



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 05:26 AM UTC

PDB ID : 2V10 / pdb_00002v10
Title : Crystal Structure of Renin with Inhibitor 9
Authors : Rahuel, J.; Rasetti, V.; Maibaum, J.; Rueger, H.; Goschke, R.; Cohen, N.C.;
Stutz, S.; Cumin, F.; Fuhrer, W.; Wood, J.M.; Grutter, M.G.
Deposited on : 2007-05-21
Resolution : 3.10 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

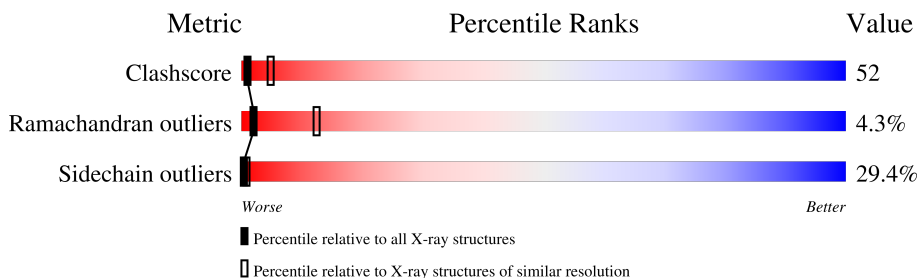
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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))
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	C	340	
1	O	340	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	C61	C	1341	-	-	X	-

2 Entry composition [i](#)

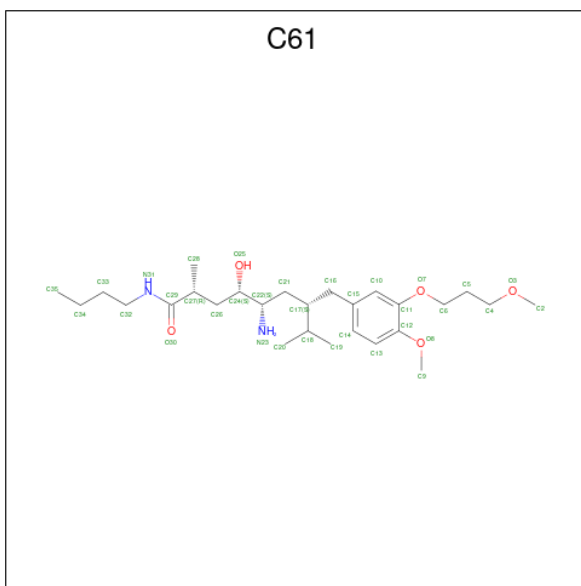
There are 2 unique types of molecules in this entry. The entry contains 5192 atoms, of which 0 are hydrogens and 0 are deuteriums.

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.

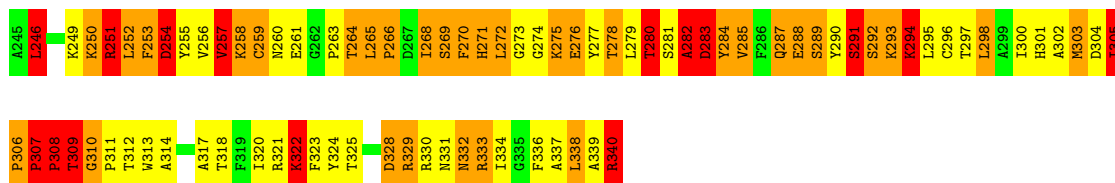
- Molecule 1 is a protein called RENIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	C	334	Total 2567	C 1639	N 416	O 498	S 14	0	0	1
1	O	332	Total 2557	C 1634	N 414	O 495	S 14	0	0	1

- Molecule 2 is (2R,4S,5S,7S)-5-AMINO-N-BUTYL-4-HYDROXY-7-[4-METHOXY-3-(3-METHOXYPROPOXY)BENZYL]-2,8-DIMETHYLNONANAMIDE (CCD ID: C61) (formula: $C_{27}H_{48}N_2O_5$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	C	1	Total 34	C 27	N 2	O 5	0	0
2	O	1	Total 34	C 27	N 2	O 5	0	0



4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 3	Depositor
Cell constants a, b, c, α , β , γ	143.00Å 143.00Å 143.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	10.00 – 3.10	Depositor
% Data completeness (in resolution range)	(Not available) (10.00-3.10)	Depositor
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	TNT	Depositor
R, R_{free}	0.210 , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	5192	wwPDB-VP
Average B, all atoms (Å ²)	20.0	wwPDB-VP

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: C61

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	C	2.15	87/2626 (3.3%)	2.78	264/3560 (7.4%)
1	O	2.09	96/2616 (3.7%)	2.94	309/3547 (8.7%)
All	All	2.12	183/5242 (3.5%)	2.86	573/7107 (8.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	5	0
1	O	3	0
All	All	8	0

All (183) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	251	ARG	NE-CZ	13.30	1.47	1.33
1	C	156	ASP	CA-C	-11.39	1.39	1.53
1	C	48	SER	CA-C	-10.66	1.40	1.52
1	O	82	ARG	NE-CZ	10.56	1.44	1.33
1	O	182	ASP	C-N	-9.83	1.23	1.34
1	C	94	GLN	CA-C	-9.79	1.40	1.52
1	O	119	PHE	N-CA	9.24	1.57	1.46
1	O	182	ASP	CA-C	-9.02	1.41	1.52
1	C	72	TYR	C-N	-8.92	1.22	1.33
1	O	162	TYR	CA-C	8.33	1.62	1.52
1	O	164	ARG	NE-CZ	8.19	1.42	1.33
1	C	72	TYR	CA-C	-8.18	1.42	1.52
1	O	69	SER	CA-C	-8.11	1.43	1.52
1	C	164	ARG	NE-CZ	8.10	1.42	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	9	SER	C-N	-8.08	1.25	1.33
1	O	139	ARG	NE-CZ	8.04	1.41	1.33
1	C	73	LYS	N-CA	-7.94	1.36	1.46
1	O	74	HIS	ND1-CE1	7.77	1.40	1.32
1	O	53	ARG	NE-CZ	7.74	1.41	1.33
1	C	163	ASN	CA-C	-7.74	1.42	1.53
1	C	7	THR	N-CA	-7.42	1.36	1.45
1	C	308	PRO	N-CA	-7.42	1.37	1.47
1	O	146	ASN	CA-C	-7.39	1.43	1.52
1	C	16	MET	CA-C	-7.34	1.42	1.53
1	C	49	SER	N-CA	-7.29	1.37	1.46
1	O	276	GLU	CA-CB	7.25	1.63	1.53
1	O	268	ILE	CA-C	-7.23	1.43	1.52
1	O	307	PRO	CA-C	-7.22	1.45	1.52
1	O	236	THR	C-N	-7.21	1.23	1.33
1	C	79	LEU	N-CA	-7.18	1.36	1.46
1	O	223	ALA	CA-C	-7.16	1.43	1.52
1	C	66	ALA	N-CA	-7.12	1.36	1.46
1	O	328	ASP	CA-C	-7.09	1.44	1.52
1	O	285	VAL	CA-CB	-7.06	1.45	1.54
1	C	200	VAL	N-CA	7.04	1.55	1.46
1	O	130	MET	N-CA	-7.02	1.38	1.46
1	O	210	VAL	CA-C	-7.01	1.44	1.52
1	O	176	ILE	C-N	-6.98	1.24	1.33
1	O	253	PHE	CA-CB	6.95	1.64	1.53
1	O	236	THR	CA-C	-6.94	1.44	1.52
1	C	309	THR	N-CA	-6.90	1.36	1.46
1	C	330	ARG	CA-C	-6.90	1.43	1.52
1	O	176	ILE	CA-C	-6.88	1.44	1.52
1	O	339	ALA	CA-C	-6.88	1.43	1.52
1	C	33	PHE	CA-C	-6.86	1.44	1.52
1	O	177	VAL	N-CA	-6.83	1.37	1.46
1	C	68	ASP	N-CA	-6.81	1.38	1.46
1	O	70	SER	N-CA	-6.75	1.37	1.46
1	O	177	VAL	CA-CB	-6.71	1.45	1.54
1	C	177	VAL	N-CA	-6.68	1.38	1.46
1	C	114	MET	N-CA	-6.64	1.40	1.46
1	C	251	ARG	CD-NE	6.61	1.55	1.46
1	C	133	ILE	C-N	-6.60	1.25	1.33
1	C	66	ALA	CA-C	-6.58	1.43	1.52
1	C	258	LYS	CA-CB	-6.56	1.43	1.53
1	O	176	ILE	CA-CB	-6.54	1.46	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	244	GLU	CD-OE2	6.52	1.37	1.25
1	O	206	LYS	N-CA	-6.47	1.36	1.46
1	C	319	PHE	N-CA	-6.46	1.38	1.46
1	C	134	GLU	N-CA	-6.41	1.38	1.46
1	O	140	VAL	CA-C	-6.33	1.45	1.52
1	O	97	ILE	CA-CB	-6.32	1.46	1.54
1	C	67	SER	C-N	-6.31	1.24	1.33
1	O	118	PRO	C-N	6.28	1.42	1.33
1	O	288	GLU	CD-OE2	6.24	1.37	1.25
1	O	330	ARG	NE-CZ	6.22	1.39	1.33
1	O	162	TYR	C-N	6.22	1.41	1.33
1	C	251	ARG	CA-C	6.21	1.61	1.52
1	O	183	PRO	N-CA	-6.19	1.39	1.47
1	O	68	ASP	N-CA	-6.16	1.38	1.46
1	O	251	ARG	CA-C	-6.12	1.44	1.52
1	C	285	VAL	N-CA	-6.12	1.38	1.46
1	O	218	GLU	CA-C	-6.11	1.44	1.52
1	O	174	GLY	CA-C	-6.11	1.45	1.51
1	C	257	VAL	CA-CB	-6.03	1.46	1.54
1	O	222	LEU	CA-C	-6.02	1.45	1.52
1	C	136	ALA	CA-C	-5.99	1.45	1.52
1	O	74	HIS	CG-ND1	5.96	1.44	1.38
1	C	68	ASP	CA-C	-5.94	1.45	1.52
1	O	184	GLN	N-CA	-5.94	1.38	1.46
1	C	176	ILE	C-N	-5.93	1.25	1.33
1	O	78	GLU	CD-OE2	5.92	1.36	1.25
1	O	165	ASP	CG-OD2	5.91	1.36	1.25
1	C	223	ALA	N-CA	-5.90	1.39	1.46
1	O	253	PHE	CB-CG	5.85	1.64	1.50
1	O	270	PHE	N-CA	-5.85	1.39	1.46
1	O	219	ASP	N-CA	-5.84	1.38	1.46
1	C	253	PHE	C-O	-5.83	1.16	1.24
1	C	218	GLU	CD-OE2	5.81	1.36	1.25
1	O	324	TYR	C-N	5.81	1.41	1.33
1	C	20	TYR	CA-CB	5.80	1.61	1.53
1	C	296	CYS	CA-C	-5.79	1.45	1.52
1	C	180	GLY	CA-C	5.78	1.60	1.51
1	C	155	GLU	CA-C	-5.76	1.45	1.52
1	O	235	SER	C-N	-5.76	1.26	1.33
1	O	72	TYR	N-CA	-5.71	1.38	1.46
1	O	173	GLY	CA-C	-5.69	1.43	1.51
1	O	268	ILE	C-N	-5.67	1.26	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	116	ALA	C-N	-5.67	1.25	1.33
1	C	78	GLU	CA-C	-5.67	1.45	1.53
1	C	156	ASP	CG-OD2	5.66	1.36	1.25
1	O	97	ILE	CA-C	-5.66	1.45	1.52
1	O	183	PRO	CA-C	-5.65	1.42	1.52
1	C	254	ASP	CA-C	-5.65	1.45	1.52
1	O	282	ALA	CA-C	-5.63	1.45	1.52
1	C	252	LEU	CA-C	-5.62	1.45	1.52
1	C	261	GLU	CA-CB	5.61	1.62	1.53
1	C	176	ILE	C-O	-5.59	1.17	1.24
1	O	218	GLU	CD-OE2	5.58	1.35	1.25
1	O	236	THR	N-CA	-5.58	1.39	1.46
1	O	285	VAL	N-CA	-5.57	1.39	1.46
1	C	17	ASP	N-CA	-5.56	1.40	1.46
1	C	288	GLU	CG-CD	5.56	1.66	1.52
1	C	309	THR	CA-C	-5.55	1.45	1.52
1	C	257	VAL	CA-C	-5.53	1.46	1.52
1	O	183	PRO	C-N	-5.52	1.26	1.33
1	O	269	SER	N-CA	-5.50	1.39	1.46
1	C	197	LYS	CA-C	5.50	1.60	1.53
1	C	257	VAL	N-CA	-5.50	1.39	1.46
1	O	210	VAL	N-CA	-5.50	1.39	1.46
1	O	67	SER	C-N	-5.50	1.25	1.33
1	C	144	PHE	C-N	-5.49	1.26	1.34
1	O	242	LEU	C-N	-5.49	1.26	1.34
1	C	85	THR	N-CA	-5.47	1.39	1.46
1	C	254	ASP	CG-OD2	5.45	1.35	1.25
1	C	164	ARG	CZ-NH2	5.43	1.40	1.33
1	O	127	VAL	N-CA	-5.43	1.40	1.46
1	O	164	ARG	C-N	5.42	1.41	1.33
1	O	124	PHE	CA-C	-5.42	1.46	1.52
1	O	113	GLU	CD-OE2	5.40	1.35	1.25
1	C	78	GLU	CD-OE2	5.40	1.35	1.25
1	O	129	GLY	C-N	-5.39	1.26	1.33
1	C	329	ARG	NE-CZ	5.38	1.39	1.33
1	O	45	TRP	CA-C	-5.37	1.45	1.52
1	O	123	GLU	CD-OE2	5.36	1.35	1.25
1	O	284	TYR	C-N	-5.36	1.26	1.33
1	C	75	ASN	C-N	-5.35	1.28	1.34
1	O	54	LEU	CA-C	5.35	1.59	1.52
1	O	218	GLU	C-N	-5.34	1.26	1.33
1	O	203	ILE	N-CA	-5.33	1.39	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	O	310	GLY	C-O	-5.32	1.16	1.24
1	O	46	VAL	C-N	5.32	1.40	1.33
1	C	308	PRO	CA-C	5.31	1.59	1.52
1	C	177	VAL	CA-C	-5.28	1.46	1.52
1	O	276	GLU	CD-OE2	5.27	1.35	1.25
1	O	296	CYS	CA-C	5.27	1.58	1.52
1	C	308	PRO	C-N	-5.26	1.24	1.33
1	O	75	ASN	N-CA	-5.26	1.39	1.46
1	O	305	ILE	CA-CB	-5.25	1.47	1.54
1	C	308	PRO	N-CD	5.24	1.55	1.47
1	O	233	SER	CA-C	-5.24	1.46	1.52
1	O	100	GLY	C-N	-5.23	1.25	1.33
1	C	280	THR	C-N	-5.22	1.26	1.33
1	O	244	GLU	CD-OE2	5.21	1.35	1.25
1	O	62	LYS	CA-C	5.20	1.59	1.52
1	C	117	LEU	N-CA	-5.20	1.37	1.46
1	C	190	PHE	CA-C	-5.20	1.46	1.53
1	C	313	TRP	N-CA	-5.20	1.39	1.45
1	C	113	GLU	C-N	-5.18	1.29	1.33
1	O	294	LYS	CA-C	5.18	1.59	1.52
1	O	53	ARG	CD-NE	5.18	1.53	1.46
1	C	118	PRO	N-CA	-5.18	1.38	1.47
1	C	237	SER	CA-C	-5.17	1.45	1.52
1	O	261	GLU	CD-OE2	5.16	1.35	1.25
1	C	111	VAL	CA-C	-5.15	1.46	1.52
1	O	205	MET	C-N	-5.14	1.24	1.33
1	C	230	SER	CA-C	-5.12	1.45	1.52
1	C	179	GLY	C-N	5.12	1.41	1.33
1	C	249	LYS	N-CA	5.10	1.51	1.45
1	C	251	ARG	CZ-NH2	5.08	1.40	1.33
1	C	237	SER	N-CA	-5.08	1.39	1.46
1	O	209	SER	CA-C	-5.08	1.46	1.52
1	C	33	PHE	N-CA	-5.07	1.39	1.45
1	C	273	GLY	CA-C	5.07	1.59	1.51
1	O	308	PRO	N-CD	5.05	1.54	1.47
1	C	251	ARG	CZ-NH1	5.04	1.39	1.32
1	O	56	THR	N-CA	-5.04	1.40	1.46
1	C	6	THR	CA-C	-5.04	1.46	1.52
1	C	268	ILE	CA-CB	-5.04	1.47	1.55
1	O	21	TYR	CA-C	-5.03	1.46	1.52
1	O	284	TYR	CA-CB	-5.03	1.46	1.53
1	C	214	THR	C-N	-5.03	1.27	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	O	26	ILE	N-CA	-5.01	1.40	1.46

