD23	3:A:1437:HOH:O	1.94	0.68
1:A:736:THR:HG21	1:B:721:LYS:HB2	1.75	0.68
1:C:105:TYR:HB2	3:C:1041:HOH:O	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:651:ILE:HG21	1:D:755:MET:CE	2.24	0.67
1:A:272:ASN:ND2	1:A:274:ASP:H	1.93	0.67
1:A:234:PRO:HB2	1:B:248:TYR:CZ	2.29	0.67
1:C:69:LEU:CD1	1:C:107:ILE:HD12	2.25	0.67
1:A:289:ALA:CB	1:A:290:PRO:HA	2.21	0.67
1:A:481:THR:OG1	1:A:483:HIS:HE1	1.78	0.67
1:B:160:VAL:HG23	1:B:161:GLY:N	2.10	0.67
1:C:429:ARG:NE	3:C:1421:HOH:O	2.28	0.67
1:B:289:ALA:CB	1:B:290:PRO:HA	2.21	0.66
1:D:320:GLN:OE1	1:D:669:ARG:HD3	1.95	0.66
1:C:651:ILE:HG21	1:C:755:MET:CE	2.26	0.66
1:B:320:GLN:OE1	1:B:669:ARG:HD3	1.94	0.66
1:B:105:TYR:HB2	3:B:4361:HOH:O	1.96	0.66
1:D:177:GLU:HB2	1:D:180:LEU:HD22	1.77	0.66
1:D:302:ASP:HB3	1:D:314:GLN:HB2	1.77	0.66
1:A:289:ALA:CB	1:A:290:PRO:CA	2.74	0.66
1:C:139:LYS:HD3	3:C:1223:HOH:O	1.94	0.66
1:D:334:SER:HB3	1:D:336:ARG:HD2	1.78	0.66
1:D:69:LEU:CD1	1:D:107:ILE:HD12	2.25	0.66
1:D:334:SER:HB3	1:D:336:ARG:CD	2.25	0.65
1:B:596:ARG:O	1:B:597:ARG:HD3	1.97	0.65
1:D:140:ARG:HH11	1:D:140:ARG:HG2	1.61	0.65
1:D:90:LEU:O	1:D:90:LEU:HD22	1.95	0.65
1:B:74:ASN:C	1:B:92:ASN:HB3	2.17	0.65
1:C:90:LEU:O	1:C:90:LEU:HD22	1.96	0.65
1:D:153:GLN:HE22	1:D:170:ASN:ND2	1.94	0.65
1:C:140:ARG:HG2	1:C:140:ARG:HH11	1.62	0.65
1:C:361:GLU:HG2	3:C:839:HOH:O	1.97	0.65
1:A:320:GLN:OE1	1:A:669:ARG:HD3	1.95	0.65
1:A:561:LEU:HB3	3:A:1680:HOH:O	1.95	0.65
1:C:302:ASP:HB3	1:C:314:GLN:HB2	1.76	0.65
1:C:334:SER:HB3	1:C:336:ARG:CD	2.26	0.65
1:D:358:ARG:NH2	3:D:1416:HOH:O	2.30	0.65
1:A:596:ARG:O	1:A:597:ARG:HD3	1.97	0.64
1:A:438:ASP:OD1	1:A:440:THR:HB	1.97	0.64
1:C:153:GLN:HE22	1:C:170:ASN:ND2	1.94	0.64
1:A:153:GLN:HE22	1:A:170:ASN:ND2	1.96	0.64
1:C:184:ARG:HH11	1:C:187:TRP:HA	1.62	0.64
1:D:510:PRO:HD3	1:D:569:SER:HB2	1.79	0.64
1:A:74:ASN:C	1:A:92:ASN:HB3	2.17	0.64
1:B:502:LYS:O	1:B:505:GLN:HG2	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:320:GLN:OE1	1:C:669:ARG:HD3	1.97	0.64
1:C:57:LEU:HD21	3:C:1136:HOH:O	1.98	0.64
1:A:502:LYS:O	1:A:505:GLN:HG2	1.97	0.64
1:B:76:ILE:HB	1:B:90:LEU:CD1	2.28	0.64
1:C:277:SER:O	1:C:278:SER:HB3	1.96	0.64
1:A:39:SER:O	1:A:40:ARG:O	2.16	0.64
1:B:39:SER:O	1:B:40:ARG:O	2.15	0.64
1:C:290:PRO:HG3	1:C:326:ASP:OD2	1.98	0.64
1:C:334:SER:HB3	1:C:336:ARG:HD2	1.78	0.63
1:D:93:SER:HA	1:D:96:ASP:OD1	1.97	0.63
1:A:160:VAL:HG23	1:A:161:GLY:N	2.12	0.63
1:D:341:VAL:O	1:D:342:ALA:HB3	1.98	0.63
1:A:76:ILE:HB	1:A:90:LEU:CD1	2.29	0.63
1:B:442:VAL:HG13	3:B:4689:HOH:O	1.98	0.63
1:C:93:SER:HA	1:C:96:ASP:OD1	1.98	0.63
1:A:366:LEU:HB3	3:A:1261:HOH:O	1.98	0.63
1:C:289:ALA:CB	1:C:290:PRO:HA	2.21	0.63
1:C:76:ILE:HB	1:C:90:LEU:CD1	2.29	0.63
1:D:173:TYR:CE2	1:D:184:ARG:HG2	2.33	0.63
1:B:438:ASP:OD1	1:B:440:THR:HB	1.99	0.63
1:B:651:ILE:HG21	1:B:755:MET:HE2	1.80	0.63
1:C:331:ASP:HB3	1:C:334:SER:HB2	1.81	0.63
1:D:147:ARG:HD3	3:D:948:HOH:O	1.99	0.63
1:A:114:ILE:CD1	1:A:137:LEU:HD21	2.29	0.63
1:C:510:PRO:HD3	1:C:569:SER:HB2	1.79	0.63
1:C:760:LYS:HB3	3:C:1519:HOH:O	1.98	0.62
1:D:293:MET:HE2	1:D:317:ARG:HG3	1.79	0.62
1:D:340:LEU:O	1:D:343:ARG:HB3	1.98	0.62
1:B:481:THR:OG1	1:B:483:HIS:HE1	1.82	0.62
1:C:177:GLU:HB2	1:C:180:LEU:HD22	1.79	0.62
1:D:40:ARG:HH11	1:D:40:ARG:HG2	1.64	0.62
1:C:340:LEU:O	1:C:343:ARG:HB3	1.99	0.62
1:D:277:SER:O	1:D:278:SER:HB3	1.98	0.62
1:A:377:ASN:HB3	1:A:379:GLU:H	1.64	0.62
1:D:184:ARG:HH11	1:D:187:TRP:HA	1.63	0.62
1:C:183:TYR:HE1	1:C:277:SER:O	1.83	0.62
1:C:65:ASP:OD2	1:C:466:LYS:HB2	1.99	0.62
1:B:153:GLN:HE22	1:B:170:ASN:ND2	1.96	0.62
1:B:114:ILE:CD1	1:B:137:LEU:HD21	2.29	0.62
1:D:65:ASP:OD2	1:D:466:LYS:HB2	1.99	0.62
1:C:173:TYR:CE2	1:C:184:ARG:HG2	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:SER:HB2	1:A:40:ARG:NE	2.15	0.62
1:A:159:PRO:HG2	1:A:217:SER:O	2.00	0.61
1:C:410:LEU:HD13	1:C:415:LEU:HD23	1.82	0.61
1:A:170:ASN:N	1:A:170:ASN:HD22	1.97	0.61
1:B:377:ASN:HB3	1:B:379:GLU:H	1.65	0.61
1:A:56:LYS:HE3	3:A:1393:HOH:O	2.01	0.61
1:C:341:VAL:O	1:C:342:ALA:HB3	1.99	0.61
1:D:290:PRO:HG3	1:D:326:ASP:OD2	2.00	0.61
1:D:640:LEU:HD11	1:D:650:GLY:HA3	1.82	0.61
1:A:184:ARG:HH11	1:A:187:TRP:HA	1.66	0.61
1:C:390:ASP:HB3	3:C:1086:HOH:O	1.99	0.61
1:C:158:SER:HB3	1:C:163:LYS:HB2	1.82	0.61
1:D:293:MET:CE	1:D:317:ARG:HG3	2.31	0.61
1:D:331:ASP:HB3	1:D:334:SER:HB2	1.81	0.61
1:D:489:LYS:HB3	1:D:489:LYS:NZ	2.16	0.61
1:D:651:ILE:HG21	1:D:755:MET:HE2	1.82	0.61
1:B:272:ASN:HD21	1:B:274:ASP:HB2	1.65	0.60
1:C:640:LEU:HD11	1:C:650:GLY:HA3	1.83	0.60
1:C:191:GLU:HG3	3:C:1215:HOH:O	2.00	0.60
1:D:272:ASN:HD22	1:D:272:ASN:C	2.04	0.60
1:D:76:ILE:HB	1:D:90:LEU:CD1	2.30	0.60
1:B:184:ARG:HH11	1:B:187:TRP:HA	1.65	0.60
1:C:40:ARG:HG2	1:C:40:ARG:HH11	1.65	0.60
1:B:289:ALA:CB	1:B:290:PRO:CA	2.76	0.60
1:C:412:SER:HB3	3:C:1512:HOH:O	2.02	0.60
1:D:158:SER:HB3	1:D:163:LYS:HB2	1.82	0.60
1:C:333:SER:HB2	3:C:1046:HOH:O	2.00	0.60
1:D:183:TYR:HE1	1:D:277:SER:O	1.85	0.60
1:D:410:LEU:HD13	1:D:415:LEU:HD23	1.82	0.60
1:A:528:MET:CE	1:A:530:LEU:HD21	2.31	0.60
1:A:72:GLN:HB3	3:A:1335:HOH:O	2.01	0.60
1:A:61:ARG:HG3	3:A:1599:HOH:O	2.02	0.60
1:A:640:LEU:HD11	1:A:650:GLY:HA3	1.84	0.60
1:B:290:PRO:HG3	1:B:326:ASP:OD2	2.02	0.60
1:B:528:MET:CE	1:B:530:LEU:HD21	2.31	0.60
1:A:253:ARG:HH22	1:B:253:ARG:NH2	1.98	0.60
1:B:159:PRO:HG2	1:B:217:SER:O	2.01	0.60
1:C:234:PRO:HB2	1:D:248:TYR:CZ	2.37	0.60
1:B:39:SER:HB2	1:B:40:ARG:NE	2.15	0.59
1:B:512:LYS:HD3	3:B:4204:HOH:O	2.02	0.59
1:A:177:GLU:HB2	1:A:180:LEU:HD22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:272:ASN:C	1:B:272:ASN:HD22	2.06	0.59
1:C:422:TYR:CE2	1:C:423:LYS:HD3	2.37	0.59
1:A:310:ARG:HH12	1:A:343:ARG:NH1	2.00	0.59
1:B:184:ARG:HD3	1:B:186:THR:O	2.02	0.59
1:A:272:ASN:HD21	1:A:274:ASP:HB2	1.68	0.59
1:A:290:PRO:HG3	1:A:326:ASP:OD2	2.01	0.59
1:C:293:MET:CE	1:C:317:ARG:HG3	2.32	0.59
1:C:489:LYS:HB3	1:C:489:LYS:NZ	2.18	0.59
1:D:154:TRP:CE2	1:D:212:SER:HB2	2.37	0.59
1:A:310:ARG:NE	3:A:1082:HOH:O	2.35	0.59
1:B:56:LYS:HE3	3:B:4521:HOH:O	2.01	0.59
1:D:40:ARG:NH1	3:D:1417:HOH:O	2.36	0.59
1:C:154:TRP:CE2	1:C:212:SER:HB2	2.37	0.58
1:C:272:ASN:C	1:C:272:ASN:HD22	2.05	0.58
1:D:77:LEU:HD23	1:D:88:VAL:HA	1.85	0.58
1:D:139:LYS:HD3	3:D:1345:HOH:O	2.03	0.58
1:D:61:ARG:HG2	3:D:1448:HOH:O	2.03	0.58
1:D:74:ASN:C	1:D:92:ASN:HB3	2.24	0.58
1:A:184:ARG:HD3	1:A:186:THR:O	2.04	0.58
1:B:184:ARG:NH1	1:B:187:TRP:HA	2.18	0.58
1:A:658:ARG:HG2	1:A:661:TYR:CE2	2.37	0.58
1:C:651:ILE:HG21	1:C:755:MET:HE2	1.85	0.58
1:C:147:ARG:HD3	3:C:1283:HOH:O	2.04	0.58
1:D:289:ALA:CB	1:D:290:PRO:HA	2.21	0.58
1:A:597:ARG:HH12	1:A:679:ASN:HD21	1.52	0.58
1:B:177:GLU:HB2	1:B:180:LEU:HD22	1.86	0.58
1:A:338:ASN:HB2	3:A:914:HOH:O	2.04	0.58
1:A:341:VAL:HG11	3:A:1407:HOH:O	2.04	0.58
1:A:184:ARG:NH1	1:A:187:TRP:HA	2.19	0.57
1:D:613:PHE:O	1:D:616:MET:HB2	2.03	0.57
1:A:140:ARG:HG2	1:A:140:ARG:NH1	2.15	0.57
1:D:697:GLN:HG3	3:D:1264:HOH:O	2.05	0.57
1:A:276:LEU:H	1:A:276:LEU:HD23	1.69	0.57
1:B:640:LEU:HD11	1:B:650:GLY:HA3	1.85	0.57
1:C:172:ILE:H	1:C:186:THR:CG2	2.13	0.57
1:A:489:LYS:HB3	1:A:489:LYS:HZ3	1.68	0.57
1:B:310:ARG:HG3	1:B:329:ASP:OD1	2.05	0.57
1:B:341:VAL:O	1:B:342:ALA:CB	2.49	0.57
1:A:272:ASN:C	1:A:272:ASN:HD22	2.06	0.57
1:C:613:PHE:O	1:C:616:MET:HB2	2.03	0.57
1:A:622:LYS:NZ	1:A:622:LYS:HB2	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:90:LEU:O	1:B:90:LEU:HD22	2.05	0.57
1:D:170:ASN:N	1:D:170:ASN:HD22	2.03	0.57
1:B:658:ARG:HG2	1:B:661:TYR:CE2	2.39	0.57
1:C:74:ASN:C	1:C:92:ASN:HB3	2.24	0.57
1:C:77:LEU:HD23	1:C:88:VAL:HA	1.86	0.57
1:A:464:GLU:HG3	3:A:1683:HOH:O	2.05	0.57
1:B:581:ARG:HB2	1:B:605:ASP:OD2	2.04	0.57
1:B:392:LYS:HG3	1:B:393:ASP:H	1.70	0.57
1:D:39:SER:O	1:D:40:ARG:O	2.23	0.57
1:C:293:MET:HE2	1:C:317:ARG:HG3	1.85	0.57
1:B:597:ARG:HH12	1:B:679:ASN:HD21	1.53	0.56
1:A:581:ARG:HB2	1:A:605:ASP:OD2	2.05	0.56
1:A:71:LYS:NZ	1:A:105:TYR:HB2	2.19	0.56
1:B:74:ASN:HB2	3:B:4264:HOH:O	2.06	0.56
1:C:341:VAL:HG12	3:C:1265:HOH:O	2.06	0.56
1:D:654:ALA:HA	1:D:704:HIS:CD2	2.40	0.56
1:B:140:ARG:NH1	1:B:140:ARG:HG2	2.16	0.56
1:C:161:GLY:HA3	3:C:1435:HOH:O	2.05	0.56
1:B:170:ASN:N	1:B:170:ASN:HD22	2.01	0.56
1:B:310:ARG:HH12	1:B:343:ARG:NH1	2.03	0.56
1:A:156:THR:HG21	1:A:214:LEU:HD11	1.88	0.56
1:B:71:LYS:NZ	1:B:105:TYR:HB2	2.20	0.56
1:D:279:VAL:HB	3:D:1256:HOH:O	2.04	0.56
1:A:90:LEU:O	1:A:90:LEU:HD22	2.05	0.56
1:C:697:GLN:HG3	3:C:1134:HOH:O	2.06	0.56
1:A:289:ALA:HB1	1:A:290:PRO:C	2.25	0.56
1:A:218:PRO:HB2	1:A:308:GLN:NE2	2.21	0.56
1:B:276:LEU:HD23	1:B:276:LEU:H	1.70	0.56
1:D:243:ASP:HB3	3:D:1167:HOH:O	2.05	0.56
1:B:147:ARG:HD3	3:B:4493:HOH:O	2.05	0.56
1:B:654:ALA:HA	1:B:704:HIS:CD2	2.40	0.56
1:C:39:SER:O	1:C:40:ARG:O	2.24	0.56
1:A:139:LYS:HD3	3:A:1198:HOH:O	2.06	0.56
1:B:156:THR:HG21	1:B:214:LEU:HD11	1.88	0.56
1:B:756:SER:O	1:B:760:LYS:HG3	2.06	0.56
1:D:338:ASN:HB2	3:D:1218:HOH:O	2.06	0.56
1:D:377:ASN:HB3	1:D:379:GLU:H	1.71	0.56
1:D:422:TYR:CE2	1:D:423:LYS:HD3	2.41	0.56
1:A:651:ILE:HG21	1:A:755:MET:HE2	1.88	0.55
1:B:218:PRO:HB2	1:B:308:GLN:NE2	2.20	0.55
1:B:276:LEU:CD2	1:B:276:LEU:H	2.19	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:654:ALA:HA	1:C:704:HIS:CD2	2.41	0.55
1:A:310:ARG:HG3	1:A:329:ASP:OD1	2.06	0.55
1:A:654:ALA:HA	1:A:704:HIS:CD2	2.41	0.55
