Full wwPDB X-ray Structure Validation Report (i)

Jun 13, 2024 – 10:57 AM EDT

PDB ID	:	1N4S
Title	:	Protein Geranylgeranyltransferase type-I Complexed with GGPP and a Geranylgeranylated KKKSKTKCVIL Peptide Product
Authors	:	Taylor, J.S.; Reid, T.S.; Casey, P.J.; Beese, L.S.
Deposited on	:	2002-11-01
Resolution	:	2.60 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 (i) 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 (i)) were used in the production of this report:

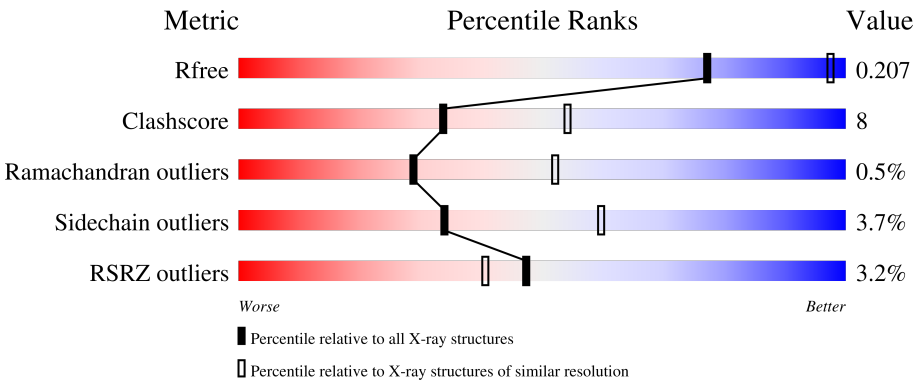
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.60 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	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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

Mol	Chain	Length	Quality of chain
1	A	377	2% 68% 14% • 17%
1	C	377	2% 67% 16% • 17%
1	E	377	2% 63% 19% • 17%
1	G	377	2% 66% 16% • 17%
1	I	377	2% 68% 15% • 17%

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Mol	Chain	Length	Quality of chain
1	K	377	%, 68%, 15%, 17%
2	B	377	2%, 72%, 19%, 8%
2	D	377	2%, 73%, 16%, 8%
2	F	377	2%, 73%, 17%, 8%
2	H	377	6%, 70%, 20%, 8%
2	J	377	3%, 73%, 18%, 8%
2	L	377	2%, 79%, 11%, 8%
3	M	11	36%, 9%, 27%, 64%
3	N	11	36%, 9%, 27%, 64%
3	O	11	36%, 9%, 27%, 64%
3	P	11	36%, 9%, 27%, 64%
3	Q	11	36%, 9%, 27%, 64%
3	R	11	45%, 9%, 36%, 55%

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
7	GER	M	1108	-	-	-	X
7	GER	N	1208	-	-	-	X
7	GER	O	1308	-	-	-	X
7	GER	P	1408	-	-	-	X
7	GER	Q	1508	-	-	-	X
7	GER	R	1608	-	-	-	X

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 33924 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-1 subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	314	2629	1679	463	482	5	0	0	0
1	C	314	2643	1689	461	488	5	0	0	0
1	E	314	2642	1686	461	490	5	0	0	0
1	G	314	2633	1683	459	486	5	0	0	0
1	I	314	2656	1694	465	492	5	0	0	0
1	K	314	2671	1703	467	496	5	0	0	0

- Molecule 2 is a protein called Geranylgeranyl transferase type-1 subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	346	2697	1707	467	499	24	0	0	0
2	D	346	2713	1715	472	502	24	0	0	0
2	F	346	2718	1717	474	503	24	0	0	0
2	H	346	2694	1706	464	500	24	0	0	0
2	J	346	2711	1713	471	503	24	0	0	0
2	L	346	2723	1720	473	506	24	0	0	0

- Molecule 3 is a protein called Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	M	4	30	20	4	5	1	0	0	0
3	N	4	30	20	4	5	1	0	0	0
3	O	4	30	20	4	5	1	0	0	0
3	P	4	30	20	4	5	1	0	0	0
3	Q	4	30	20	4	5	1	0	0	0
3	R	5	39	26	6	6	1	0	0	0

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
5	B	1	1	1	0	0
5	C	1	1	1	0	0
5	D	1	1	1	0	0
5	F	1	1	1	0	0
5	G	1	1	1	0	0
5	H	1	1	1	0	0

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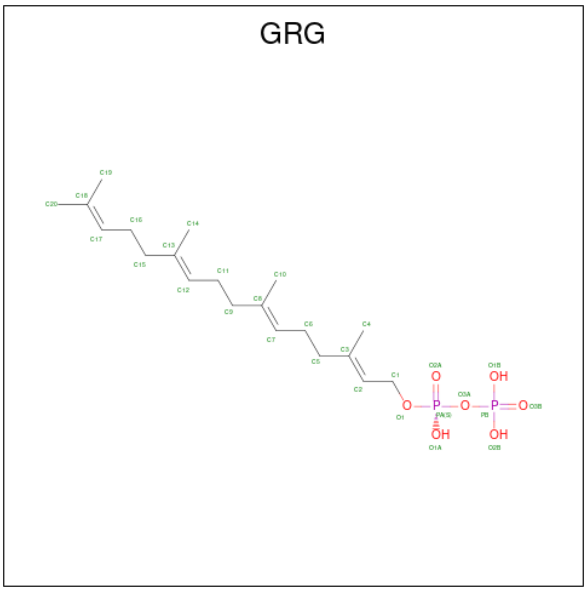
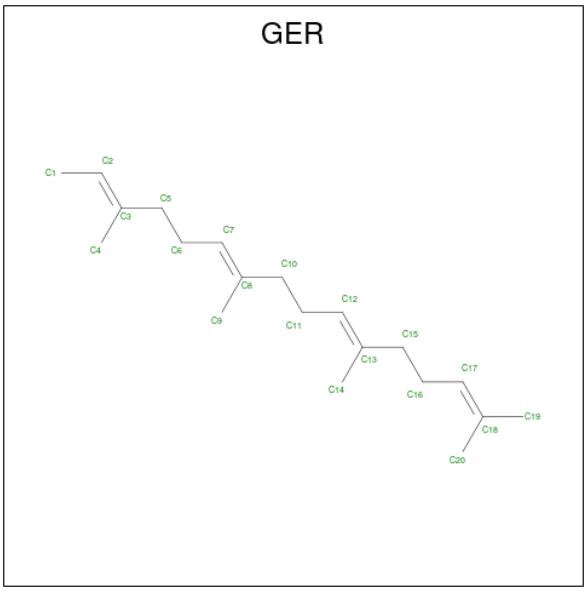
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
5	J	1	1	1	0	0
			Total	Cl		
5	K	1	1	1	0	0
			Total	Cl		
5	L	1	1	1	0	0

- Molecule 6 is GERANYLGERANYL DIPHOSPHATE (three-letter code: GRG) (formula: $C_{20}H_{36}O_7P_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	O	P		
6	B	1	29	20	7	2	0	0
			Total	C	O	P		
6	D	1	29	20	7	2	0	0
			Total	C	O	P		
6	F	1	29	20	7	2	0	0
			Total	C	O	P		
6	H	1	29	20	7	2	0	0
			Total	C	O	P		
6	J	1	29	20	7	2	0	0
			Total	C	O	P		
6	L	1	29	20	7	2	0	0

- Molecule 7 is GERAN-8-YL GERAN (three-letter code: GER) (formula: $C_{20}H_{34}$).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	C		
7	M	1	20	20	0	0
			Total	C		
7	N	1	20	20	0	0
			Total	C		
7	O	1	20	20	0	0
			Total	C		
7	P	1	20	20	0	0
			Total	C		
7	Q	1	20	20	0	0
			Total	C		
7	R	1	20	20	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
8	A	89	89	89	0	0
			Total	O		
8	B	79	79	79	0	0
			Total	O		
8	C	93	93	93	0	0
			Total	O		
8	D	121	121	121	0	0
			Total	O		
8	E	85	85	85	0	0
			Total	O		
8	F	100	100	100	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	G	86	Total O 86 86	0	0
8	H	56	Total O 56 56	0	0
8	I	121	Total O 121 121	0	0
8	J	88	Total O 88 88	0	0
8	K	211	Total O 211 211	0	0
8	L	157	Total O 157 157	0	0
8	M	2	Total O 2 2	0	0
8	N	2	Total O 2 2	0	0
8	O	1	Total O 1 1	0	0
8	P	1	Total O 1 1	0	0
8	Q	1	Total O 1 1	0	0
8	R	3	Total O 3 3	0	0

3 Residue-property plots (i)

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

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

Chain A: 2% 68% 14% • 17%

MET ALA ALA THR GLU GLY VAL GLY GLU SER ALA PRO GLY GLY GLU PRO GLY GLN PRO GLU GLN PRO PRO PRO PRO PRO PRO PRO ALA GLN GLN PRO GLN GLU GLU GLU MET ALA ALA GLU ALA GLY GLU ALA ALA SER PRO MET ASP ASP GLY F55 E71 V78

V87 V88 I91 Y92 F96 R97 D101 R104 A105 V106 L107 R115 A116 L126 L148 E151 M152 I156 R172 L175 L179 I189 K198 H205 R214 D217 S251 E265 L269 Q285 D286 R287 R291 N294 Q298

Q303 P304 S305 H306 S307 L311 I312 N325 Q326 C327 D328 N329 K330 E331 D332 I333 L334 L338 E339 L340 C341 E342 I343 L344 K348 W356 R357 H367 S368 ARG GLU SER ASP ILE PRO ALA SER VAL

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

Chain C: 2% 67% 16% • 17%

MET ALA ALA THR GLU GLY VAL GLY GLU SER ALA PRO GLY GLY GLU PRO GLY GLN PRO GLU GLN PRO PRO PRO PRO PRO PRO PRO ALA GLN GLN PRO GLN GLU GLU GLU MET ALA ALA GLU ALA GLY GLU ALA ALA SER PRO MET ASP ASP GLY F55 D59 R69 A70

