



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 14, 2023 – 11:22 PM EDT

PDB ID : 1S64
Title : Rat protein geranylgeranyltransferase type-I complexed with L-778,123 and a sulfate anion
Authors : Reid, T.S.; Long, S.B.; Beese, L.S.
Deposited on : 2004-01-22
Resolution : 2.55 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35
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) : 2.35

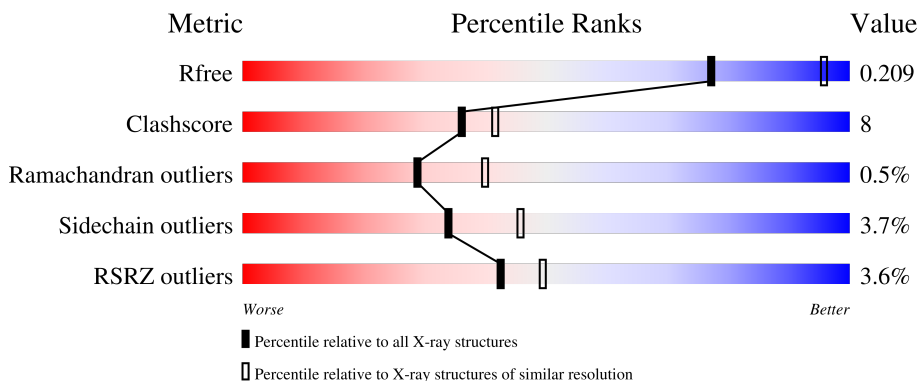
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.55 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1284 (2.56-2.52)
Clashscore	141614	1332 (2.56-2.52)
Ramachandran outliers	138981	1315 (2.56-2.52)
Sidechain outliers	138945	1315 (2.56-2.52)
RSRZ outliers	127900	1272 (2.56-2.52)

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

Mol	Chain	Length	Quality of chain
1	A	377	 3% 67% 15% 17%
1	C	377	 3% 69% 14% 17%
1	E	377	 3% 65% 17% 17%
1	G	377	 5% 66% 18% 17%
1	I	377	 2% 67% 15% 17%

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Mol	Chain	Length	Quality of chain
1	K	377	<p>3% 68% 14% • 17%</p>
2	B	377	<p>3% 70% 20% • 8%</p>
2	D	377	<p>2% 73% 17% • 8%</p>
2	F	377	<p>3% 74% 17% • 8%</p>
2	H	377	<p>8% 69% 20% • 8%</p>
2	J	377	<p>5% 74% 16% • 8%</p>
2	L	377	<p>2% 77% 13% • 8%</p>

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 33735 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 Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	314	Total 2626	C 1678	N 463	O 480	S 5	0	0	0
1	C	314	Total 2637	C 1686	N 458	O 488	S 5	0	0	0
1	E	314	Total 2642	C 1686	N 461	O 490	S 5	0	0	0
1	G	314	Total 2633	C 1683	N 459	O 486	S 5	0	0	0
1	I	314	Total 2651	C 1692	N 462	O 492	S 5	0	0	0
1	K	314	Total 2667	C 1700	N 466	O 496	S 5	0	0	0

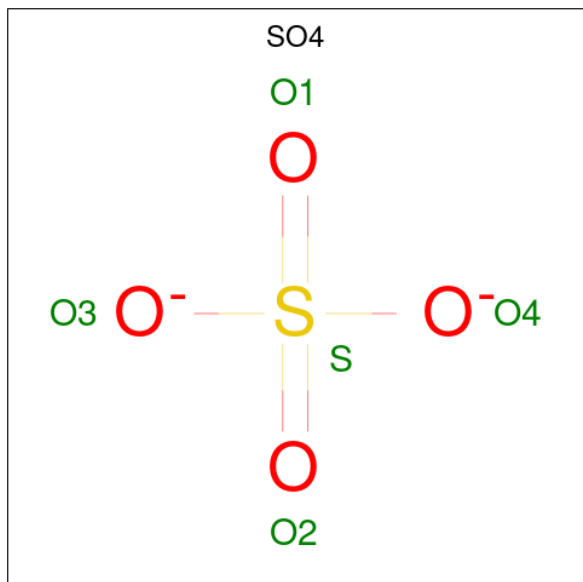
- Molecule 2 is a protein called Geranylgeranyl transferase type I beta subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	346	Total 2693	C 1704	N 467	O 498	S 24	0	0	0
2	D	346	Total 2690	C 1705	N 463	O 498	S 24	0	0	0
2	F	346	Total 2714	C 1714	N 474	O 502	S 24	0	0	0
2	H	346	Total 2688	C 1701	N 463	O 500	S 24	0	0	0
2	J	346	Total 2709	C 1711	N 471	O 503	S 24	0	0	0
2	L	346	Total 2719	C 1717	N 473	O 505	S 24	0	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

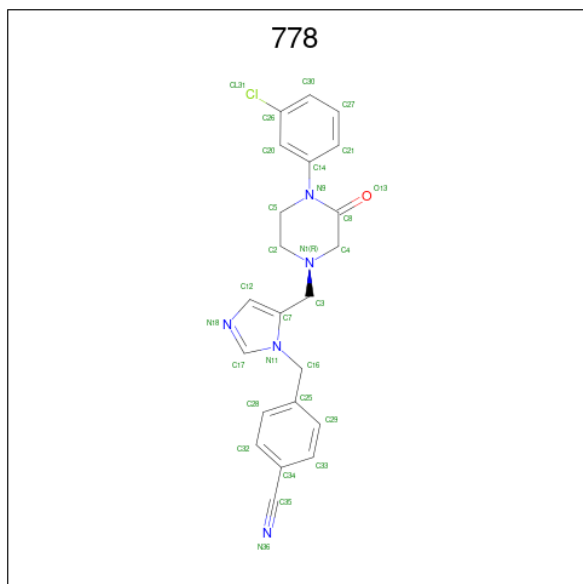
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Zn 1 1	0	0
3	D	1	Total Zn 1 1	0	0
3	F	1	Total Zn 1 1	0	0
3	H	1	Total Zn 1 1	0	0
3	J	1	Total Zn 1 1	0	0
3	L	1	Total Zn 1 1	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



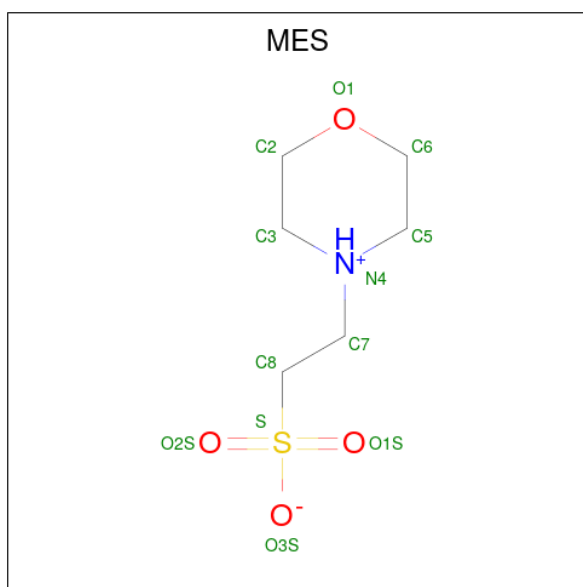
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	F	1	Total O S 5 4 1	0	0
4	H	1	Total O S 5 4 1	0	0
4	J	1	Total O S 5 4 1	0	0
4	L	1	Total O S 5 4 1	0	0

- Molecule 5 is 4-[(5-{[4-(3-CHLOROPHENYL)-3-OXOPIPERAZIN-1-YL]METHYL}-1H-IMIDAZOL-1-YL)METHYL]BENZONITRILE (three-letter code: 778) (formula: C₂₂H₂₀ClN₅O).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	Cl	N	O		
5	B	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		
5	D	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		
5	F	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		
5	H	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		
5	J	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		
5	L	1	Total	C	Cl	N	O	0	0
			29	22	1	5	1		

- Molecule 6 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: C₆H₁₃NO₄S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
6	B	1	Total 12	6	1	4	1	0	0
6	D	1	Total 12	6	1	4	1	0	0
6	F	1	Total 12	6	1	4	1	0	0
6	H	1	Total 12	6	1	4	1	0	0
6	J	1	Total 12	6	1	4	1	0	0
6	L	1	Total 12	6	1	4	1	0	0

- Molecule 7 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
7	C	1	Total 1	1	0	0
7	D	1	Total 1	1	0	0
7	F	1	Total 1	1	0	0
7	G	1	Total 1	1	0	0
7	H	1	Total 1	1	0	0
7	I	1	Total 1	1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	J	1	Total Cl 1 1	0	0
7	K	1	Total Cl 1 1	0	0
7	L	1	Total Cl 1 1	0	0

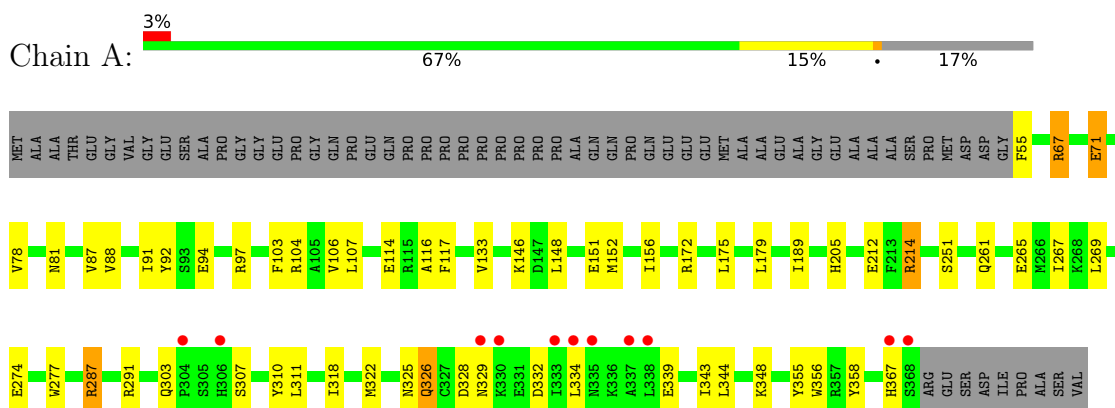
- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	95	Total O 95 95	0	0
8	B	74	Total O 74 74	0	0
8	C	102	Total O 102 102	0	0
8	D	123	Total O 123 123	0	0
8	E	97	Total O 97 97	0	0
8	F	114	Total O 114 114	0	0
8	G	96	Total O 96 96	0	0
8	H	65	Total O 65 65	0	0
8	I	134	Total O 134 134	0	0
8	J	102	Total O 102 102	0	0
8	K	207	Total O 207 207	0	0
8	L	166	Total O 166 166	0	0

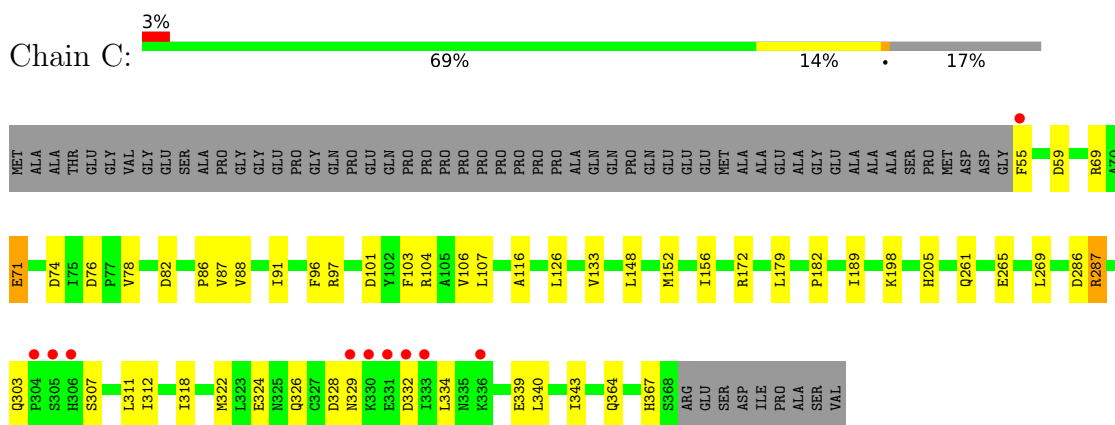
3 Residue-property plots

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.

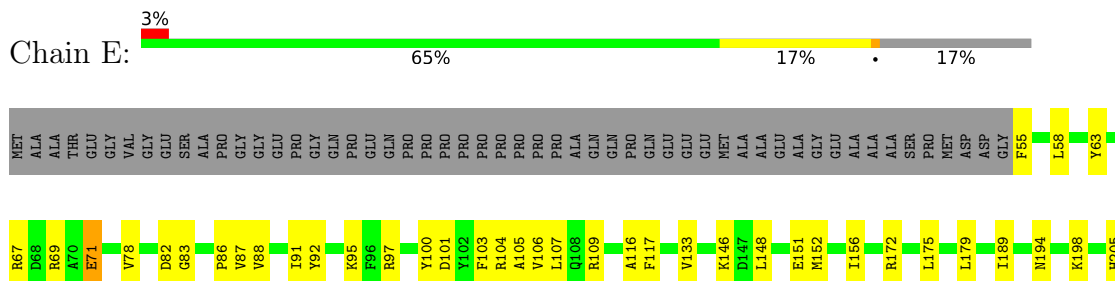
- Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

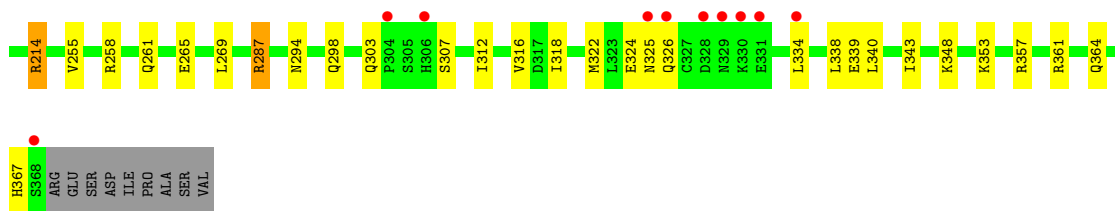


- Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

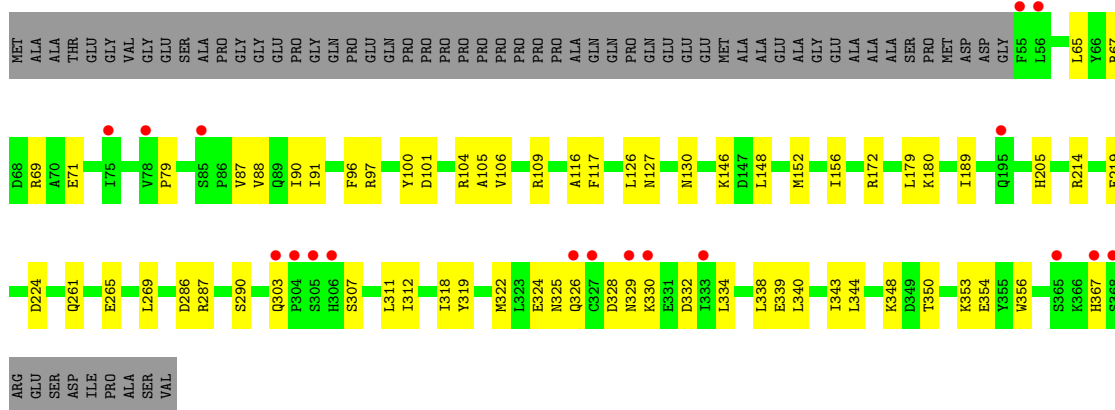


- Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

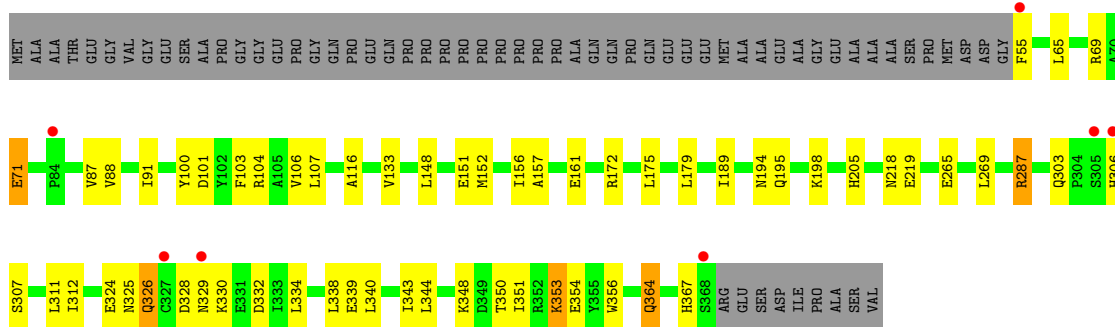




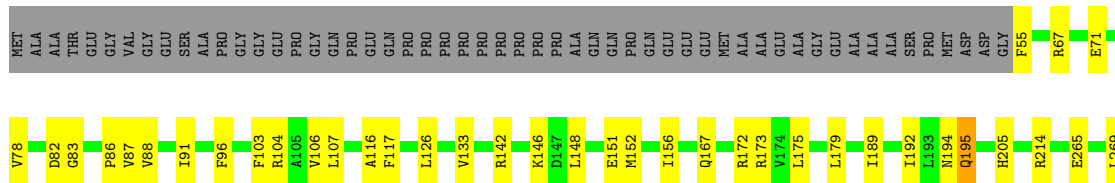
● Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

