Full wwPDB X-ray Structure Validation Report (i)

Oct 30, 2023 – 05:38 PM EDT

PDB ID	:	8U6K
Title	:	Crystal Structure of HIV-1 Reverse Transcriptase in Complex with N-(2-(2-((6-cyanonaphthalen-1-yl)oxy)phenoxy)ethyl)-N-methylacrylamide (JLJ747), a non-nucleoside inhibitor
Authors	:	Prucha, G.; Henry, S.; Jorgensen, W.L.; Anderson, K.S.
Deposited on	:	2023-09-13
Resolution	:	2.72 Å(reported)

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

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
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)	:	2.36

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.72 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.272
Clashscore		23
Ramachandran outliers		0.2%
Sidechain outliers		5.8%
RSRZ outliers		3.7%

Worse ▮ *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
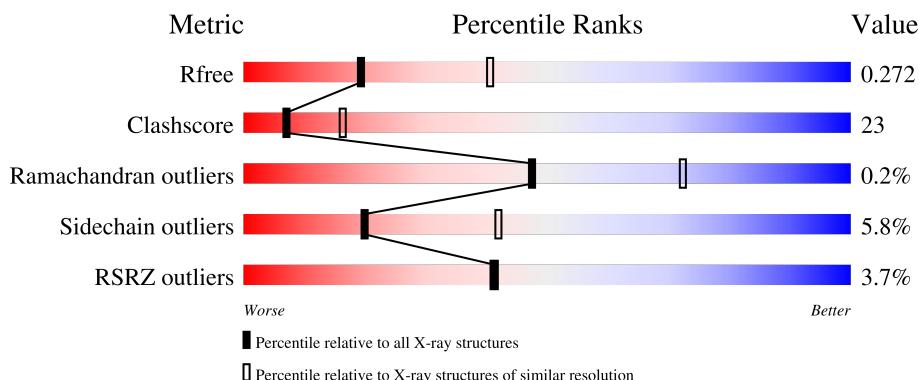
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3359 (2.74-2.70)
Clashscore	141614	3686 (2.74-2.70)
Ramachandran outliers	138981	3622 (2.74-2.70)
Sidechain outliers	138945	3623 (2.74-2.70)
RSRZ outliers	127900	3276 (2.74-2.70)

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	557	4% — 57% / 40% / ··
2	B	428	3% — 57% / 35% / · / 6%
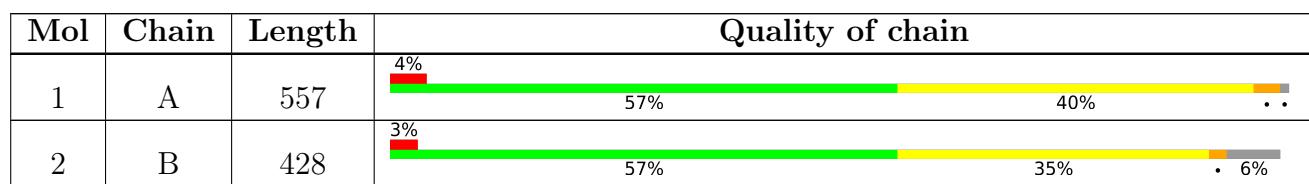
2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 7647 atoms, of which 20 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 Reverse transcriptase/ribonuclease H.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	551	4335	2802	719	807	7	0	0	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	MET	-	expression tag	UNP P03366
A	0	VAL	-	expression tag	UNP P03366
A	172	ALA	LYS	engineered mutation	UNP P03366
A	173	ALA	LYS	engineered mutation	UNP P03366
A	280	SER	CYS	engineered mutation	UNP P03366

- Molecule 2 is a protein called p51 RT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	403	3235	2104	529	596	6	0	1	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	280	SER	CYS	engineered mutation	UNP P03366

- Molecule 3 is N-(2-{2-[(6-cyanonaphthalen-1-yl)oxy]phenoxy}ethyl)-N-methylprop-2-en amide (three-letter code: VRF) (formula: $C_{23}H_{20}N_2O_3$) (labeled as "Ligand of Interest" by depositor).
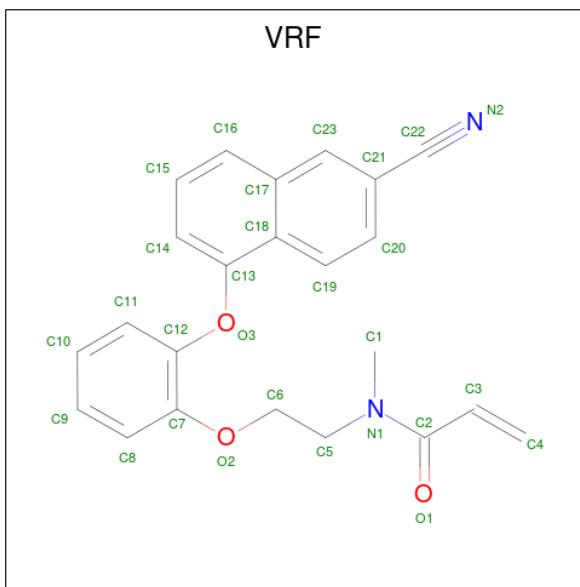
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	H	N	O	0	0
			48	23	20	2	3		

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Mg	0	0
			1	1		
4	B	1	Total	Mg	0	0
			1	1		

- Molecule 5 is PHOSPHATE ION (three-letter code: PO4) (formula: O_4P).
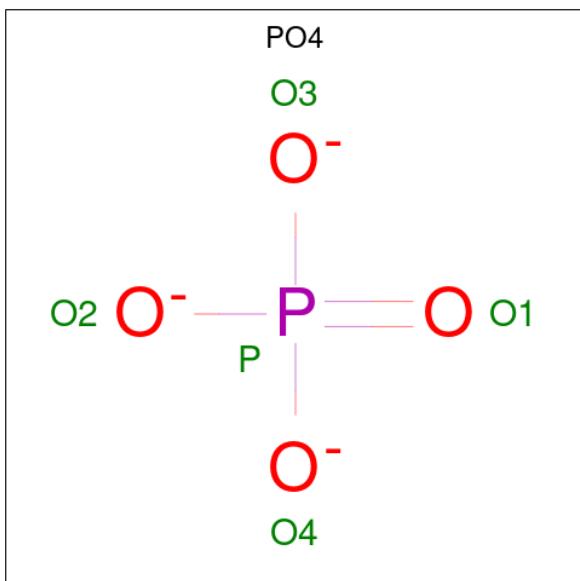
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 5	O 4	P 1	0	0