E71 D76 P77 V78 N81 D82 P86 V87 V88 I91 F96 R97 Y100 D101 R104 A105 V106 L107 Q108 R109 A116 I124 E125 L126 W134 L148 M152 I156 R172 L179 P182 S183 Q184 I189 K198 H205 R214 D217

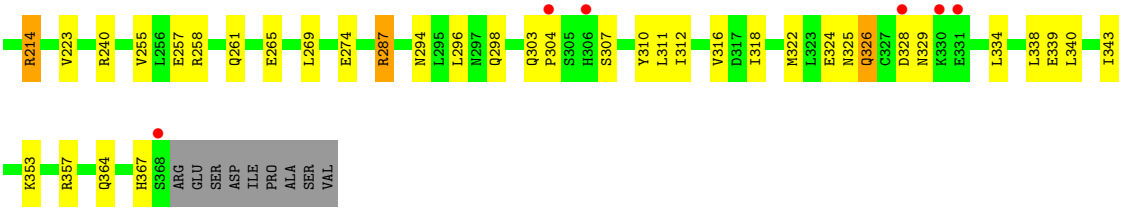
I244 S251 E259 V260 Q261 E265 L269 R287 Q303 P304 S305 H306 S307 L311 I312 E324 N325 Q326 C327 D328 N329 K330 E331 L334 E339 L340 I343 L344 W356 Q364 H367 S368 ARG GLU SER ASP ILE PRO ALA SER VAL

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

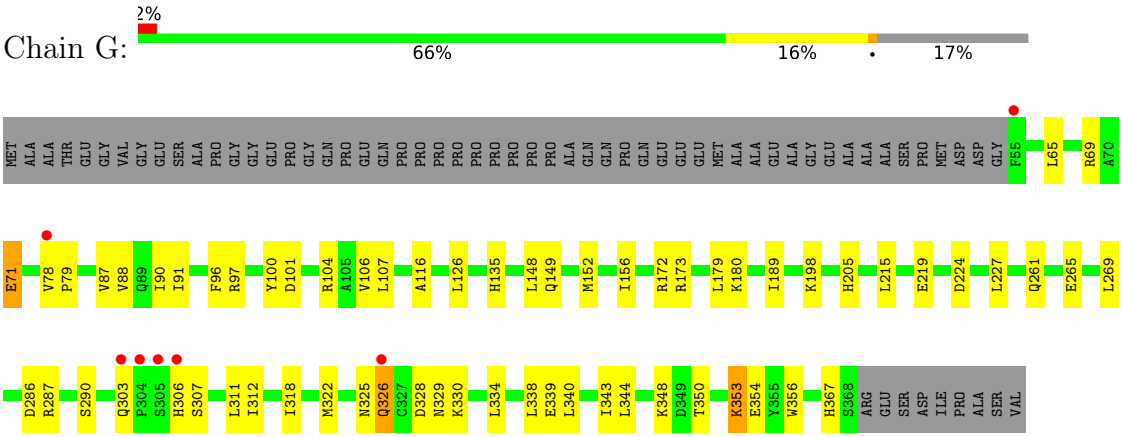
Chain E: 2% 63% 19% • 17%

MET ALA ALA THR GLU GLY VAL GLY GLU SER ALA PRO GLY GLY GLU PRO GLY GLN PRO GLU GLN PRO PRO PRO PRO PRO PRO PRO ALA GLN GLN PRO GLN GLU GLU GLU MET ALA ALA GLU ALA GLY GLU ALA ALA SER PRO MET ASP ASP GLY F55 L58 Y63

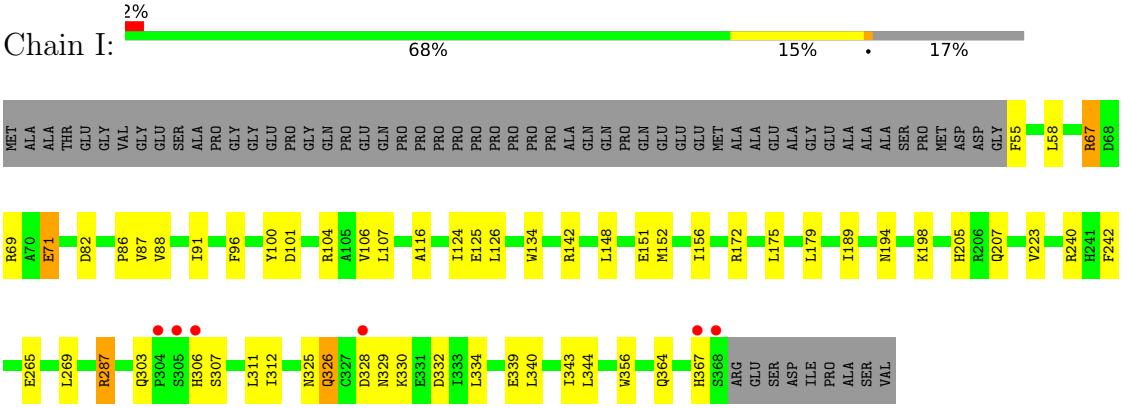
R67 D68 R69 A70 E71 V78 N81 D82 P86 V87 V88 I91 Y92 S93 E94 K95 F96 R97 Y100 D101 Y102 F103 R104 A105 V106 L107 A116 F117 R121 L126 V133 K146 D147 L148 M152 I156 R172 L179 I189 A190 D191 K198 H205



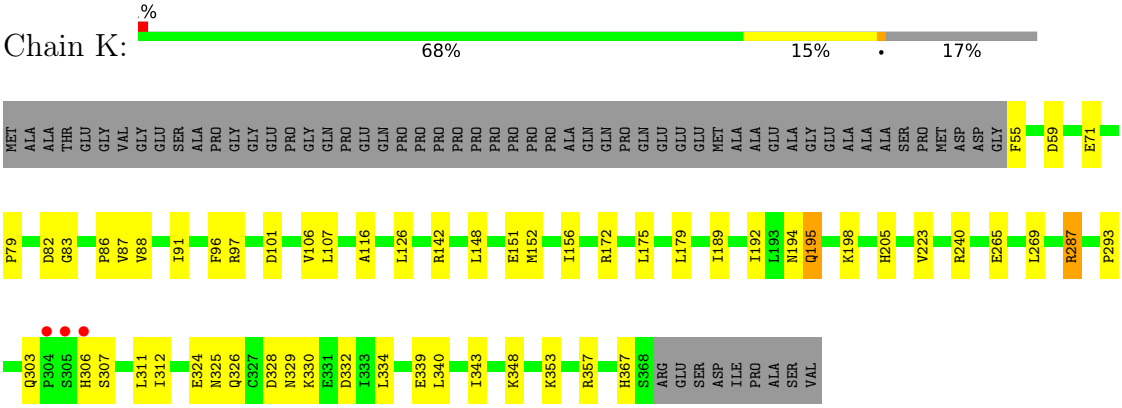
• Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type-1 subunit alpha



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

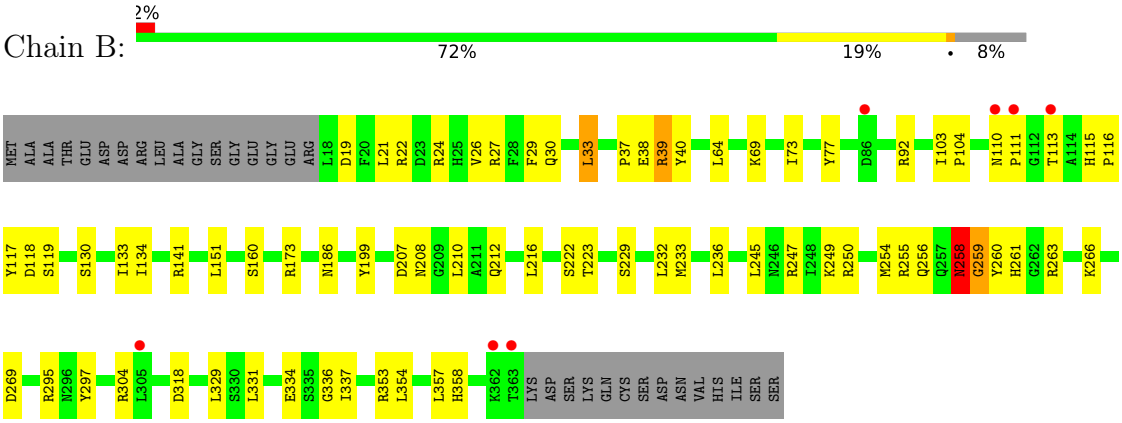


• Molecule 1: Protein farnesyltransferase/geranylgeranyltransferase type-1 subunit alpha



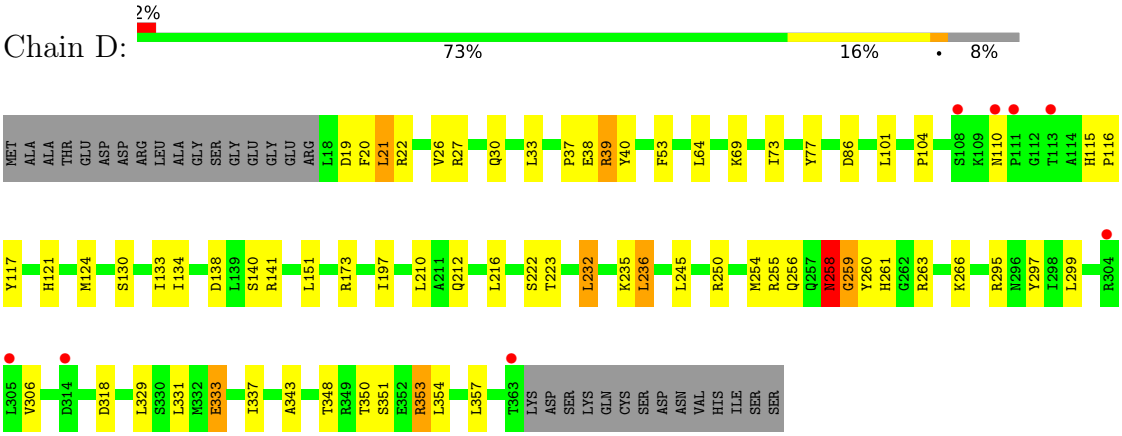
• Molecule 2: Geranylgeranyl transferase type-1 subunit beta