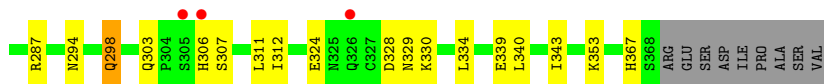


● Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

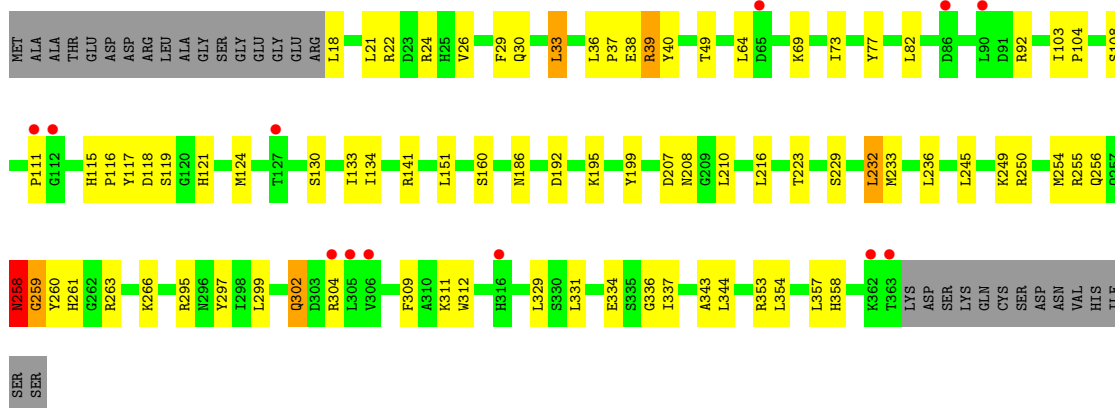


● Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type I alpha subunit

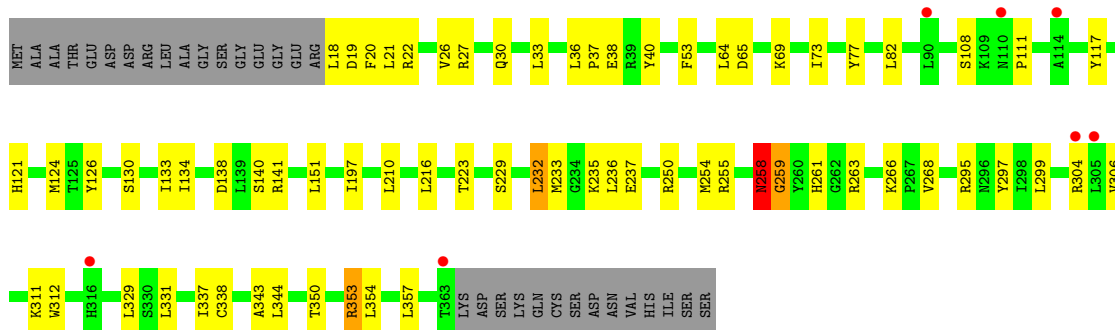
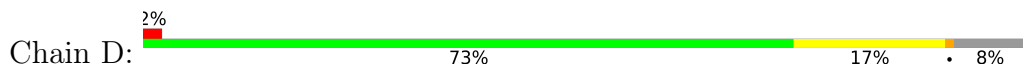




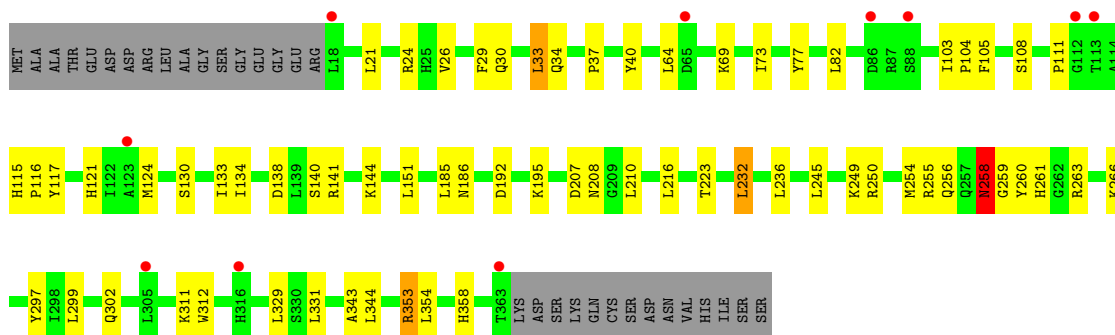
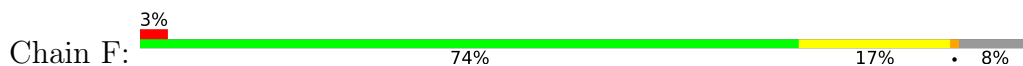
- Molecule 2: Geranylgeranyl transferase type I beta subunit



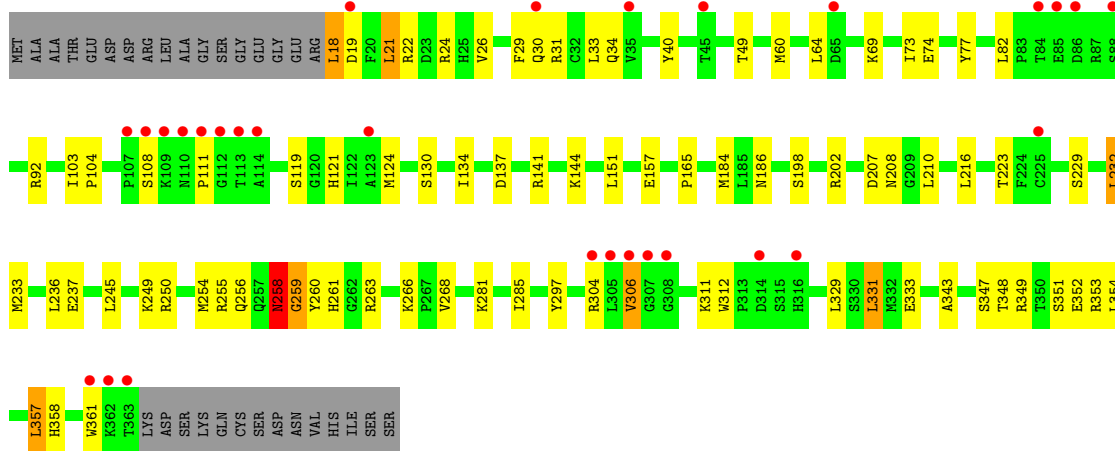
- Molecule 2: Geranylgeranyl transferase type I beta subunit



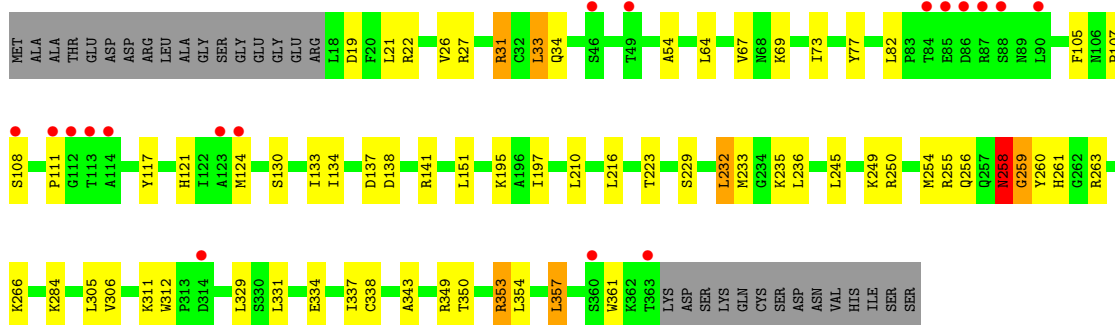
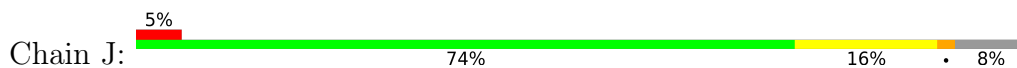
- Molecule 2: Geranylgeranyl transferase type I beta subunit



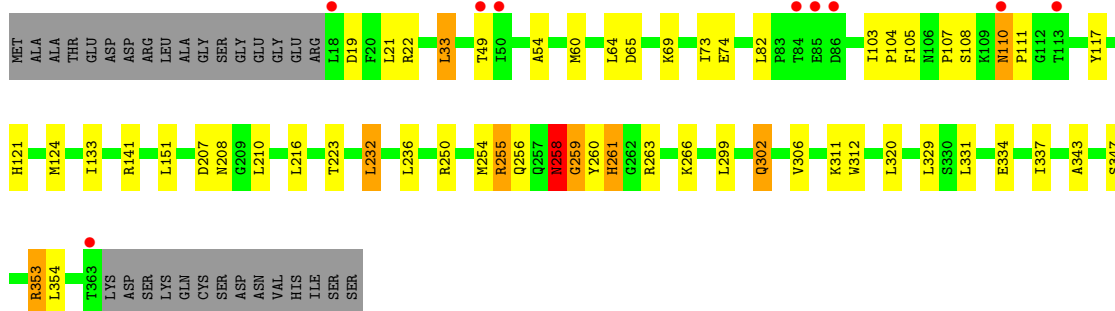
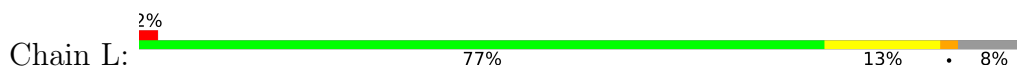
- Molecule 2: Geranylgeranyl transferase type I beta subunit



• Molecule 2: Geranylgeranyl transferase type I beta subunit



• Molecule 2: Geranylgeranyl transferase type I beta subunit



4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	271.15Å 268.68Å 184.62Å 90.00° 131.55° 90.00°	Depositor
Resolution (Å)	30.00 – 2.55 39.18 – 2.54	Depositor EDS
% Data completeness (in resolution range)	93.4 (30.00-2.55) 93.1 (39.18-2.54)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.05	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.62 (at 2.54Å)	Xtrriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.192 , 0.213 0.192 , 0.209	Depositor DCC
R_{free} test set	15041 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	47.9	Xtrriage
Anisotropy	0.108	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 51.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	0.086 for -h-2*1,-k,l	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	33735	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: CL, ZN, 778, MES, SO4

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.34	0/2692	0.51	0/3664
1	C	0.35	0/2703	0.52	0/3677
1	E	0.34	0/2708	0.53	0/3684
1	G	0.34	0/2699	0.51	0/3672
1	I	0.36	0/2717	0.52	0/3694
1	K	0.40	0/2733	0.54	0/3713
2	B	0.35	0/2754	0.59	2/3725 (0.1%)
2	D	0.36	0/2751	0.60	2/3720 (0.1%)
2	F	0.37	0/2775	0.60	2/3750 (0.1%)
2	H	0.34	0/2749	0.59	2/3720 (0.1%)
2	J	0.35	0/2770	0.60	2/3745 (0.1%)
2	L	0.39	0/2780	0.61	2/3756 (0.1%)
All	All	0.36	0/32831	0.56	12/44520 (0.0%)

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
2	B	0	1
2	F	0	1
All	All	0	2

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	J	259	GLY	N-CA-C	-6.06	97.95	113.10
2	H	259	GLY	N-CA-C	-5.96	98.21	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	259	GLY	N-CA-C	-5.90	98.34	113.10
2	D	259	GLY	N-CA-C	-5.87	98.44	113.10
2	L	259	GLY	N-CA-C	-5.84	98.50	113.10
2	B	259	GLY	N-CA-C	-5.73	98.77	113.10
2	J	258	ASN	N-CA-C	-5.61	95.85	111.00
2	B	258	ASN	N-CA-C	-5.48	96.21	111.00
2	D	258	ASN	N-CA-C	-5.43	96.33	111.00
2	F	258	ASN	N-CA-C	-5.43	96.35	111.00
2	L	258	ASN	N-CA-C	-5.39	96.46	111.00
2	H	258	ASN	N-CA-C	-5.35	96.54	111.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	297	TYR	Sidechain
2	F	297	TYR	Sidechain

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	2626	0	2518	43	0
1	C	2637	0	2529	36	0
1	E	2642	0	2534	48	0
1	G	2633	0	2524	49	0
1	I	2651	0	2551	40	0
1	K	2667	0	2577	36	0
2	B	2693	0	2589	57	0
2	D	2690	0	2588	39	0
2	F	2714	0	2624	39	0
2	H	2688	0	2573	60	0
2	J	2709	0	2610	40	0
2	L	2719	0	2632	33	0
3	B	1	0	0	0	0
3	D	1	0	0	0	0
3	F	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	H	1	0	0	0	0
3	J	1	0	0	0	0
3	L	1	0	0	0	0
4	B	5	0	0	0	0
4	D	5	0	0	0	0
4	F	5	0	0	0	0
4	H	5	0	0	0	0
4	J	5	0	0	0	0
4	L	5	0	0	0	0
5	B	29	0	20	0	0
5	D	29	0	20	0	0
5	F	29	0	20	0	0
5	H	29	0	20	0	0
5	J	29	0	20	0	0
5	L	29	0	20	0	0
6	B	12	0	13	0	0
6	D	12	0	13	2	0
6	F	12	0	13	0	0
6	H	12	0	13	0	0
6	J	12	0	13	0	0
6	L	12	0	13	0	0
7	C	1	0	0	0	0
7	D	1	0	0	0	0
7	F	1	0	0	0	0
7	G	1	0	0	1	0
7	H	1	0	0	0	0
7	I	1	0	0	1	0
7	J	1	0	0	0	0
7	K	1	0	0	1	0
7	L	1	0	0	0	0
8	A	95	0	0	2	0
8	B	74	0	0	2	0
8	C	102	0	0	2	0
8	D	123	0	0	3	0
8	E	97	0	0	1	0
8	F	114	0	0	1	0
8	G	96	0	0	3	0
8	H	65	0	0	3	0
8	I	134	0	0	3	0
8	J	102	0	0	2	0
8	K	207	0	0	5	0
8	L	166	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	33735	0	31047	504	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 8.