All (573) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	119	PHE	N-CA-C	22.28	135.20	111.14
1	O	306	PRO	CA-C-N	14.77	135.59	120.38
1	O	306	PRO	C-N-CA	14.77	135.59	120.38
1	C	9	SER	CA-C-N	-14.21	107.06	122.27
1	C	9	SER	C-N-CA	-14.21	107.06	122.27
1	O	307	PRO	N-CA-C	13.65	127.35	110.70
1	C	226	ASP	CA-CB-CG	12.84	125.44	112.60
1	C	75	ASN	CA-C-N	-12.66	109.88	123.30
1	C	75	ASN	C-N-CA	-12.66	109.88	123.30
1	O	118	PRO	CA-C-N	12.52	137.47	120.44
1	O	118	PRO	C-N-CA	12.52	137.47	120.44
1	C	68	ASP	CA-CB-CG	12.49	125.09	112.60
1	C	250	LYS	N-CA-C	12.42	129.18	112.90
1	O	6	THR	N-CA-C	12.01	129.41	110.32
1	C	259	CYS	N-CA-C	11.91	127.83	112.34
1	O	216	LEU	N-CA-CB	-11.86	92.97	110.87
1	O	307	PRO	N-CA-CB	11.81	114.53	103.08
1	O	73	LYS	CB-CA-C	11.53	127.60	111.23
1	O	139	ARG	CD-NE-CZ	11.46	140.45	124.40
1	O	306	PRO	N-CA-C	11.35	124.54	110.70
1	O	218	GLU	N-CA-CB	11.31	126.59	109.97
1	O	332	ASN	CB-CA-C	-11.26	95.89	111.89
1	C	206	LYS	N-CA-C	11.25	126.52	113.01
1	O	305	ILE	CA-C-N	11.06	131.78	120.38
1	O	305	ILE	C-N-CA	11.06	131.78	120.38
1	C	54	LEU	N-CA-C	-11.00	99.97	113.50
1	C	106	GLN	N-CA-CB	-10.90	92.58	111.55
1	C	307	PRO	CB-CA-C	10.87	124.17	110.92
1	C	119	PHE	N-CA-C	10.75	125.49	112.38
1	O	186	TYR	CA-C-N	-10.73	106.85	122.94
1	O	186	TYR	C-N-CA	-10.73	106.85	122.94
1	O	43	ASN	CA-CB-CG	10.52	123.12	112.60
1	O	185	HIS	N-CA-C	10.40	125.71	112.92
1	C	164	ARG	CA-C-N	-10.38	106.29	122.59
1	C	164	ARG	C-N-CA	-10.38	106.29	122.59
1	C	288	GLU	CB-CG-CD	10.32	130.14	112.60
1	C	307	PRO	N-CA-C	10.27	123.23	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	194	ASN	N-CA-C	10.23	125.06	110.23
1	C	334	ILE	CA-C-N	-10.22	112.64	122.66
1	C	334	ILE	C-N-CA	-10.22	112.64	122.66
1	O	82	ARG	CD-NE-CZ	10.21	138.69	124.40
1	O	164	ARG	CA-C-O	-10.19	110.22	121.94
1	C	291	SER	N-CA-C	10.12	125.06	108.96
1	O	187	GLU	CB-CG-CD	-10.11	95.42	112.60
1	O	60	TYR	N-CA-CB	-10.10	95.65	110.49
1	O	165	ASP	N-CA-CB	9.93	127.39	110.50
1	C	75	ASN	N-CA-CB	9.88	127.20	110.49
1	C	85	THR	N-CA-C	9.83	124.88	111.71
1	O	34	LYS	CB-CA-C	-9.82	93.81	110.22
1	C	254	ASP	CA-CB-CG	9.71	122.31	112.60
1	C	196	ILE	N-CA-CB	-9.70	95.22	111.23
1	O	306	PRO	O-C-N	9.70	132.91	121.46
1	O	163	ASN	N-CA-CB	9.68	124.20	110.36
1	O	201	TRP	N-CA-CB	9.56	121.06	110.35
1	C	260	ASN	CA-C-N	9.54	133.46	120.38
1	C	260	ASN	C-N-CA	9.54	133.46	120.38
1	C	19	GLN	CB-CG-CD	-9.53	96.40	112.60
1	O	338	LEU	CB-CA-C	-9.48	93.97	109.72
1	O	251	ARG	N-CA-CB	9.43	126.42	110.49
1	C	28	THR	CB-CA-C	-9.42	100.72	110.33
1	O	253	PHE	N-CA-C	-9.37	96.37	110.14
1	C	330	ARG	N-CA-CB	9.35	124.62	110.22
1	O	254	ASP	CA-CB-CG	9.29	121.89	112.60
1	O	84	SER	CB-CA-C	-9.28	99.81	111.22
1	C	41	SER	CA-C-N	-9.20	108.05	122.49
1	C	41	SER	C-N-CA	-9.20	108.05	122.49
1	C	199	GLY	N-CA-C	-9.15	102.52	115.43
1	O	323	PHE	CA-CB-CG	-9.07	104.73	113.80
1	O	176	ILE	CA-C-N	-9.05	111.06	123.10
1	O	176	ILE	C-N-CA	-9.05	111.06	123.10
1	C	79	LEU	N-CA-CB	-8.94	95.38	110.49
1	O	172	LEU	CA-C-N	-8.95	103.88	121.41
1	O	172	LEU	C-N-CA	-8.95	103.88	121.41
1	O	88	VAL	N-CA-C	-8.93	94.22	108.95
1	C	272	LEU	N-CA-CB	-8.83	96.48	110.69
1	O	232	ILE	N-CA-C	-8.82	95.01	107.80
1	C	121	LEU	CB-CA-C	-8.82	95.81	110.72
1	O	141	THR	CB-CA-C	-8.82	95.77	109.62
1	O	104	VAL	CB-CA-C	-8.80	98.22	110.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	56	THR	CB-CA-C	8.79	126.89	110.63
1	C	26	ILE	CB-CA-C	-8.74	99.24	111.21
1	O	23	GLU	N-CA-C	8.71	123.65	109.72
1	C	88	VAL	N-CA-C	-8.70	95.58	108.45
1	O	45	TRP	CA-C-N	8.68	133.92	121.68
1	O	45	TRP	C-N-CA	8.68	133.92	121.68
1	O	200	VAL	CB-CA-C	-8.65	98.45	110.90
1	C	153	LEU	CA-C-N	-8.60	104.81	121.58
1	C	153	LEU	C-N-CA	-8.60	104.81	121.58
1	C	271	HIS	CA-CB-CG	-8.59	105.21	113.80
1	O	60	TYR	CA-CB-CG	-8.52	98.57	113.90
1	O	52	SER	CB-CA-C	-8.51	96.62	109.90
1	C	190	PHE	N-CA-C	-8.50	99.08	110.55
1	C	328	ASP	CA-CB-CG	8.48	121.08	112.60
1	O	154	LYS	N-CA-CB	8.44	123.30	110.30
1	O	185	HIS	CA-CB-CG	-8.41	105.39	113.80
1	O	118	PRO	CB-CA-C	-8.39	97.72	111.56
1	C	68	ASP	N-CA-CB	-8.38	97.37	111.27
1	O	271	HIS	CA-C-N	-8.35	108.01	122.37
1	O	271	HIS	C-N-CA	-8.35	108.01	122.37
1	C	238	SER	N-CA-C	-8.25	103.36	113.50
1	C	28	THR	CA-C-O	-8.23	112.83	119.99
1	O	171	SER	CB-CA-C	-8.23	94.46	110.10
1	C	217	CYS	N-CA-CB	8.21	124.36	110.49
1	O	324	TYR	CA-C-O	-8.16	112.21	121.19
1	C	165	ASP	N-CA-C	8.16	122.17	109.52
1	C	38	ASP	CB-CA-C	-8.15	97.73	110.78
1	C	254	ASP	CA-C-O	-8.11	112.57	121.33
1	O	233	SER	CB-CA-C	-8.11	95.80	109.50
1	O	143	ILE	CA-C-N	-8.10	106.72	120.58
1	O	143	ILE	C-N-CA	-8.10	106.72	120.58
1	C	71	SER	N-CA-C	8.08	123.32	113.38
1	C	31	GLN	CA-C-N	-8.06	111.76	123.05
1	C	31	GLN	C-N-CA	-8.06	111.76	123.05
1	C	309	THR	N-CA-CB	-8.04	96.84	110.51
1	C	16	MET	CA-CB-CG	-8.03	98.04	114.10
1	O	152	VAL	N-CA-C	8.00	118.76	110.36
1	C	202	GLN	CA-C-N	-7.97	110.08	122.68
1	C	202	GLN	C-N-CA	-7.97	110.08	122.68
1	O	265	LEU	N-CA-C	7.96	120.91	109.84
1	O	68	ASP	N-CA-C	-7.95	93.86	110.80
1	O	253	PHE	CA-CB-CG	7.95	121.75	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	117	LEU	N-CA-C	-7.91	95.94	109.15
1	O	253	PHE	N-CA-CB	-7.90	98.92	110.70
1	O	325	THR	N-CA-C	7.86	122.25	109.59
1	O	268	ILE	N-CA-C	-7.85	96.76	108.85
1	O	278	THR	N-CA-C	7.85	121.70	109.07
1	O	163	ASN	CA-CB-CG	7.81	120.41	112.60
1	C	255	TYR	CA-C-N	-7.77	114.20	121.97
1	C	255	TYR	C-N-CA	-7.77	114.20	121.97
1	O	328	ASP	N-CA-CB	-7.77	98.58	110.77
1	C	160	PHE	CB-CA-C	-7.76	95.50	109.71
1	O	205	MET	CA-C-O	7.75	128.59	120.30
1	O	46	VAL	CB-CA-C	-7.72	101.77	109.33
1	O	92	LEU	N-CA-C	7.70	121.57	110.10
1	O	172	LEU	N-CA-CB	-7.68	97.42	110.33
1	C	11	ILE	CB-CA-C	7.67	122.25	110.83
1	O	313	TRP	N-CA-C	-7.63	99.19	110.48
1	O	325	THR	CA-C-N	-7.61	112.04	122.77
1	O	325	THR	C-N-CA	-7.61	112.04	122.77
1	C	268	ILE	CA-CB-CG1	-7.54	97.59	110.40
1	O	250	LYS	CA-C-N	-7.54	107.15	121.54
1	O	250	LYS	C-N-CA	-7.54	107.15	121.54
1	O	291	SER	CB-CA-C	-7.54	99.59	110.06
1	O	120	MET	CB-CA-C	7.51	126.66	110.21
1	C	242	LEU	N-CA-C	-7.51	102.10	111.11
1	C	332	ASN	N-CA-C	7.48	121.82	112.24
1	O	238	SER	CB-CA-C	7.48	123.56	110.85
1	O	221	CYS	CA-C-N	-7.47	111.08	122.81
1	O	221	CYS	C-N-CA	-7.47	111.08	122.81
1	C	38	ASP	N-CA-C	7.47	120.97	108.20
1	O	72	TYR	CA-CB-CG	-7.44	100.50	113.90
1	O	130	MET	N-CA-C	-7.43	103.53	112.59
1	O	194	ASN	CA-C-N	7.42	132.00	121.02
1	O	194	ASN	C-N-CA	7.42	132.00	121.02
1	C	49	SER	N-CA-C	-7.41	103.21	111.28
1	O	333	ARG	CD-NE-CZ	-7.38	114.07	124.40
1	C	11	ILE	CA-CB-CG1	-7.37	97.87	110.40
1	C	123	GLU	CB-CG-CD	-7.36	100.09	112.60
1	C	305	ILE	CA-C-N	7.36	127.96	120.38
1	C	305	ILE	C-N-CA	7.36	127.96	120.38
1	O	324	TYR	N-CA-CB	-7.35	98.73	109.83
1	O	256	VAL	O-C-N	7.33	131.07	123.00
1	C	293	LYS	N-CA-CB	7.33	119.47	110.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	224	LEU	N-CA-C	-7.32	98.69	110.32
1	O	322	LYS	N-CA-CB	7.30	121.53	110.14
1	O	340	ARG	CD-NE-CZ	-7.27	114.22	124.40
1	O	119	PHE	N-CA-CB	7.27	120.61	110.07
1	O	243	MET	N-CA-CB	-7.21	99.11	110.22
1	C	116	ALA	N-CA-C	7.19	119.12	111.28
1	O	23	GLU	CB-CG-CD	-7.19	100.38	112.60
1	C	156	ASP	CA-CB-CG	-7.15	105.45	112.60
1	C	17	ASP	CA-C-N	-7.15	111.02	122.24
1	C	17	ASP	C-N-CA	-7.15	111.02	122.24
1	C	308	PRO	N-CA-C	-7.14	97.77	112.47
1	C	115	PRO	N-CA-CB	7.13	109.97	103.34
1	C	47	PRO	N-CA-CB	7.12	109.95	103.33
1	O	31	GLN	CB-CA-C	-7.12	99.40	110.78
1	O	334	ILE	N-CA-CB	-7.12	101.13	111.52
1	C	326	GLU	CA-C-N	-7.11	113.31	122.77
1	C	326	GLU	C-N-CA	-7.11	113.31	122.77
1	C	264	THR	N-CA-CB	-7.11	98.47	110.49
1	O	112	THR	N-CA-CB	7.08	122.05	111.01
1	O	278	THR	CA-CB-OG1	-7.08	98.98	109.60
1	C	84	SER	N-CA-CB	-7.07	99.45	110.06
1	O	328	ASP	CA-CB-CG	7.06	119.66	112.60
1	C	293	LYS	N-CA-C	7.05	120.19	109.62
1	O	88	VAL	CB-CA-C	7.03	121.24	110.55
1	O	159	SER	N-CA-CB	-7.03	99.31	111.55
1	O	284	TYR	N-CA-C	7.03	122.85	112.94
1	C	94	GLN	CB-CG-CD	-7.03	100.65	112.60
1	C	337	ALA	N-CA-C	-7.02	98.51	108.96
1	C	197	LYS	CB-CG-CD	7.01	127.43	111.30
1	O	176	ILE	CB-CA-C	-7.00	100.20	110.62
1	C	68	ASP	N-CA-C	-6.99	102.60	113.02
1	C	294	LYS	CB-CA-C	-6.99	96.51	110.42
1	C	56	THR	N-CA-C	6.98	119.74	111.71
1	O	305	ILE	CB-CA-C	6.96	124.03	111.36
1	O	66	ALA	CA-C-N	-6.95	110.75	122.92
1	O	66	ALA	C-N-CA	-6.95	110.75	122.92
1	C	73	LYS	N-CA-CB	-6.94	99.18	110.71
1	O	257	VAL	CA-C-N	6.92	131.95	122.19
1	O	257	VAL	C-N-CA	6.92	131.95	122.19
1	C	139	ARG	N-CA-CB	-6.92	101.68	112.13
1	C	77	THR	CA-CB-OG1	-6.92	99.22	109.60
1	O	50	LYS	N-CA-C	-6.91	103.83	113.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	146	ASN	N-CA-CB	6.88	120.24	110.12
1	O	339	ALA	N-CA-CB	6.88	120.75	110.29
1	C	306	PRO	CA-C-N	6.86	127.44	120.38
1	C	306	PRO	C-N-CA	6.86	127.44	120.38
1	O	80	THR	CA-C-N	-6.85	112.79	123.13
1	O	80	THR	C-N-CA	-6.85	112.79	123.13
1	C	218	GLU	N-CA-C	6.84	125.38	110.80
1	C	202	GLN	O-C-N	-6.84	115.54	123.27
1	O	106	GLN	CB-CA-C	-6.84	95.77	109.79
1	O	135	GLN	CA-C-N	-6.82	110.08	121.39
1	O	135	GLN	C-N-CA	-6.82	110.08	121.39
1	C	307	PRO	CA-C-N	-6.78	111.36	119.84
1	C	307	PRO	C-N-CA	-6.78	111.36	119.84
1	O	226	ASP	CA-CB-CG	6.77	119.37	112.60
1	O	218	GLU	N-CA-C	-6.76	100.27	110.28
1	C	314	ALA	CA-C-N	-6.76	114.05	122.84
1	C	314	ALA	C-N-CA	-6.76	114.05	122.84
1	C	78	GLU	N-CA-CB	6.73	119.60	110.38
1	O	184	GLN	CB-CG-CD	6.73	124.04	112.60
1	C	252	LEU	N-CA-CB	6.71	121.83	110.49
1	C	256	VAL	CA-C-N	-6.71	113.91	123.03
1	C	256	VAL	C-N-CA	-6.71	113.91	123.03
1	C	202	GLN	N-CA-CB	-6.70	99.51	110.43
1	O	67	SER	CA-C-N	6.70	134.33	121.54
1	O	67	SER	C-N-CA	6.70	134.33	121.54
1	C	307	PRO	CA-N-CD	-6.69	102.63	112.00
1	C	87	THR	N-CA-CB	-6.68	100.16	110.85
1	C	43	ASN	N-CA-CB	-6.65	100.43	111.20
1	O	82	ARG	NE-CZ-NH2	6.64	125.18	119.20
1	C	34	LYS	CA-C-N	-6.64	113.81	122.51
1	C	34	LYS	C-N-CA	-6.64	113.81	122.51
1	O	239	ILE	N-CA-CB	6.62	119.54	110.54
1	O	97	ILE	CA-CB-CG1	-6.61	99.16	110.40
1	O	106	GLN	CA-C-N	6.61	132.88	122.17
1	O	106	GLN	C-N-CA	6.61	132.88	122.17
1	O	340	ARG	N-CA-CB	-6.61	99.27	110.50
1	C	287	GLN	N-CA-C	6.59	119.99	108.52
1	C	290	TYR	N-CA-CB	6.59	124.71	111.60
1	O	129	GLY	CA-C-O	6.58	127.69	121.64
1	C	241	LYS	CG-CD-CE	6.57	126.41	111.30
1	C	303	MET	CA-C-N	-6.57	114.30	122.84
1	C	303	MET	C-N-CA	-6.57	114.30	122.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	111	VAL	CB-CA-C	-6.55	102.79	110.91
1	O	210	VAL	CA-C-O	6.55	128.11	120.71
1	C	42	SER	N-CA-C	6.54	120.92	112.41
1	O	54	LEU	N-CA-C	-6.54	104.08	111.14
1	O	230	SER	N-CA-C	6.54	121.47	112.90
1	C	293	LYS	CG-CD-CE	6.50	126.24	111.30
1	O	256	VAL	CA-C-N	6.49	132.93	122.68
1	O	256	VAL	C-N-CA	6.49	132.93	122.68
1	O	280	THR	CB-CA-C	-6.49	99.09	111.48
1	O	74	HIS	CB-CA-C	-6.48	97.52	110.42
1	C	246	LEU	CA-C-N	-6.48	113.25	122.00
1	C	246	LEU	C-N-CA	-6.48	113.25	122.00
1	O	118	PRO	N-CA-C	-6.48	99.12	112.47
1	O	16	MET	N-CA-C	6.47	120.44	111.90
1	O	45	TRP	O-C-N	6.46	130.72	123.48
1	C	320	ILE	CB-CA-C	-6.46	97.76	111.32
1	C	62	LYS	CB-CA-C	-6.45	98.08	109.62
1	C	14	ASN	CA-CB-CG	6.44	119.04	112.60
1	C	214	THR	CA-C-N	-6.43	110.53	120.31
1	C	214	THR	C-N-CA	-6.43	110.53	120.31
1	O	202	GLN	CA-C-N	-6.43	110.39	121.97
1	O	202	GLN	C-N-CA	-6.43	110.39	121.97
1	C	238	SER	CB-CA-C	-6.43	97.59	109.29
1	O	164	ARG	N-CA-C	-6.42	102.25	110.53
1	C	10	VAL	N-CA-C	-6.41	100.61	109.46
1	O	69	SER	N-CA-CB	6.41	120.51	110.71
1	C	90	GLY	CA-C-O	-6.40	116.49	120.91
1	C	251	ARG	CG-CD-NE	6.39	126.07	112.00
1	O	89	SER	CA-C-O	-6.38	113.65	121.06
1	O	109	GLY	CA-C-N	-6.38	114.06	123.11
1	O	109	GLY	C-N-CA	-6.38	114.06	123.11
1	O	174	GLY	CA-C-O	-6.37	115.34	121.83
1	O	120	MET	N-CA-C	-6.36	105.24	112.87
1	C	65	ASP	CA-C-N	-6.35	110.89	122.38
1	C	65	ASP	C-N-CA	-6.35	110.89	122.38
1	C	127	VAL	N-CA-CB	-6.35	101.04	111.45
1	O	79	LEU	N-CA-CB	-6.33	99.85	111.37
1	O	330	ARG	CD-NE-CZ	6.33	133.26	124.40
1	C	293	LYS	CB-CG-CD	6.33	125.86	111.30