Chain B:



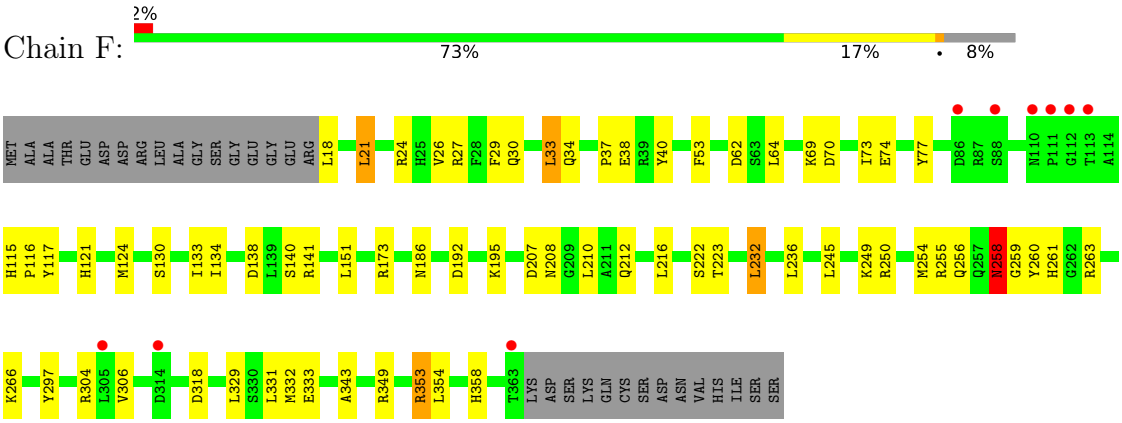
- Molecule 2: Geranylgeranyl transferase type-1 subunit beta

Chain D:



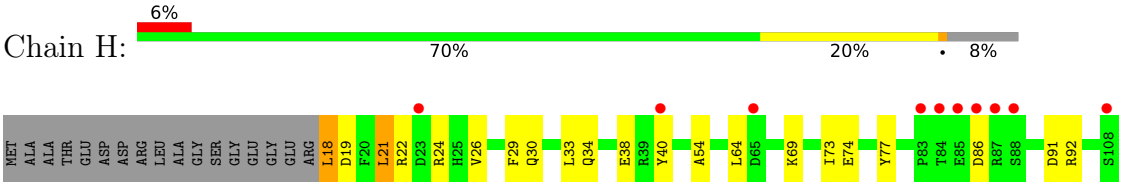
- Molecule 2: Geranylgeranyl transferase type-1 subunit beta

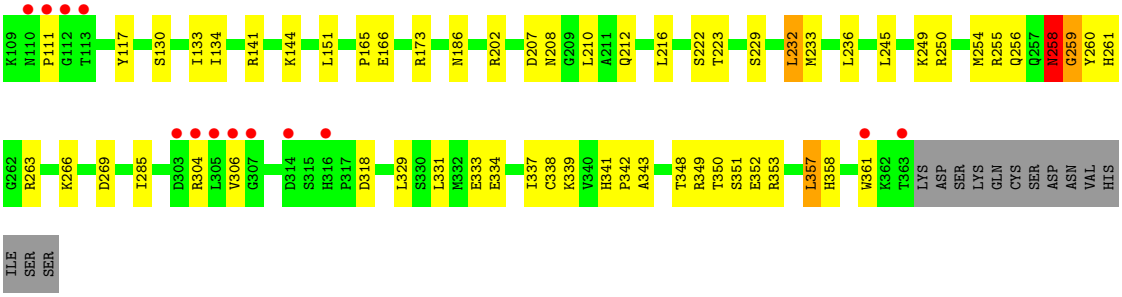
Chain F:



- Molecule 2: Geranylgeranyl transferase type-1 subunit beta

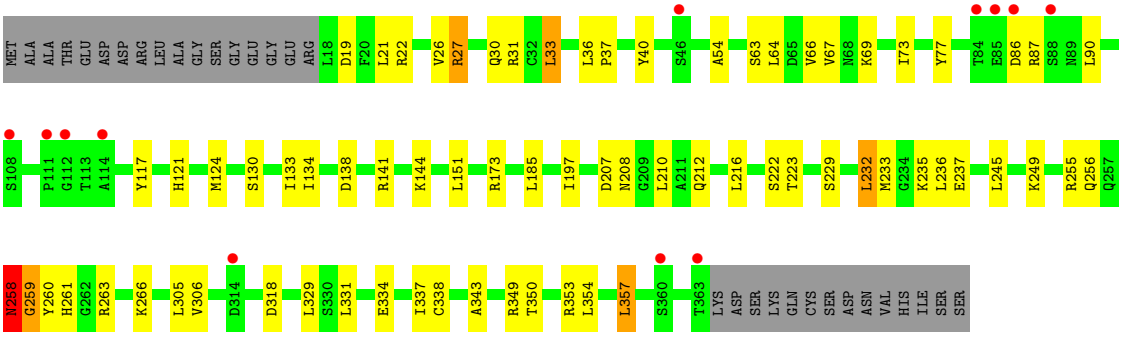
Chain H:





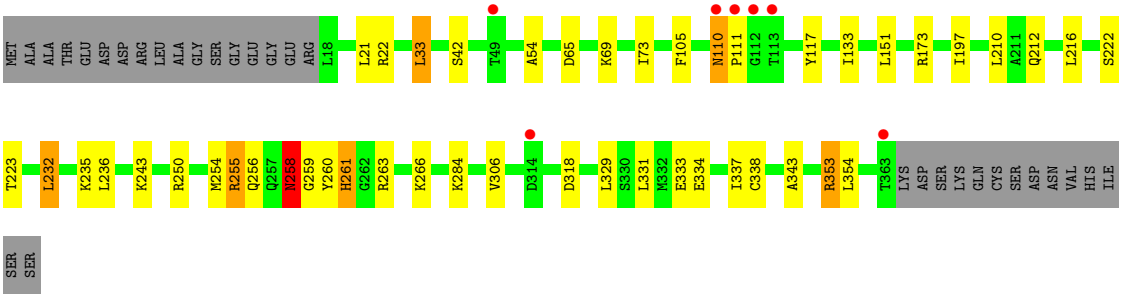
• Molecule 2: Geranylgeranyl transferase type-1 subunit beta

Chain J:



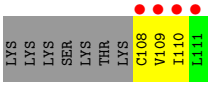
• Molecule 2: Geranylgeranyl transferase type-1 subunit beta

Chain L:



• Molecule 3: Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b

Chain M:



• Molecule 3: Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b

Chain N:

• Molecule 3: Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b

Chain O:

• Molecule 3: Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b

Chain P:

• Molecule 3: Fusion protein consisting of transforming protein p21b and Ras related protein Rap-2b

Chain Q:

• Molecule 3: Fusion protein consisting of transforming protein p21b and Ref related protein Rap-2b

Chain R:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	271.12Å 268.43Å 184.82Å 90.00° 131.58° 90.00°	Depositor
Resolution (Å)	29.98 – 2.60 39.82 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.3 (29.98-2.60) 99.7 (39.82-2.60)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.07	Depositor
$< I/\sigma(I) >$ [1]	2.76 (at 2.61Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.194 , 0.214 0.188 , 0.207	Depositor DCC
R_{free} test set	14968 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å^2)	49.4	Xtriage
Anisotropy	0.018	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 52.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.078 for -h-2*l,-k,l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	33924	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.25% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: GER, GRG, CL, ZN

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	0.33	0/2695	0.51	0/3668
1	C	0.35	0/2709	0.52	0/3684
1	E	0.34	0/2708	0.53	0/3684
1	G	0.35	0/2699	0.52	0/3672
1	I	0.35	0/2722	0.52	0/3700
1	K	0.39	0/2737	0.55	0/3717
2	B	0.35	0/2759	0.59	2/3733 (0.1%)
2	D	0.37	0/2775	0.59	2/3752 (0.1%)
2	F	0.37	0/2780	0.59	2/3758 (0.1%)
2	H	0.34	0/2756	0.58	2/3729 (0.1%)
2	J	0.36	0/2773	0.59	2/3750 (0.1%)
2	L	0.40	0/2785	0.61	2/3764 (0.1%)
3	M	0.62	0/29	0.88	0/37
3	N	0.57	0/29	0.91	0/37
3	O	0.60	0/29	0.91	0/37
3	P	0.56	0/29	0.89	0/37
3	Q	0.60	0/29	0.93	0/37
3	R	0.52	0/38	0.84	0/48
All	All	0.36	0/33081	0.56	12/44844 (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	D	0	1
2	F	0	1
All	All	0	3

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	259	GLY	N-CA-C	-5.86	98.46	113.10
2	H	259	GLY	N-CA-C	-5.83	98.53	113.10
2	D	259	GLY	N-CA-C	-5.83	98.53	113.10
2	J	259	GLY	N-CA-C	-5.81	98.57	113.10
2	L	259	GLY	N-CA-C	-5.71	98.83	113.10
2	J	258	ASN	N-CA-C	-5.67	95.70	111.00
2	B	259	GLY	N-CA-C	-5.54	99.26	113.10
2	B	258	ASN	N-CA-C	-5.50	96.14	111.00
2	F	258	ASN	N-CA-C	-5.39	96.44	111.00
2	D	258	ASN	N-CA-C	-5.39	96.45	111.00
2	H	258	ASN	N-CA-C	-5.33	96.60	111.00
2	L	258	ASN	N-CA-C	-5.33	96.59	111.00