All (504) 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:E:156:ILE:HG12	1:E:172:ARG:HH12	1.10	1.13
1:A:156:ILE:HG12	1:A:172:ARG:HH12	0.97	1.12
1:I:156:ILE:HG12	1:I:172:ARG:HH12	1.05	1.11
1:K:156:ILE:HG12	1:K:172:ARG:HH12	0.99	1.07
1:G:156:ILE:HG12	1:G:172:ARG:HH12	1.20	1.05
1:C:156:ILE:HG12	1:C:172:ARG:HH12	1.22	1.01
1:K:156:ILE:HG12	1:K:172:ARG:NH1	1.83	0.93
1:A:156:ILE:HG12	1:A:172:ARG:NH1	1.83	0.92
2:B:39:ARG:HB3	2:B:39:ARG:HH11	1.33	0.90
7:G:378:CL:CL	8:G:385:HOH:O	2.31	0.86
1:I:156:ILE:HG12	1:I:172:ARG:NH1	1.91	0.86
2:H:18:LEU:HA	2:H:304:ARG:NH2	1.93	0.83
1:E:156:ILE:HG12	1:E:172:ARG:NH1	1.94	0.82
1:K:156:ILE:CG1	1:K:172:ARG:HH12	1.88	0.81
2:H:348:THR:O	2:H:352:GLU:HG2	1.80	0.80
1:A:152:MET:O	1:A:156:ILE:HG13	1.81	0.80
1:G:152:MET:O	1:G:156:ILE:HG13	1.83	0.78
1:K:152:MET:O	1:K:156:ILE:HG13	1.83	0.78
1:E:318:ILE:HG22	1:E:322:MET:HE3	1.66	0.75
1:I:152:MET:O	1:I:156:ILE:HG13	1.87	0.75
1:I:91:ILE:HD12	1:I:91:ILE:O	1.86	0.74
1:E:156:ILE:CG1	1:E:172:ARG:HH12	1.96	0.74
1:E:189:ILE:HD11	1:E:205:HIS:HD2	1.53	0.74
2:H:229:SER:O	2:H:233:MET:HG3	1.86	0.74
1:E:152:MET:O	1:E:156:ILE:HG13	1.87	0.74
1:A:214:ARG:HG2	1:G:180:LYS:HB2	1.69	0.73
1:G:91:ILE:HD12	1:G:91:ILE:O	1.89	0.72
1:K:189:ILE:HD11	1:K:205:HIS:HD2	1.54	0.72
1:C:189:ILE:HD11	1:C:205:HIS:HD2	1.55	0.72
2:B:69:LYS:O	2:B:73:ILE:HG13	1.89	0.72
1:E:353:LYS:HE2	1:E:357:ARG:HH12	1.55	0.71
1:E:214:ARG:O	1:E:214:ARG:HG3	1.91	0.71
1:K:298:GLN:HG2	8:K:529:HOH:O	1.90	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:189:ILE:HD11	1:G:205:HIS:HD2	1.56	0.71
1:C:152:MET:O	1:C:156:ILE:HG13	1.88	0.70
1:A:189:ILE:HD11	1:A:205:HIS:HD2	1.57	0.70
2:H:92:ARG:HG2	2:H:165:PRO:HG3	1.74	0.69
1:G:100:TYR:O	1:G:104:ARG:HG3	1.91	0.69
1:A:91:ILE:HD12	1:A:91:ILE:O	1.92	0.69
1:E:353:LYS:HE3	1:E:357:ARG:HH22	1.58	0.69
1:G:97:ARG:HG2	1:G:101:ASP:OD2	1.92	0.69
2:B:353:ARG:HG2	2:B:353:ARG:HH11	1.57	0.69
2:B:133:ILE:HD13	2:B:354:LEU:HD13	1.75	0.68
1:I:189:ILE:HD11	1:I:205:HIS:HD2	1.58	0.68
2:F:69:LYS:O	2:F:73:ILE:HG13	1.93	0.68
1:E:91:ILE:O	1:E:91:ILE:HD12	1.94	0.68
1:K:91:ILE:HD12	1:K:91:ILE:O	1.94	0.68
1:A:339:GLU:O	1:A:343:ILE:HG13	1.95	0.67
2:H:18:LEU:HD22	2:H:18:LEU:N	2.09	0.67
2:D:69:LYS:O	2:D:73:ILE:HG13	1.95	0.67
2:F:133:ILE:HD13	2:F:354:LEU:HD13	1.77	0.66
1:C:91:ILE:O	1:C:91:ILE:HD12	1.95	0.66
2:J:232:LEU:HD13	2:J:343:ALA:HB1	1.76	0.66
2:H:18:LEU:HA	2:H:304:ARG:HH22	1.61	0.66
1:G:87:VAL:HG12	1:G:88:VAL:HG23	1.76	0.66
2:D:353:ARG:HH11	2:D:357:LEU:HG	1.61	0.65
7:K:378:CL:CL	8:K:389:HOH:O	2.51	0.65
2:D:65:ASP:HA	8:D:457:HOH:O	1.96	0.65
2:H:21:LEU:HD21	2:H:304:ARG:HG2	1.77	0.65
2:H:69:LYS:O	2:H:73:ILE:HG13	1.96	0.65
2:F:37:PRO:HD2	2:F:40:TYR:CD1	2.32	0.65
2:H:21:LEU:HD23	2:H:24:ARG:HE	1.63	0.64
1:E:198:LYS:HD3	2:F:266:LYS:HD3	1.80	0.64
2:L:232:LEU:HD13	2:L:343:ALA:HB1	1.80	0.64
1:K:87:VAL:HG12	1:K:88:VAL:HG23	1.80	0.64
1:G:334:LEU:HD22	1:G:367:HIS:O	1.97	0.63
1:I:156:ILE:CG1	1:I:172:ARG:HH12	1.96	0.63
1:G:343:ILE:HG22	1:G:348:LYS:HG3	1.81	0.63
1:A:214:ARG:HG3	1:A:214:ARG:O	1.98	0.62
2:J:133:ILE:HD13	2:J:354:LEU:HD13	1.79	0.62
2:L:133:ILE:HD13	2:L:354:LEU:HD13	1.82	0.62
1:C:334:LEU:HD22	1:C:367:HIS:O	1.99	0.61
1:E:255:VAL:HG13	1:E:258:ARG:NH2	2.16	0.61
2:H:26:VAL:O	2:H:30:GLN:HG3	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:92:ARG:HD2	2:H:119:SER:HB3	1.82	0.60
1:E:312:ILE:HG23	1:E:340:LEU:HD22	1.84	0.60
2:H:245:LEU:O	2:H:249:LYS:HG3	2.01	0.60
1:G:101:ASP:HA	1:G:104:ARG:NH1	2.17	0.60
1:E:87:VAL:HG12	1:E:88:VAL:HG23	1.84	0.59
1:A:87:VAL:HG12	1:A:88:VAL:HG23	1.82	0.59
1:C:303:GLN:O	1:C:307:SER:HB2	2.01	0.59
1:E:92:TYR:O	1:E:97:ARG:NH2	2.35	0.59
2:B:258:ASN:OD1	2:B:259:GLY:N	2.33	0.59
2:F:37:PRO:HD2	2:F:40:TYR:CE1	2.37	0.59
2:H:263:ARG:HG3	2:H:266:LYS:HG3	1.85	0.59
2:B:92:ARG:NH1	2:B:119:SER:HB3	2.17	0.59
2:F:26:VAL:O	2:F:30:GLN:HG3	2.03	0.58
2:H:144:LYS:HE2	8:H:439:HOH:O	2.02	0.58
2:H:210:LEU:HB2	2:H:223:THR:HA	1.85	0.58
2:F:263:ARG:HG3	2:F:266:LYS:HG3	1.84	0.58
2:F:353:ARG:HG3	8:F:406:HOH:O	2.03	0.58
1:E:353:LYS:CE	1:E:357:ARG:HH12	2.15	0.58
2:H:232:LEU:HD13	2:H:343:ALA:HB1	1.83	0.58
2:J:210:LEU:HB2	2:J:223:THR:HA	1.84	0.58
1:C:69:ARG:HB3	1:C:71:GLU:OE1	2.03	0.58
1:C:87:VAL:HG12	1:C:88:VAL:HG23	1.85	0.58
2:L:210:LEU:HB2	2:L:223:THR:HA	1.85	0.58
2:B:186:ASN:HB2	2:B:358:HIS:CE1	2.39	0.58
2:D:263:ARG:HG3	2:D:266:LYS:HG3	1.86	0.58
2:B:210:LEU:HB2	2:B:223:THR:HA	1.85	0.58
1:A:334:LEU:HD22	1:A:367:HIS:O	2.04	0.57
1:C:328:ASP:O	1:C:329:ASN:HB2	2.04	0.57
1:I:334:LEU:HD22	1:I:367:HIS:O	2.03	0.57
2:B:295:ARG:HD3	8:B:438:HOH:O	2.05	0.57
1:G:101:ASP:HA	1:G:104:ARG:HH11	1.68	0.57
2:B:26:VAL:O	2:B:30:GLN:HG3	2.04	0.57
1:A:303:GLN:O	1:A:307:SER:HB2	2.04	0.57
2:F:210:LEU:HB2	2:F:223:THR:HA	1.86	0.57
2:J:263:ARG:HG3	2:J:266:LYS:HG3	1.87	0.57
1:I:69:ARG:HB3	1:I:71:GLU:OE1	2.04	0.57
1:K:107:LEU:HD22	2:L:117:TYR:CD2	2.40	0.57
2:B:39:ARG:HH11	2:B:39:ARG:CB	2.12	0.57
1:E:82:ASP:HB2	1:E:86:PRO:HB3	1.87	0.56
1:A:78:VAL:O	1:A:104:ARG:HD2	2.05	0.56
2:D:210:LEU:HB2	2:D:223:THR:HA	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:60:MET:HE2	2:L:347:SER:HB3	1.88	0.56
2:L:263:ARG:HG3	2:L:266:LYS:HG3	1.87	0.56
2:B:334:GLU:HB3	2:B:337:ILE:HD12	1.88	0.56
2:B:353:ARG:HG2	2:B:353:ARG:NH1	2.17	0.56
1:C:339:GLU:O	1:C:343:ILE:HG13	2.05	0.56
2:J:22:ARG:O	2:J:26:VAL:HG23	2.05	0.56
1:G:303:GLN:O	1:G:307:SER:HB2	2.06	0.56
1:A:329:ASN:HB3	1:A:332:ASP:HB3	1.86	0.56
1:I:87:VAL:HG12	1:I:88:VAL:HG23	1.87	0.56
1:G:328:ASP:O	1:G:329:ASN:HB2	2.06	0.55
1:K:334:LEU:HD22	1:K:367:HIS:O	2.06	0.55
2:B:263:ARG:HG3	2:B:266:LYS:HG3	1.87	0.55
1:I:107:LEU:HD22	2:J:117:TYR:CD2	2.41	0.55
2:B:353:ARG:HH12	2:B:357:LEU:HG	1.72	0.55
1:C:156:ILE:HG12	1:C:172:ARG:NH1	2.06	0.55
2:D:295:ARG:CZ	2:D:299:LEU:HD11	2.37	0.55
1:E:339:GLU:O	1:E:343:ILE:HG13	2.07	0.55
1:A:251:SER:HA	1:A:287:ARG:HH22	1.70	0.55
1:G:261:GLN:O	1:G:265:GLU:HG2	2.07	0.55
1:E:78:VAL:O	1:E:104:ARG:HD2	2.06	0.55
1:A:156:ILE:CG1	1:A:172:ARG:HH12	1.92	0.54
1:K:303:GLN:O	1:K:307:SER:HB2	2.08	0.54
2:D:133:ILE:HD13	2:D:354:LEU:HD13	1.89	0.54
2:D:26:VAL:O	2:D:30:GLN:HG3	2.08	0.54
1:G:97:ARG:HH11	1:G:97:ARG:HB3	1.73	0.54
1:I:348:LYS:HD2	8:I:473:HOH:O	2.07	0.54
1:K:189:ILE:HD11	1:K:205:HIS:CD2	2.41	0.54
1:G:339:GLU:O	1:G:343:ILE:HG13	2.07	0.54
1:I:303:GLN:O	1:I:307:SER:HB2	2.08	0.54
1:C:318:ILE:HG22	1:C:322:MET:HE3	1.90	0.54
1:E:303:GLN:O	1:E:307:SER:HB2	2.07	0.54
1:C:156:ILE:HD12	8:C:433:HOH:O	2.07	0.54
2:H:349:ARG:O	2:H:352:GLU:HB2	2.08	0.54
1:E:261:GLN:O	1:E:265:GLU:HG2	2.07	0.53
2:J:197:ILE:HD11	2:J:235:LYS:HD3	1.91	0.53
7:I:378:CL:CL	8:I:512:HOH:O	2.56	0.53
1:K:265:GLU:O	1:K:269:LEU:HD13	2.09	0.53
1:C:261:GLN:O	1:C:265:GLU:HG2	2.08	0.53
1:G:318:ILE:HG22	1:G:322:MET:CE	2.39	0.53
2:H:202:ARG:HD2	8:H:440:HOH:O	2.08	0.53
2:B:18:LEU:HD12	2:B:304:ARG:CZ	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:27:ARG:HA	2:D:30:GLN:HE21	1.73	0.53
1:G:79:PRO:HA	1:G:101:ASP:OD1	2.09	0.53
1:E:318:ILE:HG22	1:E:322:MET:CE	2.38	0.53
2:D:338:CYS:HB3	8:D:402:HOH:O	2.08	0.53
2:H:22:ARG:HH11	2:H:22:ARG:HG2	1.73	0.53
2:J:138:ASP:HA	2:J:357:LEU:HD11	1.91	0.53
2:L:60:MET:CE	2:L:347:SER:HB3	2.38	0.53
2:B:229:SER:O	2:B:233:MET:HG3	2.08	0.53
1:I:311:LEU:HD23	1:I:311:LEU:C	2.29	0.53
2:J:69:LYS:O	2:J:73:ILE:HG13	2.08	0.52
2:F:232:LEU:HD13	2:F:343:ALA:HB1	1.91	0.52
2:B:245:LEU:O	2:B:249:LYS:HG3	2.09	0.52
2:H:186:ASN:HB2	2:H:358:HIS:CE1	2.44	0.52
2:B:37:PRO:HD2	2:B:40:TYR:CE1	2.44	0.52
2:D:353:ARG:NH1	2:D:357:LEU:HG	2.22	0.52
2:B:37:PRO:HD2	2:B:40:TYR:CD1	2.44	0.52
2:B:258:ASN:CG	2:B:259:GLY:H	2.12	0.52
1:G:156:ILE:HD12	8:G:459:HOH:O	2.08	0.52
1:A:328:ASP:O	1:A:329:ASN:HB2	2.10	0.52
1:I:189:ILE:HD11	1:I:205:HIS:CD2	2.43	0.52
1:I:218:ASN:HB3	8:I:510:HOH:O	2.10	0.52
1:E:255:VAL:HG13	1:E:258:ARG:HH21	1.75	0.52
1:C:198:LYS:HD3	2:D:266:LYS:HD3	1.91	0.52
1:E:214:ARG:O	1:E:214:ARG:CG	2.57	0.52
1:C:312:ILE:HG23	1:C:340:LEU:HD22	1.92	0.51
1:E:156:ILE:HD11	1:E:172:ARG:HH22	1.76	0.51
2:D:229:SER:O	2:D:233:MET:HG3	2.11	0.51
2:D:232:LEU:HD13	2:D:343:ALA:HB1	1.92	0.51
1:G:156:ILE:HG12	1:G:172:ARG:NH1	2.05	0.51
2:H:64:LEU:HD11	2:H:134:ILE:HG22	1.93	0.51
1:I:157:ALA:O	1:I:161:GLU:HG3	2.10	0.51
2:D:311:LYS:HG3	2:D:312:TRP:CD2	2.46	0.51
1:G:318:ILE:HG22	1:G:322:MET:HE2	1.93	0.51
2:L:69:LYS:O	2:L:73:ILE:HG13	2.12	0.51
1:G:312:ILE:HG23	1:G:340:LEU:HD22	1.93	0.50
1:A:265:GLU:O	1:A:269:LEU:HD13	2.11	0.50
2:B:92:ARG:HH11	2:B:119:SER:HB3	1.75	0.50
1:C:156:ILE:CG1	1:C:172:ARG:HH12	2.08	0.50
1:E:265:GLU:O	1:E:269:LEU:HD13	2.11	0.50
1:A:214:ARG:O	1:A:214:ARG:CG	2.58	0.50
1:C:189:ILE:HD11	1:C:205:HIS:CD2	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:18:LEU:HD12	2:D:304:ARG:NH1	2.26	0.50
2:H:202:ARG:HG3	2:H:202:ARG:HH11	1.76	0.50
2:F:311:LYS:HG3	2:F:312:TRP:CD2	2.47	0.50
2:D:138:ASP:OD1	2:D:140:SER:HB3	2.12	0.50
1:E:189:ILE:HD11	1:E:205:HIS:CD2	2.40	0.50
1:A:189:ILE:HD11	1:A:205:HIS:CD2	2.43	0.49
2:F:30:GLN:O	2:F:34:GLN:HG3	2.12	0.49
2:B:29:PHE:O	2:B:33:LEU:HD22	2.12	0.49
1:C:148:LEU:HB2	1:C:179:LEU:HD21	1.93	0.49
1:G:286:ASP:HB2	8:G:426:HOH:O	2.13	0.49
2:H:77:TYR:CZ	2:H:141:ARG:HB2	2.47	0.49
2:J:284:LYS:HE3	8:J:461:HOH:O	2.10	0.49
2:L:353:ARG:HD3	2:L:353:ARG:O	2.12	0.49
1:E:117:PHE:CE2	1:E:146:LYS:HE2	2.48	0.49
1:I:106:VAL:HG11	1:I:116:ALA:HB1	1.95	0.49
2:J:133:ILE:CD1	2:J:354:LEU:HD13	2.42	0.49
2:L:133:ILE:CD1	2:L:354:LEU:HD13	2.42	0.49
1:C:82:ASP:HB2	1:C:86:PRO:HB3	1.94	0.49
2:D:77:TYR:CZ	2:D:141:ARG:HB2	2.48	0.49
1:K:214:ARG:HG3	1:K:214:ARG:HH11	1.78	0.49
1:K:312:ILE:HG23	1:K:340:LEU:HD22	1.94	0.49
2:L:103:ILE:HG23	2:L:104:PRO:HD2	1.93	0.49
2:J:258:ASN:OD1	2:J:259:GLY:N	2.38	0.49
2:L:110:ASN:H	2:L:110:ASN:ND2	2.11	0.49
2:B:336:GLY:HA2	2:J:305:LEU:CD1	2.43	0.49
2:F:121:HIS:HB3	2:F:124:MET:HG2	1.95	0.49
2:H:311:LYS:HG3	2:H:312:TRP:CD2	2.48	0.49
1:A:92:TYR:O	1:A:97:ARG:NH2	2.46	0.48
2:B:77:TYR:CZ	2:B:141:ARG:HB2	2.48	0.48
1:E:334:LEU:HD22	1:E:367:HIS:O	2.12	0.48
1:K:104:ARG:NH2	8:K:393:HOH:O	2.46	0.48
1:I:328:ASP:O	1:I:329:ASN:HB2	2.13	0.48
1:E:107:LEU:HD22	2:F:117:TYR:CD2	2.48	0.48
2:F:245:LEU:O	2:F:249:LYS:HG3	2.13	0.48
1:E:58:LEU:HD22	1:E:95:LYS:HD3	1.95	0.48
1:E:338:LEU:HD11	1:E:364:GLN:HG3	1.95	0.48
1:G:189:ILE:HD11	1:G:205:HIS:CD2	2.42	0.48
2:H:29:PHE:O	2:H:33:LEU:HD22	2.12	0.48
1:E:97:ARG:HG2	1:E:101:ASP:OD2	2.14	0.48
1:E:148:LEU:HB2	1:E:179:LEU:HD21	1.94	0.48
1:K:192:ILE:O	1:K:195:GLN:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:311:LYS:HG3	2:L:312:TRP:CD2	2.48	0.48
2:H:74:GLU:CD	2:H:141:ARG:HH22	2.16	0.48
2:B:64:LEU:HD11	2:B:134:ILE:HG22	1.94	0.48
2:H:21:LEU:CD1	2:H:21:LEU:N	2.75	0.48
2:B:299:LEU:O	2:B:302:GLN:HB2	2.14	0.48
1:C:286:ASP:HB2	8:C:437:HOH:O	2.14	0.48
1:C:311:LEU:C	1:C:311:LEU:HD23	2.34	0.48
2:F:186:ASN:HB2	2:F:358:HIS:NE2	2.29	0.48
1:G:148:LEU:HB2	1:G:179:LEU:HD21	1.95	0.48
2:L:74:GLU:CD	2:L:141:ARG:HH22	2.16	0.48
1:A:287:ARG:O	1:A:291:ARG:HD3	2.14	0.48
2:B:311:LYS:HG3	2:B:312:TRP:CD2	2.47	0.48
1:C:265:GLU:O	1:C:269:LEU:HD13	2.14	0.48
1:C:329:ASN:HB3	1:C:332:ASP:HB3	1.96	0.48
2:F:37:PRO:HD2	2:F:40:TYR:HD1	1.79	0.48
1:G:344:LEU:HD13	1:G:356:TRP:CE2	2.49	0.48
1:E:58:LEU:HD23	1:E:63:TYR:CE2	2.49	0.47
1:I:329:ASN:HB3	1:I:332:ASP:HB3	1.96	0.47
1:K:311:LEU:C	1:K:311:LEU:HD23	2.34	0.47
1:A:71:GLU:CD	1:A:71:GLU:H	2.16	0.47
1:E:106:VAL:HG11	1:E:116:ALA:HB1	1.96	0.47
1:G:330:LYS:HE2	1:G:367:HIS:HB3	1.94	0.47
2:H:130:SER:O	2:H:134:ILE:HG13	2.14	0.47
1:I:88:VAL:HG12	1:I:88:VAL:O	2.14	0.47
1:I:148:LEU:HB2	1:I:179:LEU:HD21	1.96	0.47
1:K:311:LEU:HD23	1:K:311:LEU:O	2.14	0.47
2:D:121:HIS:HB3	2:D:124:MET:HG2	1.96	0.47
1:G:350:THR:O	1:G:353:LYS:HB3	2.14	0.47
1:C:106:VAL:HG11	1:C:116:ALA:HB1	1.96	0.47
2:J:334:GLU:HB3	2:J:337:ILE:HD12	1.96	0.47
1:E:103:PHE:CZ	1:E:133:VAL:HG22	2.50	0.47
1:G:265:GLU:O	1:G:269:LEU:HD13	2.15	0.47
1:A:97:ARG:HD3	8:A:437:HOH:O	2.14	0.47
2:B:250:ARG:O	2:B:254:MET:HG2	2.13	0.47
1:E:105:ALA:O	1:E:109:ARG:HG3	2.15	0.47
2:F:103:ILE:HG23	2:F:104:PRO:HD2	1.96	0.47
2:H:281:LYS:HE3	2:H:331:LEU:HD12	1.97	0.47
1:I:344:LEU:HD13	1:I:356:TRP:CE2	2.50	0.47
2:J:121:HIS:HB3	2:J:124:MET:HG2	1.96	0.47
2:J:311:LYS:HG3	2:J:312:TRP:CD2	2.50	0.47
2:D:82:LEU:HD11	2:D:108:SER:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:29:PHE:O	2:F:33:LEU:HD22	2.14	0.47
1:E:100:TYR:O	1:E:104:ARG:HG3	2.15	0.46
1:E:294:ASN:O	1:E:298:GLN:HG3	2.15	0.46
2:F:130:SER:O	2:F:134:ILE:HG13	2.15	0.46
1:I:350:THR:O	1:I:353:LYS:HB3	2.16	0.46
2:J:245:LEU:O	2:J:249:LYS:HG3	2.16	0.46
2:L:299:LEU:O	2:L:302:GLN:HB2	2.14	0.46
1:G:65:LEU:O	1:G:69:ARG:HG3	2.16	0.46
1:A:117:PHE:CE2	1:A:146:LYS:HE2	2.51	0.46
2:H:22:ARG:HG2	2:H:22:ARG:NH1	2.29	0.46
2:J:77:TYR:CE1	2:J:141:ARG:HB2	2.50	0.46
1:G:311:LEU:HD23	1:G:311:LEU:C	2.36	0.46
1:I:100:TYR:O	1:I:104:ARG:HG3	2.16	0.46
2:J:105:PHE:CE2	2:J:107:PRO:HD3	2.51	0.46
2:B:22:ARG:HG2	2:B:22:ARG:HH11	1.81	0.46
1:C:91:ILE:HG13	2:D:36:LEU:O	2.15	0.46
1:G:106:VAL:HG11	1:G:116:ALA:HB1	1.97	0.46
2:H:207:ASP:O	2:H:208:ASN:HB2	2.16	0.46
1:A:106:VAL:HG11	1:A:116:ALA:HB1	1.97	0.46
2:F:299:LEU:O	2:F:302:GLN:HB2	2.16	0.46
2:L:121:HIS:HB3	2:L:124:MET:HG2	1.98	0.46
2:B:192:ASP:OD1	2:B:195:LYS:HE3	2.16	0.46
2:B:207:ASP:O	2:B:208:ASN:HB2	2.16	0.46
1:K:151:GLU:HG3	1:K:175:LEU:HD11	1.97	0.46
2:B:232:LEU:HD13	2:B:343:ALA:HB1	1.98	0.45
2:B:336:GLY:HA2	2:J:305:LEU:HD13	1.98	0.45
1:C:97:ARG:HG2	1:C:101:ASP:OD2	2.15	0.45
1:I:265:GLU:O	1:I:269:LEU:HD13	2.16	0.45
1:K:106:VAL:HG11	1:K:116:ALA:HB1	1.98	0.45
2:D:258:ASN:OD1	2:D:259:GLY:N	2.37	0.45
1:A:114:GLU:HB2	8:A:459:HOH:O	2.16	0.45
1:A:318:ILE:O	1:A:322:MET:HG3	2.16	0.45
2:H:121:HIS:HB3	2:H:124:MET:HG2	1.98	0.45
1:K:328:ASP:O	1:K:329:ASN:HB2	2.16	0.45
2:L:22:ARG:HG2	2:L:22:ARG:HH11	1.81	0.45
1:A:107:LEU:HD22	2:B:117:TYR:CD2	2.51	0.45
2:D:250:ARG:O	2:D:254:MET:HG2	2.17	0.45
2:F:353:ARG:O	2:F:353:ARG:HD3	2.17	0.45
2:H:357:LEU:HD22	2:H:361:TRP:CZ2	2.51	0.45
2:H:258:ASN:OD1	2:H:259:GLY:N	2.44	0.45
1:A:311:LEU:C	1:A:311:LEU:HD23	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:82:LEU:HD11	2:B:108:SER:HA	1.98	0.45
2:B:311:LYS:HG3	2:B:312:TRP:CE2	2.51	0.45
2:F:77:TYR:CZ	2:F:141:ARG:HB2	2.52	0.45
2:H:82:LEU:HD11	2:H:108:SER:HA	1.99	0.45
1:I:65:LEU:O	1:I:69:ARG:HG3	2.16	0.45
2:L:250:ARG:O	2:L:254:MET:HG2	2.17	0.45
2:J:229:SER:O	2:J:233:MET:HG3	2.17	0.45
2:L:311:LYS:HG3	2:L:312:TRP:CE2	2.52	0.45
1:G:90:ILE:HD13	2:H:40:TYR:O	2.17	0.44
2:H:354:LEU:HD11	2:H:358:HIS:HE2	1.82	0.44
1:I:353:LYS:HG2	1:I:354:GLU:N	2.31	0.44
1:A:261:GLN:O	1:A:265:GLU:HG2	2.17	0.44
2:F:64:LEU:HA	2:F:64:LEU:HD23	1.86	0.44
1:K:82:ASP:HB2	1:K:86:PRO:HB3	1.99	0.44
1:A:91:ILE:HG13	2:B:36:LEU:O	2.18	0.44
1:A:67:ARG:NH2	1:A:94:GLU:OE1	2.51	0.44
2:B:121:HIS:HB3	2:B:124:MET:HG2	2.00	0.44
2:D:197:ILE:HD11	2:D:235:LYS:HD3	1.98	0.44
2:F:82:LEU:HD11	2:F:108:SER:HA	1.99	0.44
1:I:325:ASN:O	1:I:326:GLN:C	2.55	0.44
1:I:339:GLU:O	1:I:343:ILE:HG13	2.17	0.44
2:J:77:TYR:CZ	2:J:141:ARG:HB2	2.52	0.44
1:K:173:ARG:HD2	8:K:461:HOH:O	2.17	0.44
2:L:22:ARG:HG2	2:L:22:ARG:NH1	2.32	0.44
2:B:103:ILE:HG23	2:B:104:PRO:HD2	1.98	0.44
2:B:344:LEU:HD12	2:B:344:LEU:HA	1.84	0.44
2:H:31:ARG:HH22	2:H:306:VAL:HB	1.83	0.44
2:H:237:GLU:HG2	8:H:415:HOH:O	2.17	0.44
2:H:354:LEU:HD11	2:H:358:HIS:NE2	2.33	0.44
1:I:151:GLU:HG3	1:I:175:LEU:HD11	2.00	0.44
2:J:77:TYR:HE2	2:J:137:ASP:OD2	2.01	0.44
2:L:82:LEU:HD11	2:L:108:SER:HA	1.99	0.44
2:B:38:GLU:O	2:B:38:GLU:HG2	2.18	0.44
2:D:130:SER:O	2:D:134:ILE:HG13	2.18	0.44
1:G:290:SER:HB2	1:G:322:MET:HG2	2.00	0.44
1:I:311:LEU:HD23	1:I:311:LEU:O	2.17	0.44
2:H:21:LEU:CD2	2:H:304:ARG:HG2	2.45	0.44
1:A:156:ILE:HD11	1:A:172:ARG:HH22	1.83	0.44
1:G:325:ASN:O	1:G:326:GLN:C	2.56	0.44
2:H:18:LEU:N	2:H:18:LEU:CD2	2.79	0.44
2:H:353:ARG:O	2:H:357:LEU:HB2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:148:LEU:HB2	1:A:179:LEU:HD21	2.00	0.44
2:F:311:LYS:HG3	2:F:312:TRP:CE2	2.53	0.44
1:G:65:LEU:HD12	1:G:67:ARG:HH11	1.83	0.44
2:H:103:ILE:HG23	2:H:104:PRO:HD2	1.99	0.44
2:L:105:PHE:CE2	2:L:107:PRO:HD3	2.52	0.43
1:A:325:ASN:O	1:A:326:GLN:C	2.56	0.43
2:D:311:LYS:HG3	2:D:312:TRP:CE2	2.53	0.43
1:G:219:GLU:HA	1:G:219:GLU:OE1	2.18	0.43
2:H:198:SER:OG	2:H:202:ARG:NH1	2.51	0.43
2:H:250:ARG:O	2:H:254:MET:HG2	2.18	0.43
2:J:64:LEU:O	2:J:67:VAL:HG22	2.17	0.43
1:K:83:GLY:HA3	2:L:105:PHE:CD1	2.53	0.43
1:C:287:ARG:H	1:C:287:ARG:HG2	1.59	0.43
1:G:329:ASN:HB3	1:G:332:ASP:HB3	1.99	0.43
2:H:311:LYS:HG3	2:H:312:TRP:CE2	2.53	0.43
2:J:19:ASP:OD2	2:J:19:ASP:N	2.51	0.43
2:B:115:HIS:HA	2:B:116:PRO:HD3	1.90	0.43
1:C:78:VAL:O	1:C:104:ARG:HD2	2.17	0.43
2:F:138:ASP:OD1	2:F:140:SER:HB3	2.18	0.43
2:F:207:ASP:O	2:F:208:ASN:HB2	2.18	0.43
8:B:441:HOH:O	2:J:31:ARG:HD3	2.18	0.43
2:H:22:ARG:O	2:H:26:VAL:HG23	2.18	0.43
1:A:103:PHE:CZ	1:A:133:VAL:HG22	2.54	0.43
2:B:36:LEU:HA	2:B:37:PRO:HD3	1.86	0.43
2:D:19:ASP:OD2	2:D:19:ASP:N	2.43	0.43
2:H:77:TYR:HE2	2:H:137:ASP:OD2	2.02	0.43
1:C:318:ILE:HG22	1:C:322:MET:CE	2.48	0.43
1:G:353:LYS:CG	1:G:354:GLU:N	2.81	0.43
2:J:311:LYS:HG3	2:J:312:TRP:CE2	2.53	0.43
2:F:250:ARG:O	2:F:254:MET:HG2	2.18	0.43
2:H:92:ARG:HG2	2:H:165:PRO:CG	2.46	0.43
2:H:249:LYS:HB3	2:H:285:ILE:HD13	2.00	0.43
2:J:82:LEU:HD11	2:J:108:SER:HA	1.99	0.43
2:J:133:ILE:HG22	2:J:350:THR:HG23	1.99	0.43
2:L:334:GLU:HB3	2:L:337:ILE:HD12	2.00	0.43
1:C:107:LEU:HD22	2:D:117:TYR:CD2	2.54	0.43
1:G:105:ALA:O	1:G:109:ARG:HG3	2.18	0.43
2:H:30:GLN:O	2:H:34:GLN:HG3	2.19	0.43
1:E:83:GLY:HA3	2:F:105:PHE:CD1	2.55	0.42
2:F:133:ILE:CD1	2:F:354:LEU:HD13	2.48	0.42
2:F:256:GLN:HB2	2:F:260:TYR:CE2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:64:LEU:HB3	2:J:69:LYS:HE2	2.01	0.42
2:L:33:LEU:HD22	2:L:54:ALA:HB1	2.02	0.42
1:E:312:ILE:O	1:E:316:VAL:HG23	2.20	0.42
2:J:130:SER:O	2:J:134:ILE:HG13	2.19	0.42
2:J:338:CYS:SG	2:J:349:ARG:NH2	2.92	0.42
1:K:148:LEU:HB2	1:K:179:LEU:HD21	2.00	0.42
2:L:64:LEU:HB3	2:L:69:LYS:HE2	2.02	0.42
1:C:311:LEU:HD23	1:C:311:LEU:O	2.18	0.42
2:B:22:ARG:HG2	2:B:22:ARG:NH1	2.34	0.42
2:B:77:TYR:CE1	2:B:141:ARG:HB2	2.54	0.42
2:B:133:ILE:CD1	2:B:354:LEU:HD13	2.47	0.42
2:L:256:GLN:HB2	2:L:260:TYR:CE2	2.55	0.42
2:B:256:GLN:HB2	2:B:260:TYR:CE2	2.55	0.42
2:D:37:PRO:HD2	2:D:40:TYR:CE1	2.54	0.42
1:I:338:LEU:HD11	1:I:364:GLN:HG2	2.00	0.42
1:K:330:LYS:HE2	1:K:367:HIS:HB3	2.02	0.42
2:L:49:THR:HG23	2:L:124:MET:SD	2.59	0.42
2:B:21:LEU:CD1	2:B:21:LEU:N	2.81	0.42
2:B:22:ARG:O	2:B:26:VAL:HG23	2.19	0.42
2:F:192:ASP:CG	2:F:195:LYS:HG3	2.40	0.42
1:K:167:GLN:NE2	8:K:569:HOH:O	2.52	0.42
1:A:274:GLU:HG3	1:A:310:TYR:CE2	2.55	0.42
1:E:151:GLU:HG3	1:E:175:LEU:HD11	2.02	0.42
1:E:361:ARG:HD3	8:E:456:HOH:O	2.20	0.42
1:I:198:LYS:HD3	2:J:266:LYS:HD3	2.02	0.42
1:I:351:ILE:CD1	2:J:256:GLN:HG2	2.50	0.42
1:K:96:PHE:CE1	1:K:126:LEU:HB3	2.55	0.42
1:A:151:GLU:HG3	1:A:175:LEU:HD11	2.02	0.42
2:B:64:LEU:HA	2:B:64:LEU:HD23	1.85	0.42
2:H:19:ASP:O	2:H:21:LEU:HD13	2.19	0.42
2:H:268:VAL:HG23	2:H:297:TYR:CZ	2.55	0.42
2:D:22:ARG:HG2	2:D:22:ARG:HH11	1.86	0.41
2:D:53:PHE:HZ	6:D:382:MES:H71	1.85	0.41
1:E:69:ARG:HB3	1:E:71:GLU:OE1	2.20	0.41
1:C:91:ILE:HD11	2:D:38:GLU:H	1.85	0.41
1:K:339:GLU:O	1:K:343:ILE:HG13	2.20	0.41
2:B:192:ASP:OD1	2:B:195:LYS:CE	2.68	0.41
2:L:258:ASN:OD1	2:L:259:GLY:N	2.43	0.41
2:B:130:SER:O	2:B:134:ILE:HG13	2.19	0.41
1:C:103:PHE:CZ	1:C:133:VAL:HG22	2.55	0.41
2:F:77:TYR:CE1	2:F:141:ARG:HB2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:344:LEU:HD12	2:F:344:LEU:HA	1.73	0.41
2:B:92:ARG:NH1	2:B:118:ASP:O	2.54	0.41
1:G:334:LEU:O	1:G:338:LEU:HG	2.20	0.41
2:H:256:GLN:HB2	2:H:260:TYR:CE2	2.56	0.41
1:A:344:LEU:HD13	1:A:356:TRP:CE2	2.55	0.41
1:C:74:ASP:OD2	1:C:74:ASP:N	2.52	0.41
1:E:287:ARG:H	1:E:287:ARG:HG2	1.48	0.41
2:F:144:LYS:HG2	2:F:185:LEU:HD22	2.03	0.41
1:I:330:LYS:HE2	1:I:367:HIS:HB3	2.01	0.41
1:K:117:PHE:CE2	1:K:146:LYS:HE2	2.55	0.41
1:K:353:LYS:HE3	1:K:353:LYS:HB2	1.78	0.41
2:B:160:SER:HB3	2:B:199:TYR:CE1	2.56	0.41
2:B:302:GLN:HG3	2:B:309:PHE:CE2	2.55	0.41
1:G:97:ARG:NH1	1:G:97:ARG:CB	2.83	0.41
1:G:117:PHE:CE2	1:G:146:LYS:HE2	2.56	0.41
2:L:19:ASP:OD2	2:L:19:ASP:N	2.51	0.41
2:D:20:PHE:CZ	2:D:337:ILE:HD11	2.56	0.41
2:D:237:GLU:HG2	8:D:418:HOH:O	2.21	0.41
2:F:115:HIS:HA	2:F:116:PRO:HD3	1.92	0.41
1:I:101:ASP:HA	1:I:104:ARG:HH11	1.86	0.41
1:K:78:VAL:O	1:K:104:ARG:HD2	2.21	0.41
2:L:255:ARG:HD3	2:L:261:HIS:CD2	2.56	0.41
1:E:325:ASN:O	1:E:326:GLN:C	2.58	0.41
1:E:348:LYS:HD3	1:E:348:LYS:HA	1.89	0.41
2:F:186:ASN:HB2	2:F:358:HIS:CE1	2.56	0.41
1:A:212:GLU:O	1:G:180:LYS:HE3	2.21	0.41
1:C:96:PHE:CE1	1:C:126:LEU:HB3	2.56	0.41
2:D:133:ILE:HG22	2:D:350:THR:HG23	2.02	0.41
1:G:127:ASN:ND2	1:G:130:ASN:HB2	2.36	0.41
1:G:319:TYR:HA	1:G:322:MET:HE3	2.02	0.41
2:H:184:MET:HA	2:H:354:LEU:HD21	2.03	0.41
1:I:219:GLU:HA	1:I:219:GLU:OE1	2.21	0.41
2:J:195:LYS:NZ	8:J:415:HOH:O	2.54	0.41
1:A:355:TYR:O	1:A:358:TYR:HB3	2.21	0.40
1:I:103:PHE:CZ	1:I:133:VAL:HG22	2.56	0.40
2:J:250:ARG:O	2:J:254:MET:HG2	2.21	0.40
2:D:126:TYR:HE2	6:D:382:MES:C6	2.34	0.40
2:D:268:VAL:HG23	2:D:297:TYR:CZ	2.57	0.40
1:G:156:ILE:HD11	1:G:172:ARG:HH22	1.87	0.40
1:I:312:ILE:HG23	1:I:340:LEU:HD22	2.03	0.40
2:J:357:LEU:HD22	2:J:361:TRP:CZ2	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:103:PHE:CZ	1:K:133:VAL:HG22	2.56	0.40
1:K:294:ASN:O	1:K:298:GLN:HB2	2.21	0.40
2:L:320:LEU:HD23	2:L:320:LEU:C	2.42	0.40
1:A:267:ILE:HD13	1:A:277:TRP:CE2	2.57	0.40
1:A:348:LYS:HD3	1:A:348:LYS:HA	1.82	0.40
2:B:49:THR:HG23	2:B:124:MET:SD	2.62	0.40
2:D:64:LEU:HD11	2:D:134:ILE:HG22	2.03	0.40
2:D:344:LEU:HA	2:D:344:LEU:HD12	1.84	0.40
2:F:192:ASP:OD1	2:F:195:LYS:HG3	2.22	0.40
2:J:33:LEU:HD22	2:J:54:ALA:HB1	2.02	0.40
2:H:348:THR:HA	2:H:351:SER:OG	2.21	0.40
2:H:357:LEU:HD22	2:H:361:TRP:CE2	2.57	0.40
1:I:287:ARG:H	1:I:287:ARG:HG2	1.57	0.40
2:J:256:GLN:HB2	2:J:260:TYR:CE2	2.57	0.40
2:J:353:ARG:HG2	2:J:353:ARG:HH11	1.87	0.40
2:L:207:ASP:O	2:L:208:ASN:HB2	2.22	0.40
1:G:96:PHE:CE1	1:G:126:LEU:HB3	2.56	0.40
2:H:49:THR:HG23	2:H:124:MET:SD	2.62	0.40
2:H:60:MET:HE2	2:H:347:SER:HB3	2.04	0.40
1:K:156:ILE:HD11	1:K:172:ARG:HH22	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	312/377 (83%)	289 (93%)	22 (7%)	1 (0%)	41 51
1	C	312/377 (83%)	294 (94%)	17 (5%)	1 (0%)	41 51
1	E	312/377 (83%)	288 (92%)	24 (8%)	0	100 100
1	G	312/377 (83%)	291 (93%)	21 (7%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	I	312/377 (83%)	292 (94%)	18 (6%)	2 (1%)	25	34
1	K	312/377 (83%)	294 (94%)	17 (5%)	1 (0%)	41	51
2	B	344/377 (91%)	325 (94%)	17 (5%)	2 (1%)	25	34
2	D	344/377 (91%)	329 (96%)	13 (4%)	2 (1%)	25	34
2	F	344/377 (91%)	327 (95%)	15 (4%)	2 (1%)	25	34
2	H	344/377 (91%)	326 (95%)	15 (4%)	3 (1%)	17	24
2	J	344/377 (91%)	329 (96%)	12 (4%)	3 (1%)	17	24
2	L	344/377 (91%)	332 (96%)	10 (3%)	2 (1%)	25	34
All	All	3936/4524 (87%)	3716 (94%)	201 (5%)	19 (0%)	29	40