- Molecule 6 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	9	Total 9	O 9	0	0
6	B	13	Total 13	O 13	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Reverse transcriptase/ribonuclease H
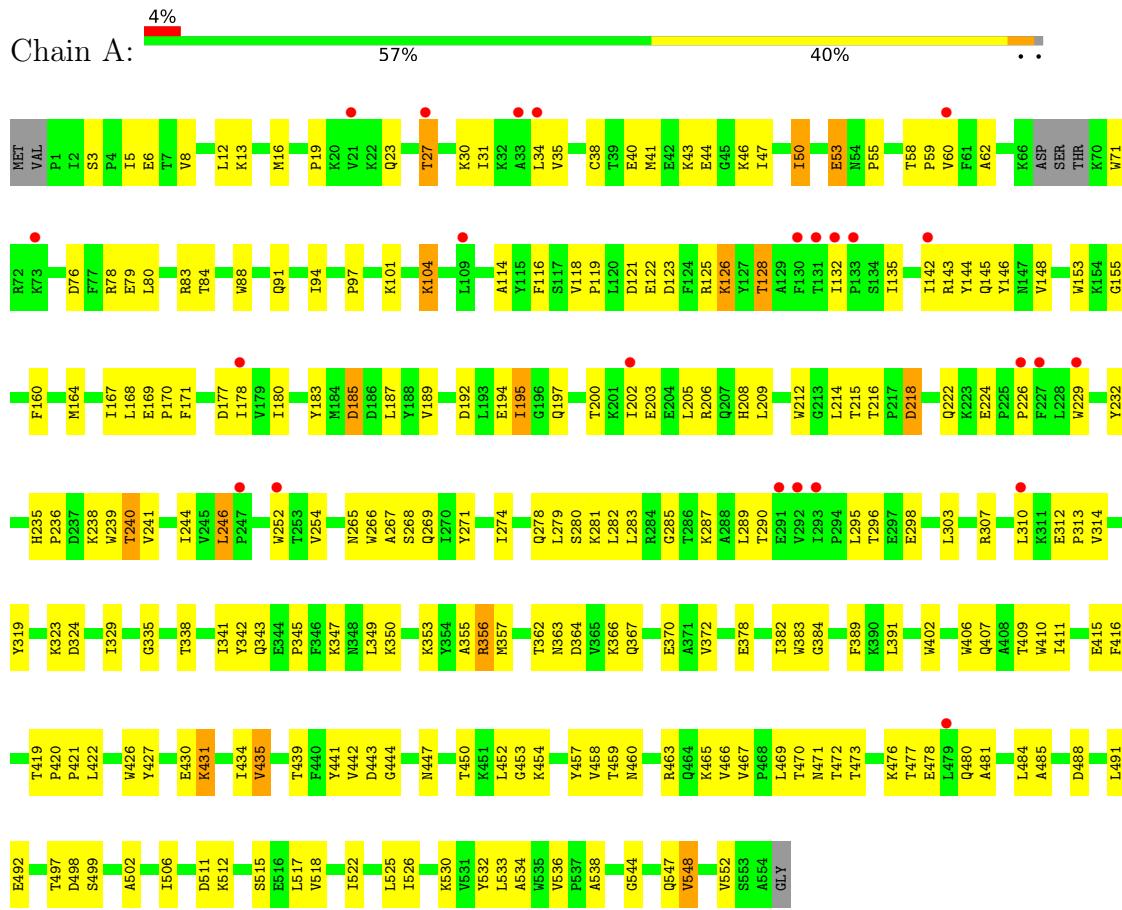
• Molecule 2: p51 RT
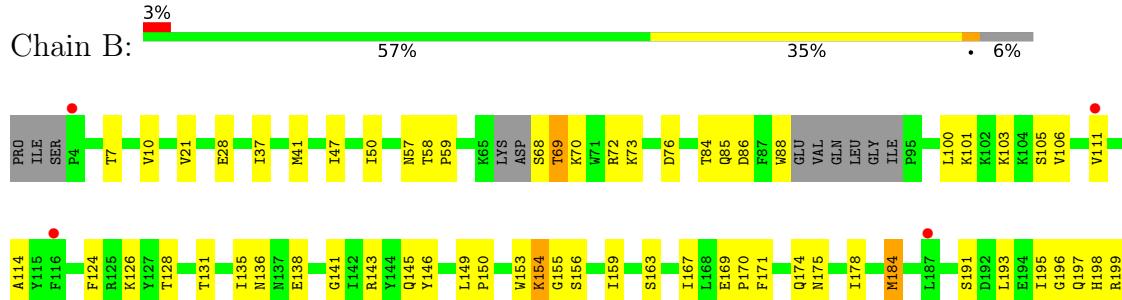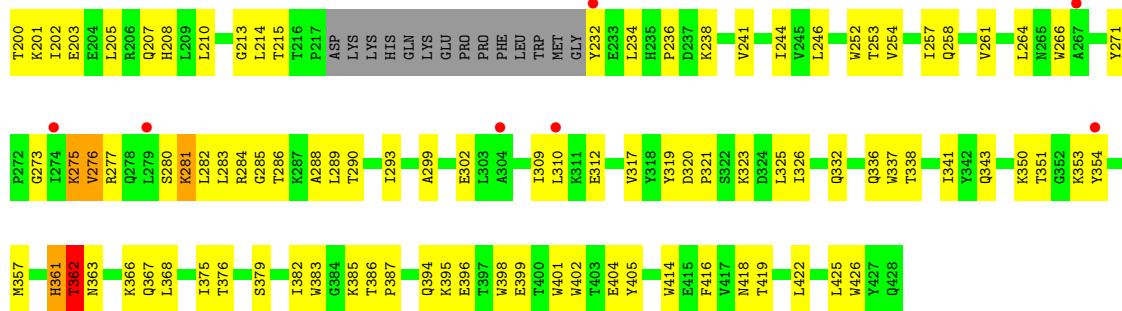
4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	222.13Å 68.38Å 103.54Å 90.00° 107.54° 90.00°	Depositor
Resolution (Å)	32.72 – 2.72 43.18 – 2.72	Depositor EDS
% Data completeness (in resolution range)	98.7 (32.72-2.72) 98.7 (43.18-2.72)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.24 (at 2.73Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487)	Depositor
R, R_{free}	0.220 , 0.276 0.223 , 0.272	Depositor DCC
R_{free} test set	1989 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	78.0	Xtriage
Anisotropy	0.219	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 51.6	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	7647	wwPDB-VP
Average B, all atoms (Å^2)	80.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.92% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, PO4, VRF

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	0.44	0/4449	0.61	0/6073
2	B	0.49	0/3329	0.65	0/4540
All	All	0.46	0/7778	0.63	0/10613

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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	4335	0	4239	207	0
2	B	3235	0	3156	152	0
3	A	28	20	0	1	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	5	0	0	0	0
6	A	9	0	0	1	0
6	B	13	0	0	0	0
All	All	7627	20	7395	342	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 23.