1:B:161:GLY:HA3	3:B:4359:HOH:O	2.05	0.55
1:A:253:ARG:NH2	1:B:253:ARG:HH22	1.99	0.55
1:C:170:ASN:HD22	1:C:170:ASN:N	2.04	0.55
1:A:736:THR:HG23	1:B:721:LYS:HB2	1.89	0.55
1:D:438:ASP:OD2	1:D:441:LYS:HG3	2.06	0.55
1:D:481:THR:OG1	1:D:483:HIS:HE1	1.88	0.55
1:A:717:ALA:O	1:B:736:THR:HG21	2.07	0.55
1:C:536:LYS:HE3	3:C:1107:HOH:O	2.06	0.55
1:A:276:LEU:CD2	1:A:276:LEU:H	2.19	0.55
1:A:310:ARG:CZ	3:A:1082:HOH:O	2.53	0.55
1:C:388:GLN:CB	1:C:391:LYS:HD3	2.37	0.55
1:C:438:ASP:OD2	1:C:441:LYS:HG3	2.07	0.55
1:B:321:ASN:ND2	3:B:4147:HOH:O	2.40	0.55
1:A:736:THR:HG21	1:B:717:ALA:O	2.08	0.54
1:B:520:ASN:O	1:B:521:GLU:HB2	2.07	0.54
1:C:377:ASN:HB2	1:C:381:TYR:O	2.06	0.54
1:A:520:ASN:O	1:A:521:GLU:HB2	2.07	0.54
1:C:481:THR:OG1	1:C:483:HIS:HE1	1.89	0.54
1:D:172:ILE:H	1:D:186:THR:CG2	2.15	0.54
1:B:441:LYS:HE3	3:B:4309:HOH:O	2.07	0.54
1:D:512:LYS:HD3	3:D:1439:HOH:O	2.07	0.54
1:A:392:LYS:HG3	1:A:393:ASP:H	1.71	0.54
1:B:510:PRO:HD3	1:B:569:SER:HB2	1.89	0.54
1:D:125:ARG:HG2	1:D:126:HIS:NE2	2.22	0.54
1:A:161:GLY:HA3	3:A:994:HOH:O	2.08	0.54
1:A:513:LYS:HG3	3:A:1695:HOH:O	2.07	0.54
1:B:622:LYS:NZ	1:B:622:LYS:HB2	2.23	0.54
1:D:622:LYS:HB2	1:D:622:LYS:NZ	2.23	0.54
1:B:57:LEU:HB3	3:B:4313:HOH:O	2.07	0.54
1:C:377:ASN:HB3	1:C:379:GLU:H	1.72	0.54
1:C:622:LYS:HB2	1:C:622:LYS:NZ	2.23	0.54
1:A:285:ILE:N	1:A:285:ILE:HD12	2.23	0.54
1:A:538:LYS:HG2	3:A:1668:HOH:O	2.08	0.54
1:A:676:PRO:HG2	1:A:677:GLU:OE2	2.08	0.54
1:B:289:ALA:HB1	1:B:290:PRO:C	2.28	0.54
1:D:388:GLN:CB	1:D:391:LYS:HD3	2.38	0.54
1:A:388:GLN:HG3	3:A:1249:HOH:O	2.08	0.54
1:A:392:LYS:HG3	1:A:393:ASP:N	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:764:SER:HA	3:B:4322:HOH:O	2.08	0.53
1:C:125:ARG:HG2	1:C:126:HIS:NE2	2.24	0.53
1:D:377:ASN:HB2	1:D:381:TYR:O	2.08	0.53
1:A:277:SER:O	1:A:278:SER:HB3	2.09	0.53
1:A:459:VAL:HG22	1:A:460:SER:N	2.24	0.53
1:A:756:SER:O	1:A:760:LYS:HG3	2.08	0.53
3:C:791:HOH:O	1:D:736:THR:HG23	2.08	0.53
1:B:535:ASP:OD1	1:B:537:SER:HB3	2.08	0.53
1:C:651:ILE:HG21	1:C:755:MET:HE3	1.90	0.53
1:C:80:ASN:HB3	1:C:85:ASN:OD1	2.09	0.53
1:D:61:ARG:HG3	3:D:1513:HOH:O	2.06	0.53
1:B:278:SER:HB3	3:B:4698:HOH:O	2.09	0.53
1:B:85:ASN:ND2	3:B:4474:HOH:O	2.42	0.53
1:C:140:ARG:NH1	1:C:140:ARG:HG2	2.24	0.53
1:C:41:LYS:HD3	1:C:41:LYS:H	1.73	0.53
1:B:392:LYS:HG3	1:B:393:ASP:N	2.23	0.53
1:D:600:THR:O	1:D:603:VAL:HG13	2.09	0.53
1:C:658:ARG:HG2	1:C:661:TYR:CE2	2.44	0.53
1:A:487:ASN:ND2	3:A:890:HOH:O	2.41	0.53
1:C:422:TYR:CD2	1:C:423:LYS:HD3	2.44	0.53
1:D:194:ILE:HD12	3:D:1095:HOH:O	2.09	0.53
1:D:520:ASN:O	1:D:521:GLU:HB2	2.08	0.53
1:A:510:PRO:HD3	1:A:569:SER:HB2	1.91	0.53
1:B:377:ASN:HB2	1:B:381:TYR:O	2.09	0.53
1:C:512:LYS:HD3	3:C:888:HOH:O	2.09	0.53
1:B:718:GLN:HE21	1:B:718:GLN:HA	1.74	0.52
1:C:341:VAL:C	1:C:343:ARG:H	2.12	0.52
1:C:502:LYS:O	1:C:505:GLN:HG2	2.09	0.52
1:D:390:ASP:HB3	3:D:1443:HOH:O	2.10	0.52
1:D:41:LYS:H	1:D:41:LYS:HD3	1.73	0.52
1:B:459:VAL:HG22	1:B:460:SER:N	2.24	0.52
1:B:489:LYS:HB3	1:B:489:LYS:HZ3	1.71	0.52
1:D:684:ARG:HG3	3:D:1350:HOH:O	2.08	0.52
1:A:147:ARG:HD3	3:A:1214:HOH:O	2.10	0.52
1:A:535:ASP:OD1	1:A:537:SER:HB3	2.10	0.52
1:A:718:GLN:HA	1:A:718:GLN:HE21	1.75	0.52
1:B:154:TRP:CE2	1:B:212:SER:HB2	2.44	0.52
1:B:334:SER:HB3	1:B:336:ARG:CD	2.39	0.52
1:B:487:ASN:HB2	3:B:4104:HOH:O	2.09	0.52
1:B:513:LYS:O	1:B:527:GLN:HA	2.09	0.52
1:D:183:TYR:CD2	1:D:276:LEU:HG	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:751:ILE:O	1:D:755:MET:HG3	2.09	0.52
1:A:704:HIS:HE1	1:A:711:VAL:O	1.92	0.52
1:A:651:ILE:HG21	1:A:755:MET:CE	2.40	0.52
1:C:57:LEU:HD23	3:C:917:HOH:O	2.09	0.52
1:A:334:SER:HB3	1:A:336:ARG:CD	2.39	0.52
1:B:277:SER:O	1:B:278:SER:HB3	2.09	0.52
1:B:676:PRO:HG2	1:B:677:GLU:OE2	2.10	0.52
1:C:486:VAL:HG13	1:C:487:ASN:N	2.25	0.52
1:D:658:ARG:HG2	1:D:661:TYR:CE2	2.45	0.52
1:B:340:LEU:C	1:B:341:VAL:O	2.44	0.52
1:D:341:VAL:C	1:D:343:ARG:H	2.12	0.52
1:A:513:LYS:O	1:A:527:GLN:HA	2.10	0.52
1:A:397:ILE:HG13	1:A:398:THR:HG23	1.92	0.52
1:A:56:LYS:HD2	3:A:1079:HOH:O	2.10	0.52
1:C:277:SER:O	1:C:278:SER:CB	2.58	0.52
1:D:140:ARG:NH1	1:D:140:ARG:HG2	2.23	0.52
1:D:486:VAL:HG13	1:D:487:ASN:N	2.25	0.52
1:D:651:ILE:HG21	1:D:755:MET:HE3	1.91	0.52
1:A:276:LEU:HD23	3:A:1365:HOH:O	2.09	0.51
1:B:183:TYR:HE1	1:B:277:SER:O	1.93	0.51
1:B:397:ILE:HG13	1:B:398:THR:HG23	1.91	0.51
1:C:203:TYR:HA	1:C:207:VAL:HG13	1.92	0.51
1:A:377:ASN:HB2	1:A:381:TYR:O	2.10	0.51
1:D:203:TYR:HA	1:D:207:VAL:HG13	1.93	0.51
1:B:285:ILE:HD12	1:B:285:ILE:N	2.25	0.51
1:B:402:TRP:CD2	1:B:421:GLU:HB2	2.46	0.51
1:C:520:ASN:O	1:C:521:GLU:HB2	2.09	0.51
1:A:302:ASP:HB3	1:A:314:GLN:HB2	1.93	0.51
1:C:751:ILE:O	1:C:755:MET:HG3	2.10	0.51
1:D:60:LEU:C	1:D:60:LEU:HD12	2.30	0.51
1:D:523:LYS:HG2	3:D:978:HOH:O	2.11	0.51
1:A:402:TRP:CD2	1:A:421:GLU:HB2	2.45	0.51
1:B:651:ILE:HG21	1:B:755:MET:CE	2.40	0.51
1:C:156:THR:HG21	1:C:214:LEU:HD11	1.93	0.51
1:C:81:ALA:O	1:C:492:ARG:NH2	2.44	0.51
1:D:341:VAL:HG22	1:D:342:ALA:N	2.26	0.51
1:A:110:ASP:OD2	1:A:162:HIS:ND1	2.44	0.51
1:C:243:ASP:HB3	3:C:1080:HOH:O	2.11	0.51
1:C:272:ASN:HD21	1:C:274:ASP:HB2	1.75	0.51
1:C:341:VAL:HG22	1:C:342:ALA:N	2.26	0.51
1:C:60:LEU:HD12	1:C:60:LEU:C	2.30	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:397:ILE:HG13	1:C:398:THR:HG23	1.92	0.51
1:C:606:GLN:NE2	3:C:774:HOH:O	2.40	0.50
1:A:392:LYS:HG3	3:A:1330:HOH:O	2.11	0.50
1:A:422:TYR:CE2	1:A:423:LYS:HD3	2.46	0.50
1:C:321:ASN:ND2	3:C:1514:HOH:O	2.45	0.50
1:D:272:ASN:HD21	1:D:274:ASP:HB2	1.77	0.50
1:D:277:SER:O	1:D:278:SER:CB	2.59	0.50
1:D:415:LEU:HD13	1:D:415:LEU:C	2.32	0.50
1:D:502:LYS:O	1:D:505:GLN:HG2	2.10	0.50
1:B:71:LYS:HZ1	1:B:105:TYR:HB2	1.76	0.50
1:C:183:TYR:CD2	1:C:276:LEU:HG	2.45	0.50
1:C:85:ASN:ND2	3:C:911:HOH:O	2.44	0.50
1:B:110:ASP:OD2	1:B:162:HIS:ND1	2.45	0.50
1:C:600:THR:O	1:C:603:VAL:HG13	2.10	0.50
1:C:760:LYS:HE2	3:C:1519:HOH:O	2.10	0.50
1:A:183:TYR:HE1	1:A:277:SER:O	1.94	0.50
1:C:741:GLY:O	1:C:742:ILE:C	2.50	0.50
1:D:472:CYS:O	1:D:478:PRO:HA	2.11	0.50
1:A:597:ARG:NH1	1:A:679:ASN:HD21	2.09	0.50
1:C:108:SER:C	1:C:110:ASP:H	2.14	0.50
1:C:276:LEU:N	1:C:276:LEU:CD2	2.68	0.50
1:D:322:TYR:OH	1:D:346:ILE:HD13	2.12	0.50
1:D:741:GLY:O	1:D:742:ILE:C	2.50	0.50
1:B:302:ASP:HB3	1:B:314:GLN:HB2	1.92	0.50
1:B:489:LYS:HB3	1:B:489:LYS:HZ2	1.76	0.50
1:C:472:CYS:O	1:C:478:PRO:HA	2.11	0.50
1:C:487:ASN:HB2	3:C:812:HOH:O	2.11	0.50
1:D:397:ILE:HG13	1:D:398:THR:HG23	1.93	0.50
1:D:597:ARG:NH1	1:D:682:HIS:HB2	2.26	0.50
1:A:159:PRO:HD3	1:A:216:TRP:HB3	1.93	0.50
1:A:658:ARG:O	1:A:658:ARG:HG3	2.11	0.50
1:A:741:GLY:O	1:A:742:ILE:C	2.50	0.50
1:B:516:PHE:CE2	1:B:523:LYS:HE2	2.47	0.50
1:C:193:ILE:HG22	1:C:194:ILE:HG13	1.94	0.50
1:D:114:ILE:HD11	1:D:137:LEU:HD21	1.92	0.50
1:D:80:ASN:HB3	1:D:85:ASN:OD1	2.11	0.50
1:A:147:ARG:HB2	3:A:888:HOH:O	2.11	0.50
1:A:310:ARG:NH2	3:A:1082:HOH:O	2.43	0.50
1:B:109:PRO:HG2	1:B:160:VAL:O	2.12	0.50
1:B:697:GLN:NE2	3:B:4265:HOH:O	2.44	0.50
1:B:704:HIS:HE1	1:B:711:VAL:O	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:276:LEU:N	1:B:276:LEU:CD2	2.76	0.49
1:B:606:GLN:NE2	3:B:4001:HOH:O	2.34	0.49
1:B:106:SER:HB3	1:B:115:LEU:HB3	1.93	0.49
1:B:203:TYR:HA	1:B:207:VAL:HG13	1.94	0.49
1:B:289:ALA:HB3	3:B:4250:HOH:O	2.13	0.49
1:B:483:HIS:HD2	3:B:4452:HOH:O	1.94	0.49
1:C:89:PHE:HD1	1:C:90:LEU:HD12	1.76	0.49
1:D:276:LEU:N	1:D:276:LEU:CD2	2.67	0.49
1:A:154:TRP:CE2	1:A:212:SER:HB2	2.47	0.49
1:A:159:PRO:HD3	1:A:216:TRP:CB	2.42	0.49
1:A:471:ARG:HG2	1:A:480:TYR:CD2	2.46	0.49
1:D:422:TYR:CD2	1:D:423:LYS:HD3	2.47	0.49
1:B:422:TYR:CE2	1:B:423:LYS:HD3	2.48	0.49
1:C:40:ARG:HB2	1:C:506:ASN:O	2.13	0.49
1:C:597:ARG:NH1	1:C:682:HIS:HB2	2.27	0.49
1:A:276:LEU:CD2	1:A:276:LEU:N	2.75	0.49
1:A:392:LYS:HG2	3:A:1399:HOH:O	2.11	0.49
1:B:81:ALA:O	1:B:492:ARG:NH2	2.45	0.49
1:C:486:VAL:HG13	3:C:812:HOH:O	2.13	0.49
1:C:736:THR:HG23	3:D:804:HOH:O	2.13	0.49
1:D:388:GLN:HG2	1:D:391:LYS:HD3	1.94	0.49
1:A:186:THR:HG21	1:A:196:ASN:CB	2.42	0.49
1:A:415:LEU:C	1:A:415:LEU:HD13	2.32	0.49
1:A:81:ALA:O	1:A:492:ARG:NH2	2.44	0.49
1:D:508:GLN:HG2	3:D:1465:HOH:O	2.12	0.49
1:C:107:ILE:HG12	1:C:114:ILE:HG12	1.95	0.49
1:C:388:GLN:HG2	1:C:391:LYS:HD3	1.94	0.49
1:D:89:PHE:HD1	1:D:90:LEU:HD12	1.77	0.49
1:A:471:ARG:HD3	3:A:1265:HOH:O	2.12	0.49
1:B:171:ASP:HB2	3:B:4055:HOH:O	2.13	0.49
1:D:679:ASN:ND2	3:D:920:HOH:O	2.44	0.49
1:D:704:HIS:HD2	1:D:716:SER:OG	1.96	0.49
1:A:106:SER:HB3	1:A:115:LEU:HB3	1.95	0.49
1:C:289:ALA:CB	1:C:290:PRO:CA	2.83	0.49
1:D:69:LEU:HD11	1:D:107:ILE:HD12	1.94	0.49
1:A:358:ARG:HA	3:A:864:HOH:O	2.12	0.48
1:A:458:SER:OG	1:A:471:ARG:HB2	2.13	0.48
1:B:65:ASP:OD2	1:B:466:LYS:HB2	2.13	0.48
1:B:82:GLU:HG2	3:B:4837:HOH:O	2.12	0.48
1:D:704:HIS:HE1	1:D:711:VAL:O	1.96	0.48
1:C:322:TYR:OH	1:C:346:ILE:HD13	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:597:ARG:HG3	1:C:600:THR:HG21	1.95	0.48
1:D:81:ALA:O	1:D:492:ARG:NH2	2.45	0.48
1:B:597:ARG:NH1	1:B:679:ASN:HD21	2.10	0.48
1:B:622:LYS:HZ2	1:B:622:LYS:HB2	1.78	0.48
1:C:285:ILE:N	1:C:285:ILE:HD12	2.29	0.48
1:D:93:SER:HA	1:D:96:ASP:CG	2.34	0.48
1:B:658:ARG:O	1:B:658:ARG:HG3	2.12	0.48
1:D:156:THR:HG21	1:D:214:LEU:HD11	1.95	0.48
1:D:289:ALA:HA	1:D:294:LEU:HD11	1.96	0.48
1:A:109:PRO:HG2	1:A:160:VAL:O	2.13	0.48
1:A:516:PHE:CE2	1:A:523:LYS:HE2	2.48	0.48