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	326	GLN
2	B	258	ASN
1	C	326	GLN
2	D	258	ASN
2	H	258	ASN
2	H	333	GLU
1	I	306	HIS
2	J	258	ASN
2	L	258	ASN
2	F	258	ASN
1	I	326	GLN
2	J	34	GLN
1	K	306	HIS
2	H	111	PRO
2	F	111	PRO
2	J	111	PRO
2	B	111	PRO
2	D	111	PRO
2	L	111	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	279/338 (82%)	273 (98%)	6 (2%)	52	66
1	C	282/338 (83%)	274 (97%)	8 (3%)	43	58
1	E	284/338 (84%)	277 (98%)	7 (2%)	47	62
1	G	281/338 (83%)	276 (98%)	5 (2%)	59	74
1	I	286/338 (85%)	278 (97%)	8 (3%)	43	58
1	K	290/338 (86%)	281 (97%)	9 (3%)	40	54
2	B	287/326 (88%)	275 (96%)	12 (4%)	30	40
2	D	286/326 (88%)	273 (96%)	13 (4%)	27	37
2	F	292/326 (90%)	279 (96%)	13 (4%)	27	37
2	H	286/326 (88%)	272 (95%)	14 (5%)	25	34
2	J	291/326 (89%)	276 (95%)	15 (5%)	23	30
2	L	294/326 (90%)	278 (95%)	16 (5%)	22	29
All	All	3438/3984 (86%)	3312 (96%)	126 (4%)	34	46