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	297	TYR	Sidechain
2	D	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	2629	0	2520	43	0
1	C	2643	0	2540	39	0
1	E	2642	0	2534	52	0
1	G	2633	0	2524	52	0
1	I	2656	0	2560	35	0
1	K	2671	0	2588	38	0
2	B	2697	0	2600	51	0
2	D	2713	0	2628	51	0
2	F	2718	0	2635	38	0
2	H	2694	0	2590	63	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	J	2711	0	2616	47	0
2	L	2723	0	2643	27	0
3	M	30	0	34	4	0
3	N	30	0	34	3	0
3	O	30	0	34	4	0
3	P	30	0	34	5	0
3	Q	30	0	34	3	0
3	R	39	0	47	8	0
4	B	1	0	0	0	0
4	D	1	0	0	0	0
4	F	1	0	0	0	0
4	H	1	0	0	0	0
4	J	1	0	0	0	0
4	L	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
5	F	1	0	0	0	0
5	G	1	0	0	1	0
5	H	1	0	0	0	0
5	J	1	0	0	0	0
5	K	1	0	0	1	0
5	L	1	0	0	0	0
6	B	29	0	33	1	0
6	D	29	0	33	2	0
6	F	29	0	33	2	0
6	H	29	0	33	1	0
6	J	29	0	33	1	0
6	L	29	0	33	2	0
7	M	20	0	33	5	0
7	N	20	0	33	6	0
7	O	20	0	33	7	0
7	P	20	0	33	6	0
7	Q	20	0	33	4	0
7	R	20	0	33	6	0
8	A	89	0	0	1	0
8	B	79	0	0	2	0
8	C	93	0	0	1	0
8	D	121	0	0	2	0
8	E	85	0	0	0	0
8	F	100	0	0	3	0
8	G	86	0	0	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	H	56	0	0	4	0
8	I	121	0	0	1	1
8	J	88	0	0	2	0
8	K	211	0	0	4	0
8	L	157	0	0	2	0
8	M	2	0	0	0	0
8	N	2	0	0	0	0
8	O	1	0	0	0	0
8	P	1	0	0	0	0
8	Q	1	0	0	0	0
8	R	3	0	0	2	0
All	All	33924	0	31591	545	1