All (342) 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:A:472:THR:HG23	1:A:476:LYS:HB3	1.39	1.03
2:B:275:LYS:HD3	2:B:277:ARG:H	1.20	1.02
1:A:431:LYS:H	1:A:431:LYS:HD2	1.37	0.90
1:A:94:ILE:HG22	1:A:183:TYR:CE1	2.12	0.84
2:B:275:LYS:HE2	2:B:275:LYS:HA	1.60	0.84
1:A:406:TRP:CZ3	1:A:407:GLN:HG3	2.14	0.83
1:A:84:THR:HG21	1:A:153:TRP:HE1	1.44	0.83
2:B:175:ASN:OD1	2:B:201:LYS:HE2	1.79	0.83
1:A:31:ILE:HD12	1:A:135:ILE:HD13	1.61	0.82
1:A:406:TRP:CH2	2:B:418:ASN:HA	2.15	0.81
2:B:362:THR:HG22	2:B:367:GLN:HG2	1.61	0.81
1:A:114:ALA:HB1	1:A:160:PHE:CE2	2.16	0.80
1:A:406:TRP:HH2	2:B:418:ASN:HA	1.45	0.80
1:A:194:GLU:H	1:A:197:GLN:HE21	1.29	0.80
1:A:246:LEU:HD11	1:A:310:LEU:HD13	1.64	0.80
1:A:452:LEU:CD2	1:A:470:THR:HG22	2.12	0.79
2:B:254:VAL:HG13	2:B:283:LEU:HD22	1.65	0.79
2:B:101:LYS:O	2:B:236:PRO:HB2	1.84	0.78
1:A:406:TRP:CH2	1:A:407:GLN:HG3	2.18	0.78
2:B:275:LYS:HD3	2:B:277:ARG:N	1.99	0.78
2:B:143:ARG:HG2	2:B:143:ARG:HH11	1.49	0.77
2:B:135:ILE:O	2:B:138:GLU:HG3	1.82	0.77
2:B:275:LYS:HD3	2:B:276:VAL:H	1.50	0.77
2:B:257:ILE:HG22	2:B:283:LEU:HD11	1.68	0.76
1:A:454:LYS:HD2	1:A:552:VAL:O	1.87	0.75
2:B:275:LYS:CD	2:B:277:ARG:H	1.98	0.75
1:A:218:ASP:O	1:A:222:GLN:HG3	1.87	0.74
2:B:275:LYS:HG3	2:B:302:GLU:OE2	1.89	0.72
1:A:246:LEU:HD11	1:A:310:LEU:CD1	2.20	0.72
2:B:254:VAL:HG13	2:B:283:LEU:CD2	2.20	0.71
1:A:453:GLY:O	1:A:469:LEU:N	2.23	0.71
1:A:472:THR:CG2	1:A:476:LYS:HB3	2.18	0.71
2:B:72:ARG:HG2	2:B:73:LYS:N	2.06	0.71
2:B:171:PHE:CE2	2:B:205:LEU:HB2	2.26	0.71
2:B:362:THR:HG22	2:B:367:GLN:CG	2.21	0.71
1:A:76:ASP:OD1	1:A:78:ARG:HG3	1.89	0.71
1:A:266:TRP:O	1:A:269:GLN:HG2	1.90	0.71
1:A:167:ILE:HD13	1:A:212:TRP:HB3	1.72	0.70
1:A:171:PHE:HB2	1:A:208:HIS:CD2	2.27	0.70
1:A:472:THR:HG22	1:A:473:THR:N	2.07	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:335:GLY:HA2	1:A:367:GLN:HE22	1.56	0.70
1:A:202:ILE:O	1:A:206:ARG:HG3	1.91	0.70
1:A:34:LEU:HD21	1:A:62:ALA:HB2	1.74	0.70
1:A:472:THR:HG22	1:A:473:THR:H	1.54	0.69
2:B:246:LEU:CD1	2:B:264:LEU:HD21	2.21	0.69
2:B:395:LYS:HE3	2:B:399:GLU:OE2	1.91	0.69
1:A:522:ILE:O	1:A:526:ILE:HG13	1.93	0.69
2:B:379:SER:OG	2:B:387:PRO:HD3	1.93	0.69
1:A:533:LEU:HD12	1:A:534:ALA:H	1.58	0.68
2:B:21:VAL:O	2:B:57:ASN:ND2	2.25	0.68
1:A:240:THR:HG23	1:A:241:VAL:O	1.93	0.68
1:A:518:VAL:O	1:A:522:ILE:HG13	1.92	0.68
2:B:258:GLN:HA	2:B:261:VAL:HG12	1.76	0.68
1:A:472:THR:CG2	1:A:473:THR:H	2.08	0.67
1:A:19:PRO:HG3	1:A:80:LEU:HB2	1.75	0.67
1:A:122:GLU:HA	1:A:125:ARG:HD2	1.77	0.67
2:B:241:VAL:HG22	2:B:350:LYS:HA	1.75	0.67
1:A:366:LYS:O	1:A:370:GLU:HG3	1.94	0.67
1:A:31:ILE:O	1:A:35:VAL:HG23	1.94	0.67
2:B:163:SER:O	2:B:167:ILE:HG13	1.95	0.67
1:A:454:LYS:HG3	1:A:552:VAL:HG13	1.77	0.66
2:B:149:LEU:HD11	2:B:159:ILE:HG21	1.76	0.66
2:B:332:GLN:HG3	2:B:338:THR:HG23	1.78	0.66
1:A:515:SER:HB2	6:A:708:HOH:O	1.95	0.66
1:A:79:GLU:OE2	1:A:83:ARG:NH2	2.28	0.66
1:A:452:LEU:HD23	1:A:470:THR:HA	1.78	0.65
2:B:246:LEU:HD11	2:B:264:LEU:HD21	1.77	0.65
1:A:442:VAL:HB	1:A:481:ALA:HB1	1.79	0.65