1:B:51:ASN:HB2	3:B:4582:HOH:O	2.12	0.48
1:D:172:ILE:N	1:D:186:THR:HG22	2.20	0.48
1:D:193:ILE:HG22	1:D:194:ILE:HG13	1.96	0.48
1:A:244:GLU:CD	1:B:689:MET:HG3	2.33	0.48
1:C:54:ARG:HG2	3:C:1152:HOH:O	2.13	0.48
1:D:40:ARG:HB2	1:D:506:ASN:O	2.13	0.48
1:A:489:LYS:HD3	3:A:1259:HOH:O	2.13	0.48
1:D:285:ILE:N	1:D:285:ILE:HD12	2.29	0.48
1:A:514:LEU:HD12	1:A:557:THR:HG22	1.96	0.48
1:C:415:LEU:HD13	1:C:415:LEU:C	2.34	0.48
1:B:415:LEU:HD13	1:B:415:LEU:C	2.34	0.48
1:B:458:SER:OG	1:B:471:ARG:HB2	2.13	0.48
1:C:114:ILE:HD11	1:C:137:LEU:HD21	1.95	0.48
1:C:382:ARG:NH2	3:C:769:HOH:O	2.46	0.48
1:D:108:SER:C	1:D:110:ASP:H	2.15	0.48
1:D:402:TRP:CD2	1:D:421:GLU:HB2	2.49	0.48
1:A:704:HIS:HD2	1:A:716:SER:OG	1.96	0.48
1:B:140:ARG:NH1	1:B:140:ARG:CG	2.77	0.48
1:B:74:ASN:HB3	1:B:92:ASN:HB3	1.94	0.48
1:D:197:GLY:C	1:D:213:ALA:HB3	2.34	0.48
1:D:51:ASN:HA	3:D:1304:HOH:O	2.13	0.48
1:B:186:THR:HG21	1:B:196:ASN:CB	2.44	0.47
1:D:40:ARG:HH11	1:D:40:ARG:CG	2.27	0.47
1:C:165:ALA:HB2	1:C:216:TRP:CZ2	2.50	0.47
1:A:203:TYR:HA	1:A:207:VAL:HG13	1.95	0.47
1:A:74:ASN:HB3	1:A:92:ASN:OD1	2.14	0.47
1:B:159:PRO:HD3	1:B:216:TRP:CB	2.44	0.47
1:B:69:LEU:HD13	1:B:107:ILE:HD12	1.97	0.47
1:B:704:HIS:HD2	1:B:716:SER:OG	1.97	0.47
1:B:741:GLY:O	1:B:742:ILE:C	2.51	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:224:ALA:HB1	1:C:268:PHE:CZ	2.50	0.47
1:A:544:LEU:HD21	1:A:606:GLN:HG3	1.97	0.47
1:A:74:ASN:HB3	1:A:92:ASN:HB3	1.95	0.47
1:D:107:ILE:HG12	1:D:114:ILE:HG12	1.96	0.47
1:D:165:ALA:HB2	1:D:216:TRP:CZ2	2.50	0.47
1:D:289:ALA:CB	1:D:290:PRO:CA	2.82	0.47
1:D:726:VAL:CG1	1:D:728:VAL:HG23	2.39	0.47
1:A:171:ASP:HA	1:A:186:THR:CG2	2.44	0.47
1:A:658:ARG:HB2	1:A:687:THR:HG22	1.97	0.47
1:A:721:LYS:HB2	1:B:736:THR:HG23	1.97	0.47
1:B:471:ARG:HG2	1:B:480:TYR:CD2	2.49	0.47
1:C:69:LEU:HD13	1:C:107:ILE:HD12	1.96	0.47
1:D:136:ASP:CG	1:D:139:LYS:HG2	2.35	0.47
1:D:471:ARG:HG2	1:D:480:TYR:CD2	2.49	0.47
1:A:340:LEU:C	1:A:341:VAL:O	2.45	0.47
1:B:658:ARG:HB2	1:B:687:THR:HG22	1.97	0.47
1:C:89:PHE:CE1	1:C:107:ILE:HD13	2.49	0.47
1:C:402:TRP:CD2	1:C:421:GLU:HB2	2.50	0.47
1:C:704:HIS:HE1	1:C:711:VAL:O	1.96	0.47
1:D:536:LYS:HG2	3:D:996:HOH:O	2.14	0.47
1:A:651:ILE:HD13	1:A:755:MET:HE2	1.96	0.47
1:C:310:ARG:HG3	1:C:329:ASP:OD1	2.15	0.47
1:C:93:SER:HA	1:C:96:ASP:CG	2.34	0.47
1:A:435:GLN:NE2	1:A:441:LYS:HD2	2.29	0.47
1:C:435:GLN:HG2	1:C:438:ASP:H	1.80	0.47
1:D:597:ARG:HG3	1:D:600:THR:HG21	1.96	0.47
1:A:125:ARG:HG2	1:A:126:HIS:CD2	2.50	0.47
1:A:140:ARG:CG	1:A:140:ARG:NH1	2.77	0.47
1:B:108:SER:C	1:B:110:ASP:N	2.68	0.47
1:C:194:ILE:HD12	3:C:1047:HOH:O	2.15	0.47
1:B:125:ARG:HB3	3:B:4009:HOH:O	2.14	0.47
1:B:544:LEU:HD21	1:B:606:GLN:HG3	1.96	0.47
1:C:136:ASP:CG	1:C:139:LYS:HG2	2.35	0.47
1:C:197:GLY:C	1:C:213:ALA:HB3	2.35	0.47
1:D:224:ALA:HB1	1:D:268:PHE:CZ	2.50	0.47
1:A:718:GLN:HE22	1:A:721:LYS:NZ	2.13	0.46
1:A:90:LEU:HD22	1:A:90:LEU:C	2.35	0.46
1:B:514:LEU:HD12	1:B:557:THR:HG22	1.96	0.46
1:B:98:PHE:CE2	1:B:100:HIS:HB2	2.50	0.46
1:D:310:ARG:HG3	1:D:329:ASP:OD1	2.14	0.46
1:A:589:LYS:HB2	3:A:1645:HOH:O	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:159:PRO:HD3	1:B:216:TRP:HB3	1.95	0.46
1:B:651:ILE:HD13	1:B:755:MET:HE2	1.97	0.46
1:C:289:ALA:HA	1:C:294:LEU:HD11	1.96	0.46
1:D:69:LEU:HD13	1:D:107:ILE:HD12	1.98	0.46
1:D:89:PHE:CE1	1:D:107:ILE:HD13	2.50	0.46
1:D:93:SER:HB2	1:D:96:ASP:OD2	2.15	0.46
1:A:489:LYS:CB	1:A:489:LYS:NZ	2.76	0.46
1:C:464:GLU:HG3	3:C:948:HOH:O	2.15	0.46
1:D:597:ARG:HD3	1:D:597:ARG:HA	1.64	0.46
1:B:323:SER:OG	1:B:347:GLU:HB3	2.16	0.46
1:C:726:VAL:O	1:C:726:VAL:HG13	2.15	0.46
1:D:726:VAL:O	1:D:726:VAL:CG1	2.64	0.46
1:C:111:GLY:O	1:C:137:LEU:HD12	2.16	0.46
1:C:471:ARG:HG2	1:C:480:TYR:CD2	2.50	0.46
1:C:679:ASN:ND2	3:C:978:HOH:O	2.49	0.46
1:A:39:SER:CB	1:A:40:ARG:HE	2.25	0.46
1:B:171:ASP:HA	1:B:186:THR:CG2	2.45	0.46
1:C:93:SER:HB2	1:C:96:ASP:OD2	2.15	0.46
1:D:486:VAL:HG13	1:D:487:ASN:H	1.80	0.46
1:D:522:THR:HG22	1:D:523:LYS:N	2.30	0.46
1:A:114:ILE:HD12	1:A:137:LEU:HD21	1.98	0.46
1:A:141:GLN:HG2	3:A:1198:HOH:O	2.15	0.46
1:A:243:ASP:HB3	3:A:1258:HOH:O	2.15	0.46
1:A:651:ILE:CD1	1:A:755:MET:HE2	2.45	0.46
1:A:65:ASP:OD2	1:A:466:LYS:HB2	2.14	0.46
1:D:132:TYR:HB2	3:D:1456:HOH:O	2.15	0.46
1:D:483:HIS:HD2	3:D:878:HOH:O	1.98	0.46
1:C:704:HIS:HD2	1:C:716:SER:OG	1.98	0.46
1:D:403:GLU:OE1	1:D:585:TYR:HA	2.15	0.46
1:A:463:LYS:HD3	1:A:463:LYS:HA	1.74	0.46
1:B:90:LEU:HD22	1:B:90:LEU:C	2.36	0.46
1:D:546:VAL:CG2	1:D:547:TYR:N	2.78	0.46
1:C:79:PHE:CD1	1:C:86:SER:HB3	2.51	0.45
1:A:482:LEU:HD23	1:A:482:LEU:HA	1.79	0.45
1:B:486:VAL:HG13	1:B:487:ASN:N	2.31	0.45
1:B:76:ILE:HB	1:B:90:LEU:HD13	1.98	0.45
1:C:496:ASP:HB2	3:C:1258:HOH:O	2.16	0.45
1:C:71:LYS:HE2	3:C:1041:HOH:O	2.15	0.45
1:B:435:GLN:NE2	1:B:441:LYS:HD2	2.32	0.45
1:C:286:GLN:NE2	1:C:288:THR:HG22	2.32	0.45
1:A:323:SER:OG	1:A:347:GLU:HB3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:75:ASN:HB3	1:A:92:ASN:N	2.32	0.45
1:B:532:PRO:HD3	1:B:569:SER:HA	1.99	0.45
1:B:726:VAL:CG1	1:B:726:VAL:O	2.63	0.45
1:D:489:LYS:HZ3	1:D:489:LYS:HB3	1.80	0.45
1:D:726:VAL:O	1:D:726:VAL:HG13	2.15	0.45
1:A:71:LYS:HZ1	1:A:105:TYR:HB2	1.80	0.45
1:A:726:VAL:O	1:A:726:VAL:CG1	2.65	0.45
1:B:114:ILE:HD12	1:B:137:LEU:HD21	1.99	0.45
1:C:314:GLN:HE22	1:C:373:LYS:NZ	2.14	0.45
1:C:536:LYS:NZ	1:C:536:LYS:CB	2.80	0.45
1:D:306:ALA:CB	1:D:310:ARG:HD2	2.47	0.45
1:D:435:GLN:HG2	1:D:438:ASP:H	1.80	0.45
1:B:39:SER:CB	1:B:40:ARG:HE	2.25	0.45
1:B:74:ASN:HB3	1:B:92:ASN:OD1	2.16	0.45
1:D:498:SER:O	1:D:502:LYS:HG2	2.16	0.45
1:B:194:ILE:HD12	3:B:4346:HOH:O	2.17	0.45
1:B:718:GLN:HE22	1:B:721:LYS:NZ	2.15	0.45
1:D:183:TYR:CE2	1:D:276:LEU:HG	2.52	0.45
1:D:253:ARG:HD2	3:D:1225:HOH:O	2.17	0.45
1:D:321:ASN:ND2	3:D:951:HOH:O	2.48	0.45
1:D:611:ARG:NH1	3:D:1422:HOH:O	2.50	0.45
1:D:697:GLN:HG3	3:D:1267:HOH:O	2.15	0.45
1:A:108:SER:C	1:A:110:ASP:N	2.69	0.45
1:A:589:LYS:HD2	3:A:1645:HOH:O	2.17	0.45
1:A:76:ILE:HB	1:A:90:LEU:HD13	1.97	0.45
1:B:173:TYR:CE2	1:B:184:ARG:HG3	2.52	0.45
1:A:241:TYR:CE2	1:B:714:GLN:HA	2.52	0.45
1:D:289:ALA:HB3	3:D:1357:HOH:O	2.17	0.45
1:A:147:ARG:HA	3:A:1151:HOH:O	2.16	0.45
1:A:486:VAL:HG13	1:A:487:ASN:N	2.32	0.45
1:A:69:LEU:HD13	1:A:107:ILE:HD12	1.98	0.45
1:A:92:ASN:ND2	1:A:93:SER:N	2.65	0.45
1:B:429:ARG:NE	3:B:4044:HOH:O	2.36	0.45
1:B:718:GLN:NE2	1:B:718:GLN:HA	2.31	0.45
1:B:75:ASN:HB3	1:B:92:ASN:N	2.32	0.45
1:C:403:GLU:OE1	1:C:585:TYR:HA	2.17	0.45
1:A:98:PHE:CE2	1:A:100:HIS:HB2	2.52	0.45
1:C:110:ASP:OD2	1:C:162:HIS:ND1	2.51	0.45
1:D:393:ASP:HA	3:D:1433:HOH:O	2.16	0.45
1:A:392:LYS:HD3	3:A:1547:HOH:O	2.17	0.44
1:B:310:ARG:NH1	1:B:329:ASP:OD1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:92:ASN:ND2	1:B:93:SER:N	2.64	0.44
1:C:76:ILE:CD1	1:C:90:LEU:HD11	2.37	0.44
1:D:110:ASP:OD2	1:D:162:HIS:ND1	2.50	0.44
1:A:310:ARG:NH1	1:A:329:ASP:OD1	2.50	0.44
1:B:528:MET:HE3	1:B:530:LEU:HD21	1.99	0.44
1:C:69:LEU:HD11	1:C:107:ILE:HD12	1.96	0.44
1:C:172:ILE:N	1:C:186:THR:HG22	2.18	0.44
1:C:522:THR:HG22	1:C:523:LYS:N	2.32	0.44
1:C:726:VAL:O	1:C:726:VAL:CG1	2.65	0.44
1:A:148:ILE:HG23	1:A:149:PRO:HD2	1.99	0.44
1:A:481:THR:OG1	1:A:483:HIS:CE1	2.65	0.44
1:B:489:LYS:CB	1:B:489:LYS:NZ	2.77	0.44
1:C:74:ASN:HB3	1:C:92:ASN:HB3	1.99	0.44
1:D:283:THR:HG22	1:D:285:ILE:HD12	2.00	0.44
1:D:79:PHE:CD1	1:D:86:SER:HB3	2.52	0.44
1:D:74:ASN:HB3	1:D:92:ASN:HB3	1.99	0.44
1:D:57:LEU:HD23	3:D:1030:HOH:O	2.17	0.44
1:A:731:GLN:HG2	3:A:1299:HOH:O	2.17	0.44
1:B:651:ILE:CD1	1:B:755:MET:HE2	2.47	0.44
1:C:726:VAL:CG1	1:C:728:VAL:HG23	2.40	0.44
1:D:259:ALA:HB3	1:D:660:GLU:HA	2.00	0.44
1:D:286:GLN:NE2	1:D:288:THR:HG22	2.33	0.44
1:B:482:LEU:HA	1:B:482:LEU:HD23	1.76	0.44
1:C:159:PRO:HD3	1:C:216:TRP:CB	2.48	0.44
1:C:306:ALA:CB	1:C:310:ARG:HD2	2.47	0.44
1:C:486:VAL:HG13	1:C:487:ASN:H	1.80	0.44
1:C:546:VAL:CG2	1:C:547:TYR:N	2.81	0.44
1:D:319:ILE:O	1:D:321:ASN:N	2.36	0.44
1:D:74:ASN:O	1:D:92:ASN:HB3	2.18	0.44
1:D:184:ARG:HD2	1:D:187:TRP:CE2	2.53	0.44
1:B:134:ILE:HG21	1:B:178:PRO:HB3	2.00	0.44
1:D:536:LYS:CB	1:D:536:LYS:NZ	2.81	0.44
1:D:718:GLN:NE2	1:D:718:GLN:HA	2.33	0.44
1:A:413:ASP:HB2	3:A:1644:HOH:O	2.17	0.44
1:B:60:LEU:C	1:B:60:LEU:HD12	2.38	0.44
1:C:248:TYR:CZ	1:D:234:PRO:HB2	2.53	0.44
1:A:134:ILE:HG21	1:A:178:PRO:HB3	1.99	0.43
1:B:761:GLN:HB3	1:B:761:GLN:HE21	1.60	0.43
1:C:425:MET:HA	1:C:426:PRO:HD2	1.77	0.43
1:C:483:HIS:HD2	3:C:1070:HOH:O	2.01	0.43
1:D:154:TRP:O	1:D:166:TYR:HA	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:173:TYR:CE2	1:A:184:ARG:HG3	2.53	0.43
1:C:283:THR:HG22	1:C:285:ILE:HD12	1.99	0.43
1:C:596:ARG:O	1:C:597:ARG:HD3	2.18	0.43
1:D:40:ARG:HD2	1:D:508:GLN:HG3	2.00	0.43
1:D:718:GLN:HE21	1:D:718:GLN:HA	1.82	0.43
1:A:176:ILE:HG22	1:A:177:GLU:HG2	2.00	0.43
1:A:440:THR:HG21	3:A:1678:HOH:O	2.17	0.43
1:A:74:ASN:O	1:A:92:ASN:HB3	2.17	0.43
1:B:205:GLU:OE2	2:B:4000:DLI:N22	2.51	0.43
1:C:183:TYR:CE2	1:C:276:LEU:HG	2.54	0.43
1:C:649:CYS:HB3	1:C:699:GLU:HB2	2.00	0.43
1:D:615:LYS:HG2	3:D:1209:HOH:O	2.19	0.43
1:A:40:ARG:HB2	1:A:41:LYS:H	1.55	0.43
1:A:76:ILE:CD1	1:A:90:LEU:HD11	2.42	0.43
1:C:184:ARG:HD2	1:C:187:TRP:CE2	2.53	0.43
1:C:516:PHE:CE2	1:C:523:LYS:HE2	2.54	0.43
1:B:107:ILE:HG12	1:B:114:ILE:HG12	2.00	0.43
1:B:612:GLN:HB3	1:B:612:GLN:HE21	1.59	0.43