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 (545) 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:K:156:ILE:HG12	1:K:172:ARG:HH12	1.01	1.15
1:E:156:ILE:HG12	1:E:172:ARG:HH12	1.12	1.10
1:I:156:ILE:HG12	1:I:172:ARG:HH12	1.11	1.07
1:A:156:ILE:HG12	1:A:172:ARG:HH12	1.06	1.06
1:G:156:ILE:HG12	1:G:172:ARG:HH12	1.18	1.04
1:C:156:ILE:HG12	1:C:172:ARG:HH12	1.24	1.03
2:L:212:GLN:HE21	2:L:222:SER:HB3	1.21	1.02
2:J:212:GLN:NE2	2:J:222:SER:HB3	1.82	0.94
2:J:212:GLN:HE21	2:J:222:SER:HB3	1.31	0.94
2:H:18:LEU:HA	2:H:304:ARG:NH2	1.84	0.92
1:K:156:ILE:HG12	1:K:172:ARG:NH1	1.85	0.92
2:H:21:LEU:HD21	2:H:304:ARG:HG2	1.52	0.90
5:G:1405:CL:CL	8:G:1411:HOH:O	2.28	0.89
2:B:39:ARG:HB3	2:B:39:ARG:HH11	1.39	0.86
1:A:156:ILE:HG12	1:A:172:ARG:NH1	1.91	0.84
2:D:39:ARG:H	2:D:39:ARG:HD2	1.42	0.83
1:A:152:MET:O	1:A:156:ILE:HG13	1.79	0.83
2:B:173:ARG:HG2	6:B:1501:GRG:H112	1.62	0.81
2:L:212:GLN:NE2	2:L:222:SER:HB3	1.95	0.81
2:L:42:SER:HG	3:R:607:LYS:N	1.79	0.81
1:E:318:ILE:HG22	1:E:322:MET:HE3	1.63	0.81
2:L:173:ARG:HG2	6:L:1506:GRG:H112	1.63	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:152:MET:O	1:G:156:ILE:HG13	1.82	0.80
2:D:37:PRO:HB2	2:D:39:ARG:CD	2.12	0.79
2:J:173:ARG:HG2	6:J:1505:GRG:H112	1.64	0.79
1:K:152:MET:O	1:K:156:ILE:HG13	1.82	0.78
2:D:173:ARG:HG2	6:D:1502:GRG:H112	1.65	0.78
1:E:255:VAL:HG13	1:E:258:ARG:HH21	1.49	0.78
1:I:152:MET:O	1:I:156:ILE:HG13	1.83	0.78
1:E:152:MET:O	1:E:156:ILE:HG13	1.84	0.77
2:B:353:ARG:HD2	8:B:1566:HOH:O	1.83	0.77
2:F:173:ARG:HG2	6:F:1503:GRG:H112	1.65	0.77
1:E:214:ARG:O	1:E:214:ARG:HG3	1.85	0.76
1:C:152:MET:O	1:C:156:ILE:HG13	1.84	0.75
2:H:173:ARG:HG2	6:H:1504:GRG:H112	1.69	0.75
2:H:348:THR:O	2:H:352:GLU:HG2	1.88	0.74
2:D:353:ARG:NH1	2:D:357:LEU:HG	2.02	0.74
2:H:229:SER:O	2:H:233:MET:HG3	1.86	0.74
1:K:87:VAL:HG12	1:K:88:VAL:HG23	1.70	0.73
5:K:1408:CL:CL	8:K:1417:HOH:O	2.43	0.73
1:E:255:VAL:HG13	1:E:258:ARG:NH2	2.04	0.73
2:F:212:GLN:NE2	2:F:222:SER:HB3	2.04	0.73
1:C:100:TYR:HB3	1:C:104:ARG:HH21	1.53	0.72
1:E:156:ILE:HG12	1:E:172:ARG:NH1	1.96	0.72
2:B:24:ARG:HD3	2:B:27:ARG:HH22	1.54	0.71
2:D:37:PRO:HB2	2:D:39:ARG:HD2	1.72	0.71
2:D:37:PRO:HB2	2:D:39:ARG:HD3	1.73	0.71
1:K:156:ILE:CG1	1:K:172:ARG:HH12	1.93	0.70
1:E:353:LYS:HE3	1:E:357:ARG:HH22	1.56	0.70
1:I:87:VAL:HG12	1:I:88:VAL:HG23	1.72	0.70
1:A:214:ARG:HG2	1:G:180:LYS:HB2	1.73	0.70
1:G:87:VAL:HG12	1:G:88:VAL:HG23	1.73	0.69
1:I:156:ILE:HG12	1:I:172:ARG:NH1	1.97	0.69
2:B:318:ASP:HB2	7:M:1108:GER:H71	1.75	0.68
1:E:353:LYS:HE2	1:E:357:ARG:HH12	1.58	0.68
2:B:133:ILE:HD13	2:B:354:LEU:HD13	1.75	0.68
2:H:144:LYS:HE2	8:H:1546:HOH:O	1.95	0.67
2:F:318:ASP:HB2	7:O:1308:GER:H71	1.76	0.67
1:C:87:VAL:HG12	1:C:88:VAL:HG23	1.75	0.67
1:G:97:ARG:HG2	1:G:101:ASP:OD2	1.95	0.67
1:I:91:ILE:HD12	1:I:91:ILE:O	1.94	0.67
1:E:156:ILE:CG1	1:E:172:ARG:HH12	2.01	0.67
2:H:212:GLN:NE2	2:H:222:SER:HB3	2.09	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:69:LYS:O	2:D:73:ILE:HG13	1.94	0.66
2:D:295:ARG:CZ	2:D:299:LEU:HD11	2.26	0.66
2:J:318:ASP:HB2	7:Q:1508:GER:H71	1.77	0.66
1:G:91:ILE:HD12	1:G:91:ILE:O	1.96	0.66
2:L:338:CYS:HB3	8:L:1637:HOH:O	1.96	0.66
2:H:18:LEU:HD22	2:H:18:LEU:N	2.10	0.66
2:J:263:ARG:HG3	2:J:266:LYS:HG3	1.77	0.66
2:L:133:ILE:HD13	2:L:354:LEU:HD13	1.76	0.65
2:H:202:ARG:HG3	2:H:202:ARG:HH11	1.60	0.65
2:J:133:ILE:HD13	2:J:354:LEU:HD13	1.79	0.65
1:A:87:VAL:HG12	1:A:88:VAL:HG23	1.79	0.65
2:B:263:ARG:HG3	2:B:266:LYS:HG3	1.79	0.65
1:K:91:ILE:HD12	1:K:91:ILE:O	1.96	0.65
1:C:339:GLU:O	1:C:343:ILE:HG13	1.97	0.65
1:A:97:ARG:HG2	1:A:101:ASP:OD2	1.97	0.65
2:B:69:LYS:O	2:B:73:ILE:HG13	1.97	0.65
2:H:21:LEU:CD2	2:H:304:ARG:HG2	2.27	0.65
1:K:330:LYS:HE2	1:K:367:HIS:HB3	1.79	0.65
1:E:87:VAL:HG12	1:E:88:VAL:HG23	1.79	0.64
1:G:101:ASP:HA	1:G:104:ARG:HH11	1.62	0.64
1:C:198:LYS:HD3	2:D:266:LYS:HD3	1.80	0.64
1:A:91:ILE:HD12	1:A:91:ILE:O	1.97	0.64
1:A:339:GLU:O	1:A:343:ILE:HG13	1.98	0.64
2:D:212:GLN:NE2	2:D:222:SER:HB3	2.12	0.64
1:C:100:TYR:HB3	1:C:104:ARG:NH2	2.12	0.64
2:D:263:ARG:HG3	2:D:266:LYS:HG3	1.80	0.64
2:D:318:ASP:HB2	7:N:1208:GER:H71	1.79	0.64
2:F:26:VAL:O	2:F:30:GLN:HG3	1.98	0.64
2:J:87:ARG:HH12	2:J:90:LEU:HD11	1.61	0.64
1:G:189:ILE:HD11	1:G:205:HIS:HD2	1.63	0.63
1:G:261:GLN:O	1:G:265:GLU:HG2	1.99	0.63
2:H:263:ARG:HG3	2:H:266:LYS:HG3	1.79	0.63
2:F:263:ARG:HG3	2:F:266:LYS:HG3	1.79	0.63
2:H:69:LYS:O	2:H:73:ILE:HG13	1.99	0.63
2:B:92:ARG:NH1	2:B:119:SER:HB3	2.13	0.63
2:F:69:LYS:O	2:F:73:ILE:HG13	1.99	0.63
1:E:312:ILE:HG23	1:E:340:LEU:HD22	1.81	0.62
2:H:334:GLU:HB3	2:H:337:ILE:HD12	1.82	0.62
2:L:263:ARG:HG3	2:L:266:LYS:HG3	1.80	0.62
1:G:100:TYR:O	1:G:104:ARG:HG3	1.98	0.62
1:K:107:LEU:HD22	2:L:117:TYR:CD2	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:318:ASP:HB2	7:P:1408:GER:H71	1.80	0.62
3:N:209:VAL:N	7:N:1208:GER:H11	2.14	0.62
1:G:79:PRO:HA	1:G:101:ASP:OD1	2.00	0.62
1:G:334:LEU:HD22	1:G:367:HIS:O	2.00	0.61
1:I:69:ARG:HB3	1:I:71:GLU:OE1	2.00	0.61
2:H:245:LEU:O	2:H:249:LYS:HG3	2.00	0.61
1:C:189:ILE:HD11	1:C:205:HIS:HD2	1.66	0.61
1:A:328:ASP:O	1:A:329:ASN:HB2	2.00	0.61
1:E:91:ILE:O	1:E:91:ILE:HD12	2.00	0.61
2:J:232:LEU:HD13	2:J:343:ALA:HB1	1.82	0.60
1:C:91:ILE:O	1:C:91:ILE:HD12	2.01	0.60
2:H:349:ARG:O	2:H:352:GLU:HB2	2.01	0.60
2:D:353:ARG:HH11	2:D:357:LEU:HG	1.64	0.60
1:E:189:ILE:HD11	1:E:205:HIS:HD2	1.66	0.60
1:E:198:LYS:HD3	2:F:266:LYS:HD3	1.83	0.60
2:L:210:LEU:HB2	2:L:223:THR:HA	1.83	0.60
2:H:21:LEU:HD23	2:H:24:ARG:HE	1.66	0.60
1:A:214:ARG:HG3	1:A:214:ARG:O	2.01	0.60
2:D:39:ARG:H	2:D:39:ARG:CD	2.14	0.60
3:M:109:VAL:N	7:M:1108:GER:H11	2.17	0.60
3:Q:509:VAL:N	7:Q:1508:GER:H11	2.17	0.60
2:H:210:LEU:HB2	2:H:223:THR:HA	1.83	0.59
3:O:309:VAL:N	7:O:1308:GER:H11	2.18	0.59
2:J:210:LEU:HB2	2:J:223:THR:HA	1.82	0.59
1:C:78:VAL:HB	1:C:104:ARG:HB3	1.83	0.59
2:L:318:ASP:HB2	7:R:1608:GER:H71	1.85	0.59
2:B:212:GLN:NE2	2:B:222:SER:HB3	2.18	0.59
2:L:232:LEU:HD13	2:L:343:ALA:HB1	1.85	0.59
1:I:207:GLN:HG2	1:I:242:PHE:CE2	2.38	0.58
2:B:210:LEU:HB2	2:B:223:THR:HA	1.85	0.58
2:F:37:PRO:HD2	2:F:40:TYR:CD1	2.38	0.58
1:A:189:ILE:HD11	1:A:205:HIS:HD2	1.69	0.58
2:B:92:ARG:HH11	2:B:119:SER:HB3	1.67	0.58
1:E:318:ILE:HG22	1:E:322:MET:CE	2.33	0.58
3:P:409:VAL:N	7:P:1408:GER:H11	2.17	0.58
3:R:609:VAL:N	7:R:1608:GER:H11	2.19	0.58
1:G:343:ILE:HG22	1:G:348:LYS:HG3	1.85	0.58
1:I:334:LEU:HD22	1:I:367:HIS:O	2.03	0.58
1:C:148:LEU:HB2	1:C:179:LEU:HD21	1.85	0.58
2:H:64:LEU:HD11	2:H:134:ILE:HG22	1.85	0.58
1:K:293:PRO:HD3	8:K:1527:HOH:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:311:LEU:O	1:K:311:LEU:HD23	2.04	0.58
2:F:210:LEU:HB2	2:F:223:THR:HA	1.86	0.57
2:F:37:PRO:HD2	2:F:40:TYR:CE1	2.38	0.57
1:G:101:ASP:HA	1:G:104:ARG:NH1	2.18	0.57
1:K:334:LEU:HD22	1:K:367:HIS:O	2.03	0.57
2:D:133:ILE:HD13	2:D:354:LEU:HD13	1.86	0.57
1:E:265:GLU:O	1:E:269:LEU:HD13	2.05	0.57
2:D:210:LEU:HB2	2:D:223:THR:HA	1.85	0.57
2:H:339:LYS:HG2	2:H:348:THR:CG2	2.34	0.57
1:K:189:ILE:HD11	1:K:205:HIS:HD2	1.70	0.57
2:B:26:VAL:O	2:B:30:GLN:HG3	2.03	0.57
1:I:148:LEU:HB2	1:I:179:LEU:HD21	1.86	0.57
2:L:353:ARG:HD3	2:L:353:ARG:O	2.05	0.57
2:B:353:ARG:HG2	2:B:353:ARG:HH11	1.69	0.57
2:H:339:LYS:HG2	2:H:348:THR:HG21	1.86	0.57
1:E:214:ARG:O	1:E:214:ARG:CG	2.53	0.56
3:P:409:VAL:HG23	3:P:410:ILE:HG23	1.87	0.56
1:E:339:GLU:O	1:E:343:ILE:HG13	2.05	0.56
2:J:27:ARG:HH12	2:J:30:GLN:NE2	2.03	0.56
1:K:192:ILE:O	1:K:195:GLN:HG3	2.05	0.56
1:G:148:LEU:HB2	1:G:179:LEU:HD21	1.87	0.56
1:G:330:LYS:HE2	1:G:367:HIS:HB3	1.87	0.56
2:H:92:ARG:HG2	2:H:165:PRO:HG3	1.88	0.55
2:J:87:ARG:NH1	2:J:90:LEU:HD11	2.21	0.55
1:E:148:LEU:HB2	1:E:179:LEU:HD21	1.87	0.55
2:H:186:ASN:HB2	2:H:358:HIS:CE1	2.41	0.55
1:I:328:ASP:O	1:I:329:ASN:HB2	2.05	0.55
3:M:109:VAL:HG23	3:M:110:ILE:HG23	1.88	0.55
1:C:69:ARG:HB3	1:C:71:GLU:OE1	2.05	0.55
1:I:107:LEU:HD22	2:J:117:TYR:CD2	2.41	0.55
1:K:198:LYS:HD3	2:L:266:LYS:HD3	1.89	0.55
2:B:22:ARG:HG2	2:B:22:ARG:HH11	1.72	0.55
1:E:261:GLN:O	1:E:265:GLU:HG2	2.06	0.55
1:I:189:ILE:HD11	1:I:205:HIS:HD2	1.71	0.55