1:A:27:THR:HG23	1:A:30:LYS:HD2	1.76	0.65
2:B:257:ILE:CG2	2:B:283:LEU:HD11	2.27	0.65
1:A:180:ILE:CG2	1:A:187:LEU:HD22	2.27	0.65
2:B:275:LYS:HD3	2:B:276:VAL:N	2.11	0.64
1:A:342:TYR:HA	1:A:349:LEU:CD2	2.27	0.64
1:A:282:LEU:HD21	1:A:296:THR:HG23	1.79	0.64
1:A:431:LYS:HD2	1:A:431:LYS:N	2.09	0.64
1:A:265:ASN:OD1	1:A:353:LYS:NZ	2.28	0.64
2:B:266:TRP:CZ3	2:B:426:TRP:HB3	2.33	0.64
2:B:319:TYR:OH	2:B:385:LYS:HE2	1.98	0.63
2:B:153:TRP:CZ3	2:B:155:GLY:HA3	2.33	0.63
1:A:254:VAL:HB	1:A:289:LEU:HA	1.81	0.63
1:A:125:ARG:HG2	1:A:146:TYR:O	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:342:TYR:HA	1:A:349:LEU:HD22	1.80	0.63
2:B:50:ILE:HG21	2:B:145:GLN:HB3	1.81	0.62
1:A:419:THR:HG22	1:A:419:THR:O	1.99	0.62
2:B:354[A]:TYR:HE2	2:B:375:ILE:HG13	1.64	0.62
1:A:335:GLY:H	1:A:512:LYS:HE2	1.63	0.62
1:A:402:TRP:CE3	1:A:411:ILE:HG13	2.35	0.62
1:A:441:TYR:CE2	1:A:544:GLY:HA3	2.35	0.62
1:A:452:LEU:HD22	1:A:470:THR:HG22	1.82	0.61
1:A:473:THR:HG23	1:A:476:LYS:H	1.65	0.61
2:B:425:LEU:HD23	2:B:426:TRP:H	1.65	0.61
1:A:88:TRP:NE1	2:B:143:ARG:HD2	2.15	0.61
2:B:37:ILE:O	2:B:41:MET:HG3	2.01	0.61
2:B:394:GLN:HG2	2:B:396:GLU:OE1	2.01	0.61
2:B:195:ILE:HD11	2:B:199:ARG:HE	1.67	0.60
1:A:460:ASN:HA	2:B:286:THR:HG22	1.82	0.60
1:A:441:TYR:O	1:A:548:VAL:HG21	2.02	0.60
1:A:252:TRP:CD1	1:A:295:LEU:HD11	2.37	0.60
2:B:361:HIS:O	2:B:362:THR:C	2.40	0.60
2:B:72:ARG:HG2	2:B:73:LYS:H	1.67	0.59
1:A:41:MET:CE	1:A:47:ILE:HD13	2.32	0.59
1:A:104:LYS:HB3	1:A:192:ASP:HA	1.83	0.59
1:A:420:PRO:HA	1:A:422:LEU:N	2.18	0.59
2:B:395:LYS:HB2	2:B:416:PHE:CD2	2.36	0.59
2:B:282:LEU:HD11	2:B:299:ALA:CB	2.33	0.59
1:A:195:ILE:O	1:A:195:ILE:HD12	2.03	0.59
2:B:281:LYS:HD3	2:B:284:ARG:CZ	2.33	0.59
1:A:180:ILE:HG12	1:A:189:VAL:HG13	1.84	0.58
2:B:47:ILE:HG22	2:B:146:TYR:HA	1.85	0.58
2:B:100:LEU:HD11	2:B:106:VAL:CG2	2.34	0.58
1:A:79:GLU:OE2	1:A:83:ARG:NE	2.37	0.58
1:A:118:VAL:HG13	1:A:119:PRO:HD2	1.84	0.58
1:A:533:LEU:HD12	1:A:534:ALA:N	2.18	0.58
1:A:378:GLU:HG2	1:A:382:ILE:HD12	1.85	0.58
1:A:46:LYS:HZ2	1:A:116:PHE:HB3	1.69	0.58
1:A:97:PRO:HG2	1:A:232:TYR:CD2	2.40	0.57
2:B:84:THR:O	2:B:86:ASP:N	2.37	0.57
2:B:143:ARG:HG2	2:B:143:ARG:NH1	2.19	0.57
1:A:38:CYS:SG	1:A:132:ILE:HD11	2.44	0.56
1:A:435:VAL:HG22	2:B:290:THR:HG21	1.87	0.56
1:A:443:ASP:O	1:A:481:ALA:HB2	2.06	0.56
2:B:149:LEU:HD11	2:B:159:ILE:CG2	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:536:VAL:HG12	2:B:258:GLN:HB3	1.87	0.56
1:A:50:ILE:HG21	1:A:145:GLN:OE1	2.06	0.56
1:A:420:PRO:HA	1:A:421:PRO:C	2.27	0.56
2:B:128:THR:OG1	2:B:146:TYR:HB2	2.05	0.56
1:A:312:GLU:OE2	1:A:313:PRO:HD2	2.06	0.56
1:A:439:THR:HG23	2:B:289:LEU:HG	1.88	0.55
1:A:218:ASP:OD1	1:A:218:ASP:N	2.39	0.55
2:B:203:GLU:OE1	2:B:203:GLU:HA	2.05	0.55
2:B:266:TRP:CE3	2:B:426:TRP:HB3	2.42	0.55
1:A:356:ARG:NH2	1:A:357:MET:HB2	2.22	0.55
1:A:465:LYS:O	1:A:466:VAL:HG23	2.07	0.55
1:A:79:GLU:HG3	1:A:83:ARG:HE	1.71	0.55
1:A:285:GLY:O	1:A:287:LYS:HG2	2.07	0.55
2:B:275:LYS:HE2	2:B:275:LYS:CA	2.30	0.55
2:B:350:LYS:HG2	2:B:351:THR:N	2.21	0.55
2:B:170:PRO:HB2	2:B:208:HIS:CE1	2.41	0.55