1:B:726:VAL:HG13	1:B:726:VAL:O	2.18	0.43
1:C:154:TRP:O	1:C:166:TYR:HA	2.18	0.43
1:C:40:ARG:HH11	1:C:40:ARG:CG	2.28	0.43
1:C:498:SER:O	1:C:502:LYS:HG2	2.18	0.43
1:C:693:GLU:HG2	3:C:1444:HOH:O	2.19	0.43
1:A:532:PRO:HD3	1:A:569:SER:HA	1.99	0.43
1:B:291:ALA:O	1:B:295:ILE:HG23	2.18	0.43
1:D:696:LYS:CG	1:D:728:VAL:HG22	2.49	0.43
1:D:649:CYS:HB3	1:D:699:GLU:HB2	2.00	0.43
1:B:125:ARG:HG2	1:B:126:HIS:CD2	2.54	0.43
1:B:76:ILE:CD1	1:B:90:LEU:HD11	2.42	0.43
1:D:159:PRO:HD3	1:D:216:TRP:CB	2.48	0.43
1:D:422:TYR:CZ	1:D:423:LYS:HE3	2.54	0.43
1:B:74:ASN:O	1:B:92:ASN:HB3	2.17	0.43
1:C:422:TYR:CZ	1:C:423:LYS:HE3	2.54	0.43
1:C:438:ASP:OD2	1:C:440:THR:HG22	2.19	0.43
1:C:622:LYS:HZ2	1:C:622:LYS:HB2	1.84	0.43
1:D:125:ARG:HG2	1:D:126:HIS:CD2	2.54	0.43
1:D:75:ASN:ND2	3:D:974:HOH:O	2.52	0.43
1:B:108:SER:C	1:B:110:ASP:H	2.22	0.43
1:B:148:ILE:HG23	1:B:149:PRO:HD2	1.99	0.43
1:B:176:ILE:HG22	1:B:177:GLU:HG2	2.00	0.43
1:B:62:TRP:CE3	1:B:68:TYR:HB3	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:40:ARG:HE	1:C:508:GLN:HG2	1.84	0.43
1:D:147:ARG:HG2	1:D:147:ARG:HH11	1.82	0.43
1:D:696:LYS:HG3	1:D:728:VAL:HG22	2.00	0.43
1:A:107:ILE:HG12	1:A:114:ILE:HG12	2.00	0.43
1:A:237:GLU:HA	1:A:252:VAL:O	2.19	0.43
1:A:60:LEU:C	1:A:60:LEU:HD12	2.40	0.43
1:B:74:ASN:HB3	1:B:92:ASN:CB	2.49	0.43
1:C:147:ARG:HG2	1:C:147:ARG:HH11	1.84	0.43
1:C:289:ALA:HA	1:C:294:LEU:CD1	2.49	0.43
1:C:40:ARG:HD2	1:C:508:GLN:HG3	2.00	0.43
1:D:531:PRO:HB3	1:D:572:ASN:HD22	1.84	0.43
1:D:546:VAL:HG22	1:D:547:TYR:N	2.33	0.43
1:A:172:ILE:N	1:A:186:THR:HG22	2.21	0.42
1:B:289:ALA:HB2	3:B:4251:HOH:O	2.18	0.42
1:B:325:MET:HE2	1:B:327:ILE:HG12	2.01	0.42
1:B:377:ASN:HB2	1:B:381:TYR:H	1.84	0.42
1:C:696:LYS:CG	1:C:728:VAL:HG22	2.49	0.42
1:C:74:ASN:O	1:C:92:ASN:HB3	2.18	0.42
1:D:425:MET:HA	1:D:426:PRO:HD2	1.78	0.42
1:A:177:GLU:CG	1:A:180:LEU:HD22	2.49	0.42
1:A:325:MET:O	1:A:344:GLN:HA	2.19	0.42
1:A:704:HIS:CE1	1:A:711:VAL:O	2.72	0.42
1:D:314:GLN:HE22	1:D:373:LYS:NZ	2.17	0.42
1:A:341:VAL:C	1:A:343:ARG:H	2.23	0.42
1:A:82:GLU:HG2	1:A:83:TYR:CZ	2.55	0.42
1:C:453:ARG:HG3	1:C:476:GLY:HA3	2.02	0.42
1:D:438:ASP:OD2	1:D:440:THR:HG22	2.19	0.42
1:D:459:VAL:HG22	1:D:460:SER:N	2.34	0.42
1:D:64:SER:O	1:D:463:LYS:HG2	2.19	0.42
1:A:325:MET:HE1	1:A:327:ILE:HD11	2.01	0.42
1:A:332:GLU:HB2	3:A:901:HOH:O	2.19	0.42
1:A:92:ASN:HD22	1:A:93:SER:N	2.18	0.42
1:B:197:GLY:C	1:B:213:ALA:HB3	2.40	0.42
1:B:506:ASN:ND2	3:B:4532:HOH:O	2.52	0.42
1:B:528:MET:HE1	1:B:618:PHE:CE1	2.55	0.42
1:D:289:ALA:HA	1:D:294:LEU:CD1	2.49	0.42
1:D:502:LYS:HD3	3:D:1160:HOH:O	2.18	0.42
1:A:693:GLU:HB2	3:A:975:HOH:O	2.18	0.42
1:B:92:ASN:HD22	1:B:93:SER:N	2.18	0.42
1:C:696:LYS:HG3	1:C:728:VAL:HG22	2.00	0.42
1:D:108:SER:C	1:D:110:ASP:N	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:156:THR:CG2	1:A:214:LEU:HD11	2.50	0.42
1:A:536:LYS:CB	1:A:536:LYS:NZ	2.83	0.42
1:B:159:PRO:HB2	1:B:218:PRO:O	2.20	0.42
1:B:177:GLU:CG	1:B:180:LEU:HD22	2.49	0.42
1:B:82:GLU:HG2	1:B:83:TYR:CZ	2.55	0.42
1:D:276:LEU:HD22	1:D:276:LEU:N	2.22	0.42
1:D:292:SER:HA	3:D:1237:HOH:O	2.19	0.42
1:D:40:ARG:CG	1:D:40:ARG:NH1	2.83	0.42
1:D:40:ARG:HE	1:D:508:GLN:HG2	1.84	0.42
1:A:197:GLY:C	1:A:213:ALA:HB3	2.40	0.42
1:A:581:ARG:HG2	1:A:593:ALA:HB1	2.02	0.42
1:C:110:ASP:HB3	1:C:112:GLN:HB2	2.01	0.42
1:C:253:ARG:NH1	3:C:1509:HOH:O	2.34	0.42
1:C:259:ALA:HB3	1:C:660:GLU:HA	2.01	0.42
1:C:57:LEU:HB3	3:C:960:HOH:O	2.18	0.42
1:D:114:ILE:HD12	1:D:137:LEU:HD21	2.01	0.42
1:D:147:ARG:HB2	3:D:975:HOH:O	2.19	0.42
1:A:658:ARG:NH1	3:A:965:HOH:O	2.50	0.42
1:B:172:ILE:H	1:B:186:THR:CG2	2.21	0.42
1:B:519:LEU:O	1:B:520:ASN:C	2.58	0.42
1:C:125:ARG:HG2	1:C:126:HIS:CD2	2.55	0.42
1:C:236:ILE:HG12	1:C:712:HIS:CE1	2.55	0.42
1:D:148:ILE:CG2	1:D:149:PRO:HD2	2.49	0.42
1:D:382:ARG:NH2	3:D:766:HOH:O	2.51	0.42
1:A:333:SER:HB2	3:A:1026:HOH:O	2.19	0.42
1:C:98:PHE:CE2	1:C:100:HIS:HB2	2.55	0.42
1:C:523:LYS:HG2	3:C:808:HOH:O	2.19	0.42
1:C:532:PRO:HD3	1:C:569:SER:HA	2.02	0.42
1:C:658:ARG:HD2	1:C:661:TYR:CE1	2.55	0.42
1:D:111:GLY:O	1:D:137:LEU:HD12	2.19	0.42
1:D:489:LYS:CB	1:D:489:LYS:NZ	2.82	0.42
1:D:98:PHE:CE2	1:D:100:HIS:HB2	2.55	0.42
1:A:184:ARG:HD2	1:A:187:TRP:CD2	2.55	0.42
1:A:187:TRP:N	1:A:187:TRP:CD1	2.88	0.42
1:A:435:GLN:NE2	1:A:441:LYS:CD	2.83	0.42
1:A:62:TRP:CE3	1:A:68:TYR:HB3	2.55	0.42
1:B:109:PRO:HA	3:B:4766:HOH:O	2.19	0.42
1:B:85:ASN:ND2	3:B:4276:HOH:O	2.52	0.42
1:C:530:LEU:HA	1:C:531:PRO:HD3	1.84	0.42
1:C:64:SER:O	1:C:463:LYS:HG2	2.19	0.42
1:C:95:PHE:HB3	1:C:98:PHE:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:40:ARG:HD3	1:D:507:VAL:C	2.40	0.42
1:D:520:ASN:ND2	1:D:520:ASN:O	2.53	0.42
1:D:562:ASN:HB2	3:D:913:HOH:O	2.19	0.42
1:D:704:HIS:CE1	1:D:711:VAL:O	2.72	0.42
1:A:512:LYS:HD3	3:A:1141:HOH:O	2.19	0.41
1:A:546:VAL:HG22	1:A:547:TYR:N	2.35	0.41
1:A:248:TYR:CE1	1:B:258:LYS:HD2	2.55	0.41
1:B:546:VAL:HG22	1:B:547:TYR:N	2.35	0.41
1:C:152:THR:HG21	1:C:155:VAL:CG2	2.50	0.41
1:C:520:ASN:ND2	1:C:520:ASN:O	2.52	0.41
1:C:597:ARG:HD3	1:C:597:ARG:HA	1.63	0.41
1:D:65:ASP:CG	1:D:464:GLU:HB2	2.40	0.41
1:B:183:TYR:CE1	1:B:277:SER:O	2.72	0.41
1:B:187:TRP:CD1	1:B:187:TRP:N	2.88	0.41
1:C:489:LYS:CB	1:C:489:LYS:NZ	2.82	0.41
1:C:40:ARG:HD3	1:C:507:VAL:C	2.40	0.41
1:C:531:PRO:HB3	1:C:572:ASN:HD22	1.84	0.41
1:D:95:PHE:HB3	1:D:98:PHE:HB2	2.02	0.41
1:A:718:GLN:HA	1:A:718:GLN:NE2	2.33	0.41
1:B:246:LEU:HD23	1:B:246:LEU:HA	1.87	0.41
1:B:40:ARG:HB2	1:B:41:LYS:H	1.56	0.41
1:C:108:SER:C	1:C:110:ASP:N	2.72	0.41
1:C:370:SER:HB3	1:C:388:GLN:NE2	2.35	0.41
1:C:734:TRP:CD1	1:C:736:THR:HG22	2.55	0.41
1:D:137:LEU:HD23	1:D:137:LEU:HA	1.84	0.41
1:D:442:VAL:O	1:D:442:VAL:HG13	2.20	0.41
1:B:137:LEU:O	1:B:140:ARG:NH1	2.54	0.41
1:B:536:LYS:HB3	1:B:536:LYS:HZ3	1.84	0.41
1:C:561:LEU:HA	1:C:561:LEU:HD12	1.92	0.41
1:C:704:HIS:CE1	1:C:711:VAL:O	2.73	0.41
1:D:110:ASP:HB3	1:D:112:GLN:HB2	2.03	0.41
1:D:579:ASP:HB3	1:D:583:SER:OG	2.20	0.41
1:B:156:THR:CG2	1:B:214:LEU:HD11	2.50	0.41
1:B:269:PHE:CE2	1:B:286:GLN:HB2	2.56	0.41
1:C:148:ILE:CG2	1:C:149:PRO:HD2	2.50	0.41
1:C:76:ILE:HB	1:C:90:LEU:HD13	2.00	0.41
1:D:152:THR:HG21	1:D:155:VAL:CG2	2.50	0.41
1:D:532:PRO:HD3	1:D:569:SER:HA	2.01	0.41
1:D:571:GLU:CD	1:D:760:LYS:HD3	2.40	0.41
1:B:242:SER:OG	1:B:243:ASP:N	2.51	0.41
1:D:734:TRP:CD1	1:D:736:THR:HG22	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:137:LEU:O	1:A:140:ARG:NH1	2.53	0.41
1:A:325:MET:HE2	1:A:327:ILE:HG12	2.01	0.41
1:A:519:LEU:O	1:A:520:ASN:C	2.59	0.41
1:A:597:ARG:HD2	1:A:597:ARG:HA	1.94	0.41
1:C:334:SER:CB	1:C:336:ARG:HD2	2.49	0.41
1:D:520:ASN:O	1:D:521:GLU:CB	2.68	0.41
1:A:726:VAL:HG13	1:A:726:VAL:O	2.20	0.41
1:B:341:VAL:C	1:B:343:ARG:H	2.23	0.41
1:B:536:LYS:CB	1:B:536:LYS:NZ	2.83	0.41
1:D:341:VAL:C	1:D:343:ARG:N	2.74	0.41
1:A:120:TYR:OH	1:A:122:LYS:HB2	2.21	0.41
1:A:74:ASN:HB3	1:A:92:ASN:CB	2.50	0.41
1:B:184:ARG:HD2	1:B:187:TRP:CD2	2.56	0.41
1:B:214:LEU:HD12	1:B:214:LEU:O	2.20	0.41
1:B:387:PHE:CD2	1:B:394:CYS:HB3	2.56	0.41
1:C:361:GLU:HG2	3:C:882:HOH:O	2.20	0.41
1:C:504:LEU:O	1:C:507:VAL:HG13	2.21	0.41
1:D:91:GLU:HA	3:D:974:HOH:O	2.20	0.41
1:A:183:TYR:CE1	1:A:277:SER:O	2.73	0.41
1:B:69:LEU:CD1	1:B:107:ILE:HD12	2.51	0.41
1:D:331:ASP:CB	1:D:334:SER:HB2	2.49	0.41
1:D:505:GLN:HE21	1:D:505:GLN:HB3	1.59	0.41
1:A:691:ARG:NE	3:A:1580:HOH:O	2.27	0.41
1:B:176:ILE:HD11	1:B:276:LEU:HD21	2.02	0.41
1:C:544:LEU:HD21	1:C:606:GLN:HG3	2.03	0.41
1:D:453:ARG:HG3	1:D:476:GLY:HA3	2.03	0.41
1:D:504:LEU:O	1:D:507:VAL:HG13	2.21	0.41
1:D:513:LYS:O	1:D:527:GLN:HA	2.21	0.41
1:A:269:PHE:CE2	1:A:286:GLN:HB2	2.56	0.40
1:A:528:MET:HE3	1:A:530:LEU:HD21	2.00	0.40
1:C:442:VAL:O	1:C:442:VAL:HG13	2.21	0.40
1:A:136:ASP:CG	1:A:139:LYS:HG2	2.42	0.40
1:A:291:ALA:O	1:A:295:ILE:HG23	2.21	0.40
1:A:708:ASP:OD2	1:A:740:HIS:HA	2.21	0.40
1:B:708:ASP:OD2	1:B:740:HIS:HA	2.21	0.40
1:C:459:VAL:HG22	1:C:460:SER:N	2.36	0.40
1:C:65:ASP:CG	1:C:464:GLU:HB2	2.41	0.40
1:C:513:LYS:O	1:C:527:GLN:HA	2.20	0.40
1:C:579:ASP:HB3	1:C:583:SER:OG	2.21	0.40
1:D:474:GLY:HA3	1:D:557:THR:O	2.21	0.40
1:D:516:PHE:CE2	1:D:523:LYS:HE2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:PRO:HB2	1:A:218:PRO:O	2.21	0.40
1:A:319:ILE:HB	3:A:1427:HOH:O	2.20	0.40
1:A:528:MET:HE1	1:A:618:PHE:CE1	2.56	0.40
1:A:614:SER:HB2	1:A:621:ASN:HB3	2.04	0.40
1:C:146:GLU:O	1:C:175:LYS:HE2	2.22	0.40
1:C:244:GLU:CD	1:D:689:MET:HG3	2.42	0.40
1:C:546:VAL:HG22	1:C:547:TYR:N	2.36	0.40
1:D:482:LEU:HD23	1:D:482:LEU:HA	1.91	0.40
1:A:203:TYR:HA	1:A:207:VAL:CG1	2.51	0.40
1:B:237:GLU:HA	1:B:252:VAL:O	2.21	0.40
1:C:402:TRP:HA	3:C:805:HOH:O	2.21	0.40
1:C:520:ASN:O	1:C:521:GLU:CB	2.69	0.40
1:C:718:GLN:HE21	1:C:718:GLN:HA	1.86	0.40
1:D:195:TYR:O	1:D:227:GLN:HA	2.22	0.40
1:D:334:SER:CB	1:D:336:ARG:HD2	2.48	0.40
1:D:463:LYS:HD3	1:D:463:LYS:HA	1.85	0.40
1:D:544:LEU:HD21	1:D:606:GLN:HG3	2.03	0.40
1:A:114:ILE:HG13	1:A:137:LEU:HD11	2.04	0.40
1:A:150:ASN:O	1:A:151:ASN:HB2	2.21	0.40
1:A:172:ILE:H	1:A:186:THR:CG2	2.23	0.40
1:C:685:ASN:ND2	3:C:1440:HOH:O	2.55	0.40
1:C:718:GLN:NE2	1:C:718:GLN:HA	2.36	0.40
1:D:388:GLN:CB	1:D:391:LYS:HB2	2.52	0.40
1:D:658:ARG:HD2	1:D:661:TYR:CE1	2.56	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	724/726 (100%)	668 (92%)	49 (7%)	7 (1%)	15 17