All (126) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	55	PHE
1	A	67	ARG
1	A	71	GLU
1	A	81	ASN
1	A	214	ARG
1	A	287	ARG
2	B	24	ARG
2	B	33	LEU
2	B	39	ARG
2	B	151	LEU
2	B	216	LEU
2	B	232	LEU
2	B	236	LEU
2	B	255	ARG
2	B	261	HIS
2	B	302	GLN
2	B	329	LEU
2	B	331	LEU
1	C	55	PHE

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Mol	Chain	Res	Type
1	C	59	ASP
1	C	71	GLU
1	C	76	ASP
1	C	182	PRO
1	C	287	ARG
1	C	324	GLU
1	C	364	GLN
2	D	21	LEU
2	D	33	LEU
2	D	151	LEU
2	D	216	LEU
2	D	232	LEU
2	D	236	LEU
2	D	255	ARG
2	D	258	ASN
2	D	261	HIS
2	D	306	VAL
2	D	329	LEU
2	D	331	LEU
2	D	353	ARG
1	E	55	PHE
1	E	67	ARG
1	E	71	GLU
1	E	194	ASN
1	E	214	ARG
1	E	287	ARG
1	E	324	GLU
2	F	21	LEU
2	F	24	ARG
2	F	33	LEU
2	F	151	LEU
2	F	216	LEU
2	F	232	LEU
2	F	236	LEU
2	F	255	ARG
2	F	258	ASN
2	F	261	HIS
2	F	329	LEU
2	F	331	LEU
2	F	353	ARG
1	G	71	GLU
1	G	214	ARG

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Mol	Chain	Res	Type
1	G	224	ASP
1	G	287	ARG
1	G	324	GLU
2	H	18	LEU
2	H	21	LEU
2	H	151	LEU
2	H	157	GLU
2	H	216	LEU
2	H	232	LEU
2	H	236	LEU
2	H	255	ARG
2	H	258	ASN
2	H	261	HIS
2	H	306	VAL
2	H	329	LEU
2	H	331	LEU
2	H	357	LEU
1	I	55	PHE
1	I	71	GLU
1	I	194	ASN
1	I	195	GLN
1	I	287	ARG
1	I	324	GLU
1	I	353	LYS
1	I	364	GLN
2	J	21	LEU
2	J	27	ARG
2	J	31	ARG
2	J	33	LEU
2	J	151	LEU
2	J	216	LEU
2	J	232	LEU
2	J	236	LEU
2	J	255	ARG
2	J	261	HIS
2	J	306	VAL
2	J	329	LEU
2	J	331	LEU
2	J	353	ARG
2	J	357	LEU
1	K	55	PHE
1	K	67	ARG

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Mol	Chain	Res	Type
1	K	71	GLU
1	K	142	ARG
1	K	194	ASN
1	K	195	GLN
1	K	287	ARG
1	K	298	GLN
1	K	324	GLU
2	L	21	LEU
2	L	33	LEU
2	L	65	ASP
2	L	110	ASN
2	L	151	LEU
2	L	216	LEU
2	L	232	LEU
2	L	236	LEU
2	L	255	ARG
2	L	258	ASN
2	L	261	HIS
2	L	302	GLN
2	L	306	VAL
2	L	329	LEU
2	L	331	LEU
2	L	353	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	89	GLN
1	A	184	GLN
1	A	201	HIS
1	A	285	GLN
1	A	329	ASN
2	B	208	ASN
1	C	108	GLN
1	C	218	ASN
1	C	298	GLN
1	C	335	ASN
1	C	364	GLN
2	D	30	GLN
2	D	246	ASN
1	E	81	ASN
1	E	184	GLN

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Mol	Chain	Res	Type
1	E	298	GLN
2	F	30	GLN
2	F	246	ASN
1	G	80	GLN
1	G	81	ASN
1	G	89	GLN
1	G	162	GLN
1	G	184	GLN
1	G	297	ASN
1	G	325	ASN
2	H	246	ASN
1	I	89	GLN
1	I	285	GLN
1	I	364	GLN
2	J	30	GLN
2	J	208	ASN
2	J	246	ASN
1	K	81	ASN
1	K	218	ASN
2	L	110	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 33 ligands modelled in this entry, 15 are monoatomic - leaving 18 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
4	SO4	L	380	-	4,4,4	0.21	0	6,6,6	0.19	0
4	SO4	H	380	-	4,4,4	0.27	0	6,6,6	0.18	0
5	778	L	381	3	29,32,32	2.43	15 (51%)	39,44,44	2.18	11 (28%)
5	778	H	381	3	29,32,32	2.37	15 (51%)	39,44,44	2.17	12 (30%)
6	MES	H	382	-	12,12,12	9.52	8 (66%)	14,16,16	2.43	6 (42%)
6	MES	J	382	-	12,12,12	9.46	8 (66%)	14,16,16	2.60	7 (50%)
6	MES	D	382	-	12,12,12	9.53	8 (66%)	14,16,16	2.52	6 (42%)
6	MES	B	381	-	12,12,12	9.37	8 (66%)	14,16,16	2.60	7 (50%)
5	778	J	381	3	29,32,32	2.38	13 (44%)	39,44,44	2.16	11 (28%)
5	778	B	380	3	29,32,32	2.48	16 (55%)	39,44,44	2.17	12 (30%)
6	MES	L	382	-	12,12,12	9.70	9 (75%)	14,16,16	2.66	7 (50%)
5	778	F	381	3	29,32,32	2.44	14 (48%)	39,44,44	2.20	12 (30%)
6	MES	F	382	-	12,12,12	9.28	8 (66%)	14,16,16	2.63	7 (50%)
4	SO4	J	380	-	4,4,4	0.23	0	6,6,6	0.22	0
5	778	D	381	3	29,32,32	2.40	16 (55%)	39,44,44	2.16	11 (28%)
4	SO4	F	380	-	4,4,4	0.22	0	6,6,6	0.25	0
4	SO4	D	380	-	4,4,4	0.26	0	6,6,6	0.10	0
4	SO4	B	379	-	4,4,4	0.26	0	6,6,6	0.06	0

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. ^{1,2} means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	778	L	381	3	-	2/14/27/27	0/4/4/4
5	778	H	381	3	-	2/14/27/27	0/4/4/4
6	MES	H	382	-	-	0/6/14/14	0/1/1/1
6	MES	J	382	-	-	0/6/14/14	0/1/1/1
6	MES	D	382	-	-	0/6/14/14	0/1/1/1
6	MES	B	381	-	-	0/6/14/14	0/1/1/1
5	778	J	381	3	-	2/14/27/27	0/4/4/4
5	778	B	380	3	-	2/14/27/27	0/4/4/4
6	MES	L	382	-	-	0/6/14/14	0/1/1/1
5	778	F	381	3	-	3/14/27/27	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	MES	F	382	-	-	0/6/14/14	0/1/1/1
5	778	D	381	3	-	2/14/27/27	0/4/4/4

All (138) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	L	382	MES	C8-S	-25.41	1.41	1.77
6	D	382	MES	C8-S	-24.85	1.42	1.77
6	H	382	MES	C8-S	-24.74	1.42	1.77
6	J	382	MES	C8-S	-24.47	1.42	1.77
6	B	381	MES	C8-S	-23.98	1.43	1.77
6	F	382	MES	C8-S	-23.49	1.44	1.77
6	F	382	MES	O1S-S	12.85	1.83	1.45
6	J	382	MES	O2S-S	12.75	1.82	1.45
6	F	382	MES	O2S-S	12.74	1.82	1.45
6	B	381	MES	O2S-S	12.74	1.82	1.45
6	L	382	MES	O2S-S	12.70	1.82	1.45
6	H	382	MES	O2S-S	12.62	1.82	1.45
6	D	382	MES	O1S-S	12.60	1.82	1.45
6	D	382	MES	O2S-S	12.52	1.82	1.45
6	J	382	MES	O1S-S	12.50	1.81	1.45
6	B	381	MES	O1S-S	12.49	1.81	1.45
6	L	382	MES	O1S-S	12.47	1.81	1.45
6	H	382	MES	O1S-S	12.47	1.81	1.45
6	B	381	MES	O3S-S	9.86	1.82	1.47
6	H	382	MES	O3S-S	9.83	1.82	1.47
6	F	382	MES	O3S-S	9.78	1.82	1.47
6	L	382	MES	O3S-S	9.73	1.81	1.47
6	J	382	MES	O3S-S	9.66	1.81	1.47
6	D	382	MES	O3S-S	9.58	1.81	1.47
6	L	382	MES	C7-C8	-5.82	1.36	1.52
5	B	380	778	C34-C35	-5.75	1.31	1.44
5	F	381	778	C34-C35	-5.73	1.31	1.44
6	H	382	MES	C7-C8	-5.68	1.37	1.52
5	D	381	778	C34-C35	-5.62	1.32	1.44
6	D	382	MES	C7-C8	-5.61	1.37	1.52
6	B	381	MES	C7-C8	-5.58	1.37	1.52
5	H	381	778	C34-C35	-5.54	1.32	1.44
6	J	382	MES	C7-C8	-5.49	1.37	1.52
5	J	381	778	C34-C35	-5.43	1.32	1.44
6	F	382	MES	C7-C8	-5.38	1.38	1.52
5	L	381	778	C34-C35	-5.37	1.32	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	F	381	778	C8-N9	5.11	1.44	1.36
5	J	381	778	C8-N9	4.83	1.44	1.36
5	B	380	778	C8-N9	4.79	1.44	1.36
5	H	381	778	C8-N9	4.76	1.44	1.36
5	D	381	778	C8-N9	4.74	1.44	1.36
5	L	381	778	C8-N9	4.57	1.43	1.36
5	F	381	778	C4-C8	3.72	1.58	1.51
5	B	380	778	C4-C8	3.71	1.58	1.51
5	F	381	778	C21-C14	3.63	1.46	1.39
6	L	382	MES	C7-N4	-3.59	1.39	1.47
5	L	381	778	C4-C8	3.55	1.58	1.51
5	L	381	778	C21-C14	3.54	1.46	1.39
5	J	381	778	C21-C14	3.46	1.46	1.39
5	F	381	778	C12-N18	3.38	1.46	1.35
6	D	382	MES	C7-N4	-3.36	1.39	1.47
5	J	381	778	C30-C26	3.33	1.44	1.38
5	B	380	778	C12-N18	3.33	1.45	1.35
5	B	380	778	C21-C14	3.32	1.45	1.39
5	H	381	778	C21-C14	3.31	1.45	1.39
6	H	382	MES	C7-N4	-3.30	1.39	1.47
5	D	381	778	C21-C14	3.29	1.45	1.39
5	D	381	778	C12-N18	3.27	1.45	1.35
6	J	382	MES	C7-N4	-3.24	1.40	1.47
5	L	381	778	C12-N18	3.24	1.45	1.35
5	L	381	778	C30-C26	3.24	1.44	1.38
5	H	381	778	C12-N18	3.23	1.45	1.35
5	D	381	778	C4-C8	3.20	1.57	1.51
5	D	381	778	C30-C26	3.18	1.44	1.38
5	J	381	778	C12-N18	3.18	1.45	1.35
5	L	381	778	C4-N1	3.16	1.49	1.46
5	H	381	778	C4-C8	3.15	1.57	1.51
6	B	381	MES	C7-N4	-3.15	1.40	1.47
5	L	381	778	C20-C26	3.05	1.43	1.38
5	F	381	778	C30-C26	3.02	1.43	1.38
5	H	381	778	C20-C26	2.94	1.43	1.38
5	B	380	778	C32-C28	2.93	1.44	1.38
6	L	382	MES	C3-C2	-2.91	1.39	1.50
5	J	381	778	C4-C8	2.91	1.56	1.51
5	B	380	778	C30-C26	2.91	1.43	1.38
5	J	381	778	C20-C26	2.91	1.43	1.38
6	J	382	MES	C3-C2	-2.86	1.39	1.50
5	B	380	778	C20-C26	2.82	1.42	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	F	381	778	C32-C28	2.80	1.43	1.38
6	D	382	MES	C3-C2	-2.80	1.39	1.50
6	F	382	MES	C3-C2	-2.79	1.39	1.50
5	H	381	778	C30-C26	2.78	1.43	1.38
6	B	381	MES	C3-C2	-2.76	1.39	1.50
6	H	382	MES	C3-C2	-2.74	1.39	1.50
6	F	382	MES	C7-N4	-2.71	1.41	1.47
5	D	381	778	C32-C28	2.67	1.43	1.38
5	D	381	778	C20-C26	2.67	1.42	1.38
6	L	382	MES	C5-C6	-2.66	1.40	1.50
5	B	380	778	C20-C14	2.65	1.44	1.39
5	B	380	778	C28-C25	2.60	1.44	1.38
5	H	381	778	C32-C28	2.60	1.43	1.38
5	J	381	778	C32-C28	2.58	1.43	1.38
6	J	382	MES	C5-C6	-2.58	1.40	1.50
5	D	381	778	C28-C25	2.56	1.44	1.38
6	D	382	MES	C5-C6	-2.56	1.40	1.50
6	H	382	MES	C5-C6	-2.54	1.40	1.50
5	H	381	778	C29-C25	2.51	1.44	1.38
6	F	382	MES	C5-C6	-2.51	1.40	1.50
5	J	381	778	C27-C21	2.51	1.44	1.38
6	B	381	MES	C5-C6	-2.51	1.40	1.50
5	F	381	778	C27-C21	2.50	1.44	1.38
5	D	381	778	C29-C25	2.50	1.44	1.38
5	B	380	778	C29-C25	2.50	1.44	1.38
5	D	381	778	C20-C14	2.49	1.44	1.39
5	L	381	778	C28-C25	2.46	1.44	1.38
5	L	381	778	C32-C28	2.44	1.43	1.38
5	L	381	778	C27-C21	2.43	1.44	1.38
5	F	381	778	C20-C26	2.43	1.42	1.38
5	B	380	778	C33-C34	2.43	1.44	1.39
5	H	381	778	C20-C14	2.42	1.43	1.39
5	F	381	778	C28-C25	2.38	1.44	1.38
5	H	381	778	C17-N18	2.36	1.40	1.34
5	J	381	778	C29-C25	2.36	1.43	1.38
5	D	381	778	C33-C34	2.35	1.44	1.39
5	L	381	778	C33-C34	2.34	1.44	1.39
5	J	381	778	C20-C14	2.32	1.43	1.39
5	B	380	778	C27-C21	2.32	1.43	1.38
5	J	381	778	C28-C25	2.29	1.43	1.38
5	B	380	778	C33-C29	2.29	1.42	1.38
5	B	380	778	C17-N18	2.28	1.39	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L	381	778	C29-C25	2.27	1.43	1.38
5	F	381	778	C29-C25	2.27	1.43	1.38
5	J	381	778	C33-C34	2.26	1.44	1.39
5	H	381	778	C33-C29	2.19	1.42	1.38
5	F	381	778	C4-N1	2.17	1.48	1.46
5	D	381	778	C4-N1	2.17	1.48	1.46
5	H	381	778	C27-C21	2.17	1.43	1.38
5	L	381	778	C20-C14	2.16	1.43	1.39
5	F	381	778	C20-C14	2.12	1.43	1.39
5	D	381	778	C17-N18	2.12	1.39	1.34
6	L	382	MES	C5-N4	-2.11	1.41	1.46
5	L	381	778	C17-N18	2.10	1.39	1.34
5	D	381	778	C27-C21	2.07	1.43	1.38
5	H	381	778	C4-N1	2.03	1.48	1.46
5	H	381	778	C28-C25	2.02	1.43	1.38
5	D	381	778	C33-C29	2.02	1.42	1.38
5	F	381	778	C33-C29	2.02	1.42	1.38
5	B	380	778	C27-C30	2.01	1.43	1.38