1:C:330:LYS:HE2	1:C:367:HIS:HB3	1.87	0.55
1:A:265:GLU:O	1:A:269:LEU:HD13	2.07	0.55
1:G:97:ARG:HH11	1:G:97:ARG:HB3	1.71	0.55
1:G:156:ILE:HG12	1:G:172:ARG:NH1	2.03	0.55
3:R:609:VAL:HG23	3:R:610:ILE:HG23	1.89	0.55
1:I:330:LYS:HE2	1:I:367:HIS:HB3	1.89	0.54
1:K:265:GLU:O	1:K:269:LEU:HD13	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Q:509:VAL:HG23	3:Q:510:ILE:HG23	1.88	0.54
1:C:261:GLN:O	1:C:265:GLU:HG2	2.07	0.54
1:I:311:LEU:HD23	1:I:311:LEU:C	2.28	0.54
1:E:82:ASP:HB2	1:E:86:PRO:HB3	1.90	0.54
2:L:197:ILE:HD11	2:L:235:LYS:HD3	1.90	0.54
1:A:285:GLN:NE2	2:B:247:ARG:NH1	2.56	0.54
2:H:26:VAL:O	2:H:30:GLN:HG3	2.07	0.54
1:E:78:VAL:O	1:E:104:ARG:HD2	2.08	0.54
1:I:100:TYR:O	1:I:104:ARG:HG3	2.08	0.54
2:D:37:PRO:HB3	2:D:39:ARG:HH11	1.72	0.53
2:J:22:ARG:O	2:J:26:VAL:HG23	2.08	0.53
1:E:58:LEU:HD22	1:E:95:LYS:HD3	1.91	0.53
1:A:329:ASN:HB3	1:A:332:ASP:HB3	1.90	0.53
2:F:133:ILE:HD13	2:F:354:LEU:HD13	1.90	0.53
1:G:334:LEU:O	1:G:338:LEU:HG	2.09	0.53
2:H:232:LEU:HD13	2:H:343:ALA:HB1	1.88	0.53
2:J:334:GLU:HB3	2:J:337:ILE:HD12	1.90	0.53
2:B:39:ARG:HH11	2:B:39:ARG:CB	2.18	0.53
1:A:334:LEU:HD22	1:A:367:HIS:O	2.07	0.53
1:C:334:LEU:HD22	1:C:367:HIS:O	2.08	0.53
1:K:311:LEU:HD23	1:K:311:LEU:C	2.28	0.53
1:G:312:ILE:HG23	1:G:340:LEU:HD22	1.92	0.52
2:J:212:GLN:HE21	2:J:222:SER:CB	2.12	0.52
2:F:332:MET:HB2	8:F:1537:HOH:O	2.08	0.52
1:E:92:TYR:O	1:E:97:ARG:NH2	2.42	0.52
1:I:339:GLU:O	1:I:343:ILE:HG13	2.08	0.52
1:A:78:VAL:O	1:A:104:ARG:HD2	2.08	0.52
1:C:328:ASP:O	1:C:329:ASN:HB2	2.09	0.52
2:D:22:ARG:HG2	2:D:22:ARG:HH11	1.74	0.52
2:F:30:GLN:O	2:F:34:GLN:HG3	2.10	0.52
1:K:156:ILE:HD11	1:K:172:ARG:HH22	1.74	0.52
3:O:309:VAL:HG23	3:O:310:ILE:HG23	1.91	0.52
1:A:148:LEU:HB2	1:A:179:LEU:HD21	1.90	0.52
2:B:245:LEU:O	2:B:249:LYS:HG3	2.10	0.52
1:G:339:GLU:O	1:G:343:ILE:HG13	2.09	0.52
1:I:198:LYS:HD3	2:J:266:LYS:HD3	1.92	0.52
2:H:202:ARG:HG3	2:H:202:ARG:NH1	2.26	0.51
2:D:26:VAL:O	2:D:30:GLN:HG3	2.10	0.51
1:K:339:GLU:O	1:K:343:ILE:HG13	2.10	0.51
1:C:265:GLU:O	1:C:269:LEU:HD13	2.09	0.51
1:G:265:GLU:O	1:G:269:LEU:HD13	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:286:ASP:HB2	8:G:1440:HOH:O	2.10	0.51
2:H:318:ASP:HB2	7:P:1408:GER:C7	2.40	0.51
2:J:258:ASN:OD1	2:J:259:GLY:N	2.37	0.51
2:B:229:SER:O	2:B:233:MET:HG3	2.11	0.51
2:D:258:ASN:OD1	2:D:259:GLY:N	2.39	0.51
3:N:209:VAL:HG23	3:N:210:ILE:HG23	1.92	0.51
1:C:97:ARG:HG2	1:C:101:ASP:OD2	2.10	0.51
1:I:265:GLU:O	1:I:269:LEU:HD13	2.11	0.51
1:E:69:ARG:HB3	1:E:71:GLU:OE1	2.10	0.50
1:K:79:PRO:HA	1:K:101:ASP:OD1	2.11	0.50
3:R:608:CYS:HA	7:R:1608:GER:C2	2.41	0.50
2:D:37:PRO:CB	2:D:39:ARG:HH11	2.24	0.50
1:K:148:LEU:HB2	1:K:179:LEU:HD21	1.93	0.50
2:J:63:SER:O	2:J:66:VAL:HG22	2.11	0.50
1:K:312:ILE:HG23	1:K:340:LEU:HD22	1.93	0.50
2:B:21:LEU:HD11	2:B:304:ARG:NH2	2.26	0.50
1:I:106:VAL:HG11	1:I:116:ALA:HB1	1.94	0.50
1:G:156:ILE:HD11	1:G:172:ARG:HH22	1.77	0.50
1:A:214:ARG:O	1:A:214:ARG:CG	2.58	0.50
1:G:189:ILE:HD11	1:G:205:HIS:CD2	2.47	0.50
2:B:336:GLY:HA2	2:J:305:LEU:HD13	1.94	0.49
2:D:197:ILE:HD11	2:D:235:LYS:HD3	1.93	0.49
2:F:186:ASN:HB2	2:F:358:HIS:NE2	2.27	0.49
1:G:198:LYS:HD3	2:H:266:LYS:HD3	1.94	0.49
1:G:311:LEU:HD23	1:G:311:LEU:C	2.33	0.49
2:J:27:ARG:NH1	2:J:30:GLN:NE2	2.60	0.49
1:A:344:LEU:HD13	1:A:356:TRP:CE2	2.47	0.49
2:H:22:ARG:HH11	2:H:22:ARG:HG2	1.76	0.49
1:K:303:GLN:O	1:K:307:SER:HB2	2.12	0.49
2:J:144:LYS:HG2	2:J:185:LEU:HD22	1.94	0.49
1:C:303:GLN:O	1:C:307:SER:HB2	2.11	0.49
2:J:338:CYS:SG	2:J:349:ARG:NH2	2.85	0.49
2:H:30:GLN:O	2:H:34:GLN:HG3	2.13	0.49
2:H:348:THR:HA	2:H:351:SER:OG	2.13	0.49
1:I:151:GLU:HG3	1:I:175:LEU:HD11	1.94	0.49
2:L:133:ILE:CD1	2:L:354:LEU:HD13	2.43	0.49
1:A:107:LEU:HD22	2:B:117:TYR:CD2	2.48	0.49
1:C:91:ILE:HD11	2:D:38:GLU:H	1.77	0.49
1:G:303:GLN:O	1:G:307:SER:HB2	2.13	0.49
2:B:37:PRO:HD2	2:B:40:TYR:CE1	2.48	0.48
1:E:107:LEU:HD22	2:F:117:TYR:CD2	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:294:ASN:O	1:E:298:GLN:HG3	2.13	0.48
2:F:232:LEU:HD13	2:F:343:ALA:HB1	1.95	0.48
2:D:348:THR:HA	2:D:351:SER:OG	2.13	0.48
2:H:19:ASP:H	2:H:304:ARG:HH21	1.61	0.48
2:B:353:ARG:HG2	2:B:353:ARG:NH1	2.29	0.48
2:H:130:SER:O	2:H:134:ILE:HG13	2.13	0.48
2:B:64:LEU:HD11	2:B:134:ILE:HG22	1.96	0.48
1:E:106:VAL:HG11	1:E:116:ALA:HB1	1.95	0.48
1:I:344:LEU:HD13	1:I:356:TRP:CE2	2.49	0.48
1:A:151:GLU:HG3	1:A:175:LEU:HD11	1.96	0.48
2:B:22:ARG:HG2	2:B:22:ARG:NH1	2.29	0.48
2:B:29:PHE:O	2:B:33:LEU:HD22	2.14	0.48
1:E:67:ARG:NH2	1:E:94:GLU:OE1	2.46	0.48
1:G:344:LEU:HD13	1:G:356:TRP:CE2	2.49	0.48
1:C:214:ARG:O	1:C:214:ARG:HG2	2.14	0.47
2:D:333:GLU:O	1:K:357:ARG:NH2	2.47	0.47
2:H:338:CYS:HB3	8:H:1551:HOH:O	2.14	0.47
2:J:197:ILE:HD11	2:J:235:LYS:HD3	1.96	0.47
1:K:223:VAL:HG11	1:K:240:ARG:HB2	1.96	0.47
2:D:133:ILE:HG22	2:D:350:THR:HG23	1.94	0.47
1:I:329:ASN:HB3	1:I:332:ASP:HB3	1.95	0.47
2:B:38:GLU:O	2:B:38:GLU:HG2	2.14	0.47
1:C:105:ALA:O	1:C:109:ARG:HG3	2.14	0.47
2:F:130:SER:O	2:F:134:ILE:HG13	2.14	0.47
1:G:90:ILE:HD13	2:H:40:TYR:O	2.14	0.47
1:K:96:PHE:CE1	1:K:126:LEU:HB3	2.49	0.47
1:C:312:ILE:HG23	1:C:340:LEU:HD22	1.96	0.47
2:D:86:ASP:OD2	2:D:86:ASP:N	2.44	0.47
2:F:64:LEU:HD11	2:F:134:ILE:HG22	1.97	0.47
2:H:258:ASN:OD1	2:H:259:GLY:N	2.41	0.47
3:R:608:CYS:HB3	8:R:1002:HOH:O	2.14	0.47
1:C:106:VAL:HG11	1:C:116:ALA:HB1	1.96	0.47
1:E:97:ARG:HG2	1:E:101:ASP:OD2	2.14	0.47
1:E:334:LEU:HD22	1:E:367:HIS:O	2.14	0.47
2:F:256:GLN:HB2	2:F:260:TYR:CE2	2.50	0.47
1:G:328:ASP:O	1:G:329:ASN:HB2	2.14	0.47
1:I:325:ASN:O	1:I:326:GLN:C	2.52	0.47
1:K:353:LYS:HB2	1:K:353:LYS:HE3	1.68	0.47
2:L:333:GLU:HA	8:L:1636:HOH:O	2.15	0.47
1:A:91:ILE:HD11	2:B:38:GLU:H	1.79	0.47
2:H:29:PHE:O	2:H:33:LEU:HD22	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:ASN:O	1:A:326:GLN:C	2.53	0.47
1:I:156:ILE:HD11	1:I:172:ARG:HH22	1.80	0.47
2:J:318:ASP:HB2	7:Q:1508:GER:C7	2.45	0.47
1:G:106:VAL:HG11	1:G:116:ALA:HB1	1.96	0.47
2:J:256:GLN:HB2	2:J:260:TYR:CE2	2.50	0.47
1:G:353:LYS:HG2	1:G:354:GLU:N	2.29	0.46
2:H:256:GLN:HB2	2:H:260:TYR:CE2	2.51	0.46
2:J:133:ILE:HG22	2:J:350:THR:HG23	1.97	0.46
1:K:328:ASP:O	1:K:329:ASN:HB2	2.15	0.46
1:I:101:ASP:HA	1:I:104:ARG:HH11	1.81	0.46
2:L:22:ARG:NH1	2:L:22:ARG:HG2	2.30	0.46
1:A:104:ARG:NH2	8:A:389:HOH:O	2.49	0.46
1:G:91:ILE:HD12	2:H:38:GLU:HB2	1.98	0.46
1:G:173:ARG:HD2	8:G:1452:HOH:O	2.14	0.46
1:G:325:ASN:O	1:G:326:GLN:C	2.54	0.46
2:H:22:ARG:HG2	2:H:22:ARG:NH1	2.30	0.46
1:A:189:ILE:HD11	1:A:205:HIS:CD2	2.50	0.46
2:B:207:ASP:O	2:B:208:ASN:HB2	2.16	0.46
1:C:96:PHE:CE1	1:C:126:LEU:HB3	2.51	0.46
2:D:22:ARG:HG2	2:D:22:ARG:NH1	2.30	0.46
1:E:189:ILE:HD11	1:E:205:HIS:CD2	2.50	0.46
2:J:130:SER:O	2:J:134:ILE:HG13	2.16	0.46
2:F:38:GLU:O	2:F:38:GLU:HG2	2.16	0.46
2:H:21:LEU:CD1	2:H:21:LEU:N	2.78	0.46
1:K:106:VAL:HG11	1:K:116:ALA:HB1	1.98	0.46
2:B:130:SER:O	2:B:134:ILE:HG13	2.15	0.46
2:F:333:GLU:HA	8:F:1569:HOH:O	2.14	0.46
3:R:608:CYS:C	7:R:1608:GER:H11	2.36	0.46
1:A:106:VAL:HG11	1:A:116:ALA:HB1	1.97	0.46
2:D:77:TYR:CZ	2:D:141:ARG:HB2	2.51	0.46
2:D:232:LEU:HD13	2:D:343:ALA:HB1	1.98	0.46
2:D:250:ARG:O	2:D:254:MET:HG2	2.16	0.46
2:L:22:ARG:HG2	2:L:22:ARG:HH11	1.81	0.46
1:C:82:ASP:HB2	1:C:86:PRO:HB3	1.97	0.46
1:C:104:ARG:HG2	2:D:101:LEU:O	2.15	0.46
2:F:62:ASP:HA	2:F:349:ARG:HH22	1.81	0.46
1:G:96:PHE:CE1	1:G:126:LEU:HB3	2.51	0.46
2:H:77:TYR:CZ	2:H:141:ARG:HB2	2.51	0.46
1:E:287:ARG:H	1:E:287:ARG:HG2	1.49	0.45
1:E:353:LYS:CE	1:E:357:ARG:HH22	2.28	0.45
2:H:357:LEU:HD22	2:H:361:TRP:CZ2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:138:ASP:HA	2:J:357:LEU:HD11	1.97	0.45
1:E:296:LEU:HD22	1:E:322:MET:CE	2.46	0.45
2:H:18:LEU:HA	2:H:304:ARG:HH22	1.74	0.45
2:L:334:GLU:HB3	2:L:337:ILE:HD12	1.98	0.45
1:A:312:ILE:HG23	1:A:340:LEU:HD22	1.99	0.45
2:B:24:ARG:HD3	2:B:27:ARG:NH2	2.28	0.45
2:B:92:ARG:NH1	2:B:118:ASP:O	2.50	0.45
2:B:256:GLN:HB2	2:B:260:TYR:CE2	2.52	0.45
1:C:311:LEU:C	1:C:311:LEU:HD23	2.37	0.45
1:A:311:LEU:C	1:A:311:LEU:HD23	2.36	0.45
1:E:274:GLU:HG3	1:E:310:TYR:CE2	2.52	0.45
1:G:350:THR:O	1:G:353:LYS:HB3	2.15	0.45