1:A:415:GLU:HG3	1:A:415:GLU:O	2.07	0.55
1:A:364:ASP:OD1	1:A:512:LYS:NZ	2.40	0.54
1:A:168:LEU:HD11	1:A:187:LEU:HD21	1.90	0.54
1:A:209:LEU:HB3	1:A:214:LEU:HB2	1.89	0.54
2:B:195:ILE:HD11	2:B:199:ARG:NE	2.23	0.54
1:A:23:GLN:HE22	1:A:60:VAL:H	1.54	0.54
2:B:354[A]:TYR:CE2	2:B:375:ILE:HG13	2.43	0.54
2:B:366:LYS:HG3	2:B:405:TYR:CD2	2.43	0.54
1:A:343:GLN:HG3	1:A:349:LEU:HD21	1.89	0.54
1:A:439:THR:CG2	2:B:289:LEU:HG	2.39	0.53
2:B:100:LEU:HD11	2:B:106:VAL:HG21	1.90	0.53
1:A:34:LEU:CD2	1:A:62:ALA:HB2	2.37	0.53
2:B:275:LYS:CD	2:B:276:VAL:H	2.18	0.53
1:A:203:GLU:OE2	1:A:206:ARG:NH1	2.39	0.53
2:B:153:TRP:CE3	2:B:155:GLY:HA3	2.44	0.53
1:A:406:TRP:CE3	2:B:419:THR:HB	2.43	0.53
1:A:434:ILE:HD13	1:A:530:LYS:HB2	1.90	0.53
1:A:59:PRO:HG2	1:A:76:ASP:HB3	1.91	0.53
2:B:84:THR:HG21	2:B:153:TRP:HE1	1.74	0.53
2:B:210:LEU:O	2:B:213:GLY:N	2.33	0.53
1:A:12:LEU:HD23	1:A:84:THR:HA	1.91	0.53
2:B:257:ILE:O	2:B:261:VAL:HG12	2.09	0.53
1:A:382:ILE:O	2:B:136:ASN:HB2	2.09	0.53
1:A:46:LYS:NZ	1:A:116:PHE:HB3	2.24	0.52
1:A:402:TRP:HB2	1:A:409:THR:HG21	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:472:THR:CG2	1:A:473:THR:N	2.67	0.52
2:B:232:TYR:CE2	2:B:234:LEU:HD21	2.45	0.52
2:B:252:TRP:HB3	2:B:257:ILE:HD11	1.92	0.52
2:B:319:TYR:CZ	2:B:321:PRO:HA	2.44	0.52
1:A:426:TRP:O	1:A:427:TYR:HB3	2.09	0.52
2:B:246:LEU:HD13	2:B:264:LEU:HD21	1.92	0.52
1:A:31:ILE:HD12	1:A:135:ILE:CD1	2.37	0.52
2:B:425:LEU:H	2:B:425:LEU:CD2	2.23	0.52
1:A:53:GLU:O	1:A:55:PRO:HD3	2.09	0.51
2:B:210:LEU:CD2	2:B:215:THR:HA	2.40	0.51
2:B:258:GLN:HA	2:B:261:VAL:CG1	2.40	0.51
2:B:401:TRP:HE3	2:B:404:GLU:HG3	1.76	0.51
1:A:143:ARG:HG3	1:A:143:ARG:HH11	1.76	0.51
2:B:131:THR:CG2	2:B:141:GLY:HA3	2.41	0.51
1:A:268:SER:HB3	1:A:274:ILE:HB	1.93	0.50
1:A:295:LEU:HD12	1:A:295:LEU:H	1.75	0.50
2:B:341:ILE:HD11	2:B:375:ILE:HG23	1.94	0.50
2:B:149:LEU:HD13	2:B:156:SER:HA	1.93	0.50
2:B:207:GLN:HA	2:B:207:GLN:OE1	2.12	0.50
2:B:126:LYS:HA	2:B:145:GLN:OE1	2.12	0.50
1:A:447:ASN:OD1	1:A:450:THR:HG23	2.12	0.50
1:A:515:SER:OG	1:A:518:VAL:HG23	2.12	0.49
1:A:467:VAL:HG21	1:A:484:LEU:HD13	1.93	0.49
1:A:303:LEU:O	1:A:307:ARG:HG3	2.11	0.49
1:A:335:GLY:N	1:A:512:LYS:HE2	2.26	0.49
1:A:13:LYS:O	1:A:16:MET:HB2	2.13	0.49
2:B:241:VAL:CG2	2:B:350:LYS:HA	2.41	0.49
2:B:254:VAL:HG21	2:B:288:ALA:O	2.12	0.49
2:B:325:LEU:HD23	2:B:343:GLN:HG2	1.95	0.49
1:A:177:ASP:C	1:A:178:ILE:HD12	2.32	0.49
1:A:180:ILE:HG21	1:A:187:LEU:HD22	1.93	0.49
1:A:458:VAL:HA	1:A:463:ARG:O	2.13	0.49
1:A:335:GLY:O	1:A:355:ALA:HA	2.13	0.48
2:B:271:TYR:HE2	2:B:312:GLU:O	1.96	0.48
1:A:40:GLU:O	1:A:44:GLU:HG3	2.12	0.48
1:A:427:TYR:CE1	1:A:525:LEU:HD13	2.48	0.48
1:A:303:LEU:O	1:A:303:LEU:HD12	2.13	0.48
2:B:68:SER:C	2:B:70:LYS:H	2.17	0.48
2:B:195:ILE:HG23	2:B:196:GLY:N	2.29	0.48
1:A:94:ILE:HD12	1:A:229:TRP:CH2	2.49	0.48
1:A:356:ARG:NE	1:A:356:ARG:HA	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:398:TRP:O	2:B:402:TRP:HD1	1.97	0.48
2:B:191:SER:HB2	2:B:193:LEU:HG	1.96	0.48
1:A:349:LEU:HD22	1:A:349:LEU:H	1.77	0.48