All (109) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	L	382	MES	O3S-S-C8	6.52	116.31	105.77
6	J	382	MES	O3S-S-C8	6.03	115.53	105.77
6	D	382	MES	O3S-S-C8	5.95	115.39	105.77
6	B	381	MES	O3S-S-C8	5.90	115.31	105.77
5	L	381	778	C2-C5-N9	5.83	120.66	110.88
6	H	382	MES	O3S-S-C8	5.80	115.15	105.77
5	F	381	778	C2-C5-N9	5.53	120.14	110.88
5	D	381	778	C2-C5-N9	5.52	120.12	110.88
6	F	382	MES	O3S-S-C8	5.45	114.59	105.77
5	J	381	778	C2-C5-N9	5.42	119.96	110.88
5	B	380	778	C2-C5-N9	5.34	119.82	110.88
5	H	381	778	C2-C5-N9	5.28	119.73	110.88
5	D	381	778	C3-N1-C4	-5.21	103.68	110.53
5	H	381	778	C3-N1-C4	-5.18	103.72	110.53
5	B	380	778	C3-N1-C4	-5.14	103.77	110.53
5	L	381	778	C3-N1-C4	-5.09	103.84	110.53
5	J	381	778	C3-N1-C4	-4.98	103.98	110.53
6	F	382	MES	O1S-S-C8	4.86	112.77	106.92
5	F	381	778	C3-N1-C4	-4.84	104.17	110.53
5	H	381	778	C5-C2-N1	-4.62	101.17	110.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	380	778	C5-N9-C8	-4.53	116.11	122.52
5	D	381	778	C5-C2-N1	-4.49	101.42	110.64
5	L	381	778	C5-N9-C8	-4.46	116.22	122.52
5	F	381	778	C5-N9-C8	-4.44	116.24	122.52
5	J	381	778	C5-N9-C8	-4.43	116.25	122.52
6	B	381	MES	O1S-S-C8	4.41	112.22	106.92
5	B	380	778	C5-C2-N1	-4.39	101.64	110.64
5	H	381	778	C5-N9-C8	-4.39	116.31	122.52
5	J	381	778	C5-C2-N1	-4.37	101.68	110.64
5	J	381	778	C14-N9-C8	4.34	126.31	120.72
5	D	381	778	C5-N9-C8	-4.30	116.44	122.52
5	F	381	778	C3-N1-C2	4.27	120.57	111.06
5	F	381	778	C5-C2-N1	-4.27	101.88	110.64
5	L	381	778	C5-C2-N1	-4.22	101.99	110.64
5	B	380	778	C3-N1-C2	4.20	120.40	111.06
6	F	382	MES	O2S-S-C8	4.18	111.95	106.92
6	L	382	MES	O1S-S-C8	4.16	111.92	106.92
5	F	381	778	C14-N9-C8	4.15	126.07	120.72
5	L	381	778	C3-N1-C2	4.14	120.27	111.06
5	H	381	778	C3-N1-C2	4.13	120.25	111.06
5	B	380	778	C14-N9-C8	4.11	126.01	120.72
5	J	381	778	C3-N1-C2	4.09	120.15	111.06
5	H	381	778	C14-N9-C8	4.08	125.98	120.72
5	D	381	778	C3-N1-C2	4.06	120.10	111.06
5	D	381	778	C14-N9-C8	4.05	125.94	120.72
6	H	382	MES	O1S-S-C8	4.03	111.77	106.92
5	L	381	778	C14-N9-C8	4.02	125.90	120.72
6	J	382	MES	O1S-S-C8	3.95	111.67	106.92
6	J	382	MES	O2S-S-C8	3.94	111.66	106.92
6	D	382	MES	O2S-S-C8	3.91	111.62	106.92
6	B	381	MES	O2S-S-C8	3.81	111.51	106.92
5	H	381	778	C4-N1-C2	3.61	114.63	109.95
5	J	381	778	C4-N1-C2	3.57	114.57	109.95
6	D	382	MES	O1S-S-C8	3.57	111.21	106.92
5	B	380	778	C4-N1-C2	3.55	114.55	109.95
5	L	381	778	C4-N1-C2	3.52	114.51	109.95
6	L	382	MES	O2S-S-C8	3.42	111.03	106.92
5	D	381	778	C4-N1-C2	3.40	114.36	109.95
5	F	381	778	C4-N1-C2	3.36	114.31	109.95
6	H	382	MES	O2S-S-C8	3.21	110.78	106.92
5	F	381	778	C21-C14-N9	2.96	124.51	120.18
5	J	381	778	C21-C14-N9	2.70	124.13	120.18

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L	381	778	C21-C14-N9	2.70	124.13	120.18
5	H	381	778	N18-C17-N11	-2.70	108.25	112.26
5	F	381	778	N18-C17-N11	-2.68	108.28	112.26
5	D	381	778	N18-C17-N11	-2.63	108.36	112.26
5	J	381	778	N18-C17-N11	-2.61	108.39	112.26
5	L	381	778	N18-C17-N11	-2.59	108.42	112.26
6	J	382	MES	O3S-S-O2S	-2.55	105.05	111.27
5	B	380	778	C21-C14-N9	2.54	123.89	120.18
5	D	381	778	C21-C14-N9	2.54	123.89	120.18
5	B	380	778	N18-C17-N11	-2.53	108.50	112.26
5	F	381	778	C16-N11-C17	-2.53	122.68	125.66
6	L	382	MES	O3S-S-O2S	-2.48	105.22	111.27
6	F	382	MES	O2S-S-O1S	-2.47	105.41	113.95
5	H	381	778	C16-N11-C17	-2.47	122.75	125.66
5	B	380	778	C16-N11-C17	-2.45	122.78	125.66
5	H	381	778	C21-C14-N9	2.42	123.72	120.18
6	L	382	MES	O2S-S-O1S	-2.42	105.56	113.95
6	B	381	MES	O2S-S-O1S	-2.41	105.62	113.95
5	J	381	778	C16-N11-C17	-2.41	122.83	125.66
6	D	382	MES	O3S-S-O2S	-2.38	105.46	111.27
6	B	381	MES	O3S-S-O2S	-2.37	105.48	111.27
6	F	382	MES	O3S-S-O1S	-2.37	105.50	111.27
5	L	381	778	C16-N11-C17	-2.35	122.89	125.66
6	D	382	MES	O2S-S-O1S	-2.32	105.92	113.95
6	H	382	MES	O2S-S-O1S	-2.29	106.02	113.95
6	J	382	MES	O2S-S-O1S	-2.29	106.02	113.95
5	H	381	778	C3-C7-C12	-2.26	126.44	129.46
5	D	381	778	C16-N11-C17	-2.23	123.03	125.66
5	F	381	778	C3-C7-C12	-2.20	126.52	129.46
6	F	382	MES	O3S-S-O2S	-2.20	105.90	111.27
6	L	382	MES	O1-C2-C3	-2.18	106.99	111.80
6	B	381	MES	O3S-S-O1S	-2.16	105.99	111.27
5	D	381	778	C7-C12-N18	-2.16	104.78	108.80
6	L	382	MES	O3S-S-O1S	-2.15	106.02	111.27
6	J	382	MES	O1-C2-C3	-2.14	107.08	111.80
6	H	382	MES	O3S-S-O2S	-2.12	106.09	111.27
5	B	380	778	C3-C7-C12	-2.12	126.63	129.46
6	F	382	MES	O1-C2-C3	-2.11	107.14	111.80
5	H	381	778	C7-C12-N18	-2.10	104.89	108.80
6	D	382	MES	O1-C2-C3	-2.10	107.18	111.80
5	F	381	778	C7-C12-N18	-2.08	104.93	108.80
6	J	382	MES	O3S-S-O1S	-2.07	106.22	111.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L	381	778	C3-C7-C12	-2.04	126.73	129.46
6	H	382	MES	O1-C2-C3	-2.02	107.36	111.80
5	B	380	778	C7-C12-N18	-2.01	105.05	108.80
5	J	381	778	C7-C12-N18	-2.01	105.06	108.80
6	B	381	MES	O1-C2-C3	-2.00	107.39	111.80

There are no chirality outliers.

All (13) torsion outliers are listed below:

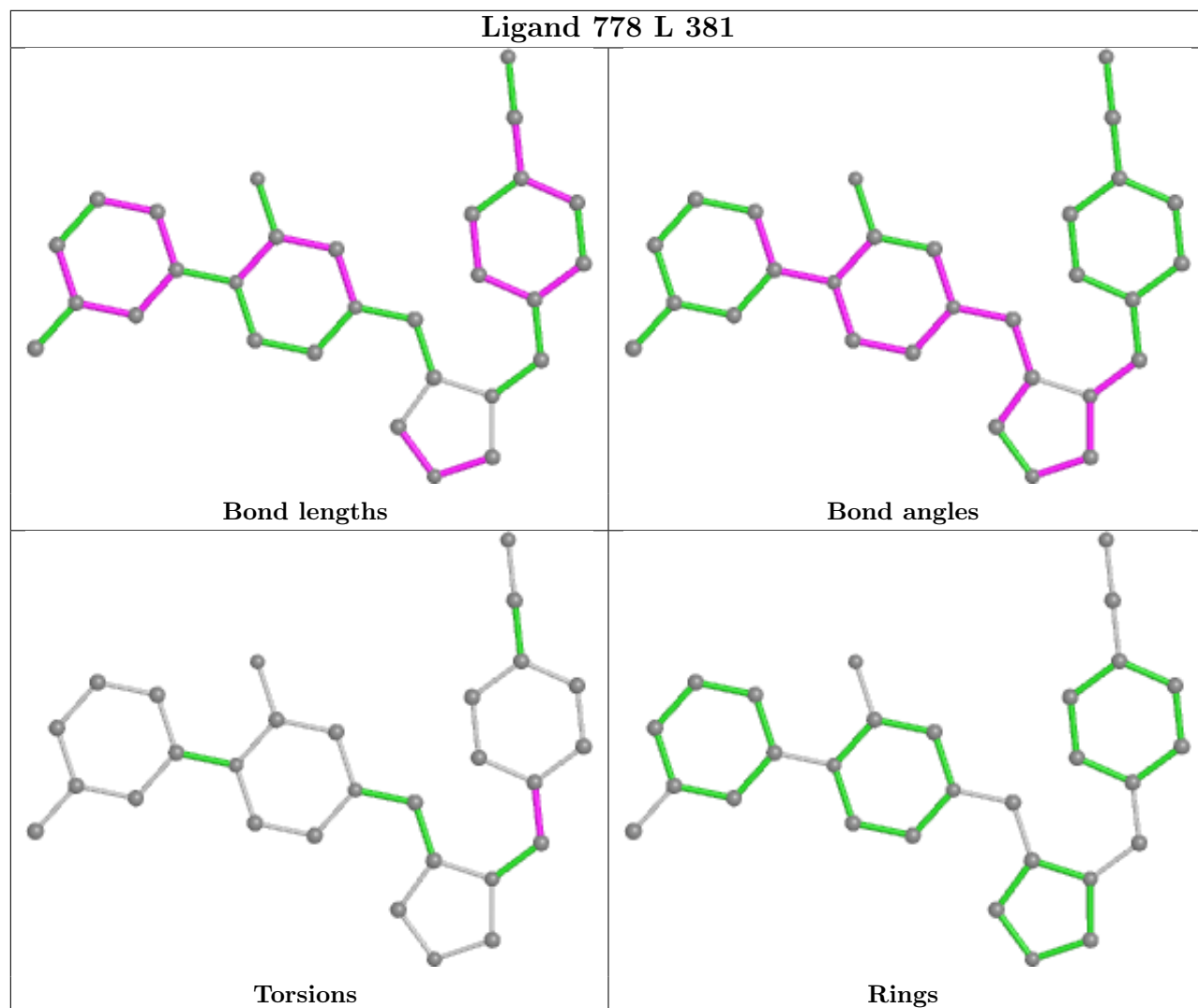
Mol	Chain	Res	Type	Atoms
5	D	381	778	N11-C16-C25-C29
5	D	381	778	N11-C16-C25-C28
5	F	381	778	N11-C16-C25-C29
5	J	381	778	N11-C16-C25-C29
5	F	381	778	N11-C16-C25-C28
5	H	381	778	N11-C16-C25-C29
5	L	381	778	N11-C16-C25-C29
5	J	381	778	N11-C16-C25-C28
5	L	381	778	N11-C16-C25-C28
5	H	381	778	N11-C16-C25-C28
5	B	380	778	N11-C16-C25-C29
5	B	380	778	N11-C16-C25-C28
5	F	381	778	C32-C34-C35-N36

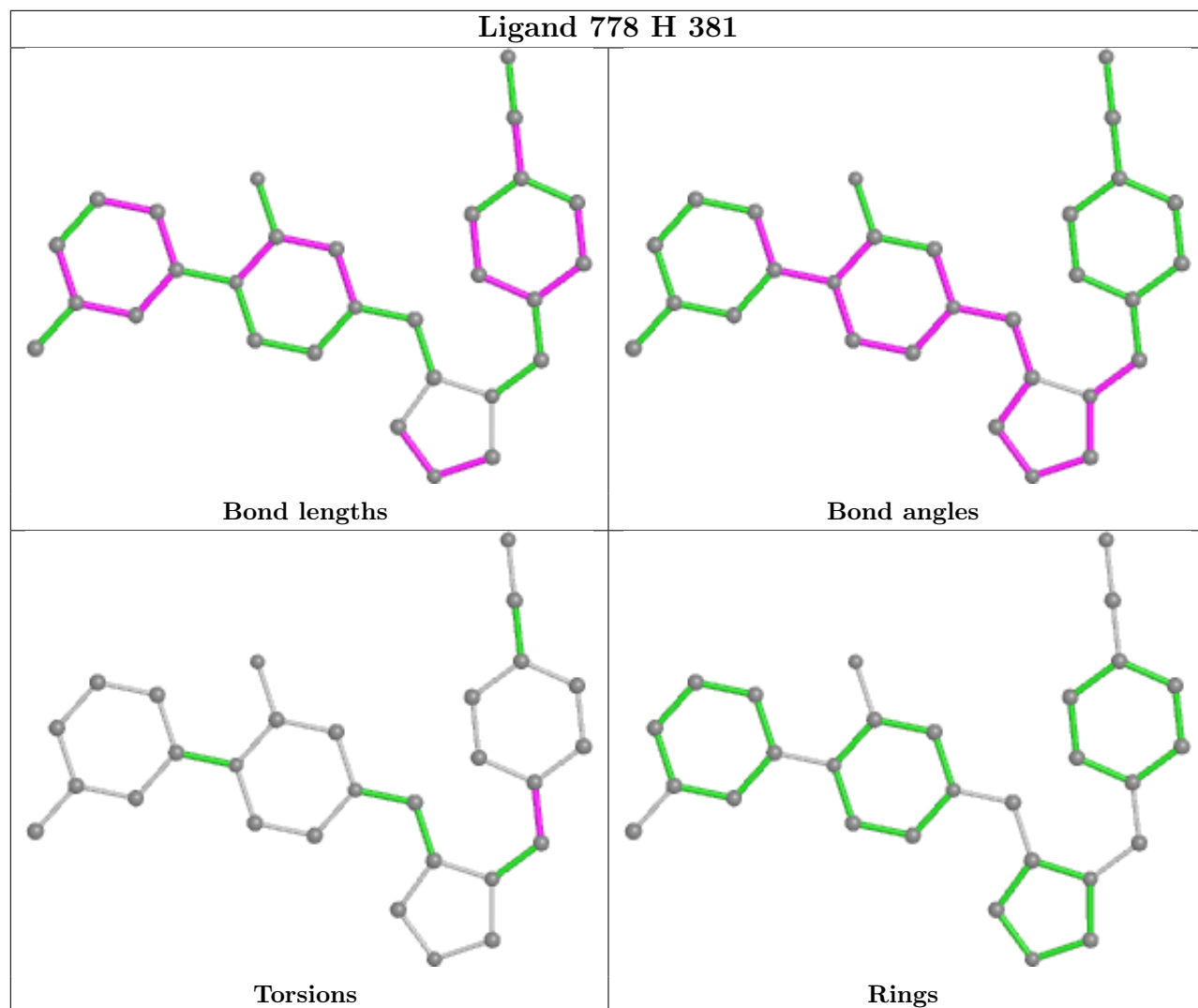
There are no ring outliers.