1	C	92	LEU	N-CA-C	6.33	119.84	110.48
1	O	158	PHE	CA-CB-CG	-6.31	107.49	113.80
1	C	267	ASP	CB-CA-C	-6.31	98.72	109.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	59	VAL	N-CA-C	6.30	116.47	110.42
1	O	108	PHE	CA-C-N	-6.30	116.48	122.66
1	O	108	PHE	C-N-CA	-6.30	116.48	122.66
1	O	310	GLY	CA-C-O	-6.30	112.51	121.52
1	C	313	TRP	N-CA-C	-6.30	100.31	110.32
1	C	113	GLU	CB-CG-CD	6.29	123.30	112.60
1	O	202	GLN	CA-CB-CG	6.29	126.69	114.10
1	C	133	ILE	CA-C-O	6.28	127.29	120.57
1	C	110	GLU	CA-C-O	-6.28	114.01	120.54
1	C	318	THR	O-C-N	6.27	128.76	122.12
1	O	193	ILE	CB-CA-C	-6.26	104.14	111.09
1	C	227	THR	N-CA-C	6.26	120.01	112.38
1	O	157	VAL	O-C-N	-6.25	116.01	122.82
1	C	305	ILE	CA-C-O	6.24	123.75	119.20
1	C	48	SER	O-C-N	6.23	131.01	123.16
1	C	226	ASP	N-CA-CB	-6.23	100.18	110.95
1	O	83	TYR	N-CA-C	-6.22	100.18	109.94
1	O	310	GLY	N-CA-C	-6.21	99.66	112.34
1	O	119	PHE	CA-CB-CG	6.21	120.01	113.80
1	O	138	GLY	O-C-N	6.20	129.39	122.50
1	O	188	GLY	CA-C-N	-6.20	112.69	122.73
1	O	188	GLY	C-N-CA	-6.20	112.69	122.73
1	C	50	LYS	CA-CB-CG	6.20	126.49	114.10
1	O	117	LEU	CA-C-N	-6.18	112.11	119.84
1	O	117	LEU	C-N-CA	-6.18	112.11	119.84
1	O	204	GLN	N-CA-C	-6.16	99.68	109.59
1	O	251	ARG	CA-C-N	-6.15	115.12	122.44
1	O	251	ARG	C-N-CA	-6.15	115.12	122.44
1	O	157	VAL	N-CA-CB	-6.14	99.40	112.00
1	C	307	PRO	N-CA-CB	6.14	109.04	103.08
1	O	131	GLY	CA-C-N	-6.13	110.42	122.02
1	O	131	GLY	C-N-CA	-6.13	110.42	122.02
1	C	176	ILE	CA-C-N	-6.12	113.87	122.75
1	C	176	ILE	C-N-CA	-6.12	113.87	122.75
1	O	128	VAL	O-C-N	-6.12	117.09	123.03
1	C	308	PRO	CA-C-N	-6.10	109.95	122.58
1	C	308	PRO	C-N-CA	-6.10	109.95	122.58
1	O	331	ASN	CA-CB-CG	-6.10	106.50	112.60
1	C	94	GLN	N-CA-CB	6.09	122.04	111.13
1	C	160	PHE	CA-CB-CG	-6.07	107.73	113.80
1	C	78	GLU	CB-CG-CD	6.07	122.91	112.60
1	C	28	THR	C-N-CD	-6.05	107.28	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	139	ARG	NE-CZ-NH2	6.05	124.64	119.20
1	O	19	GLN	N-CA-CB	-6.04	100.30	110.99
1	O	330	ARG	NE-CZ-NH1	6.04	127.54	121.50
1	O	58	CYS	CA-CB-SG	-6.03	100.53	114.40
1	O	259	CYS	N-CA-C	6.03	118.62	111.33
1	O	219	ASP	CA-C-N	6.01	133.19	121.41
1	O	219	ASP	C-N-CA	6.01	133.19	121.41
1	C	171	SER	CA-C-N	6.01	132.37	121.97
1	C	171	SER	C-N-CA	6.01	132.37	121.97
1	O	129	GLY	N-CA-C	6.00	121.06	111.64
1	C	328	ASP	N-CA-C	6.00	118.46	108.20
1	O	102	ILE	N-CA-CB	-6.00	101.42	111.38
1	O	246	LEU	CA-C-O	6.00	126.88	120.10
1	O	253	PHE	CA-C-O	-6.00	114.10	121.78
1	C	163	ASN	N-CA-CB	-6.00	101.17	110.46
1	C	257	VAL	N-CA-CB	-6.00	103.42	112.35
1	C	332	ASN	CA-C-N	-6.00	112.55	122.39
1	C	332	ASN	C-N-CA	-6.00	112.55	122.39
1	O	26	ILE	O-C-N	-5.99	117.03	123.14
1	C	66	ALA	CA-C-N	-5.98	112.73	122.65
1	C	66	ALA	C-N-CA	-5.98	112.73	122.65
1	O	96	ILE	N-CA-CB	-5.96	103.89	111.64
1	C	156	ASP	O-C-N	5.95	130.23	122.38
1	C	143	ILE	CA-C-N	-5.95	111.27	120.31
1	C	143	ILE	C-N-CA	-5.95	111.27	120.31
1	O	237	SER	CA-C-N	-5.95	111.85	120.29
1	O	237	SER	C-N-CA	-5.95	111.85	120.29
1	C	284	TYR	N-CA-C	5.94	122.51	113.61
1	C	117	LEU	N-CA-CB	-5.92	99.46	110.05
1	O	151	GLY	CA-C-N	5.91	128.22	120.60
1	O	151	GLY	C-N-CA	5.91	128.22	120.60
1	C	166	SER	N-CA-CB	5.91	120.54	110.50
1	O	283	ASP	CA-C-N	-5.91	113.28	122.37
1	O	283	ASP	C-N-CA	-5.91	113.28	122.37
1	O	309	THR	CB-CA-C	5.90	120.10	110.95
1	C	209	SER	CA-C-N	-5.89	115.47	123.12
1	C	209	SER	C-N-CA	-5.89	115.47	123.12
1	O	46	VAL	CA-C-N	5.89	125.80	119.85
1	O	46	VAL	C-N-CA	5.89	125.80	119.85
1	O	212	SER	N-CA-C	5.88	117.55	111.03
1	O	27	GLY	N-CA-C	5.87	119.44	112.33
1	C	176	ILE	CB-CA-C	-5.87	101.50	110.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	218	GLU	CA-C-N	-5.87	110.33	121.54
1	O	218	GLU	C-N-CA	-5.87	110.33	121.54
1	O	62	LYS	CB-CA-C	5.85	120.22	109.46
1	C	71	SER	CA-C-N	5.83	129.39	120.82
1	C	71	SER	C-N-CA	5.83	129.39	120.82
1	C	33	PHE	CA-CB-CG	-5.83	107.97	113.80
1	O	133	ILE	CA-C-O	5.83	126.54	120.25
1	O	142	PRO	N-CA-C	5.83	120.15	111.41
1	O	337	ALA	N-CA-C	-5.83	100.49	109.52
1	C	76	GLY	O-C-N	-5.82	118.05	122.71
1	C	325	THR	N-CA-C	5.82	118.44	109.07
1	C	329	ARG	CB-CA-C	-5.80	100.08	110.70
1	O	202	GLN	N-CA-CB	-5.79	100.83	111.37
1	C	157	VAL	N-CA-C	5.78	115.97	108.35
1	O	145	ASP	O-C-N	5.77	128.24	122.12
1	O	210	VAL	O-C-N	5.77	129.53	122.95
1	O	32	THR	CA-C-N	5.76	131.54	122.21
1	O	32	THR	C-N-CA	5.76	131.54	122.21
1	C	17	ASP	N-CA-C	-5.73	106.68	113.38
1	C	85	THR	CA-C-O	-5.72	114.48	120.32
1	O	113	GLU	CB-CG-CD	-5.70	102.91	112.60
1	C	329	ARG	CG-CD-NE	-5.70	99.47	112.00
1	O	219	ASP	CB-CA-C	5.69	121.75	110.42
1	C	239	ILE	CB-CA-C	5.69	118.92	111.81
1	O	292	SER	CA-C-N	5.69	132.67	121.58
1	O	292	SER	C-N-CA	5.69	132.67	121.58
1	O	32	THR	CB-CA-C	5.68	118.91	109.53
1	O	192	TYR	N-CA-C	5.68	118.88	110.48
1	O	137	ILE	CB-CA-C	-5.68	104.09	110.96
1	O	117	LEU	O-C-N	-5.67	114.80	121.32
1	C	102	ILE	CB-CA-C	-5.66	103.23	110.98
1	O	176	ILE	CA-CB-CG1	-5.66	100.78	110.40
1	C	232	ILE	N-CA-C	-5.66	100.27	108.87
1	O	63	LEU	N-CA-C	5.65	118.17	109.07
1	C	324	TYR	CA-C-O	-5.65	114.70	120.80
1	O	135	GLN	N-CA-CB	5.64	119.08	110.44
1	O	194	ASN	N-CA-CB	5.64	118.34	109.83
1	O	325	THR	CA-CB-OG1	-5.64	101.15	109.60
1	C	127	VAL	CA-CB-CG2	-5.63	100.83	110.40
1	O	33	PHE	CA-CB-CG	5.63	119.43	113.80
1	O	329	ARG	CD-NE-CZ	5.62	132.27	124.40
1	C	241	LYS	CB-CA-C	-5.62	102.02	110.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	260	ASN	CA-CB-CG	5.62	118.22	112.60
1	O	293	LYS	CB-CG-CD	5.62	124.22	111.30
1	O	276	GLU	CA-CB-CG	5.60	125.30	114.10
1	C	188	GLY	N-CA-C	-5.59	102.08	112.37
1	O	226	ASP	N-CA-C	5.59	117.63	108.52
1	C	164	ARG	CD-NE-CZ	5.57	132.20	124.40
1	C	325	THR	CA-CB-CG2	5.56	119.95	110.50
1	O	210	VAL	N-CA-C	-5.56	100.58	108.58
1	O	78	GLU	CA-C-N	-5.55	113.96	122.62
1	O	78	GLU	C-N-CA	-5.55	113.96	122.62
1	O	131	GLY	O-C-N	-5.55	115.71	122.71
1	C	212	SER	N-CA-C	5.55	120.21	113.38
1	C	5	ASN	N-CA-CB	5.55	119.87	110.49
1	O	290	TYR	N-CA-C	-5.54	106.36	114.39
1	C	23	GLU	N-CA-C	5.53	118.48	109.24
1	C	109	GLY	O-C-N	5.53	128.68	123.48
1	C	265	LEU	N-CA-C	-5.53	102.62	109.64
1	O	19	GLN	CA-C-O	-5.53	113.91	120.43
1	O	271	HIS	N-CA-CB	5.53	118.62	109.88
1	C	105	THR	N-CA-C	-5.53	99.51	108.52
1	O	107	MET	CA-C-N	-5.53	112.37	123.09
1	O	107	MET	C-N-CA	-5.53	112.37	123.09
1	O	33	PHE	CA-C-N	5.52	129.75	122.30
1	O	33	PHE	C-N-CA	5.52	129.75	122.30
1	O	206	LYS	N-CA-C	5.50	119.54	113.21
1	O	78	GLU	CA-C-O	5.50	127.20	121.15
1	O	121	LEU	CA-C-N	-5.50	113.06	120.87
1	O	121	LEU	C-N-CA	-5.50	113.06	120.87
1	O	165	ASP	O-C-N	5.49	131.79	123.00
1	O	84	SER	CA-C-N	5.49	132.03	121.54
1	O	84	SER	C-N-CA	5.49	132.03	121.54
1	O	135	GLN	N-CA-C	-5.48	106.36	113.16
1	O	210	VAL	N-CA-CB	5.47	116.68	110.72
1	O	65	ASP	N-CA-C	5.47	118.14	108.24
1	O	158	PHE	N-CA-C	-5.47	99.69	108.55
1	O	145	ASP	CA-CB-CG	5.45	118.05	112.60
1	C	154	LYS	N-CA-CB	5.44	119.55	110.41
1	C	8	SER	N-CA-C	5.44	117.33	109.07
1	O	206	LYS	CB-CA-C	5.44	120.34	110.72
1	O	158	PHE	N-CA-CB	5.43	120.61	110.99
1	C	224	LEU	N-CA-C	-5.43	100.44	109.46
1	O	124	PHE	CB-CA-C	-5.43	100.69	110.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	41	SER	O-C-N	5.42	129.34	123.10
1	O	307	PRO	CA-N-CD	-5.42	104.41	112.00
1	C	270	PHE	CA-C-O	5.42	125.99	120.24
1	C	61	HIS	N-CA-CB	-5.42	101.52	111.37
1	C	105	THR	N-CA-CB	5.39	119.02	110.55
1	C	251	ARG	CD-NE-CZ	5.39	131.95	124.40
1	C	76	GLY	CA-C-N	-5.39	112.47	120.94
1	C	76	GLY	C-N-CA	-5.39	112.47	120.94
1	O	238	SER	N-CA-CB	5.39	118.14	110.16
1	C	269	SER	CB-CA-C	5.38	120.63	109.38
1	O	126	GLY	CA-C-N	-5.38	114.61	122.58
1	O	126	GLY	C-N-CA	-5.38	114.61	122.58
1	C	288	GLU	CB-CA-C	-5.38	103.66	111.14
1	C	165	ASP	CA-C-N	5.37	131.37	121.70
1	C	165	ASP	C-N-CA	5.37	131.37	121.70
1	O	305	ILE	CA-CB-CG2	-5.37	101.38	110.50
1	O	305	ILE	N-CA-CB	5.36	118.72	111.21
1	C	236	THR	CA-C-O	5.36	125.97	119.49
1	O	290	TYR	N-CA-CB	5.36	118.05	110.98
1	C	6	THR	CA-C-N	-5.35	113.46	122.29
1	C	6	THR	C-N-CA	-5.35	113.46	122.29
1	O	337	ALA	CA-C-O	-5.35	115.18	121.44
1	O	28	THR	CB-CA-C	-5.35	99.63	110.17
1	C	203	ILE	CA-CB-CG1	5.35	119.49	110.40
1	O	104	VAL	CA-C-N	-5.34	115.52	123.11
1	O	104	VAL	C-N-CA	-5.34	115.52	123.11
1	C	253	PHE	O-C-N	-5.34	116.08	122.27
1	O	164	ARG	NE-CZ-NH1	5.34	126.84	121.50
1	O	129	GLY	CA-C-N	-5.33	114.19	122.67
1	O	129	GLY	C-N-CA	-5.33	114.19	122.67
1	C	156	ASP	CB-CA-C	-5.33	103.30	111.83
1	C	104	VAL	CB-CA-C	-5.33	102.94	110.82
1	C	307	PRO	O-C-N	5.32	127.74	121.46
1	C	267	ASP	CA-C-O	-5.32	114.98	121.36
1	C	211	GLY	N-CA-C	-5.31	100.59	113.18
1	C	213	SER	N-CA-C	5.30	118.10	109.24
1	C	331	ASN	CA-C-N	-5.30	114.72	122.40
1	C	331	ASN	C-N-CA	-5.30	114.72	122.40
1	C	204	GLN	N-CA-CB	-5.30	101.55	109.71
1	O	162	TYR	O-C-N	-5.29	117.08	123.27
1	O	307	PRO	O-C-N	5.29	127.70	121.46
1	O	294	LYS	N-CA-C	5.29	116.84	108.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	78	GLU	N-CA-C	5.29	117.69	110.24
1	C	82	ARG	CA-C-N	-5.27	113.62	123.01
1	C	82	ARG	C-N-CA	-5.27	113.62	123.01
1	O	85	THR	CB-CA-C	-5.27	99.93	110.42
1	C	301	HIS	CB-CA-C	-5.27	99.01	111.65
1	O	121	LEU	CA-CB-CG	-5.26	97.90	116.30
1	O	224	LEU	N-CA-CB	-5.25	101.84	110.41
1	C	253	PHE	CA-C-N	-5.25	112.67	121.75
1	C	253	PHE	C-N-CA	-5.25	112.67	121.75
1	C	15	TYR	CB-CG-CD2	5.24	128.66	120.80
1	O	119	PHE	CB-CA-C	-5.24	102.62	110.90
1	O	132	PHE	CA-CB-CG	5.23	119.03	113.80
1	O	226	ASP	N-CA-CB	-5.22	102.35	110.55
1	O	329	ARG	CG-CD-NE	5.22	123.49	112.00
1	C	226	ASP	N-CA-C	5.22	117.51	107.44
1	C	258	LYS	N-CA-CB	-5.21	101.87	109.95
1	O	117	LEU	N-CA-C	5.21	121.33	109.81
1	O	182	ASP	CA-CB-CG	5.21	117.81	112.60
1	O	104	VAL	N-CA-C	5.21	117.12	108.99
1	C	333	ARG	N-CA-C	-5.20	101.53	108.34
1	C	75	ASN	CB-CA-C	5.19	120.75	110.42
1	O	246	LEU	N-CA-CB	-5.18	102.24	110.22
1	C	237	SER	N-CA-C	5.17	118.75	112.23
1	O	55	TYR	CB-CA-C	-5.17	102.81	110.67
1	O	87	THR	O-C-N	-5.17	117.14	123.19
1	C	155	GLU	CA-C-N	-5.16	114.00	122.26
1	C	155	GLU	C-N-CA	-5.16	114.00	122.26
1	C	79	LEU	N-CA-C	-5.16	99.81	110.80
1	C	310	GLY	N-CA-C	-5.16	105.81	112.00
1	C	239	ILE	O-C-N	5.15	127.24	121.94
1	O	30	PRO	CA-C-N	5.15	129.53	122.84
1	O	30	PRO	C-N-CA	5.15	129.53	122.84
1	O	48	SER	CB-CA-C	-5.15	101.31	109.80
1	C	144	PHE	CA-C-N	-5.14	112.50	120.31
1	C	144	PHE	C-N-CA	-5.14	112.50	120.31
1	C	155	GLU	N-CA-CB	-5.14	101.96	111.52
1	C	299	ALA	N-CA-C	5.14	118.42	112.97
1	C	38	ASP	CA-CB-CG	5.13	117.73	112.60
1	C	295	LEU	N-CA-C	5.13	117.34	109.07
1	O	253	PHE	CB-CA-C	5.12	119.47	110.36
1	C	31	GLN	N-CA-C	-5.12	100.83	109.07
1	O	258	LYS	CB-CA-C	-5.12	101.41	109.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	O	164	ARG	CB-CG-CD	5.11	123.06	111.30
1	C	239	ILE	N-CA-CB	5.11	116.19	110.62
1	C	240	GLU	CB-CG-CD	5.11	121.28	112.60
1	C	176	ILE	CA-CB-CG1	-5.10	101.73	110.40
1	C	23	GLU	CB-CG-CD	-5.10	103.94	112.60
1	C	192	TYR	N-CA-C	5.10	118.12	109.76
1	C	73	LYS	CA-CB-CG	-5.09	103.91	114.10
1	C	200	VAL	CB-CA-C	-5.09	102.95	111.29
1	O	14	ASN	N-CA-CB	-5.08	102.03	110.47
1	O	187	GLU	CG-CD-OE2	-5.08	106.72	118.40
1	O	7	THR	N-CA-CB	-5.08	102.09	111.53
1	O	244	GLU	CA-C-O	5.08	125.81	119.97
1	O	294	LYS	CA-CB-CG	-5.08	103.95	114.10
1	O	53	ARG	CB-CA-C	5.07	120.36	110.57
1	O	146	ASN	O-C-N	5.07	127.49	122.12
1	C	132	PHE	CA-C-O	-5.07	115.48	121.66
1	C	201	TRP	CE2-CD2-CE3	-5.07	113.73	118.80
1	O	77	THR	N-CA-CB	5.06	117.51	109.51
1	O	122	ALA	N-CA-CB	-5.06	102.53	109.97
1	O	124	PHE	CA-C-O	-5.05	115.31	121.78
1	C	112	THR	CA-CB-OG1	-5.05	102.03	109.60
1	O	264	THR	N-CA-C	5.05	118.70	112.54
1	C	50	LYS	CG-CD-CE	5.05	122.91	111.30
1	C	91	PHE	CB-CG-CD1	5.04	129.27	120.70
1	O	336	PHE	CA-C-O	-5.04	114.72	120.32
1	O	330	ARG	NE-CZ-NH2	-5.04	114.67	119.20
1	C	73	LYS	CB-CG-CD	-5.03	99.73	111.30
1	C	110	GLU	CB-CG-CD	5.02	121.14	112.60
1	O	203	ILE	CB-CG1-CD1	-5.02	103.26	113.80
1	O	162	TYR	CA-CB-CG	5.01	122.92	113.90
1	O	332	ASN	N-CA-CB	-5.01	104.28	111.70
1	C	34	LYS	CB-CA-C	-5.01	101.59	109.80