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	724/726 (100%)	667 (92%)	50 (7%)	7 (1%)	15	17
1	C	724/726 (100%)	672 (93%)	45 (6%)	7 (1%)	15	17
1	D	724/726 (100%)	671 (93%)	46 (6%)	7 (1%)	15	17
All	All	2896/2904 (100%)	2678 (92%)	190 (7%)	28 (1%)	15	17

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	40	ARG
1	A	278	SER
1	B	40	ARG
1	B	278	SER
1	C	40	ARG
1	C	278	SER
1	C	320	GLN
1	D	40	ARG
1	D	278	SER
1	D	320	GLN
1	A	161	GLY
1	A	289	ALA
1	A	520	ASN
1	B	161	GLY
1	B	289	ALA
1	B	520	ASN
1	C	289	ALA
1	C	520	ASN
1	D	289	ALA
1	D	520	ASN
1	A	320	GLN
1	B	320	GLN
1	C	334	SER
1	D	334	SER
1	A	277	SER
1	B	277	SER
1	D	389	ILE
1	C	389	ILE

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	651/651 (100%)	604 (93%)	47 (7%)	14	18
1	B	651/651 (100%)	601 (92%)	50 (8%)	13	16
1	C	651/651 (100%)	605 (93%)	46 (7%)	14	19
1	D	651/651 (100%)	604 (93%)	47 (7%)	14	18
All	All	2604/2604 (100%)	2414 (93%)	190 (7%)	14	18