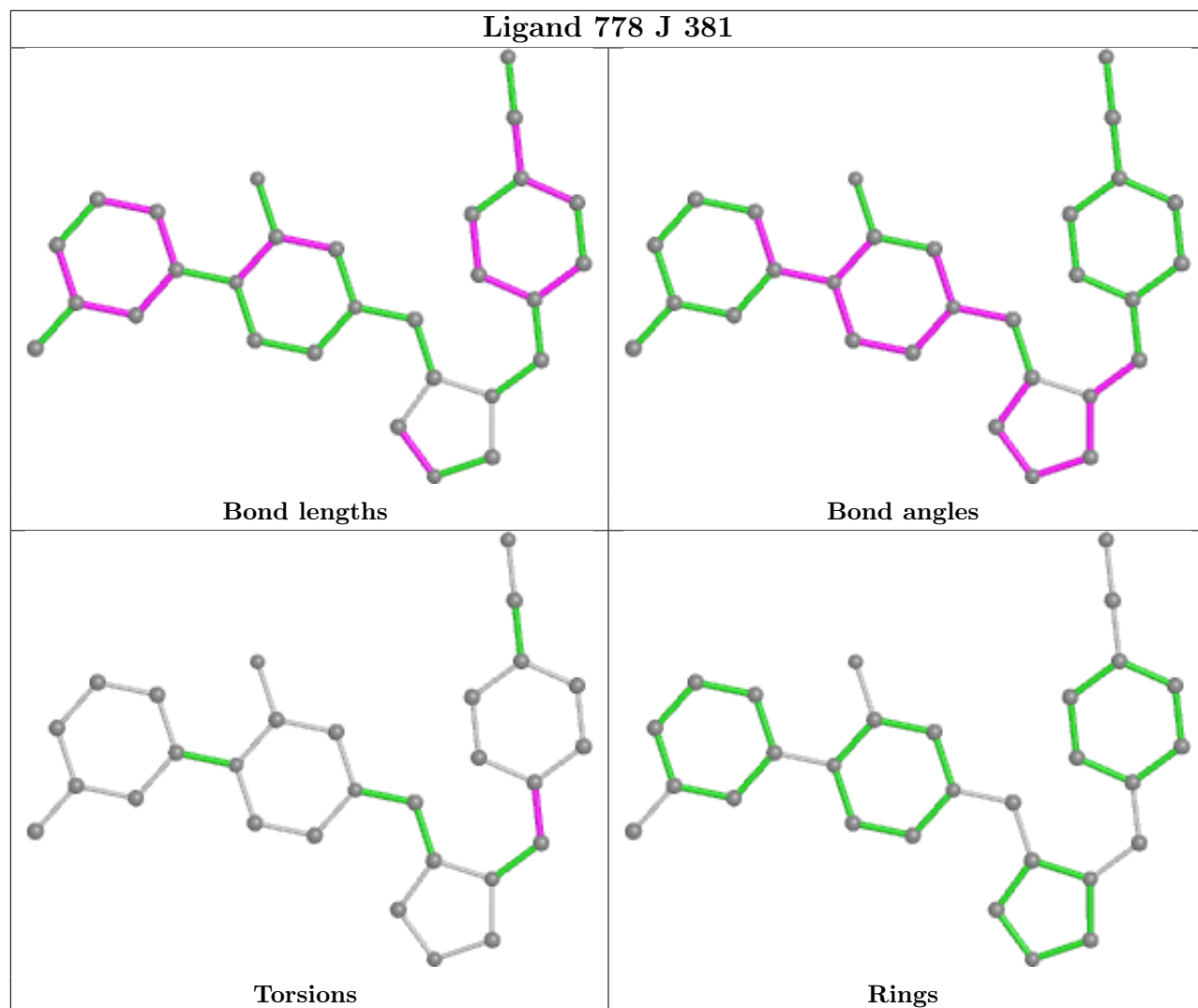
1 monomer is involved in 2 short contacts:

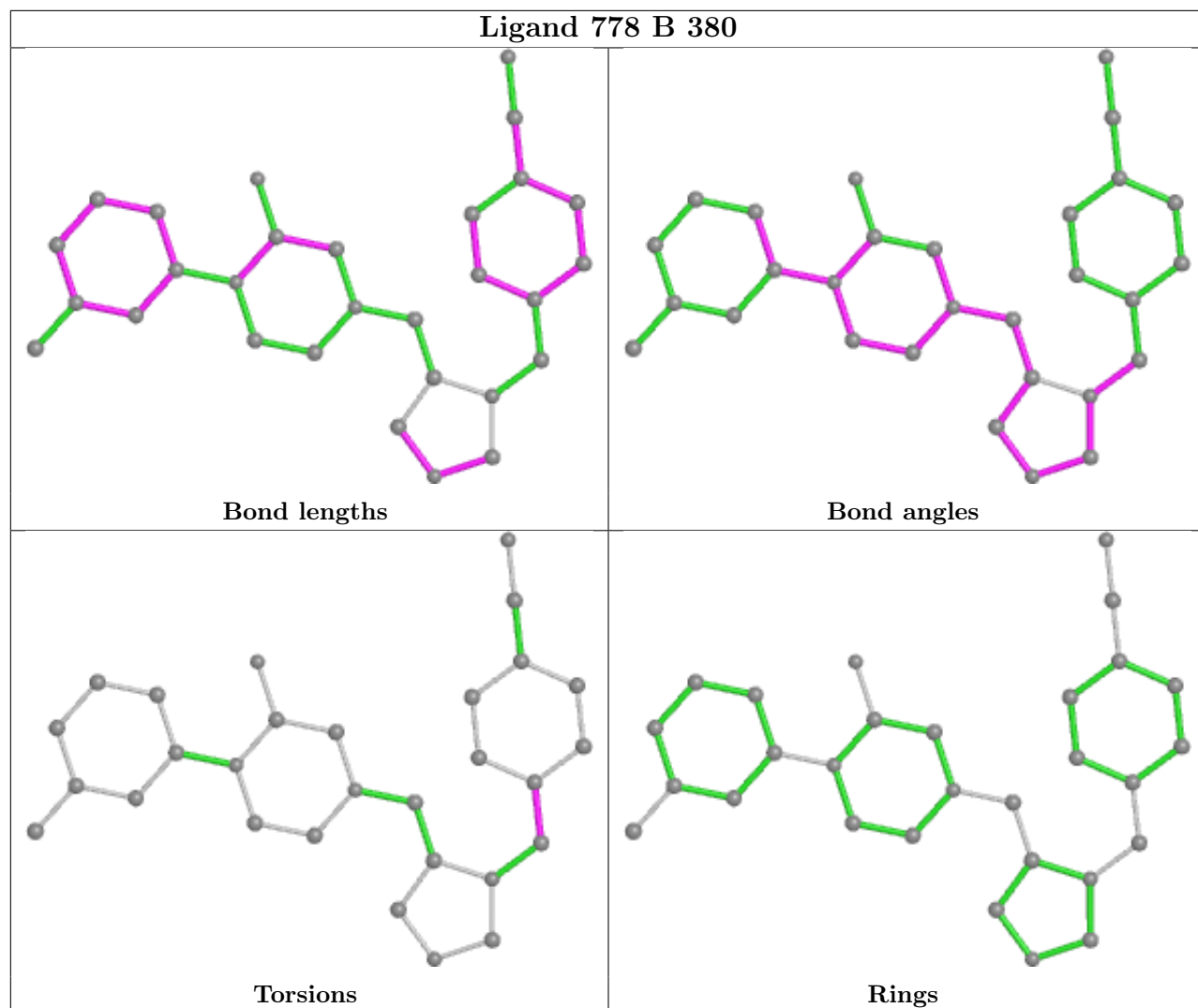
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	D	382	MES	2	0

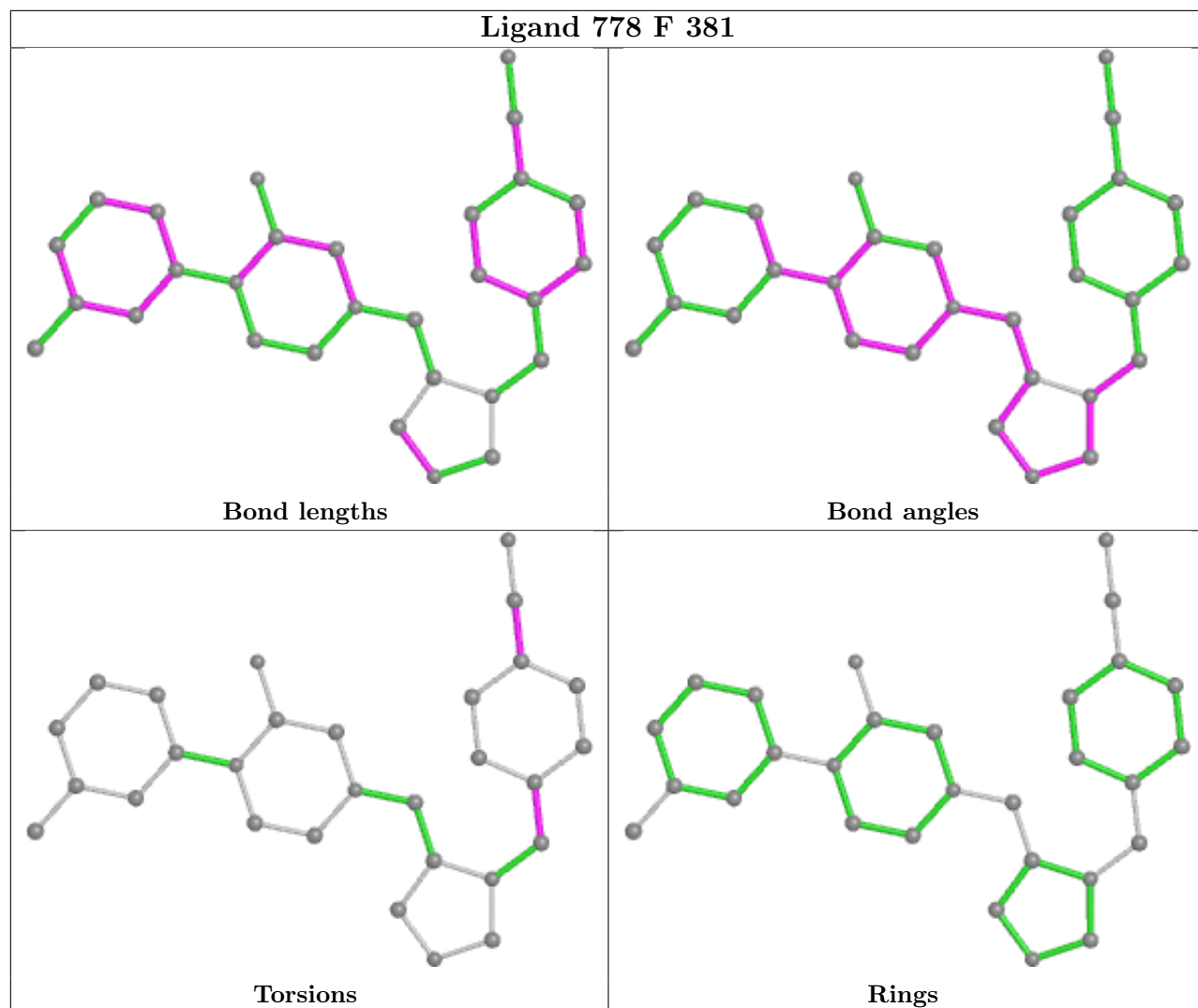
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

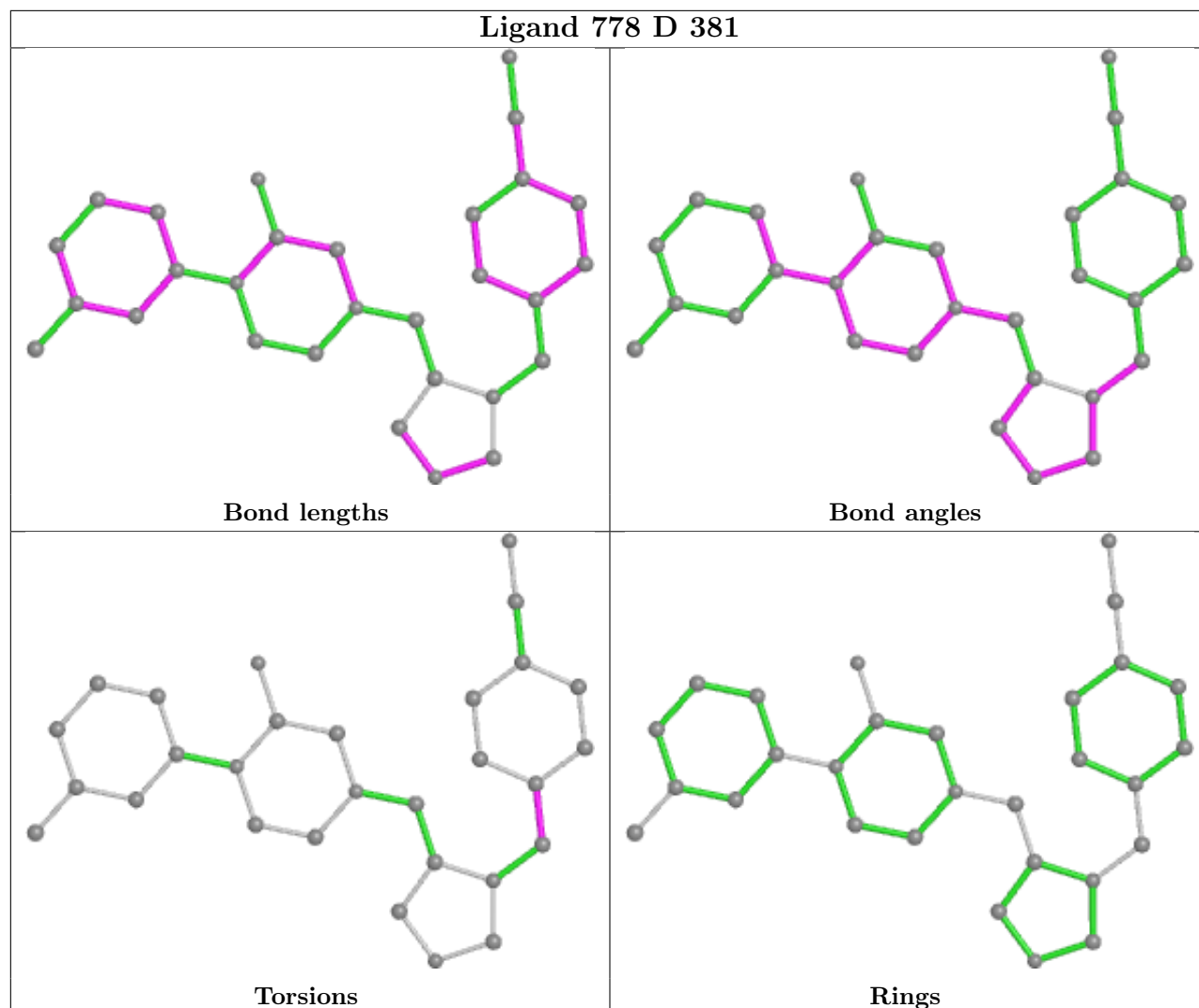












5.7 Other polymers [i](#)

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

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	314/377 (83%)	0.01	11 (3%) 44 51	41, 63, 97, 108	0
1	C	314/377 (83%)	-0.03	10 (3%) 47 55	41, 59, 87, 108	0
1	E	314/377 (83%)	0.02	10 (3%) 47 55	44, 63, 91, 106	0
1	G	314/377 (83%)	0.14	18 (5%) 23 28	41, 64, 94, 110	0
1	I	314/377 (83%)	-0.10	7 (2%) 62 68	34, 57, 87, 96	0
1	K	314/377 (83%)	-0.25	3 (0%) 82 86	31, 47, 72, 87	0
2	B	346/377 (91%)	0.09	12 (3%) 44 51	42, 57, 82, 102	0
2	D	346/377 (91%)	0.07	7 (2%) 65 72	35, 51, 77, 91	0
2	F	346/377 (91%)	0.02	10 (2%) 51 59	36, 51, 77, 101	0
2	H	346/377 (91%)	0.54	29 (8%) 11 13	40, 71, 97, 114	0
2	J	346/377 (91%)	0.15	18 (5%) 27 32	35, 55, 84, 104	0
2	L	346/377 (91%)	0.03	9 (2%) 56 62	29, 44, 71, 95	0
All	All	3960/4524 (87%)	0.06	144 (3%) 42 49	29, 57, 88, 114	0

All (144) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	H	304	ARG	6.3
1	G	306	HIS	5.9
1	C	306	HIS	5.9
2	H	305	LEU	5.9
1	G	55	PHE	5.5
1	C	55	PHE	5.1
2	H	108	SER	4.9
2	B	363	THR	4.4
1	I	306	HIS	4.4
2	H	361	TRP	4.3
1	C	305	SER	4.2

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Mol	Chain	Res	Type	RSRZ
2	H	363	THR	4.0
2	J	108	SER	4.0
1	E	306	HIS	3.9
2	H	112	GLY	3.8
1	A	333	ILE	3.8
2	L	363	THR	3.7
2	H	306	VAL	3.7
2	F	112	GLY	3.6
1	C	333	ILE	3.5
2	H	85	GLU	3.4
2	H	86	ASP	3.3
2	D	305	LEU	3.3
2	H	110	ASN	3.3
1	A	334	LEU	3.3
1	A	304	PRO	3.3
2	B	362	LYS	3.2
1	G	329	ASN	3.2
1	E	368	SER	3.2
1	G	305	SER	3.2
1	G	368	SER	3.1
2	F	363	THR	3.1
2	H	107	PRO	3.1
2	H	109	LYS	3.0
1	I	305	SER	3.0
2	H	307	GLY	3.0
2	B	86	ASP	2.9
2	L	49	THR	2.9
1	A	338	LEU	2.9
1	G	75	ILE	2.9
2	J	112	GLY	2.9
2	J	90	LEU	2.9
2	B	112	GLY	2.8
2	J	363	THR	2.8
1	E	331	GLU	2.8
2	D	363	THR	2.8
2	J	86	ASP	2.8
2	H	123	ALA	2.7
1	G	333	ILE	2.7
1	C	330	LYS	2.7
1	K	306	HIS	2.7
1	C	304	PRO	2.7
1	A	306	HIS	2.7

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Mol	Chain	Res	Type	RSRZ
2	H	84	THR	2.7
2	H	88	SER	2.7
2	L	84	THR	2.7
2	B	304	ARG	2.6
2	F	88	SER	2.6
1	C	329	ASN	2.6
2	J	111	PRO	2.6
2	F	305	LEU	2.6
1	C	332	ASP	2.6
1	E	330	LYS	2.6
1	A	335	ASN	2.6
1	A	367	HIS	2.6
2	J	84	THR	2.6
2	H	316	HIS	2.6
2	B	316	HIS	2.5
1	A	368	SER	2.5
1	C	336	LYS	2.5
2	J	360	SER	2.5
2	B	65	ASP	2.5
2	H	111	PRO	2.5
2	H	114	ALA	2.5
2	J	85	GLU	2.5
2	H	362	LYS	2.5
1	E	334	LEU	2.5
1	I	368	SER	2.5
2	J	46	SER	2.4
2	D	110	ASN	2.4
1	G	56	LEU	2.4
2	H	45	THR	2.4
2	B	111	PRO	2.3
2	L	85	GLU	2.3
1	C	331	GLU	2.3
2	D	304	ARG	2.3
2	H	19	ASP	2.3
1	G	304	PRO	2.3
2	J	49	THR	2.3
2	J	87	ARG	2.3
2	L	18	LEU	2.3
1	G	367	HIS	2.3
2	D	316	HIS	2.3
2	L	50	ILE	2.3
2	L	110	ASN	2.3

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Mol	Chain	Res	Type	RSRZ
2	J	114	ALA	2.3
1	E	328	ASP	2.3
2	H	314	ASP	2.2
1	G	365	SER	2.2
1	I	329	ASN	2.2
2	L	86	ASP	2.2
1	I	327	CYS	2.2
2	B	305	LEU	2.2
2	H	65	ASP	2.2
2	J	314	ASP	2.2
1	I	55	PHE	2.2
1	A	329	ASN	2.2
1	E	304	PRO	2.2
1	G	330	LYS	2.2
2	J	123	ALA	2.2
2	F	113	THR	2.2
2	L	113	THR	2.2
1	A	337	ALA	2.2
2	H	30	GLN	2.1
2	D	114	ALA	2.1
1	K	305	SER	2.1
1	G	195	GLN	2.1
2	F	65	ASP	2.1
1	A	330	LYS	2.1
1	G	78	VAL	2.1
2	F	123	ALA	2.1
2	B	127	THR	2.1
2	J	113	THR	2.1
2	D	90	LEU	2.1
1	G	85	SER	2.1
1	G	303	GLN	2.1
1	G	326	GLN	2.1
1	G	327	CYS	2.1
1	I	84	PRO	2.1
2	H	225	CYS	2.1
1	E	326	GLN	2.1
2	B	90	LEU	2.1
2	F	18	LEU	2.1
1	E	325	ASN	2.1
1	E	329	ASN	2.1
2	B	306	VAL	2.1
1	K	326	GLN	2.1

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Mol	Chain	Res	Type	RSRZ
2	F	316	HIS	2.0
2	F	86	ASP	2.0
2	H	35	VAL	2.0
2	J	124	MET	2.0
2	H	113	THR	2.0
2	H	308	GLY	2.0
2	J	88	SER	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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.