All (8) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	C	56	THR	CA
1	C	75	ASN	CA
1	C	203	ILE	CB
1	C	206	LYS	CA
1	C	259	CYS	CA
1	O	119	PHE	CA

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Mol	Chain	Res	Type	Atom
1	O	194	ASN	CA
1	O	307	PRO	CA

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	C	2567	0	2498	249	0
1	O	2557	0	2490	288	0
2	C	34	0	48	22	0
2	O	34	0	48	9	0
All	All	5192	0	5084	538	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 52.

All (538) 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:260:ASN:HD22	1:C:261:GLU:N	1.41	1.16
1:C:216:LEU:HD12	1:C:238:SER:HB3	1.28	1.11
1:C:127:VAL:HG21	2:C:1341:C61:C19	1.83	1.09
1:O:196:ILE:HG22	1:O:197:LYS:HG2	1.14	1.09
1:C:47:PRO:HG3	1:C:114:MET:HE1	1.37	1.04
1:C:96:ILE:HG22	1:C:105:THR:HG22	1.41	1.03
1:C:53:ARG:H	1:C:53:ARG:HD2	1.23	1.01
1:C:79:LEU:HD22	1:C:92:LEU:HD21	1.43	1.00
1:C:53:ARG:HD2	1:C:53:ARG:N	1.74	0.98
1:C:94:GLN:HB3	1:C:107:MET:HE2	1.45	0.98
1:C:133:ILE:HG12	1:C:139:ARG:HH21	1.28	0.97
1:C:127:VAL:HG21	2:C:1341:C61:H191	1.46	0.95
1:C:133:ILE:HG12	1:C:139:ARG:NH2	1.82	0.94
1:C:127:VAL:CG2	2:C:1341:C61:H191	1.99	0.92
1:O:6:THR:H	1:O:154:LYS:HE3	1.35	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:59:VAL:HG12	1:O:60:TYR:CD2	2.07	0.89
1:O:216:LEU:HB2	1:O:241:LYS:NZ	1.88	0.88
1:O:106:GLN:NE2	1:O:146:ASN:HD22	1.70	0.88
1:C:96:ILE:HG22	1:C:105:THR:CG2	2.03	0.88
1:C:260:ASN:ND2	1:C:261:GLU:N	2.19	0.88
1:C:127:VAL:CG2	2:C:1341:C61:C19	2.52	0.87
1:O:118:PRO:HG2	1:O:119:PHE:CD2	2.09	0.86
1:O:5:ASN:HA	1:O:154:LYS:CD	2.04	0.86
1:O:5:ASN:HA	1:O:154:LYS:HD2	1.57	0.86
1:O:279:LEU:HD22	1:O:283:ASP:HB3	1.56	0.85
1:C:84:SER:HB2	2:C:1341:C61:H261	1.58	0.84
1:C:156:ASP:H	1:C:330:ARG:HD2	1.40	0.84
1:O:216:LEU:HG	1:O:241:LYS:HE2	1.58	0.84
1:C:183:PRO:HA	1:C:186:TYR:CE1	2.13	0.83
1:C:196:ILE:HG23	1:C:197:LYS:N	1.92	0.83
1:O:72:TYR:HE1	1:O:93:SER:HG	1.23	0.83
1:O:209:SER:HB2	1:O:214:THR:HA	1.62	0.82
1:O:35:VAL:HG21	1:O:128:VAL:HG23	1.59	0.82
1:O:196:ILE:CG2	1:O:197:LYS:HG2	2.06	0.82
1:O:205:MET:HE2	1:O:208:VAL:HG22	1.60	0.82
1:C:256:VAL:HG23	1:C:297:THR:HG22	1.61	0.82
1:O:82:ARG:O	2:O:1341:C61:H352	1.80	0.81
1:O:6:THR:N	1:O:154:LYS:HE3	1.94	0.81
1:O:216:LEU:CG	1:O:241:LYS:HE2	2.10	0.81
1:C:127:VAL:HG21	2:C:1341:C61:H192	1.59	0.81
1:O:196:ILE:HG22	1:O:197:LYS:CG	2.07	0.81
1:C:150:GLN:HB2	1:C:152:VAL:CG1	2.10	0.81
1:C:196:ILE:HG23	1:C:197:LYS:H	1.46	0.80
1:C:51:CYS:HB2	1:C:112:THR:HA	1.64	0.80
1:C:236:THR:O	1:C:240:GLU:HB2	1.82	0.80
1:O:35:VAL:HG21	1:O:128:VAL:CG2	2.11	0.80
1:C:154:LYS:NZ	1:C:154:LYS:HB3	1.97	0.79
1:O:133:ILE:HD13	1:O:139:ARG:HD3	1.65	0.79
1:O:233:SER:HA	1:O:301:HIS:O	1.83	0.78
1:C:53:ARG:H	1:C:53:ARG:CD	1.97	0.78
1:O:205:MET:CE	1:O:208:VAL:HG22	2.13	0.78
1:O:195:LEU:HB2	1:O:332:ASN:O	1.82	0.78
1:O:216:LEU:HD23	1:O:217:CYS:H	1.48	0.78
1:O:251:ARG:HH11	1:O:253:PHE:H	1.31	0.78
1:O:285:VAL:HG22	1:O:298:LEU:HD22	1.65	0.78
1:O:57:ALA:HB3	1:O:114:MET:HB3	1.65	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:340:ARG:NH1	1:O:7:THR:HG22	2.00	0.77
1:O:291:SER:HB3	1:O:294:LYS:HG2	1.65	0.77
1:O:251:ARG:HH12	1:O:253:PHE:HB2	1.50	0.77
1:C:157:VAL:HG12	1:C:328:ASP:HA	1.67	0.76
1:C:194:ASN:HA	1:C:333:ARG:HB3	1.66	0.76
1:O:79:LEU:HD13	1:O:92:LEU:HD13	1.67	0.76
1:O:133:ILE:CD1	1:O:139:ARG:HG3	2.16	0.75
1:C:261:GLU:O	1:C:264:THR:HB	1.86	0.75
1:C:239:ILE:HG13	1:C:301:HIS:O	1.86	0.75
1:C:206:LYS:HE2	1:C:271:HIS:NE2	2.01	0.75
1:C:16:MET:O	1:C:18:THR:HG23	1.86	0.74
1:O:153:LEU:O	1:O:154:LYS:HE2	1.87	0.74
1:O:47:PRO:HB2	1:O:63:LEU:HD23	1.70	0.74
1:O:139:ARG:NH2	1:O:139:ARG:HB2	2.03	0.74
1:C:26:ILE:HD13	1:C:97:ILE:HG12	1.70	0.74
1:O:306:PRO:O	1:O:308:PRO:HD2	1.88	0.74
1:O:214:THR:HG23	1:O:218:GLU:HG3	1.70	0.73
1:C:340:ARG:HH12	1:O:7:THR:HG22	1.51	0.73
1:O:283:ASP:OD1	1:O:322:LYS:HE2	1.88	0.73
1:C:150:GLN:HB2	1:C:152:VAL:HG11	1.72	0.72
1:C:260:ASN:HD22	1:C:261:GLU:H	1.36	0.72
1:O:216:LEU:HB2	1:O:241:LYS:HZ3	1.55	0.71
1:C:106:GLN:OE1	1:C:146:ASN:ND2	2.23	0.71
1:C:47:PRO:CG	1:C:114:MET:HE1	2.20	0.71
1:O:106:GLN:NE2	1:O:146:ASN:ND2	2.37	0.70
1:O:57:ALA:CB	1:O:114:MET:HB3	2.20	0.70
1:O:35:VAL:HG23	1:O:36:VAL:N	2.06	0.70
1:O:194:ASN:HB3	1:O:333:ARG:HB3	1.74	0.70
1:O:251:ARG:NH1	1:O:253:PHE:H	1.89	0.70
1:C:73:LYS:HB3	1:C:94:GLN:HG3	1.74	0.69
1:O:205:MET:CE	1:O:270:PHE:HD2	2.04	0.69
1:O:205:MET:O	1:O:220:GLY:HA2	1.92	0.69
1:C:260:ASN:ND2	1:C:261:GLU:H	1.87	0.69
1:C:216:LEU:HD12	1:C:238:SER:CB	2.15	0.69
1:O:84:SER:O	1:O:85:THR:HG23	1.93	0.69
1:O:53:ARG:HB2	1:O:59:VAL:HG22	1.74	0.69
1:O:205:MET:HE2	1:O:208:VAL:CG2	2.23	0.69
1:O:55:TYR:OH	1:O:113:GLU:HG3	1.92	0.68
1:C:156:ASP:H	1:C:330:ARG:CD	2.05	0.68
1:O:115:PRO:HB2	1:O:118:PRO:CD	2.22	0.68
1:O:33:PHE:CE2	1:O:62:LYS:HG2	2.29	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:150:GLN:HB2	1:C:152:VAL:HG12	1.76	0.68
1:C:200:VAL:CG1	1:C:202:GLN:HB2	2.23	0.68
1:O:251:ARG:NH1	1:O:253:PHE:O	2.26	0.68
1:C:232:ILE:O	1:C:300:ILE:HA	1.93	0.67
2:O:1341:C61:N23	2:O:1341:C61:H162	2.10	0.67
1:C:215:LEU:HB3	1:C:216:LEU:HD22	1.77	0.67
1:O:139:ARG:HB2	1:O:139:ARG:HH21	1.59	0.67
1:C:154:LYS:HB3	1:C:154:LYS:HZ2	1.58	0.66
1:C:14:ASN:ND2	1:C:165:ASP:HB2	2.09	0.66
1:O:106:GLN:HE21	1:O:146:ASN:ND2	1.91	0.66
1:O:305:ILE:O	1:O:310:GLY:HA3	1.95	0.66
1:C:57:ALA:HA	1:C:120:MET:CE	2.26	0.65
1:C:79:LEU:HD22	1:C:92:LEU:CD2	2.24	0.65
1:C:153:LEU:HD22	1:C:179:GLY:HA3	1.79	0.65
1:C:305:ILE:O	1:C:310:GLY:HA3	1.96	0.65
1:O:6:THR:O	1:O:154:LYS:N	2.30	0.65
1:C:17:ASP:OD1	1:C:165:ASP:HB3	1.97	0.65
1:O:193:ILE:HD12	1:O:273:GLY:HA3	1.79	0.64
1:O:5:ASN:CA	1:O:154:LYS:HE3	2.28	0.64
1:C:47:PRO:HB3	1:C:114:MET:HE2	1.79	0.64
1:C:242:LEU:HD11	1:C:246:LEU:HD11	1.78	0.64
1:O:5:ASN:C	1:O:154:LYS:HG2	2.22	0.64
1:O:133:ILE:HD11	1:O:139:ARG:HG3	1.79	0.64
1:C:307:PRO:HA	1:C:310:GLY:O	1.97	0.64
1:O:284:TYR:CD1	1:O:285:VAL:HG23	2.33	0.64
1:C:164:ARG:HH21	1:O:172:LEU:HD13	1.61	0.64
1:O:92:LEU:HD21	1:O:140:VAL:HG21	1.80	0.63
1:O:133:ILE:HD13	1:O:139:ARG:HG3	1.78	0.63
1:O:9:SER:HA	1:O:176:ILE:O	1.99	0.63
1:O:260:ASN:HB2	1:O:292:SER:HA	1.80	0.63
1:O:289:SER:OG	1:O:294:LYS:HD3	2.00	0.62
1:C:260:ASN:HD22	1:C:260:ASN:C	2.06	0.62
1:O:164:ARG:O	1:O:166:SER:N	2.32	0.62
1:O:117:LEU:O	1:O:117:LEU:HD12	1.99	0.62
1:O:115:PRO:C	1:O:117:LEU:H	2.08	0.62
1:C:5:ASN:C	1:C:5:ASN:HD22	2.06	0.61
1:O:205:MET:HE3	1:O:270:PHE:HD2	1.66	0.61
1:C:216:LEU:HD23	1:C:216:LEU:N	2.15	0.61
1:O:34:LYS:CB	1:O:124:PHE:HA	2.30	0.61
1:O:66:ALA:HB1	1:O:72:TYR:CG	2.36	0.61
1:C:198:THR:HB	1:C:332:ASN:ND2	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:115:PRO:HB2	1:O:118:PRO:HD2	1.81	0.60
1:C:118:PRO:HB2	2:C:1341:C61:H9C3	1.82	0.60
1:O:79:LEU:CD1	1:O:92:LEU:HD13	2.31	0.60
1:O:118:PRO:CD	1:O:119:PHE:H	2.12	0.60
1:C:193:ILE:HD13	1:C:203:ILE:CD1	2.31	0.60
1:C:139:ARG:O	1:C:139:ARG:HG3	2.01	0.60
1:O:115:PRO:HB2	1:O:118:PRO:HD3	1.83	0.60
1:C:192:TYR:HA	1:C:335:GLY:HA2	1.84	0.60
1:O:34:LYS:HB2	1:O:124:PHE:HA	1.83	0.59
1:O:45:TRP:CE3	1:O:111:VAL:HG21	2.37	0.59
1:O:58:CYS:SG	1:O:114:MET:HE3	2.42	0.59
1:O:38:ASP:OD1	1:O:228:GLY:HA3	2.02	0.59
1:O:83:TYR:HD1	2:O:1341:C61:H321	1.66	0.59
1:C:249:LYS:O	1:C:255:TYR:HA	2.02	0.59
1:O:52:SER:OG	1:O:54:LEU:HB2	2.03	0.59
1:C:306:PRO:O	1:C:308:PRO:N	2.36	0.59
1:C:308:PRO:HB2	1:C:309:THR:HG23	1.85	0.59
1:O:92:LEU:HD12	1:O:108:PHE:O	2.03	0.59
1:O:216:LEU:HD12	1:O:241:LYS:CE	2.33	0.59
1:C:195:LEU:HB2	1:C:332:ASN:O	2.03	0.58
1:O:55:TYR:CE1	1:O:113:GLU:HA	2.37	0.58
1:O:210:VAL:HG21	1:O:242:LEU:HD12	1.85	0.58
1:O:139:ARG:HH21	1:O:139:ARG:CB	2.16	0.58
1:C:94:GLN:CB	1:C:107:MET:HE2	2.26	0.58
1:O:34:LYS:HB2	1:O:124:PHE:CA	2.34	0.58
1:C:151:GLY:C	1:C:152:VAL:HG12	2.28	0.58
1:C:258:LYS:HB3	1:C:261:GLU:CD	2.28	0.58
1:O:5:ASN:HA	1:O:154:LYS:CE	2.34	0.58
1:O:197:LYS:HG3	1:O:197:LYS:O	2.03	0.58
1:O:227:THR:O	2:O:1341:C61:H2C2	2.03	0.58
1:C:216:LEU:C	1:C:218:GLU:H	2.10	0.58
1:C:157:VAL:CG1	1:C:328:ASP:HA	2.34	0.58
1:O:72:TYR:HE1	1:O:93:SER:OG	1.86	0.58