All (190) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	40	ARG
1	A	41	LYS
1	A	51	ASN
1	A	66	HIS
1	A	73	GLU
1	A	90	LEU
1	A	91	GLU
1	A	92	ASN
1	A	110	ASP
1	A	125	ARG
1	A	140	ARG
1	A	141	GLN
1	A	170	ASN
1	A	184	ARG
1	A	207	VAL
1	A	246	LEU
1	A	253	ARG
1	A	254	VAL
1	A	272	ASN
1	A	276	LEU
1	A	303	VAL
1	A	336	ARG
1	A	385	CYS
1	A	388	GLN
1	A	413	ASP
1	A	436	LEU
1	A	440	THR
1	A	442	VAL

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Mol	Chain	Res	Type
1	A	448	GLU
1	A	482	LEU
1	A	514	LEU
1	A	520	ASN
1	A	523	LYS
1	A	536	LYS
1	A	543	LEU
1	A	561	LEU
1	A	581	ARG
1	A	597	ARG
1	A	603	VAL
1	A	658	ARG
1	A	673	LEU
1	A	679	ASN
1	A	689	MET
1	A	701	LEU
1	A	702	LEU
1	A	726	VAL
1	A	761	GLN
1	B	40	ARG
1	B	41	LYS
1	B	51	ASN
1	B	61	ARG
1	B	66	HIS
1	B	73	GLU
1	B	90	LEU
1	B	91	GLU
1	B	92	ASN
1	B	110	ASP
1	B	125	ARG
1	B	140	ARG
1	B	141	GLN
1	B	170	ASN
1	B	184	ARG
1	B	207	VAL
1	B	246	LEU
1	B	253	ARG
1	B	254	VAL
1	B	272	ASN
1	B	276	LEU
1	B	303	VAL
1	B	336	ARG