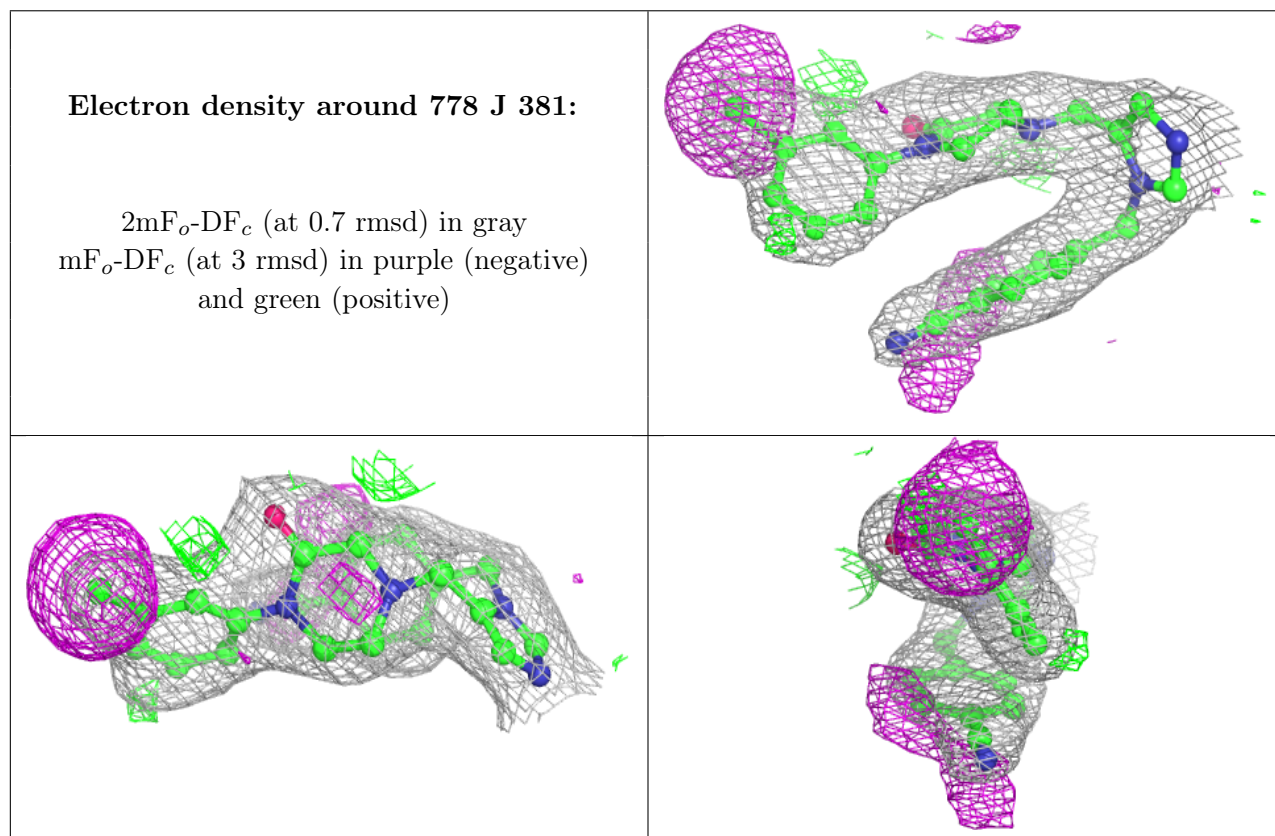
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	778	J	381	29/29	0.89	0.25	29,39,42,42	0
5	778	F	381	29/29	0.91	0.24	36,45,52,52	0
5	778	B	380	29/29	0.91	0.25	39,46,53,56	0
5	778	L	381	29/29	0.91	0.26	27,33,36,39	0
5	778	D	381	29/29	0.92	0.24	35,45,47,51	0
5	778	H	381	29/29	0.92	0.24	42,48,51,54	0
6	MES	H	382	12/12	0.93	0.26	74,75,84,84	0
6	MES	B	381	12/12	0.94	0.30	69,71,81,83	0
6	MES	J	382	12/12	0.94	0.38	70,72,81,81	0
6	MES	L	382	12/12	0.94	0.36	69,71,76,77	0
6	MES	F	382	12/12	0.95	0.31	72,73,85,86	0
6	MES	D	382	12/12	0.95	0.28	71,72,78,78	0
7	CL	G	378	1/1	0.96	0.16	61,61,61,61	0
7	CL	H	379	1/1	0.96	0.10	68,68,68,68	0
7	CL	I	378	1/1	0.96	0.18	75,75,75,75	0
7	CL	J	379	1/1	0.97	0.11	63,63,63,63	0

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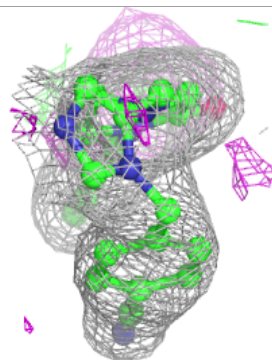
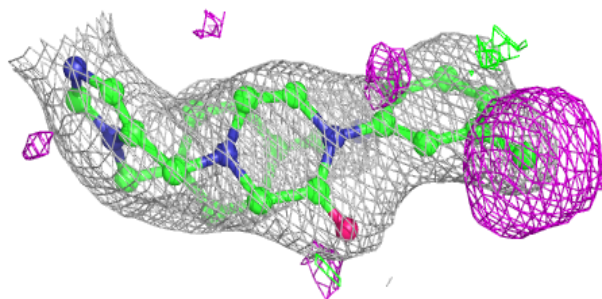
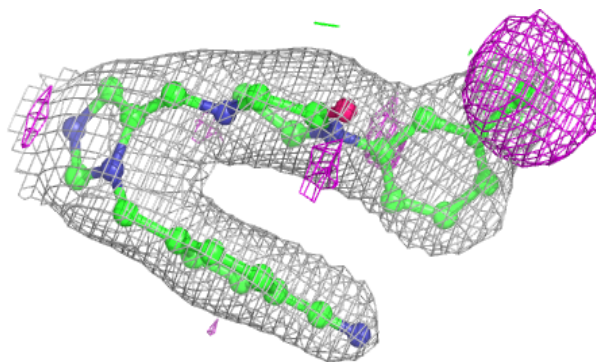
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
7	CL	C	378	1/1	0.98	0.21	61,61,61,61	0
7	CL	D	379	1/1	0.98	0.15	52,52,52,52	0
7	CL	K	378	1/1	0.98	0.14	67,67,67,67	0
4	SO4	J	380	5/5	0.99	0.16	45,45,47,48	0
4	SO4	L	380	5/5	0.99	0.19	41,44,45,47	0
7	CL	F	379	1/1	0.99	0.17	53,53,53,53	0
3	ZN	H	378	1/1	0.99	0.11	55,55,55,55	0
4	SO4	B	379	5/5	0.99	0.18	56,56,58,59	0
4	SO4	D	380	5/5	0.99	0.16	51,52,54,55	0
4	SO4	F	380	5/5	0.99	0.19	53,54,58,58	0
4	SO4	H	380	5/5	0.99	0.14	60,61,62,62	0
7	CL	L	379	1/1	0.99	0.12	53,53,53,53	0
3	ZN	B	378	1/1	1.00	0.14	45,45,45,45	0
3	ZN	J	378	1/1	1.00	0.15	39,39,39,39	0
3	ZN	L	378	1/1	1.00	0.16	35,35,35,35	0
3	ZN	D	378	1/1	1.00	0.15	43,43,43,43	0
3	ZN	F	378	1/1	1.00	0.14	45,45,45,45	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.

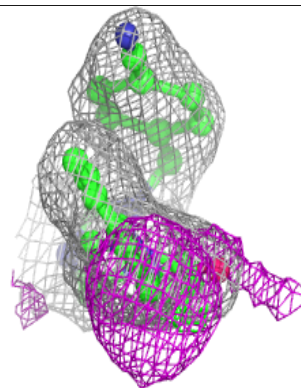
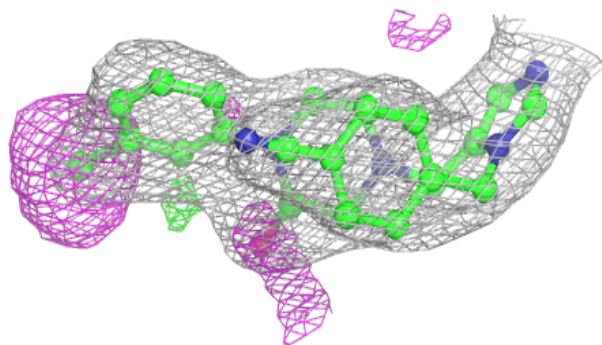
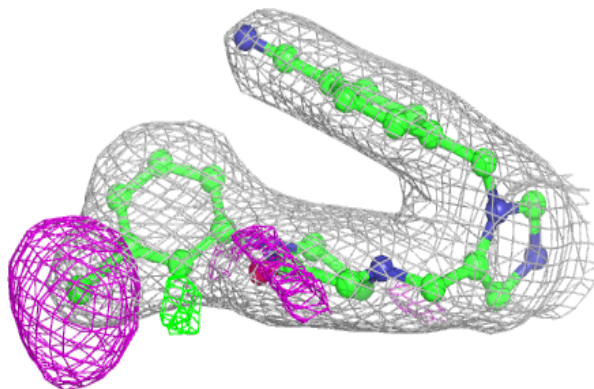


Electron density around 778 F 381:

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

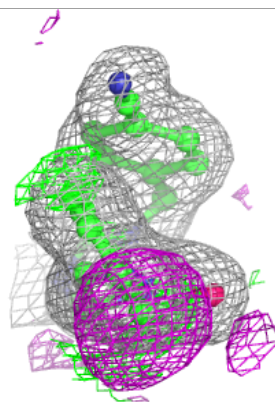
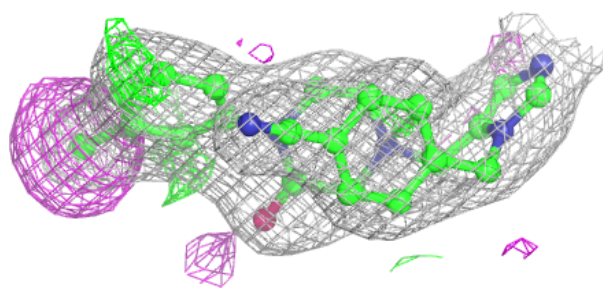
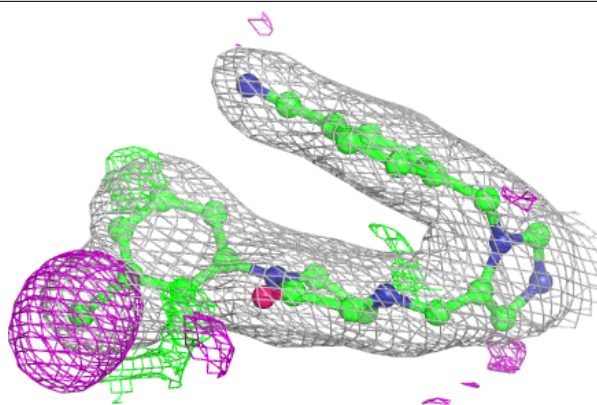
**Electron density around 778 B 380:**

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

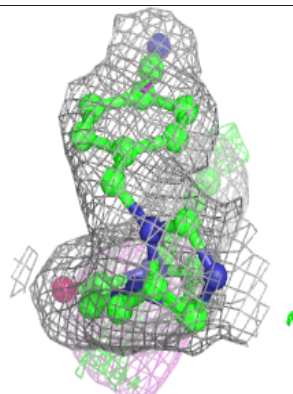
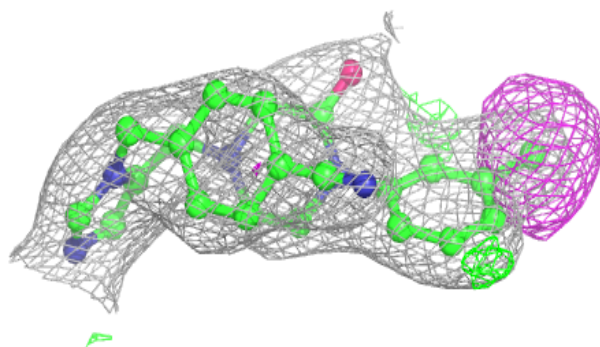
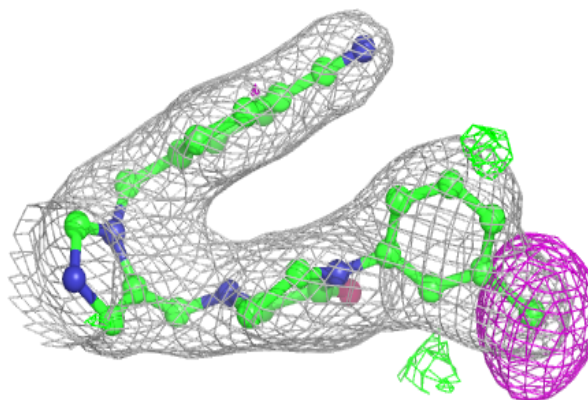


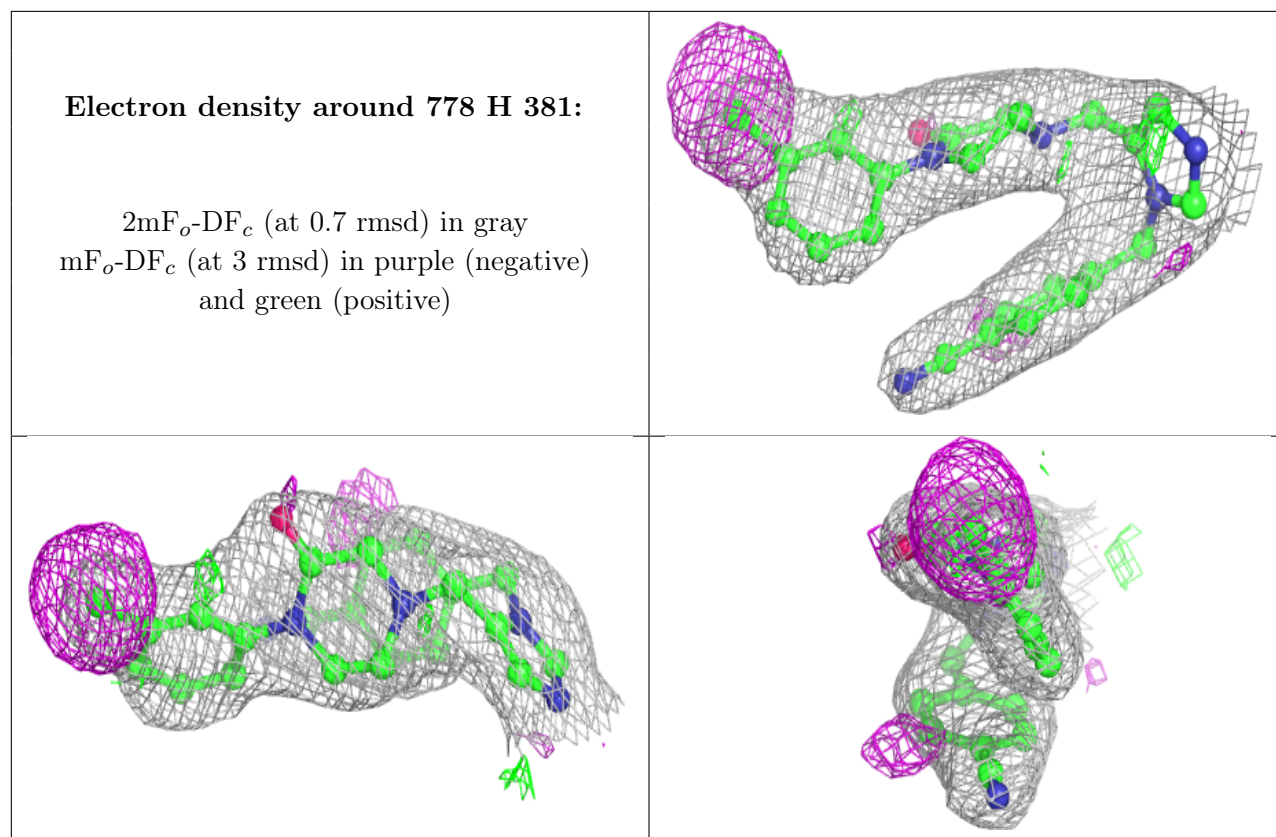
Electron density around 778 L 381:

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

**Electron density around 778 D 381:**

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





6.5 Other polymers [i](#)

There are no such residues in this entry.