1:C:205:MET:HE2	1:C:223:ALA:HB2	1.86	0.57
1:C:319:PHE:HE1	1:C:336:PHE:CE2	2.22	0.57
1:O:251:ARG:HD2	1:O:252:LEU:H	1.68	0.57
1:O:234:GLY:O	1:O:303:MET:N	2.33	0.57
1:C:20:TYR:HB2	2:C:1341:C61:H2C1	1.85	0.57
1:O:26:ILE:HG12	1:O:97:ILE:HG12	1.86	0.57
1:O:52:SER:OG	1:O:54:LEU:N	2.31	0.57
1:C:57:ALA:HA	1:C:120:MET:HE3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:6:THR:HG23	1:O:7:THR:N	2.20	0.57
1:O:272:LEU:HD23	1:O:277:TYR:CD1	2.39	0.57
1:C:53:ARG:HB2	1:C:59:VAL:CG1	2.35	0.57
1:O:133:ILE:HD13	1:O:139:ARG:CD	2.34	0.57
1:O:106:GLN:HE21	1:O:146:ASN:HD22	1.42	0.57
1:O:251:ARG:CG	1:O:252:LEU:H	2.15	0.56
1:O:133:ILE:HG13	1:O:142:PRO:HD3	1.85	0.56
1:O:216:LEU:CD2	1:O:217:CYS:H	2.19	0.56
1:O:279:LEU:CD2	1:O:283:ASP:HB3	2.30	0.56
1:O:205:MET:HE1	1:O:270:PHE:HD2	1.71	0.56
2:O:1341:C61:H18	2:O:1341:C61:C10	2.36	0.56
1:C:96:ILE:HA	1:C:105:THR:HA	1.86	0.56
1:O:48:SER:O	1:O:63:LEU:HD22	2.06	0.56
1:C:99:VAL:HG23	1:C:99:VAL:O	2.05	0.56
1:O:25:GLY:O	1:O:97:ILE:HA	2.06	0.56
1:O:91:PHE:HE1	1:O:112:THR:CG2	2.19	0.56
1:C:226:ASP:OD1	1:C:229:ALA:HB2	2.07	0.55
1:C:57:ALA:CB	1:C:114:MET:HG2	2.36	0.55
1:C:256:VAL:HG13	1:C:295:LEU:HD22	1.87	0.55
1:C:206:LYS:NZ	1:C:273:GLY:N	2.54	0.55
1:O:47:PRO:HD3	1:O:125:ASP:O	2.06	0.55
1:O:64:PHE:CE1	1:O:108:PHE:HZ	2.24	0.55
1:C:206:LYS:HE2	1:C:271:HIS:CD2	2.41	0.55
1:O:34:LYS:HG3	1:O:124:PHE:HA	1.89	0.55
1:O:155:GLU:HG3	1:O:179:GLY:O	2.05	0.55
1:O:272:LEU:CD2	1:O:277:TYR:CD1	2.89	0.55
1:O:340:ARG:HB3	1:O:340:ARG:HH21	1.71	0.55
1:C:83:TYR:CE2	2:C:1341:C61:C20	2.90	0.55
1:O:206:LYS:NZ	1:O:274:GLY:HA2	2.21	0.55
1:O:287:GLN:C	1:O:289:SER:H	2.15	0.55
1:C:18:THR:O	1:C:230:SER:HB3	2.06	0.55
1:C:118:PRO:HG2	2:C:1341:C61:H13	1.87	0.55
1:O:250:LYS:HA	1:O:255:TYR:HA	1.88	0.55
1:C:96:ILE:CG2	1:C:105:THR:HG22	2.27	0.54
1:C:242:LEU:CD1	1:C:246:LEU:HD11	2.37	0.54
1:O:45:TRP:NE1	1:O:127:VAL:CG1	2.71	0.54
1:O:300:ILE:C	1:O:301:HIS:HD2	2.15	0.54
1:C:73:LYS:CB	1:C:94:GLN:HG3	2.36	0.54
1:O:92:LEU:HG	1:O:107:MET:HG3	1.89	0.54
1:C:130:MET:HE3	1:C:130:MET:HA	1.88	0.54
1:O:15:TYR:CD1	1:O:16:MET:HG3	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:24:ILE:HG12	1:O:35:VAL:HG11	1.89	0.54
1:O:104:VAL:HG12	1:O:105:THR:N	2.21	0.54
1:O:251:ARG:CD	1:O:252:LEU:H	2.21	0.54
1:C:256:VAL:HG23	1:C:297:THR:CG2	2.35	0.54
1:O:227:THR:HG22	1:O:320:ILE:HD13	1.90	0.54
1:C:253:PHE:O	1:C:301:HIS:CE1	2.61	0.54
1:O:38:ASP:O	1:O:130:MET:N	2.28	0.54
1:O:210:VAL:CG2	1:O:242:LEU:HD12	2.38	0.54
1:C:118:PRO:HB2	2:C:1341:C61:H13	1.89	0.54
1:C:8:SER:O	1:C:177:VAL:HA	2.08	0.54
1:C:294:LYS:NZ	1:C:294:LYS:HB3	2.23	0.54
1:O:16:MET:O	1:O:17:ASP:HB2	2.08	0.53
1:O:47:PRO:CB	1:O:63:LEU:HD23	2.37	0.53
1:C:196:ILE:HG21	1:C:202:GLN:HB3	1.89	0.53
1:C:306:PRO:HB2	1:C:308:PRO:HD2	1.90	0.53
1:C:132:PHE:CD2	1:C:200:VAL:N	2.77	0.53
1:C:213:SER:O	1:C:215:LEU:N	2.42	0.53
1:C:59:VAL:HG23	1:C:60:TYR:CD1	2.43	0.53
1:C:200:VAL:HG11	1:C:202:GLN:HB2	1.89	0.53
1:C:211:GLY:HA2	1:C:266:PRO:HB2	1.91	0.53
1:C:320:ILE:O	1:C:320:ILE:HG22	2.09	0.53
1:C:8:SER:O	1:C:178:LEU:N	2.33	0.53
1:O:232:ILE:HG13	1:O:318:THR:HB	1.91	0.53
1:O:58:CYS:O	1:O:63:LEU:HD11	2.09	0.53
1:O:202:GLN:OE1	1:O:222:LEU:HD13	2.09	0.53
1:C:306:PRO:C	1:C:308:PRO:HD2	2.34	0.53
1:C:72:TYR:CG	1:C:73:LYS:N	2.77	0.53
1:O:306:PRO:C	1:O:308:PRO:HD2	2.33	0.52
1:O:83:TYR:HB3	2:O:1341:C61:H22	1.91	0.52
1:C:62:LYS:NZ	1:C:62:LYS:HB3	2.22	0.52
1:C:158:PHE:CE2	1:C:327:PHE:CD1	2.98	0.52
1:C:256:VAL:CG2	1:C:297:THR:HG22	2.35	0.52
1:O:161:TYR:HE2	1:O:172:LEU:CD2	2.22	0.52
1:O:5:ASN:N	1:O:154:LYS:HE3	2.24	0.52
1:C:53:ARG:HB2	1:C:59:VAL:HG12	1.89	0.52
1:O:115:PRO:C	1:O:117:LEU:N	2.67	0.52
1:O:340:ARG:HD2	1:O:340:ARG:O	2.10	0.52
1:C:265:LEU:HB3	1:C:284:TYR:OH	2.09	0.52
1:C:306:PRO:HG2	1:C:308:PRO:HG2	1.91	0.52
1:O:41:SER:O	1:O:131:GLY:N	2.42	0.52
1:O:45:TRP:CE2	1:O:127:VAL:HG12	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:65:ASP:O	1:O:68:ASP:HB2	2.10	0.52
1:O:206:LYS:HZ3	1:O:274:GLY:HA2	1.75	0.52
1:O:291:SER:HB3	1:O:294:LYS:CG	2.37	0.52
1:C:196:ILE:CG2	1:C:197:LYS:N	2.68	0.52
1:C:202:GLN:OE1	1:C:312:THR:OG1	2.27	0.52
1:O:59:VAL:HG12	1:O:60:TYR:CE2	2.44	0.52
1:O:137:ILE:HG22	1:O:137:ILE:O	2.08	0.52
1:O:253:PHE:O	1:O:254:ASP:O	2.28	0.52
1:C:64:PHE:CE1	1:C:66:ALA:HB2	2.45	0.51
1:C:192:TYR:HB3	1:C:333:ARG:HD2	1.93	0.51
1:C:286:PHE:CE1	1:C:299:ALA:HB2	2.45	0.51
1:C:206:LYS:HZ1	1:C:273:GLY:N	2.09	0.51
1:O:139:ARG:HH21	1:O:139:ARG:HA	1.76	0.51
1:C:206:LYS:HZ1	1:C:273:GLY:CA	2.24	0.51
1:O:34:LYS:CG	1:O:124:PHE:HA	2.40	0.51
1:O:236:THR:OG1	1:O:304:ASP:OD2	2.29	0.51
1:O:26:ILE:CD1	1:O:46:VAL:HG11	2.39	0.51
1:O:310:GLY:HA2	1:O:312:THR:HG22	1.92	0.51
1:O:300:ILE:O	1:O:301:HIS:HD2	1.92	0.51
1:O:217:CYS:O	1:O:217:CYS:SG	2.68	0.51
1:C:120:MET:HE3	1:C:120:MET:HA	1.93	0.51
1:C:192:TYR:CD2	1:C:335:GLY:HA3	2.46	0.51
1:C:284:TYR:CD1	1:C:285:VAL:HG23	2.45	0.51
1:C:19:GLN:HG2	2:C:1341:C61:H5C1	1.94	0.50
1:C:250:LYS:O	1:C:252:LEU:N	2.44	0.50
1:O:88:VAL:HG12	1:O:115:PRO:HD2	1.92	0.50
1:C:45:TRP:HA	1:C:109:GLY:O	2.11	0.50
1:C:127:VAL:HG23	2:C:1341:C61:H191	1.86	0.50
1:C:248:ALA:HB1	1:C:256:VAL:H	1.77	0.50
1:O:35:VAL:CG2	1:O:128:VAL:HG23	2.36	0.50
1:O:49:SER:C	1:O:51:CYS:H	2.19	0.50
1:O:97:ILE:HD12	1:O:106:GLN:HB2	1.92	0.50
1:O:305:ILE:O	1:O:311:PRO:HA	2.11	0.50
1:O:216:LEU:HD12	1:O:241:LYS:HE3	1.93	0.50
1:C:251:ARG:HB3	1:C:254:ASP:OD2	2.12	0.50
1:O:154:LYS:HE2	1:O:154:LYS:HA	1.93	0.50
1:C:5:ASN:C	1:C:5:ASN:ND2	2.68	0.50
1:O:153:LEU:C	1:O:154:LYS:HE2	2.37	0.50
1:O:234:GLY:O	1:O:302:ALA:HA	2.11	0.50
1:O:246:LEU:HD12	1:O:298:LEU:HD11	1.93	0.50
1:C:6:THR:HG22	1:C:7:THR:N	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:19:GLN:HE22	1:C:123:GLU:HB2	1.76	0.50
1:C:47:PRO:HG3	1:C:114:MET:CE	2.26	0.50
1:O:59:VAL:HG12	1:O:60:TYR:CG	2.47	0.49
1:O:119:PHE:C	1:O:121:LEU:N	2.69	0.49
1:C:97:ILE:HG22	1:C:98:THR:N	2.27	0.49
1:C:242:LEU:CD1	1:C:242:LEU:C	2.85	0.49
1:O:133:ILE:HD13	1:O:139:ARG:CG	2.42	0.49
1:C:92:LEU:O	1:C:93:SER:HB3	2.13	0.49
1:C:242:LEU:C	1:C:242:LEU:HD12	2.37	0.49
1:C:133:ILE:O	1:C:133:ILE:HG13	2.12	0.49
1:O:280:THR:H	1:O:283:ASP:HB2	1.77	0.49
1:C:16:MET:O	1:C:17:ASP:HB2	2.13	0.49
1:C:322:LYS:HG2	1:C:323:PHE:CE1	2.48	0.49
1:C:73:LYS:HB3	1:C:94:GLN:CG	2.42	0.49
1:O:35:VAL:HG21	1:O:128:VAL:HG21	1.95	0.49
1:O:139:ARG:HH21	1:O:139:ARG:CA	2.26	0.49
1:C:216:LEU:N	1:C:216:LEU:CD2	2.75	0.49
1:C:256:VAL:HG23	1:C:297:THR:HA	1.94	0.49
1:O:139:ARG:HB2	1:O:139:ARG:CZ	2.43	0.49
1:C:111:VAL:HG13	1:C:113:GLU:O	2.12	0.48
1:C:144:PHE:CE1	1:C:148:ILE:HD11	2.47	0.48
1:C:186:TYR:HA	1:C:338:LEU:O	2.13	0.48
1:C:295:LEU:HD23	1:C:295:LEU:HA	1.67	0.48
1:O:216:LEU:CD1	1:O:241:LYS:HE2	2.43	0.48
1:C:156:ASP:HB3	1:C:329:ARG:HB2	1.95	0.48
1:C:156:ASP:O	1:C:329:ARG:HB2	2.14	0.48
1:C:193:ILE:CD1	1:C:203:ILE:HD12	2.43	0.48
1:C:258:LYS:HA	1:C:295:LEU:HD23	1.95	0.48
1:O:161:TYR:HE2	1:O:172:LEU:HD23	1.78	0.48
1:O:298:LEU:HD23	1:O:298:LEU:N	2.28	0.48
1:C:36:VAL:HG13	2:C:1341:C61:H2C2	1.95	0.48
1:C:133:ILE:HG22	1:C:134:GLU:OE1	2.13	0.48
1:O:216:LEU:HD23	1:O:217:CYS:N	2.24	0.48
1:C:104:VAL:HG11	1:C:147:ILE:HG13	1.95	0.48
1:O:152:VAL:HG12	1:O:153:LEU:N	2.28	0.48
1:O:155:GLU:O	1:O:157:VAL:N	2.40	0.48
1:O:224:LEU:O	1:O:314:ALA:HA	2.13	0.48
1:C:253:PHE:O	1:C:301:HIS:HE1	1.97	0.48
1:O:251:ARG:CG	1:O:252:LEU:N	2.75	0.48
1:C:200:VAL:HG12	1:C:202:GLN:HB2	1.93	0.48
1:C:258:LYS:HE3	1:C:261:GLU:OE1	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:88:VAL:HG13	1:O:119:PHE:CE2	2.49	0.48
1:C:79:LEU:CD2	1:C:92:LEU:HD21	2.30	0.48
1:O:196:ILE:O	1:O:196:ILE:HG23	2.13	0.48
1:O:257:VAL:HG21	1:O:265:LEU:HD11	1.94	0.48
1:C:92:LEU:HD23	1:C:92:LEU:HA	1.45	0.47
1:O:275:LYS:HB2	1:O:275:LYS:HE2	1.28	0.47
1:O:305:ILE:C	1:O:310:GLY:HA3	2.38	0.47
1:O:5:ASN:C	1:O:154:LYS:HE3	2.39	0.47
1:O:216:LEU:HB2	1:O:241:LYS:CE	2.45	0.47
1:O:39:THR:HG23	1:O:227:THR:OG1	2.13	0.47
1:O:61:HIS:HD2	1:O:125:ASP:OD1	1.97	0.47
1:O:309:THR:CG2	1:O:310:GLY:N	2.77	0.47
1:C:260:ASN:HD22	1:C:261:GLU:CA	2.25	0.47