2:B:114:ALA:HB2	2:B:214:LEU:HG	1.95	0.48
2:B:336:GLN:OE1	2:B:353:LYS:HD2	2.14	0.48
2:B:363:ASN:ND2	2:B:366:LYS:HB2	2.28	0.48
1:A:79:GLU:O	1:A:83:ARG:HG3	2.14	0.48
1:A:498:ASP:HB2	1:A:538:ALA:HB2	1.96	0.48
2:B:214:LEU:C	2:B:214:LEU:HD23	2.34	0.48
2:B:252:TRP:HB3	2:B:257:ILE:CD1	2.44	0.48
1:A:88:TRP:CE2	2:B:143:ARG:HD2	2.48	0.48
1:A:442:VAL:CG1	1:A:485:ALA:HB2	2.44	0.48
2:B:58:THR:HG23	2:B:76:ASP:O	2.13	0.47
1:A:236:PRO:HA	3:A:601:VRF:C3	2.44	0.47
1:A:5:ILE:HD12	1:A:6:GLU:H	1.79	0.47
1:A:497:THR:HG22	1:A:533:LEU:HD11	1.97	0.47
1:A:58:THR:HG23	1:A:76:ASP:O	2.13	0.47
1:A:434:ILE:HD13	1:A:530:LYS:CB	2.45	0.47
1:A:329:ILE:HD12	1:A:391:LEU:CD2	2.45	0.47
2:B:193:LEU:HD13	2:B:197:GLN:HB3	1.96	0.47
1:A:160:PHE:CD1	1:A:160:PHE:C	2.88	0.47
1:A:185:ASP:OD1	1:A:185:ASP:N	2.47	0.47
1:A:324:ASP:O	1:A:343:GLN:HG2	2.15	0.47
2:B:244:ILE:HB	2:B:310:LEU:HD22	1.97	0.47
2:B:376:THR:HG23	2:B:386:THR:HG22	1.97	0.47
1:A:126:LYS:NZ	1:A:126:LYS:HB3	2.29	0.47
1:A:441:TYR:CD2	1:A:544:GLY:C	2.88	0.47
1:A:8:VAL:O	1:A:121:ASP:HB2	2.14	0.47
1:A:101:LYS:HE2	1:A:101:LYS:HB2	1.74	0.46
2:B:258:GLN:CA	2:B:261:VAL:HG12	2.43	0.46
1:A:547:GLN:NE2	2:B:285:GLY:O	2.49	0.46
2:B:257:ILE:HG22	2:B:283:LEU:CD1	2.43	0.46
2:B:425:LEU:HD23	2:B:426:TRP:N	2.29	0.46
2:B:317:VAL:HG13	2:B:317:VAL:O	2.16	0.46
1:A:443:ASP:OD1	1:A:444:GLY:N	2.41	0.46
1:A:454:LYS:CG	1:A:552:VAL:HG13	2.45	0.46
2:B:425:LEU:HD23	2:B:425:LEU:N	2.30	0.46
1:A:94:ILE:HG22	1:A:183:TYR:HE1	1.71	0.46
2:B:169:GLU:HB3	2:B:170:PRO:HD3	1.98	0.46
1:A:79:GLU:CG	1:A:83:ARG:HE	2.29	0.46
1:A:435:VAL:CA	2:B:290:THR:HG21	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:273:GLY:HA3	2:B:309:ILE:HD13	1.98	0.46
1:A:153:TRP:CZ3	1:A:155:GLY:HA3	2.50	0.46
2:B:28:GLU:HB2	2:B:135:ILE:HD11	1.98	0.46
1:A:246:LEU:N	1:A:246:LEU:HD12	2.31	0.46
1:A:384:GLY:HA3	2:B:135:ILE:HD13	1.97	0.46
2:B:184:MET:HE3	2:B:184:MET:HA	1.98	0.45
1:A:491:LEU:HA	1:A:491:LEU:HD23	1.71	0.45
1:A:235:HIS:HB2	1:A:238:LYS:HG3	1.99	0.45
2:B:84:THR:C	2:B:86:ASP:H	2.19	0.45
2:B:191:SER:OG	2:B:198:HIS:ND1	2.31	0.45
1:A:226:PRO:HB3	1:A:235:HIS:CD2	2.52	0.45
1:A:457:TYR:OH	1:A:488:ASP:OD2	2.30	0.45
1:A:416:PHE:HZ	1:A:422:LEU:CD1	2.30	0.45
1:A:41:MET:HE3	1:A:47:ILE:HD13	1.98	0.45
1:A:341:ILE:HG21	1:A:383:TRP:CH2	2.52	0.45
1:A:502:ALA:O	1:A:506:ILE:HG12	2.16	0.45
1:A:79:GLU:OE2	1:A:83:ARG:CZ	2.65	0.44
2:B:100:LEU:HD11	2:B:106:VAL:HG22	1.99	0.44
1:A:114:ALA:HB1	1:A:160:PHE:CZ	2.50	0.44
1:A:171:PHE:CZ	1:A:205:LEU:HB2	2.53	0.44
1:A:271:TYR:CE1	1:A:314:VAL:HG23	2.51	0.44
2:B:253:THR:O	2:B:257:ILE:HD13	2.18	0.44
1:A:478:GLU:HG3	1:A:499:SER:HB2	1.98	0.44
1:A:197:GLN:O	1:A:200:THR:N	2.50	0.44
1:A:279:LEU:O	1:A:282:LEU:HB2	2.17	0.44
1:A:410:TRP:HZ3	2:B:405:TYR:HE1	1.64	0.44
1:A:362:THR:HG22	1:A:512:LYS:HG3	2.00	0.44
1:A:23:GLN:OE1	1:A:59:PRO:HA	2.18	0.43
2:B:210:LEU:HD23	2:B:215:THR:HA	1.99	0.43
1:A:125:ARG:O	1:A:128:THR:OG1	2.35	0.43
1:A:335:GLY:HA2	1:A:367:GLN:NE2	2.30	0.43
1:A:478:GLU:CD	1:A:499:SER:HB2	2.38	0.43