2:H:202:ARG:HD2	8:H:1547:HOH:O	2.16	0.45
2:J:27:ARG:HH12	2:J:30:GLN:HE22	1.63	0.45
2:J:27:ARG:HD3	8:J:1564:HOH:O	2.16	0.45
3:R:608:CYS:CB	8:R:1002:HOH:O	2.64	0.45
1:A:287:ARG:O	1:A:291:ARG:HD3	2.17	0.45
1:A:303:GLN:O	1:A:307:SER:HB2	2.16	0.45
1:C:107:LEU:HD22	2:D:117:TYR:CD2	2.51	0.45
2:D:138:ASP:OD1	2:D:140:SER:HB3	2.17	0.45
2:H:207:ASP:O	2:H:208:ASN:HB2	2.17	0.45
2:B:77:TYR:CZ	2:B:141:ARG:HB2	2.52	0.45
2:B:250:ARG:O	2:B:254:MET:HG2	2.15	0.45
2:D:130:SER:O	2:D:134:ILE:HG13	2.16	0.45
1:E:117:PHE:CE2	1:E:146:LYS:HE2	2.52	0.45
1:G:290:SER:HB2	1:G:322:MET:HG2	1.99	0.45
2:D:37:PRO:HD2	2:D:40:TYR:CE1	2.52	0.45
2:D:64:LEU:HD11	2:D:134:ILE:HG22	1.98	0.45
2:H:18:LEU:N	2:H:18:LEU:CD2	2.79	0.45
1:K:151:GLU:HG3	1:K:175:LEU:HD11	1.98	0.45
1:G:91:ILE:HD11	2:H:38:GLU:H	1.82	0.45
3:O:308:CYS:C	7:O:1308:GER:H11	2.37	0.45
1:A:96:PHE:CE1	1:A:126:LEU:HB3	2.52	0.44
1:G:107:LEU:HD22	2:H:117:TYR:CD2	2.52	0.44
3:P:408:CYS:C	7:P:1408:GER:H11	2.38	0.44
1:A:340:LEU:HD23	1:A:343:ILE:HD12	2.00	0.44
1:A:357:ARG:HG3	1:A:357:ARG:HH11	1.83	0.44
2:D:295:ARG:NH1	2:D:299:LEU:CD1	2.80	0.44
2:D:333:GLU:HA	8:D:1561:HOH:O	2.17	0.44
1:E:96:PHE:CE1	1:E:126:LEU:HB3	2.52	0.44
1:K:82:ASP:HB2	1:K:86:PRO:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:100:TYR:O	1:E:104:ARG:HG3	2.18	0.44
2:F:245:LEU:O	2:F:249:LYS:HG3	2.17	0.44
2:H:74:GLU:CD	2:H:141:ARG:HH22	2.21	0.44
2:L:256:GLN:HB2	2:L:260:TYR:CE2	2.52	0.44
2:F:192:ASP:OD1	2:F:195:LYS:HG3	2.17	0.44
1:I:303:GLN:O	1:I:307:SER:HB2	2.17	0.44
2:J:207:ASP:O	2:J:208:ASN:HB2	2.17	0.44
1:I:287:ARG:H	1:I:287:ARG:HG2	1.56	0.44
1:A:348:LYS:HA	1:A:348:LYS:HD3	1.77	0.44
2:B:160:SER:HB3	2:B:199:TYR:CE1	2.53	0.44
1:G:215:LEU:HA	8:G:1449:HOH:O	2.17	0.44
1:I:312:ILE:HG23	1:I:340:LEU:HD22	1.98	0.44
1:K:97:ARG:HG2	1:K:101:ASP:OD2	2.18	0.44
2:B:21:LEU:CD1	2:B:21:LEU:N	2.81	0.44
1:C:344:LEU:HD13	1:C:356:TRP:CE2	2.53	0.44
2:D:38:GLU:O	2:D:38:GLU:HG2	2.17	0.44
1:E:223:VAL:HG11	1:E:240:ARG:HB2	2.00	0.44
1:I:58:LEU:HD12	1:I:125:GLU:OE2	2.18	0.44
2:J:77:TYR:CZ	2:J:141:ARG:HB2	2.52	0.44
2:F:27:ARG:HA	2:F:30:GLN:HE21	1.83	0.44
2:F:353:ARG:NE	8:F:1557:HOH:O	2.49	0.44
2:H:40:TYR:CE2	7:P:1408:GER:H101	2.52	0.44
2:B:186:ASN:HB2	2:B:358:HIS:CE1	2.53	0.43
2:F:250:ARG:O	2:F:254:MET:HG2	2.17	0.43
2:J:69:LYS:O	2:J:73:ILE:HG13	2.17	0.43
2:B:295:ARG:HD3	8:B:1549:HOH:O	2.18	0.43
2:D:104:PRO:HG2	8:D:1593:HOH:O	2.17	0.43
2:D:20:PHE:CZ	2:D:337:ILE:HD11	2.54	0.43
1:A:92:TYR:O	1:A:97:ARG:NH2	2.50	0.43
1:E:121:ARG:NH1	1:E:121:ARG:HG3	2.33	0.43
1:G:69:ARG:HB3	1:G:71:GLU:OE1	2.18	0.43
1:K:156:ILE:HD12	8:K:1585:HOH:O	2.18	0.43
2:L:250:ARG:O	2:L:254:MET:HG2	2.19	0.43
1:E:303:GLN:O	1:E:307:SER:HB2	2.17	0.43
2:F:70:ASP:O	2:F:74:GLU:HG2	2.19	0.43
1:G:65:LEU:O	1:G:69:ARG:HG3	2.19	0.43
1:K:348:LYS:HD2	8:K:1541:HOH:O	2.18	0.43
1:A:303:GLN:N	1:A:304:PRO:CD	2.82	0.43
2:H:352:GLU:OE2	2:H:352:GLU:HA	2.19	0.43
2:B:258:ASN:OD1	2:B:259:GLY:N	2.47	0.43
2:B:258:ASN:CG	2:B:259:GLY:H	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:115:HIS:ND1	2:D:116:PRO:HD2	2.33	0.43
2:D:256:GLN:HB2	2:D:260:TYR:CE2	2.53	0.43
1:E:58:LEU:HD23	1:E:63:TYR:CE2	2.53	0.43
2:B:103:ILE:HG23	2:B:104:PRO:HD2	2.00	0.43
2:H:133:ILE:HG22	2:H:350:THR:HG23	2.00	0.43
1:K:287:ARG:H	1:K:287:ARG:HG2	1.56	0.43
2:L:110:ASN:CB	2:L:111:PRO:HD2	2.49	0.43
1:C:287:ARG:H	1:C:287:ARG:HG2	1.63	0.43
6:L:1506:GRG:HC62	6:L:1506:GRG:H101	1.88	0.43
2:F:21:LEU:HD11	2:F:304:ARG:NH2	2.34	0.42
2:F:207:ASP:O	2:F:208:ASN:HB2	2.18	0.42
2:H:341:HIS:HA	2:H:342:PRO:HD2	1.84	0.42
1:I:223:VAL:HG11	1:I:240:ARG:HB2	2.01	0.42
2:J:19:ASP:OD2	2:J:19:ASP:N	2.52	0.42
3:N:208:CYS:C	7:N:1208:GER:H11	2.38	0.42
2:B:269:ASP:C	2:B:269:ASP:OD1	2.58	0.42
2:B:318:ASP:HB2	7:M:1108:GER:C7	2.47	0.42
1:C:325:ASN:O	1:C:326:GLN:C	2.57	0.42
1:E:325:ASN:O	1:E:326:GLN:C	2.56	0.42
2:F:318:ASP:HB2	7:O:1308:GER:C7	2.47	0.42
1:K:329:ASN:HB3	1:K:332:ASP:HB3	2.01	0.42
2:B:19:ASP:OD2	2:B:19:ASP:N	2.51	0.42
8:H:1560:HOH:O	3:P:409:VAL:HG21	2.19	0.42
2:J:37:PRO:HD2	2:J:40:TYR:CE1	2.54	0.42
2:J:77:TYR:CE1	2:J:141:ARG:HB2	2.54	0.42
2:D:19:ASP:OD2	2:D:19:ASP:N	2.43	0.42
1:E:312:ILE:O	1:E:316:VAL:HG23	2.20	0.42
2:F:115:HIS:HA	2:F:116:PRO:HD3	1.91	0.42
2:J:121:HIS:HB3	2:J:124:MET:HG2	2.02	0.42
1:C:156:ILE:HD11	1:C:172:ARG:HH22	1.84	0.42
1:E:303:GLN:N	1:E:304:PRO:CD	2.82	0.42
2:F:121:HIS:HB3	2:F:124:MET:HG2	2.02	0.42
2:J:133:ILE:CD1	2:J:354:LEU:HD13	2.46	0.42
1:K:325:ASN:O	1:K:326:GLN:C	2.57	0.42
7:O:1308:GER:H112	7:O:1308:GER:H91	1.87	0.42
2:B:115:HIS:HA	2:B:116:PRO:HD3	1.86	0.42
2:H:33:LEU:CD2	2:H:54:ALA:HB1	2.49	0.42
2:H:250:ARG:O	2:H:254:MET:HG2	2.20	0.42
2:J:237:GLU:HG2	8:J:1534:HOH:O	2.20	0.42
2:J:30:GLN:HE21	2:J:30:GLN:HB3	1.63	0.42
2:L:255:ARG:HD3	2:L:261:HIS:CD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:19:ASP:O	2:D:21:LEU:HD13	2.20	0.42
2:D:121:HIS:HB3	2:D:124:MET:HG2	2.02	0.42
6:D:1502:GRG:H101	6:D:1502:GRG:HC62	1.92	0.42
1:K:83:GLY:HA3	2:L:105:PHE:CD1	2.55	0.42
2:H:269:ASP:OD1	2:H:269:ASP:C	2.59	0.42
1:A:71:GLU:H	1:A:71:GLU:CD	2.14	0.42
1:E:103:PHE:CZ	1:E:133:VAL:HG22	2.55	0.42
1:E:338:LEU:HD11	1:E:364:GLN:HG3	2.01	0.42
3:Q:508:CYS:C	7:Q:1508:GER:H11	2.39	0.42
2:D:236:LEU:HD22	2:D:245:LEU:HD21	2.02	0.41
1:G:318:ILE:HG22	1:G:322:MET:HE3	2.01	0.41
2:J:229:SER:O	2:J:233:MET:HG3	2.20	0.41
3:M:108:CYS:C	7:M:1108:GER:H11	2.39	0.41
1:A:285:GLN:HE21	2:B:247:ARG:NH1	2.18	0.41
2:B:334:GLU:HB3	2:B:337:ILE:HD12	2.02	0.41
2:F:77:TYR:CZ	2:F:141:ARG:HB2	2.54	0.41
6:F:1503:GRG:HC62	6:F:1503:GRG:H101	1.90	0.41
1:G:135:HIS:CD2	2:H:166:GLU:HG2	2.55	0.41
1:K:189:ILE:HD11	1:K:205:HIS:CD2	2.51	0.41
3:P:408:CYS:HA	7:P:1408:GER:C2	2.50	0.41
1:A:198:LYS:CD	2:B:266:LYS:HD3	2.51	0.41
1:A:251:SER:HA	1:A:287:ARG:HH22	1.85	0.41
2:F:29:PHE:O	2:F:33:LEU:HD22	2.20	0.41
2:J:33:LEU:HD22	2:J:54:ALA:HB1	2.02	0.41
2:J:37:PRO:HD2	2:J:40:TYR:CD1	2.55	0.41
1:G:78:VAL:O	1:G:104:ARG:HD2	2.21	0.41
1:G:149:GLN:HG3	8:G:1443:HOH:O	2.19	0.41
1:G:318:ILE:HG22	1:G:322:MET:CE	2.51	0.41
2:H:353:ARG:O	2:H:357:LEU:HB2	2.20	0.41
1:I:96:PHE:CE1	1:I:126:LEU:HB3	2.55	0.41
2:L:243:LYS:HB2	2:L:243:LYS:HE3	1.91	0.41
3:O:308:CYS:HA	7:O:1308:GER:C2	2.50	0.41
1:C:244:ILE:HD11	1:C:259:GLU:OE1	2.21	0.41
2:J:64:LEU:O	2:J:67:VAL:HG22	2.19	0.41
2:B:110:ASN:CB	2:B:111:PRO:HD2	2.50	0.41
2:H:357:LEU:HD22	2:H:361:TRP:CE2	2.56	0.41
1:I:67:ARG:HD2	8:I:462:HOH:O	2.20	0.41
2:L:69:LYS:O	2:L:73:ILE:HG13	2.21	0.41
7:N:1208:GER:H112	7:N:1208:GER:H91	1.89	0.41
1:A:294:ASN:O	1:A:298:GLN:HG3	2.20	0.41
1:C:124:ILE:HD13	1:C:134:TRP:CH2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:53:PHE:HE1	7:N:1208:GER:H42	1.86	0.41
2:J:245:LEU:O	2:J:249:LYS:HG3	2.21	0.41
7:R:1608:GER:H112	7:R:1608:GER:H91	1.87	0.41
1:E:328:ASP:O	1:E:329:ASN:HB2	2.21	0.41
2:H:86:ASP:OD2	2:H:86:ASP:N	2.54	0.41
2:J:36:LEU:HA	2:J:37:PRO:HD3	1.91	0.41
1:A:71:GLU:O	1:A:115:ARG:NH1	2.54	0.40
1:C:189:ILE:HD11	1:C:205:HIS:CD2	2.50	0.40
2:F:18:LEU:HD12	2:F:304:ARG:NH1	2.36	0.40
2:F:138:ASP:OD1	2:F:140:SER:HB3	2.20	0.40
1:I:82:ASP:HB2	1:I:86:PRO:HB3	2.02	0.40
1:I:124:ILE:HD13	1:I:134:TRP:CH2	2.56	0.40
3:M:108:CYS:HA	7:M:1108:GER:C2	2.51	0.40
1:A:334:LEU:O	1:A:338:LEU:HG	2.22	0.40
1:C:78:VAL:O	1:C:104:ARG:HD2	2.21	0.40
1:G:227:LEU:HD23	1:G:227:LEU:HA	1.94	0.40
1:C:251:SER:HA	1:C:287:ARG:HH12	1.87	0.40
2:D:101:LEU:HD23	2:D:101:LEU:HA	1.94	0.40
1:E:353:LYS:HE3	1:E:357:ARG:NH2	2.29	0.40
1:I:189:ILE:HD11	1:I:205:HIS:CD2	2.53	0.40
3:R:608:CYS:HA	7:R:1608:GER:H21	2.02	0.40
2:D:318:ASP:HB2	7:N:1208:GER:C7	2.47	0.40
1:E:311:LEU:C	1:E:311:LEU:HD23	2.42	0.40
2:F:53:PHE:HE1	7:O:1308:GER:H42	1.86	0.40
2:H:33:LEU:HD22	2:H:54:ALA:HB1	2.03	0.40
2:H:249:LYS:HB3	2:H:285:ILE:HD13	2.02	0.40
2:J:86:ASP:OD2	2:J:86:ASP:N	2.54	0.40
1:C:184:GLN:HB2	8:C:1404:HOH:O	2.21	0.40
1:G:97:ARG:NH1	1:G:97:ARG:CB	2.85	0.40
1:G:219:GLU:HA	1:G:219:GLU:OE1	2.21	0.40
2:L:33:LEU:HD22	2:L:54:ALA:HB1	2.04	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:433:HOH:O	8:I:433:HOH:O[2_657]	0.35	1.85