1:C:280:THR:HG21	1:O:23:GLU:OE2	2.14	0.47
1:O:91:PHE:HE1	1:O:112:THR:HG23	1.80	0.47
1:O:150:GLN:HB3	1:O:152:VAL:HB	1.96	0.47
1:O:197:LYS:CB	1:O:197:LYS:NZ	2.77	0.47
1:O:251:ARG:HH12	1:O:253:PHE:CB	2.24	0.47
2:O:1341:C61:C16	2:O:1341:C61:H231	2.27	0.47
1:C:79:LEU:CD1	1:C:137:ILE:HG22	2.45	0.47
1:C:172:LEU:HA	1:C:172:LEU:HD12	1.48	0.47
1:O:237:SER:O	1:O:240:GLU:HB2	2.14	0.47
1:C:103:THR:O	1:C:103:THR:HG22	2.12	0.47
1:C:155:GLU:HB3	1:C:157:VAL:CG2	2.45	0.47
1:O:132:PHE:HB2	1:O:199:GLY:O	2.15	0.47
1:C:306:PRO:HB2	1:C:307:PRO:CD	2.44	0.47
1:O:53:ARG:HB2	1:O:59:VAL:CG2	2.44	0.47
1:O:148:ILE:HG13	1:O:156:ASP:OD2	2.14	0.47
1:C:217:CYS:O	1:C:217:CYS:SG	2.73	0.47
1:O:227:THR:HG22	1:O:320:ILE:CD1	2.44	0.47
1:O:309:THR:HG22	1:O:310:GLY:H	1.78	0.47
1:C:192:TYR:HA	1:C:334:ILE:O	2.16	0.46
1:O:115:PRO:O	1:O:118:PRO:HD2	2.16	0.46
1:O:271:HIS:HB2	1:O:276:GLU:CD	2.40	0.46
1:C:118:PRO:CG	2:C:1341:C61:H13	2.45	0.46
1:O:5:ASN:CA	1:O:154:LYS:CE	2.92	0.46
1:O:49:SER:C	1:O:51:CYS:N	2.70	0.46
1:O:88:VAL:CG1	1:O:119:PHE:CE2	2.98	0.46
1:O:214:THR:HG23	1:O:214:THR:O	2.14	0.46
1:O:216:LEU:HB2	1:O:241:LYS:HZ1	1.76	0.46
1:O:97:ILE:HG22	1:O:98:THR:N	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:60:TYR:HB2	1:C:120:MET:CE	2.46	0.46
1:O:214:THR:CG2	1:O:218:GLU:HG3	2.43	0.46
1:C:81:LEU:O	1:C:87:THR:HA	2.15	0.46
1:C:249:LYS:HD3	1:C:249:LYS:N	2.31	0.46
1:O:16:MET:C	1:O:18:THR:H	2.23	0.46
1:O:236:THR:O	1:O:240:GLU:HG3	2.15	0.46
1:O:291:SER:CB	1:O:294:LYS:HD2	2.45	0.46
1:C:28:THR:HG1	1:C:71:SER:CB	2.24	0.46
1:C:60:TYR:HB2	1:C:120:MET:HE1	1.98	0.46
1:C:186:TYR:CE2	1:C:190:PHE:CE1	3.03	0.46
1:C:206:LYS:HB2	1:C:271:HIS:HD2	1.81	0.46
1:C:293:LYS:O	1:C:294:LYS:HG2	2.15	0.46
1:C:306:PRO:CB	1:C:307:PRO:CD	2.94	0.46
1:O:251:ARG:NH1	1:O:253:PHE:HB2	2.25	0.45
1:O:300:ILE:C	1:O:301:HIS:CD2	2.94	0.45
1:C:132:PHE:CD2	1:C:199:GLY:C	2.95	0.45
1:C:198:THR:HB	1:C:332:ASN:HD22	1.80	0.45
1:O:118:PRO:HD2	1:O:119:PHE:H	1.80	0.45
1:O:309:THR:HG22	1:O:310:GLY:N	2.31	0.45
1:C:57:ALA:HA	1:C:120:MET:HE1	1.99	0.45
1:C:193:ILE:HG21	1:C:203:ILE:HG13	1.99	0.45
1:C:239:ILE:HG21	1:C:302:ALA:HB2	1.97	0.45
1:C:54:LEU:HD12	1:C:54:LEU:HA	1.68	0.45
1:C:127:VAL:O	1:C:127:VAL:HG12	2.17	0.45
1:O:213:SER:O	1:O:215:LEU:HD23	2.17	0.45
1:O:6:THR:CG2	1:O:7:THR:N	2.78	0.45
1:O:216:LEU:CD2	1:O:217:CYS:N	2.79	0.45
1:O:307:PRO:HA	1:O:310:GLY:O	2.17	0.45
1:C:9:SER:HA	1:C:176:ILE:O	2.17	0.45
1:C:57:ALA:HB1	1:C:114:MET:HG2	1.98	0.45
1:C:280:THR:O	1:C:283:ASP:HB2	2.17	0.45
1:O:251:ARG:NH1	1:O:253:PHE:C	2.75	0.45
1:C:83:TYR:CE2	2:C:1341:C61:H203	2.52	0.45
1:C:157:VAL:HG12	1:C:327:PHE:O	2.16	0.45
1:C:175:GLN:HE21	1:C:175:GLN:HB3	1.35	0.45
1:C:193:ILE:HD13	1:C:203:ILE:HD12	1.99	0.45
1:C:307:PRO:O	1:C:308:PRO:C	2.59	0.45
1:O:306:PRO:HA	1:O:307:PRO:HD3	1.62	0.45
1:C:20:TYR:H	2:C:1341:C61:H2C1	1.82	0.44
1:O:24:ILE:HG12	1:O:35:VAL:CG1	2.47	0.44
1:C:83:TYR:CD2	2:C:1341:C61:C20	3.01	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:75:ASN:OD1	1:O:77:THR:HG22	2.17	0.44
1:O:211:GLY:HA2	1:O:266:PRO:HB3	1.99	0.44
1:C:6:THR:OG1	1:C:152:VAL:HG23	2.17	0.44
1:O:121:LEU:HA	1:O:121:LEU:HD23	1.57	0.44
1:O:259:CYS:HB3	1:O:289:SER:O	2.18	0.44
1:O:305:ILE:HA	1:O:306:PRO:HD3	1.62	0.44
1:C:19:GLN:NE2	1:C:123:GLU:HB2	2.32	0.44
1:C:115:PRO:O	1:C:119:PHE:HB2	2.18	0.44
1:O:196:ILE:C	1:O:197:LYS:HG2	2.42	0.44
1:O:215:LEU:HD23	1:O:215:LEU:N	2.33	0.44
1:C:214:THR:CG2	1:C:218:GLU:HB3	2.47	0.44
1:O:6:THR:HB	1:O:152:VAL:O	2.17	0.44
1:O:220:GLY:O	1:O:221:CYS:HB3	2.17	0.44
1:C:34:LYS:C	1:C:35:VAL:HG13	2.42	0.44
1:O:181:SER:O	1:O:183:PRO:HD3	2.18	0.43
1:O:197:LYS:NZ	1:O:197:LYS:HB2	2.32	0.43
1:O:280:THR:N	1:O:283:ASP:HB2	2.33	0.43
1:C:154:LYS:NZ	1:C:154:LYS:CB	2.71	0.43
1:O:260:ASN:HB2	1:O:292:SER:CA	2.47	0.43
1:O:88:VAL:HG12	1:O:115:PRO:CD	2.48	0.43
1:C:16:MET:C	1:C:18:THR:N	2.71	0.43
1:C:239:ILE:HA	1:C:239:ILE:HD13	1.33	0.43
1:C:260:ASN:HD21	1:C:261:GLU:HG3	1.82	0.43
1:O:252:LEU:HB3	1:O:253:PHE:CD1	2.53	0.43
1:O:306:PRO:CB	1:O:307:PRO:HD2	2.48	0.43
1:C:225:VAL:HG21	1:C:334:ILE:HD13	2.01	0.43
1:C:333:ARG:H	1:C:333:ARG:HG3	1.49	0.43
1:O:59:VAL:C	1:O:60:TYR:CD2	2.96	0.43
2:O:1341:C61:H162	2:O:1341:C61:H231	1.82	0.43
1:C:182:ASP:C	1:C:186:TYR:HE1	2.27	0.43
1:O:192:TYR:CD1	1:O:192:TYR:N	2.86	0.43
1:O:197:LYS:HB2	1:O:197:LYS:HZ2	1.84	0.43
1:C:111:VAL:HG13	1:C:113:GLU:H	1.84	0.43
1:C:287:GLN:HE21	1:C:287:GLN:HB2	1.59	0.43
1:O:118:PRO:HG2	1:O:119:PHE:CE2	2.51	0.43
1:O:271:HIS:CD2	1:O:271:HIS:C	2.97	0.43
1:C:72:TYR:HB2	1:C:95:ASP:OD2	2.19	0.43
1:O:24:ILE:HD12	1:O:97:ILE:HG23	2.01	0.43
1:O:99:VAL:O	1:O:102:ILE:HB	2.19	0.43
1:O:251:ARG:NH2	1:O:254:ASP:HB2	2.33	0.43
1:C:205:MET:HE1	1:C:313:TRP:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:104:VAL:HG21	1:O:143:ILE:HD11	2.01	0.42
1:C:215:LEU:HB3	1:C:216:LEU:CD2	2.48	0.42
1:O:176:ILE:HG23	1:O:176:ILE:HD13	1.62	0.42
1:C:242:LEU:CD1	1:C:246:LEU:CD1	2.97	0.42
1:C:306:PRO:C	1:C:308:PRO:CD	2.92	0.42
1:O:66:ALA:HB1	1:O:72:TYR:CD2	2.54	0.42
1:C:206:LYS:NZ	1:C:274:GLY:H	2.18	0.42
1:O:39:THR:HG22	1:O:130:MET:HB2	2.01	0.42
1:O:281:SER:O	1:O:285:VAL:HB	2.19	0.42
1:C:84:SER:HB2	2:C:1341:C61:C26	2.41	0.42
1:C:104:VAL:O	1:C:104:VAL:HG23	2.16	0.42
1:C:307:PRO:N	1:C:308:PRO:HD2	2.35	0.42
1:O:96:ILE:HG21	1:O:96:ILE:HD13	1.80	0.42
1:C:27:GLY:O	1:C:30:PRO:HA	2.19	0.42
1:C:192:TYR:CD2	1:C:335:GLY:CA	3.03	0.42
1:O:103:THR:HG23	1:O:103:THR:O	2.20	0.42
1:O:340:ARG:CG	1:O:340:ARG:NH2	2.81	0.42
1:O:230:SER:O	1:O:317:ALA:HB3	2.20	0.42
1:C:306:PRO:C	1:C:308:PRO:N	2.78	0.41
1:O:215:LEU:HB2	1:O:241:LYS:NZ	2.34	0.41
1:C:155:GLU:O	1:C:179:GLY:HA2	2.20	0.41
1:O:34:LYS:O	1:O:125:ASP:N	2.50	0.41
1:O:153:LEU:HD23	1:O:153:LEU:HA	1.80	0.41
1:O:260:ASN:O	1:O:263:PRO:HD2	2.20	0.41
1:O:141:THR:HG22	1:O:142:PRO:N	2.34	0.41
1:C:47:PRO:HB3	1:C:114:MET:CE	2.48	0.41
1:C:83:TYR:CZ	2:C:1341:C61:H203	2.55	0.41
1:O:36:VAL:HG11	2:O:1341:C61:H5C1	2.02	0.41
1:O:96:ILE:HA	1:O:104:VAL:O	2.20	0.41
1:C:97:ILE:CG2	1:C:98:THR:N	2.82	0.41
1:C:130:MET:HE2	1:C:130:MET:HB3	1.79	0.41
1:C:200:VAL:HG12	1:C:202:GLN:N	2.35	0.41
1:O:16:MET:C	1:O:18:THR:N	2.76	0.41
1:C:19:GLN:CG	2:C:1341:C61:H5C1	2.51	0.41
1:C:153:LEU:HD22	1:C:179:GLY:CA	2.49	0.41
1:O:45:TRP:CE3	1:O:111:VAL:CG2	3.02	0.41
1:O:47:PRO:HG2	1:O:62:LYS:O	2.20	0.41
1:O:281:SER:O	1:O:282:ALA:O	2.38	0.41
1:O:307:PRO:C	1:O:310:GLY:O	2.64	0.41
1:C:64:PHE:HE1	1:C:66:ALA:HB2	1.84	0.41
1:O:17:ASP:O	1:O:321:ARG:NH2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:200:VAL:HG12	1:C:202:GLN:H	1.86	0.41
1:O:114:MET:HE3	1:O:114:MET:HB2	1.31	0.41
1:O:328:ASP:HB3	1:O:333:ARG:O	2.21	0.41
1:O:340:ARG:HH21	1:O:340:ARG:CB	2.34	0.41
1:C:193:ILE:CD1	1:C:203:ILE:CD1	2.99	0.41
1:O:195:LEU:HD12	1:O:195:LEU:HA	1.69	0.41
2:C:1341:C61:H202	2:C:1341:C61:H161	1.79	0.40
1:O:27:GLY:HA2	1:O:95:ASP:OD1	2.21	0.40
1:O:65:ASP:O	1:O:67:SER:N	2.53	0.40
1:O:214:THR:O	1:O:214:THR:CG2	2.68	0.40
1:O:234:GLY:H	1:O:302:ALA:HA	1.86	0.40
1:C:256:VAL:HG22	1:C:296:CYS:C	2.45	0.40
1:C:265:LEU:HD23	1:C:284:TYR:HE1	1.86	0.40
1:O:72:TYR:OH	1:O:74:HIS:HA	2.21	0.40
1:O:118:PRO:CD	1:O:119:PHE:N	2.83	0.40
1:O:147:ILE:C	1:O:149:SER:N	2.79	0.40
1:O:215:LEU:CB	1:O:241:LYS:NZ	2.84	0.40
1:O:216:LEU:CD1	1:O:241:LYS:CE	2.99	0.40
1:C:5:ASN:CG	1:C:154:LYS:NZ	2.79	0.40
1:C:66:ALA:C	1:C:68:ASP:H	2.28	0.40
1:C:200:VAL:HG12	1:C:202:GLN:CB	2.51	0.40
1:C:258:LYS:HE3	1:C:258:LYS:HB2	1.92	0.40
1:O:205:MET:HE3	1:O:270:PHE:CD2	2.52	0.40
1:O:280:THR:O	1:O:284:TYR:CD2	2.74	0.40
1:C:155:GLU:O	1:C:157:VAL:N	2.53	0.40
1:C:263:PRO:HG3	1:C:290:TYR:CD2	2.57	0.40
1:C:286:PHE:O	1:C:288:GLU:OE1	2.39	0.40
1:C:310:GLY:HA2	1:C:311:PRO:C	2.47	0.40
1:O:144:PHE:CE1	1:O:148:ILE:HG12	2.56	0.40
1:C:216:LEU:HA	1:C:218:GLU:OE1	2.21	0.40
1:C:310:GLY:HA2	1:C:312:THR:HB	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	330/340 (97%)	288 (87%)	31 (9%)	11 (3%)	3	17
1	O	328/340 (96%)	281 (86%)	30 (9%)	17 (5%)	1	10
All	All	658/680 (97%)	569 (86%)	61 (9%)	28 (4%)	2	12