1:A:3:SER:HB3	1:A:5:ILE:HG22	1.99	0.43
1:A:441:TYR:CD2	1:A:544:GLY:HA3	2.53	0.43
1:A:402:TRP:HB2	1:A:409:THR:CG2	2.47	0.43
1:A:457:TYR:CE2	1:A:484:LEU:HG	2.54	0.43
1:A:80:LEU:O	1:A:84:THR:HG23	2.17	0.43
2:B:422:LEU:HD12	2:B:422:LEU:HA	1.81	0.43
1:A:123:ASP:O	1:A:126:LYS:HE2	2.18	0.43
1:A:164:MET:CE	1:A:214:LEU:HD13	2.48	0.43
1:A:267:ALA:HB1	1:A:271:TYR:CD2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:10:VAL:HG11	2:B:153:TRP:CH2	2.54	0.43
2:B:337:TRP:CZ3	2:B:368:LEU:HD13	2.53	0.43
1:A:214:LEU:HD23	1:A:214:LEU:HA	1.77	0.43
2:B:103:LYS:HD3	2:B:103:LYS:HA	1.87	0.43
2:B:320:ASP:OD2	2:B:323:LYS:HE2	2.19	0.43
2:B:362:THR:O	2:B:367:GLN:NE2	2.52	0.43
1:A:94:ILE:CG2	1:A:183:TYR:CE1	2.95	0.42
1:A:118:VAL:O	1:A:148:VAL:HB	2.19	0.42
1:A:239:TRP:HZ2	1:A:349:LEU:O	2.02	0.42
1:A:472:THR:HG22	1:A:477:THR:HG23	2.01	0.42
2:B:111:VAL:HG23	2:B:111:VAL:O	2.18	0.42
2:B:254:VAL:HG12	2:B:258:GLN:NE2	2.34	0.42
1:A:280:SER:O	1:A:283:LEU:N	2.48	0.42
1:A:458:VAL:HG22	1:A:548:VAL:HG22	2.01	0.42
1:A:169:GLU:N	1:A:170:PRO:HD2	2.35	0.42
1:A:410:TRP:CD1	1:A:410:TRP:C	2.92	0.42
2:B:195:ILE:HG23	2:B:196:GLY:H	1.85	0.42
1:A:372:VAL:HG13	1:A:389:PHE:CZ	2.55	0.42
2:B:146:TYR:CD1	2:B:150:PRO:HB3	2.55	0.42
1:A:27:THR:CG2	1:A:30:LYS:HD2	2.49	0.42
1:A:492:GLU:HA	1:A:530:LYS:O	2.20	0.42
1:A:430:GLU:HB2	1:A:532:TYR:HB2	2.02	0.42
2:B:28:GLU:HB2	2:B:135:ILE:CD1	2.49	0.42
2:B:178:ILE:HD11	2:B:201:LYS:HG2	2.02	0.42
2:B:425:LEU:HD23	2:B:425:LEU:H	1.84	0.42
1:A:252:TRP:HD1	1:A:295:LEU:HD11	1.82	0.41
2:B:198:HIS:O	2:B:202:ILE:HG12	2.20	0.41
2:B:253:THR:O	2:B:257:ILE:CD1	2.68	0.41
2:B:319:TYR:HH	2:B:385:LYS:HE2	1.84	0.41
1:A:101:LYS:HA	1:A:319:TYR:O	2.20	0.41
1:A:323:LYS:HB2	1:A:343:GLN:NE2	2.35	0.41
1:A:476:LYS:HE2	1:A:517:LEU:HD22	2.02	0.41
1:A:356:ARG:HA	1:A:356:ARG:HE	1.84	0.41
2:B:85:GLN:HA	2:B:154:LYS:NZ	2.35	0.41
2:B:293:ILE:N	2:B:293:ILE:HD12	2.36	0.41
2:B:422:LEU:O	2:B:425:LEU:HD21	2.20	0.41
1:A:271:TYR:O	1:A:274:ILE:HD13	2.19	0.41
1:A:457:TYR:HE2	1:A:484:LEU:HG	1.86	0.41
2:B:69:THR:O	2:B:69:THR:HG23	2.20	0.41
1:A:416:PHE:CZ	1:A:422:LEU:HD13	2.55	0.41
2:B:84:THR:CG2	2:B:124:PHE:HZ	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:142:ILE:HG22	1:A:144:TYR:CE1	2.55	0.41
1:A:363:ASN:HA	1:A:511:ASP:OD1	2.20	0.41
2:B:425:LEU:CD2	2:B:425:LEU:N	2.83	0.41
1:A:281:LYS:HE2	1:A:281:LYS:HB3	1.81	0.41
1:A:435:VAL:HA	2:B:290:THR:HG21	2.03	0.41
1:A:350:LYS:HB2	1:A:350:LYS:HE2	1.92	0.41
2:B:58:THR:HA	2:B:59:PRO:HD3	1.97	0.41
1:A:406:TRP:HZ2	2:B:418:ASN:ND2	2.19	0.41
2:B:362:THR:HA	2:B:366:LYS:HD3	2.03	0.40
2:B:382:ILE:HG22	2:B:383:TRP:CD2	2.56	0.40
1:A:126:LYS:HB3	1:A:126:LYS:HZ2	1.86	0.40
1:A:278:GLN:HG3	1:A:298:GLU:HB3	2.03	0.40
2:B:257:ILE:CG2	2:B:283:LEU:CD1	2.99	0.40
2:B:100:LEU:CD1	2:B:106:VAL:CG2	3.00	0.40
2:B:275:LYS:HA	2:B:275:LYS:CE	2.42	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	547/557 (98%)	502 (92%)	45 (8%)	0	100	100
2	B	396/428 (92%)	358 (90%)	36 (9%)	2 (0%)	29	53
All	All	943/985 (96%)	860 (91%)	81 (9%)	2 (0%)	47	72