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Mol	Chain	Res	Type
1	B	385	CYS
1	B	388	GLN
1	B	413	ASP
1	B	425	MET
1	B	436	LEU
1	B	440	THR
1	B	442	VAL
1	B	448	GLU
1	B	472	CYS
1	B	482	LEU
1	B	514	LEU
1	B	520	ASN
1	B	523	LYS
1	B	536	LYS
1	B	543	LEU
1	B	561	LEU
1	B	581	ARG
1	B	597	ARG
1	B	603	VAL
1	B	658	ARG
1	B	673	LEU
1	B	679	ASN
1	B	689	MET
1	B	701	LEU
1	B	702	LEU
1	B	726	VAL
1	B	761	GLN
1	C	40	ARG
1	C	41	LYS
1	C	51	ASN
1	C	90	LEU
1	C	91	GLU
1	C	110	ASP
1	C	125	ARG
1	C	145	GLU
1	C	170	ASN
1	C	184	ARG
1	C	207	VAL
1	C	246	LEU
1	C	253	ARG
1	C	272	ASN
1	C	276	LEU

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Mol	Chain	Res	Type
1	C	293	MET
1	C	303	VAL
1	C	313	LEU
1	C	326	ASP
1	C	336	ARG
1	C	385	CYS
1	C	388	GLN
1	C	392	LYS
1	C	413	ASP
1	C	436	LEU
1	C	440	THR
1	C	448	GLU
1	C	482	LEU
1	C	507	VAL
1	C	514	LEU
1	C	523	LYS
1	C	536	LYS
1	C	543	LEU
1	C	561	LEU
1	C	566	TYR
1	C	581	ARG
1	C	597	ARG
1	C	603	VAL
1	C	658	ARG
1	C	679	ASN
1	C	689	MET
1	C	701	LEU
1	C	702	LEU
1	C	726	VAL
1	C	736	THR
1	C	761	GLN
1	D	40	ARG
1	D	41	LYS
1	D	51	ASN
1	D	90	LEU
1	D	91	GLU
1	D	110	ASP
1	D	125	ARG
1	D	145	GLU
1	D	170	ASN
1	D	184	ARG
1	D	207	VAL

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Mol	Chain	Res	Type
1	D	246	LEU
1	D	253	ARG
1	D	254	VAL
1	D	272	ASN
1	D	276	LEU
1	D	293	MET
1	D	303	VAL
1	D	313	LEU
1	D	326	ASP
1	D	336	ARG
1	D	385	CYS
1	D	388	GLN
1	D	392	LYS
1	D	413	ASP
1	D	436	LEU
1	D	440	THR
1	D	448	GLU
1	D	482	LEU
1	D	507	VAL
1	D	514	LEU
1	D	523	LYS
1	D	536	LYS
1	D	543	LEU
1	D	561	LEU
1	D	566	TYR
1	D	581	ARG
1	D	597	ARG
1	D	603	VAL
1	D	658	ARG
1	D	679	ASN
1	D	689	MET
1	D	701	LEU
1	D	702	LEU
1	D	726	VAL
1	D	736	THR
1	D	761	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (81) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	72	GLN
1	A	123	GLN

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Mol	Chain	Res	Type
1	A	169	ASN
1	A	170	ASN
1	A	247	GLN
1	A	272	ASN
1	A	314	GLN
1	A	345	HIS
1	A	369	ASN
1	A	435	GLN
1	A	483	HIS
1	A	487	ASN
1	A	533	HIS
1	A	572	ASN
1	A	586	GLN
1	A	612	GLN
1	A	679	ASN
1	A	694	ASN
1	A	704	HIS
1	A	718	GLN
1	A	731	GLN
1	A	761	GLN
1	B	66	HIS
1	B	72	GLN
1	B	169	ASN
1	B	170	ASN
1	B	247	GLN
1	B	272	ASN
1	B	314	GLN
1	B	345	HIS
1	B	369	ASN
1	B	377	ASN
1	B	435	GLN
1	B	483	HIS
1	B	487	ASN
1	B	533	HIS
1	B	572	ASN
1	B	612	GLN
1	B	679	ASN
1	B	694	ASN
1	B	704	HIS
1	B	718	GLN
1	B	761	GLN
1	C	72	GLN

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Mol	Chain	Res	Type
1	C	169	ASN
1	C	170	ASN
1	C	247	GLN
1	C	272	ASN
1	C	314	GLN
1	C	321	ASN
1	C	369	ASN
1	C	483	HIS
1	C	487	ASN
1	C	505	GLN
1	C	572	ASN
1	C	612	GLN
1	C	679	ASN
1	C	685	ASN
1	C	694	ASN
1	C	704	HIS
1	C	718	GLN
1	C	761	GLN
1	D	72	GLN
1	D	169	ASN
1	D	170	ASN
1	D	247	GLN
1	D	272	ASN
1	D	314	GLN
1	D	369	ASN
1	D	388	GLN
1	D	483	HIS
1	D	487	ASN
1	D	505	GLN
1	D	572	ASN
1	D	606	GLN
1	D	612	GLN
1	D	679	ASN
1	D	694	ASN
1	D	704	HIS
1	D	718	GLN
1	D	761	GLN

5.3.3 RNA

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 carbohydrates in this entry.

5.6 Ligand geometry (i)

1 ligand is 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	DLI	B	4000	-	34,34,34	1.61	9 (26%)	45,51,51	2.24	18 (40%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	DLI	B	4000	-	-	6/18/30/30	0/4/4/4

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	4000	DLI	C5-C6	3.57	1.43	1.37
2	B	4000	DLI	C5-C4	3.05	1.42	1.37
2	B	4000	DLI	C8-C7	-2.93	1.49	1.53
2	B	4000	DLI	C19-N18	2.93	1.41	1.35
2	B	4000	DLI	C3-C4	2.30	1.42	1.38
2	B	4000	DLI	C2-C1	2.18	1.41	1.37
2	B	4000	DLI	C25-C26	2.10	1.42	1.38
2	B	4000	DLI	C12-N11	2.05	1.49	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	4000	DLI	C23-C21	2.05	1.43	1.39

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	4000	DLI	C8-C7-C3	5.81	122.68	114.98
2	B	4000	DLI	C2-C3-C4	4.71	120.40	116.48
2	B	4000	DLI	C10-S1-C26	4.46	109.85	104.58
2	B	4000	DLI	C19-C20-C14	3.97	119.63	117.03
2	B	4000	DLI	C20-C19-N18	-3.88	117.11	122.16
2	B	4000	DLI	C27-C26-S1	3.85	122.13	119.06
2	B	4000	DLI	F15-C1-C6	3.33	126.52	118.43
2	B	4000	DLI	C17-N18-C19	3.32	120.25	115.74
2	B	4000	DLI	F15-C1-C2	-2.80	113.03	118.61
2	B	4000	DLI	N18-C17-N16	-2.79	124.23	128.60
2	B	4000	DLI	C25-C26-S1	-2.62	117.15	119.58
2	B	4000	DLI	C5-C4-C3	-2.54	120.78	123.83
2	B	4000	DLI	C12-N11-C8	2.50	114.96	111.67
2	B	4000	DLI	C20-C14-N11	-2.31	119.55	122.29
2	B	4000	DLI	O2-S1-C26	-2.28	106.39	108.25
2	B	4000	DLI	C17-N16-C14	2.24	116.90	114.94
2	B	4000	DLI	C3-C7-C9	-2.13	108.93	113.65
2	B	4000	DLI	F10-C4-C5	2.12	122.84	118.61

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	4000	DLI	C25-C26-S1-C10
2	B	4000	DLI	C27-C26-S1-C10
2	B	4000	DLI	C25-C26-S1-O2
2	B	4000	DLI	C27-C26-S1-O2
2	B	4000	DLI	C25-C26-S1-O1
2	B	4000	DLI	C27-C26-S1-O1

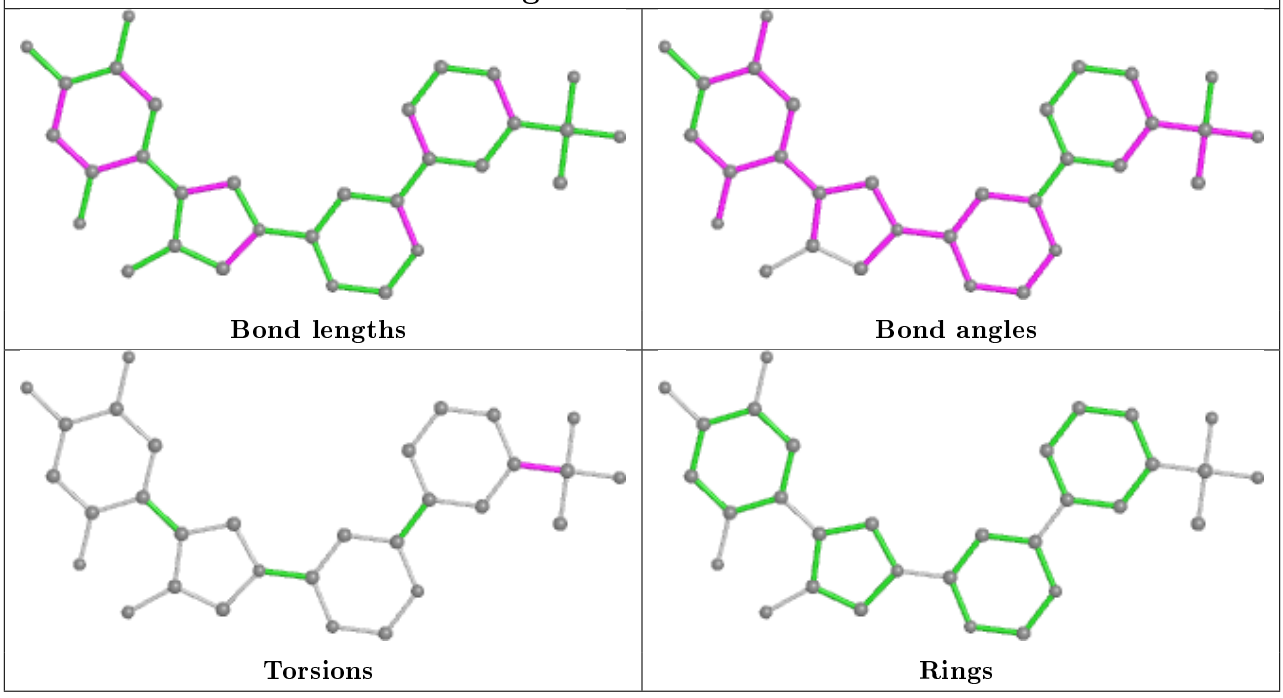
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	4000	DLI	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand DLI B 4000