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	196	ILE
1	C	218	GLU
1	C	251	ARG
1	C	252	LEU
1	O	66	ALA
1	O	85	THR
1	O	156	ASP
1	O	165	ASP
1	O	220	GLY
1	O	254	ASP
1	O	307	PRO
1	C	152	VAL
1	C	214	THR
1	C	245	ALA
1	C	262	GLY
1	C	307	PRO
1	O	68	ASP
1	O	95	ASP
1	O	197	LYS
1	O	214	THR
1	C	151	GLY
1	O	76	GLY
1	O	283	ASP
1	O	289	SER
1	O	282	ALA
1	C	308	PRO
1	O	266	PRO
1	O	308	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	283/290 (98%)	211 (75%)	72 (25%)	0	2
1	O	282/290 (97%)	188 (67%)	94 (33%)	0	0
All	All	565/580 (97%)	399 (71%)	166 (29%)	0	1

All (166) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	9	SER
1	C	11	ILE
1	C	12	LEU
1	C	13	THR
1	C	26	ILE
1	C	32	THR
1	C	48	SER
1	C	50	LYS
1	C	53	ARG
1	C	62	LYS
1	C	63	LEU
1	C	68	ASP
1	C	71	SER
1	C	89	SER
1	C	103	THR
1	C	113	GLU
1	C	117	LEU
1	C	127	VAL
1	C	130	MET
1	C	133	ILE
1	C	137	ILE
1	C	139	ARG
1	C	141	THR
1	C	143	ILE
1	C	152	VAL
1	C	154	LYS
1	C	157	VAL