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	361	HIS
2	B	362	THR

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	454/495 (92%)	425 (94%)	29 (6%)	17	37
2	B	342/390 (88%)	325 (95%)	17 (5%)	24	49
All	All	796/885 (90%)	750 (94%)	46 (6%)	20	42

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	27	THR
1	A	43	LYS
1	A	50	ILE
1	A	53	GLU
1	A	71	TRP
1	A	91	GLN
1	A	104	LYS
1	A	126	LYS
1	A	128	THR
1	A	185	ASP
1	A	195	ILE
1	A	215	THR
1	A	216	THR
1	A	218	ASP
1	A	224	GLU
1	A	240	THR
1	A	244	ILE
1	A	246	LEU
1	A	290	THR
1	A	338	THR
1	A	345	PRO
1	A	347	LYS
1	A	356	ARG
1	A	431	LYS
1	A	435	VAL
1	A	459	THR
1	A	471	ASN

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Mol	Chain	Res	Type
1	A	480	GLN
1	A	548	VAL
2	B	7	THR
2	B	69	THR
2	B	88	TRP
2	B	105	SER
2	B	154	LYS
2	B	174	GLN
2	B	184	MET
2	B	200	THR
2	B	238	LYS
2	B	275	LYS
2	B	276	VAL
2	B	280	SER
2	B	281	LYS
2	B	326	ILE
2	B	357	MET
2	B	362	THR
2	B	414	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	197	GLN
1	A	208	HIS
1	A	336	GLN
1	A	340	GLN
1	A	367	GLN
2	B	255	ASN
2	B	418	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
5	PO4	A	603	-	4,4,4	1.73	0	6,6,6	0.79	0
3	VRF	A	601	-	30,30,30	1.63	2 (6%)	39,40,40	1.44	6 (15%)

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
3	VRF	A	601	-	-	7/18/18/18	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	601	VRF	C2-N1	6.48	1.44	1.35
3	A	601	VRF	C21-C22	3.66	1.52	1.44

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	601	VRF	C1-N1-C5	4.34	124.70	115.89
3	A	601	VRF	C6-C5-N1	-2.77	105.68	112.29
3	A	601	VRF	C13-C18-C17	2.63	121.31	118.01
3	A	601	VRF	C4-C3-C2	-2.44	116.33	121.33
3	A	601	VRF	O2-C7-C12	2.35	120.59	115.73
3	A	601	VRF	O2-C7-C8	-2.21	119.18	123.97

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	601	VRF	N1-C5-C6-O2
3	A	601	VRF	C5-C6-O2-C7
3	A	601	VRF	C8-C7-O2-C6
3	A	601	VRF	N1-C2-C3-C4
3	A	601	VRF	C12-C7-O2-C6
3	A	601	VRF	O1-C2-C3-C4
3	A	601	VRF	C7-C12-O3-C13

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	601	VRF	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 VRF A 601

Bond lengths — Bond angles — Torsions — Rings
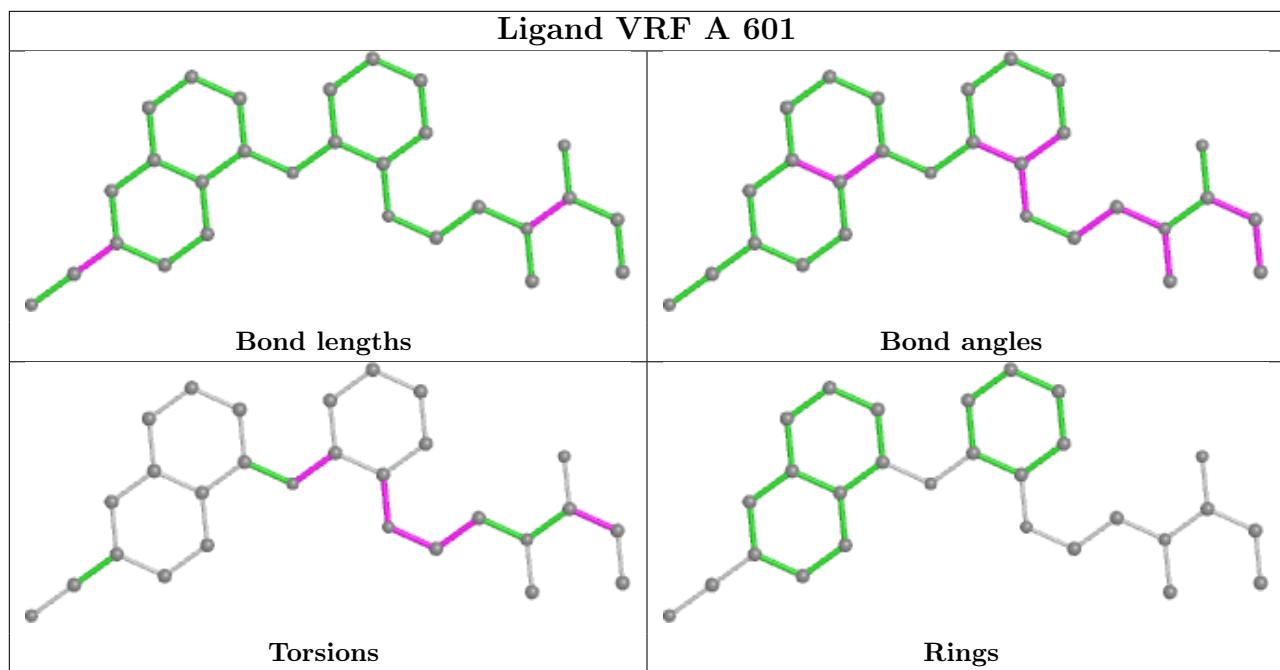
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2		OWAB(Å^2)	Q<0.9
1	A	551/557 (98%)	0.18	24 (4%) 34	33	54, 82, 114, 140	0
2	B	403/428 (94%)	0.11	11 (2%) 54	55	53, 75, 108, 130	0
All	All	954/985 (96%)	0.15	35 (3%) 41	41	53, 79, 111, 140	0

All (35) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	4	PRO	4.4
1	A	133	PRO	4.3
2	B	279	LEU	4.2
1	A	293	ILE	4.2
1	A	34	LEU	3.9
2	B	232	TYR	3.8
1	A	252	TRP	3.5
1	A	247	PRO	3.1
1	A	202	ILE	2.9
2	B	304	ALA	2.8
1	A	226	PRO	2.7
2	B	274	ILE	2.7
1	A	27	THR	2.7
1	A	33	ALA	2.7
1	A	132	ILE	2.7
1	A	227	PHE	2.6
2	B	116	PHE	2.6
2	B	267	ALA	2.5
1	A	178	ILE	2.5
2	B	310	LEU	2.4
1	A	142	ILE	2.4
1	A	109	LEU	2.4
1	A	130	PHE	2.4
1	A	291	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	187	LEU	2.2
1	A	479	LEU	2.2
2	B	354[A]	TYR	2.2
1	A	21	VAL	2.2
1	A	60	VAL	2.1
1	A	229	TRP	2.1
1	A	292	VAL	2.1
1	A	73	LYS	2.1
1	A	310	LEU	2.1
1	A	131	THR	2.1
2	B	111	VAL	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	MG	A	602	1/1	0.88	0.16	91,91,91,91	0
3	VRF	A	601	28/28	0.94	0.30	63,81,98,107	0
4	MG	B	501	1/1	0.94	0.11	62,62,62,62	0
5	PO4	A	603	5/5	0.97	0.08	93,95,102,109	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 VRF A 601:

$2mF_o$-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.