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	726/726 (100%)	0.21	30 (4%) 37 44	15, 30, 71, 158	0
1	B	726/726 (100%)	0.47	66 (9%) 9 12	16, 31, 77, 132	0
1	C	726/726 (100%)	0.29	59 (8%) 12 16	16, 36, 82, 149	0
1	D	726/726 (100%)	0.29	54 (7%) 14 19	18, 35, 81, 135	0
All	All	2904/2904 (100%)	0.31	209 (7%) 15 20	15, 33, 79, 158	0

All (209) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	279	VAL	15.1
1	A	280	THR	14.7
1	A	277	SER	14.0
1	D	39	SER	11.4
1	A	282	ALA	11.1
1	C	39	SER	10.2
1	A	74	ASN	9.9
1	A	278	SER	8.9
1	B	39	SER	8.8
1	C	73	GLU	7.5
1	A	39	SER	7.1
1	B	73	GLU	6.8
1	C	105	TYR	6.6
1	B	71	LYS	6.5
1	A	281	ASN	6.3
1	D	99	GLY	6.0
1	C	98	PHE	5.9
1	C	92	ASN	5.8
1	D	93	SER	5.7
1	B	105	TYR	5.6
1	D	88	VAL	5.6

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Mol	Chain	Res	Type	RSRZ
1	B	89	PHE	5.6
1	C	138	ASN	5.5
1	C	71	LYS	5.5
1	A	73	GLU	5.4
1	B	90	LEU	5.2
1	B	40	ARG	5.2
1	B	91	GLU	5.2
1	D	98	PHE	5.1
1	B	96	ASP	5.0
1	D	71	LYS	5.0
1	C	88	VAL	4.8
1	A	276	LEU	4.7
1	D	97	GLU	4.6
1	B	95	PHE	4.5
1	B	280	THR	4.5
1	B	98	PHE	4.4
1	B	74	ASN	4.4
1	B	93	SER	4.4
1	C	95	PHE	4.3
1	B	111	GLY	4.3
1	D	96	ASP	4.3
1	B	277	SER	4.3
1	C	140	ARG	4.3
1	D	89	PHE	4.2
1	D	278	SER	4.2
1	D	91	GLU	4.2
1	C	100	HIS	4.2
1	A	333	SER	4.2
1	C	89	PHE	4.1
1	D	72	GLN	4.1
1	C	391	LYS	4.1
1	C	277	SER	4.1
1	D	73	GLU	4.1
1	B	75	ASN	4.1
1	C	74	ASN	4.1
1	D	92	ASN	4.1
1	B	341	VAL	4.0
1	C	94	THR	4.0
1	D	83	TYR	4.0
1	C	141	GLN	4.0
1	C	96	ASP	4.0
1	D	289	ALA	3.9

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Mol	Chain	Res	Type	RSRZ
1	A	40	ARG	3.9
1	B	72	GLN	3.8
1	B	92	ASN	3.8
1	D	141	GLN	3.8
1	C	142	LEU	3.8
1	D	74	ASN	3.8
1	C	90	LEU	3.8
1	B	97	GLU	3.7
1	B	76	ILE	3.7
1	B	94	THR	3.7
1	C	502	LYS	3.7
1	D	86	SER	3.6
1	C	137	LEU	3.6
1	D	336	ARG	3.6
1	D	279	VAL	3.5
1	D	342	ALA	3.5
1	C	40	ARG	3.5
1	B	278	SER	3.5
1	B	139	LYS	3.4
1	C	506	ASN	3.4
1	C	289	ALA	3.4
1	C	72	GLN	3.4
1	B	489	LYS	3.4
1	C	139	LYS	3.3
1	B	281	ASN	3.3
1	D	87	SER	3.3
1	A	90	LEU	3.3
1	A	72	GLN	3.2
1	D	40	ARG	3.2
1	D	90	LEU	3.2
1	C	91	GLU	3.2
1	D	276	LEU	3.1
1	C	102	ILE	3.1
1	C	333	SER	3.1
1	C	75	ASN	3.1
1	D	139	LYS	3.1
1	B	102	ILE	3.1
1	C	505	GLN	3.0
1	B	88	VAL	3.0
1	C	336	ARG	3.0
1	B	282	ALA	3.0
1	D	333	SER	2.9

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Mol	Chain	Res	Type	RSRZ
1	B	140	ARG	2.9
1	B	332	GLU	2.9
1	A	505	GLN	2.9
1	D	76	ILE	2.9
1	D	335	GLY	2.9
1	C	114	ILE	2.9
1	D	281	ASN	2.8
1	D	105	TYR	2.8
1	C	93	SER	2.8
1	D	94	THR	2.8
1	C	537	SER	2.7
1	B	78	VAL	2.7
1	B	83	TYR	2.7
1	C	392	LYS	2.7
1	A	92	ASN	2.7
1	C	99	GLY	2.7
1	B	77	LEU	2.7
1	D	77	LEU	2.7
1	B	342	ALA	2.7
1	D	85	ASN	2.7
1	C	143	ILE	2.6
1	C	390	ASP	2.6
1	C	147	ARG	2.6
1	A	342	ALA	2.6
1	D	334	SER	2.6
1	B	279	VAL	2.6
1	C	81	ALA	2.6
1	C	97	GLU	2.6
1	A	98	PHE	2.5
1	B	138	ASN	2.5
1	C	135	TYR	2.5
1	D	61	ARG	2.5
1	D	137	LEU	2.5
1	A	502	LYS	2.5
1	D	79	PHE	2.5
1	B	70	TYR	2.5
1	C	500	LEU	2.5
1	B	160	VAL	2.4
1	B	61	ARG	2.4
1	D	100	HIS	2.4
1	B	66	HIS	2.4
1	B	87	SER	2.4

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Mol	Chain	Res	Type	RSRZ
1	C	76	ILE	2.4
1	C	504	LEU	2.3
1	A	506	ASN	2.3
1	A	366	LEU	2.3
1	B	506	ASN	2.3
1	A	96	ASP	2.3
1	B	141	GLN	2.3
1	C	83	TYR	2.3
1	B	144	THR	2.3
1	C	144	THR	2.3
1	D	277	SER	2.3
1	B	505	GLN	2.3
1	D	502	LYS	2.3
1	A	114	ILE	2.3
1	B	114	ILE	2.3
1	B	289	ALA	2.3
1	C	101	SER	2.3
1	B	366	LEU	2.2
1	C	340	LEU	2.2
1	D	140	ARG	2.2
1	D	138	ASN	2.2
1	D	113	PHE	2.2
1	A	88	VAL	2.2
1	A	341	VAL	2.2
1	B	86	SER	2.2
1	C	87	SER	2.2
1	B	99	GLY	2.2
1	B	119	ASN	2.2
1	D	280	THR	2.2
1	D	358	ARG	2.2
1	B	442	VAL	2.2
1	A	94	THR	2.2
1	C	389	ILE	2.2
1	C	538	LYS	2.2
1	A	105	TYR	2.2
1	D	341	VAL	2.2
1	B	491	LEU	2.2
1	C	276	LEU	2.2
1	A	334	SER	2.2
1	B	101	SER	2.2
1	B	502	LYS	2.1
1	B	330	TYR	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	147	ARG	2.1
1	B	137	LEU	2.1
1	D	95	PHE	2.1
1	A	75	ASN	2.1
1	C	507	VAL	2.1
1	D	484	SER	2.1
1	B	41	LYS	2.1
1	B	499	ALA	2.1
1	D	78	VAL	2.1
1	D	498	SER	2.1
1	B	100	HIS	2.1
1	C	118	TYR	2.1
1	C	146	GLU	2.0
1	B	142	LEU	2.0
1	B	180	LEU	2.0
1	B	333	SER	2.0
1	D	340	LEU	2.0
1	A	93	SER	2.0
1	C	86	SER	2.0
1	B	507	VAL	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 carbohydrates in this entry.

6.4 Ligands (i)

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

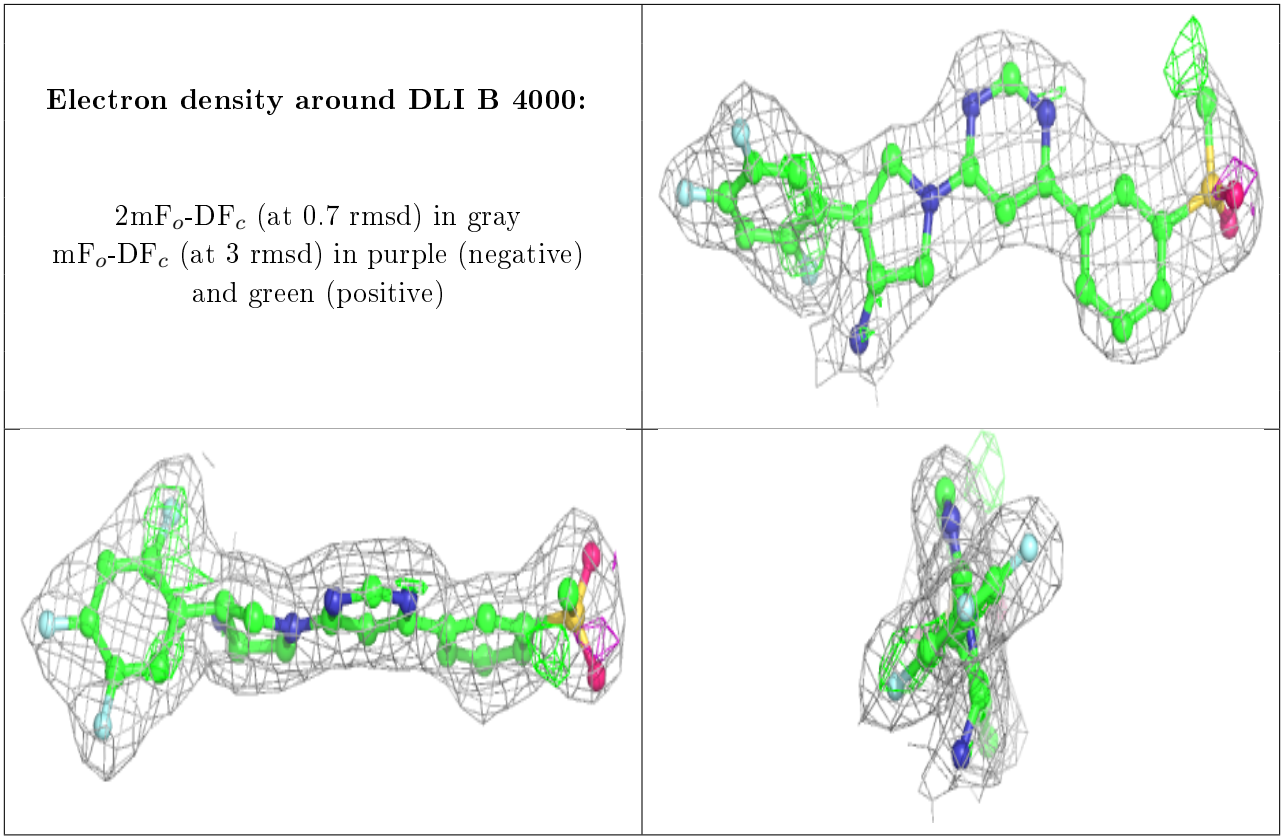
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	DLI	B	4000	31/31	0.92	0.29	40,40,40,40	0

The following is a graphical depiction of the model fit to experimental electron density of all

instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around DLI B 4000:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.