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Mol	Chain	Res	Type
1	C	164	ARG
1	C	165	ASP
1	C	175	GLN
1	C	184	GLN
1	C	195	LEU
1	C	197	LYS
1	C	198	THR
1	C	200	VAL
1	C	203	ILE
1	C	204	GLN
1	C	206	LYS
1	C	210	VAL
1	C	213	SER
1	C	216	LEU
1	C	218	GLU
1	C	224	LEU
1	C	230	SER
1	C	237	SER
1	C	238	SER
1	C	239	ILE
1	C	240	GLU
1	C	241	LYS
1	C	242	LEU
1	C	244	GLU
1	C	250	LYS
1	C	251	ARG
1	C	252	LEU
1	C	256	VAL
1	C	257	VAL
1	C	258	LYS
1	C	259	CYS
1	C	260	ASN
1	C	288	GLU
1	C	289	SER
1	C	291	SER
1	C	294	LYS
1	C	298	LEU
1	C	308	PRO
1	C	309	THR
1	C	318	THR
1	C	321	ARG
1	C	329	ARG

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Mol	Chain	Res	Type
1	C	333	ARG
1	C	338	LEU
1	C	340	ARG
1	O	5	ASN
1	O	6	THR
1	O	7	THR
1	O	9	SER
1	O	19	GLN
1	O	20	TYR
1	O	23	GLU
1	O	28	THR
1	O	29	PRO
1	O	31	GLN
1	O	32	THR
1	O	35	VAL
1	O	38	ASP
1	O	41	SER
1	O	42	SER
1	O	52	SER
1	O	56	THR
1	O	61	HIS
1	O	62	LYS
1	O	63	LEU
1	O	70	SER
1	O	73	LYS
1	O	77	THR
1	O	79	LEU
1	O	92	LEU
1	O	93	SER
1	O	94	GLN
1	O	95	ASP
1	O	98	THR
1	O	102	ILE
1	O	110	GLU
1	O	113	GLU
1	O	114	MET
1	O	117	LEU
1	O	125	ASP
1	O	127	VAL
1	O	133	ILE
1	O	137	ILE
1	O	139	ARG

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Mol	Chain	Res	Type
1	O	148	ILE
1	O	150	GLN
1	O	152	VAL
1	O	154	LYS
1	O	157	VAL
1	O	159	SER
1	O	163	ASN
1	O	165	ASP
1	O	172	LEU
1	O	175	GLN
1	O	176	ILE
1	O	182	ASP
1	O	189	ASN
1	O	195	LEU
1	O	196	ILE
1	O	197	LYS
1	O	200	VAL
1	O	206	LYS
1	O	210	VAL
1	O	212	SER
1	O	214	THR
1	O	216	LEU
1	O	224	LEU
1	O	230	SER
1	O	238	SER
1	O	243	MET
1	O	244	GLU
1	O	246	LEU
1	O	249	LYS
1	O	251	ARG
1	O	252	LEU
1	O	257	VAL
1	O	258	LYS
1	O	264	THR
1	O	268	ILE
1	O	269	SER
1	O	272	LEU
1	O	275	LYS
1	O	278	THR
1	O	280	THR
1	O	287	GLN
1	O	288	GLU

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Mol	Chain	Res	Type
1	O	291	SER
1	O	293	LYS
1	O	294	LYS
1	O	295	LEU
1	O	297	THR
1	O	298	LEU
1	O	303	MET
1	O	305	ILE
1	O	309	THR
1	O	322	LYS
1	O	329	ARG
1	O	338	LEU
1	O	340	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	5	ASN
1	C	19	GLN
1	C	175	GLN
1	C	189	ASN
1	C	194	ASN
1	C	202	GLN
1	C	260	ASN
1	C	287	GLN
1	C	301	HIS
1	C	332	ASN
1	O	106	GLN
1	O	189	ASN
1	O	191	HIS
1	O	202	GLN
1	O	287	GLN
1	O	301	HIS
1	O	332	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	C61	O	1341	-	34,34,34	1.15	3 (8%)	35,43,43	2.06	7 (20%)
2	C61	C	1341	-	34,34,34	1.48	4 (11%)	35,43,43	1.70	10 (28%)

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	C61	O	1341	-	-	11/37/37/37	0/1/1/1
2	C61	C	1341	-	-	9/37/37/37	0/1/1/1

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1341	C61	C19-C18	-4.41	1.37	1.52
2	C	1341	C61	O8-C12	4.14	1.43	1.37
2	O	1341	C61	O8-C12	3.85	1.43	1.37
2	C	1341	C61	O7-C11	3.51	1.44	1.37
2	O	1341	C61	O7-C11	3.41	1.44	1.37
2	C	1341	C61	C28-C27	2.51	1.61	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	O	1341	C61	C14-C13	2.45	1.42	1.38

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	O	1341	C61	C9-O8-C12	8.72	130.30	117.51
2	C	1341	C61	C9-O8-C12	4.14	123.58	117.51
2	O	1341	C61	C6-O7-C11	-3.95	108.17	117.69
2	C	1341	C61	C15-C16-C17	-3.81	107.66	113.61
2	C	1341	C61	O8-C12-C11	3.71	120.43	115.40
2	O	1341	C61	C15-C16-C17	-3.36	108.37	113.61
2	C	1341	C61	C6-O7-C11	-3.31	109.69	117.69
2	O	1341	C61	O8-C12-C11	3.00	119.48	115.40
2	O	1341	C61	O7-C11-C10	-2.61	117.85	123.49
2	C	1341	C61	O8-C12-C13	-2.49	120.10	124.30
2	O	1341	C61	O7-C11-C12	2.43	120.77	115.75
2	C	1341	C61	O7-C11-C12	2.32	120.54	115.75
2	C	1341	C61	C33-C32-N31	2.20	118.37	112.20
2	O	1341	C61	O8-C12-C13	-2.16	120.65	124.30
2	C	1341	C61	C21-C17-C16	-2.15	108.70	111.45
2	C	1341	C61	C26-C27-C29	2.11	113.90	109.84
2	C	1341	C61	O7-C11-C10	-2.09	118.98	123.49

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	O	1341	C61	C17-C21-C22-N23
2	O	1341	C61	C17-C21-C22-C24
2	C	1341	C61	C11-C12-O8-C9
2	O	1341	C61	C11-C12-O8-C9
2	C	1341	C61	C13-C12-O8-C9
2	O	1341	C61	C4-C5-C6-O7
2	O	1341	C61	C13-C12-O8-C9
2	O	1341	C61	C10-C15-C16-C17
2	O	1341	C61	C14-C15-C16-C17
2	O	1341	C61	O25-C24-C26-C27
2	C	1341	C61	C32-C33-C34-C35
2	O	1341	C61	C12-C11-O7-C6
2	O	1341	C61	C22-C24-C26-C27
2	C	1341	C61	C16-C17-C21-C22
2	C	1341	C61	C15-C16-C17-C18

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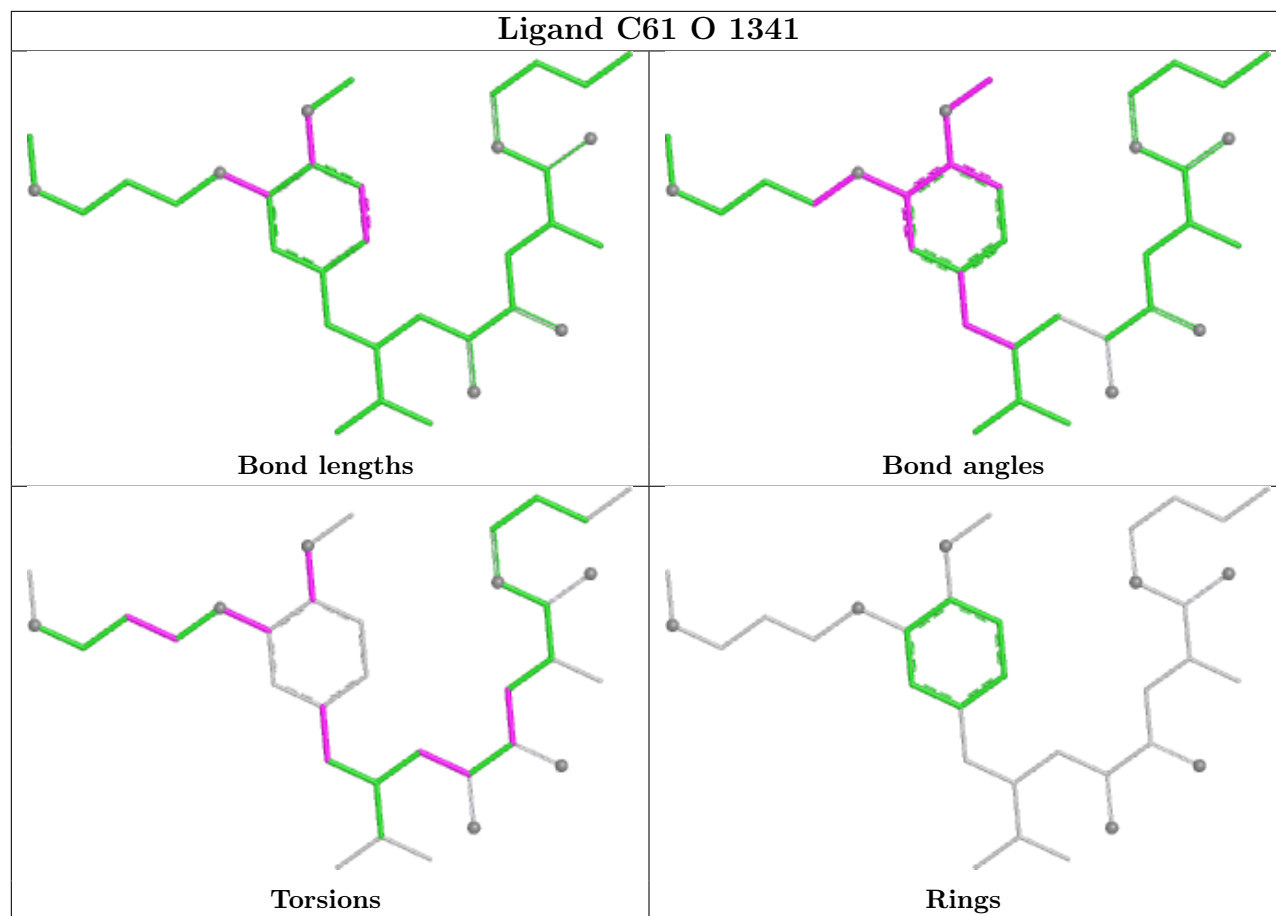
Mol	Chain	Res	Type	Atoms
2	C	1341	C61	C33-C32-N31-C29
2	O	1341	C61	C10-C11-O7-C6
2	C	1341	C61	O3-C4-C5-C6
2	C	1341	C61	C10-C15-C16-C17
2	C	1341	C61	C5-C4-O3-C2

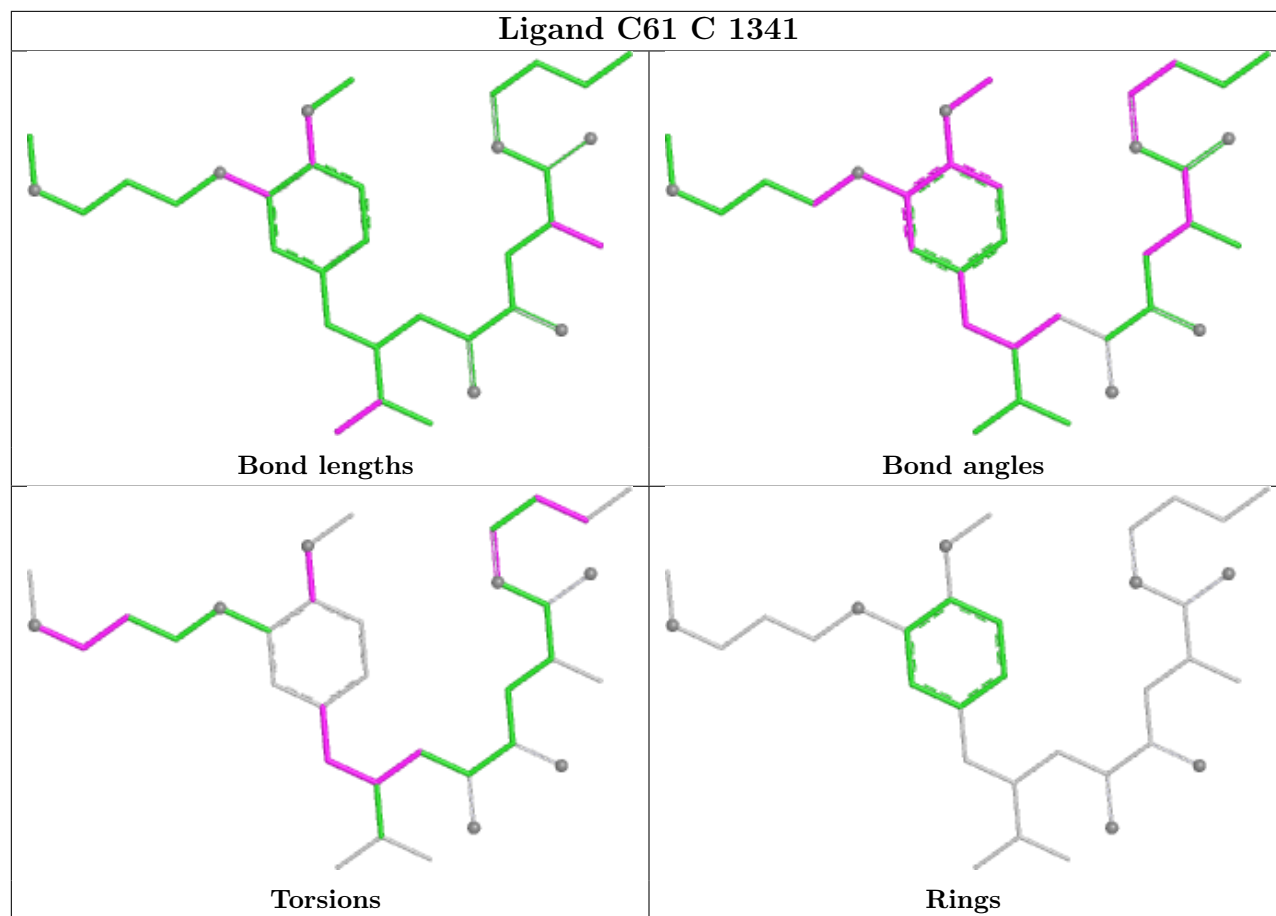
There are no ring outliers.

2 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	O	1341	C61	9	0
2	C	1341	C61	22	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 than 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.





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

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.