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%)	290 (93%)	20 (6%)	2 (1%)	25	47
1	C	312/377 (83%)	292 (94%)	19 (6%)	1 (0%)	41	64
1	E	312/377 (83%)	290 (93%)	21 (7%)	1 (0%)	41	64
1	G	312/377 (83%)	294 (94%)	16 (5%)	2 (1%)	25	47
1	I	312/377 (83%)	293 (94%)	17 (5%)	2 (1%)	25	47
1	K	312/377 (83%)	294 (94%)	17 (5%)	1 (0%)	41	64
2	B	344/377 (91%)	334 (97%)	9 (3%)	1 (0%)	41	64
2	D	344/377 (91%)	333 (97%)	9 (3%)	2 (1%)	25	47
2	F	344/377 (91%)	332 (96%)	11 (3%)	1 (0%)	41	64
2	H	344/377 (91%)	329 (96%)	12 (4%)	3 (1%)	17	35
2	J	344/377 (91%)	329 (96%)	14 (4%)	1 (0%)	41	64
2	L	344/377 (91%)	333 (97%)	10 (3%)	1 (0%)	41	64
3	M	2/11 (18%)	2 (100%)	0	0	100	100
3	N	2/11 (18%)	2 (100%)	0	0	100	100
3	O	2/11 (18%)	2 (100%)	0	0	100	100
3	P	2/11 (18%)	2 (100%)	0	0	100	100
3	Q	2/11 (18%)	2 (100%)	0	0	100	100
3	R	3/11 (27%)	3 (100%)	0	0	100	100
All	All	3949/4590 (86%)	3756 (95%)	175 (4%)	18 (0%)	29	52

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	326	GLN
1	G	326	GLN
2	B	258	ASN
1	C	326	GLN

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Mol	Chain	Res	Type
2	D	258	ASN
2	F	258	ASN
2	H	258	ASN
1	I	326	GLN
2	J	258	ASN
2	L	258	ASN
1	E	326	GLN
1	G	306	HIS
2	H	333	GLU
1	I	306	HIS
1	K	306	HIS
2	D	333	GLU
1	A	306	HIS
2	H	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	280/338 (83%)	276 (99%)	4 (1%)	67	85
1	C	283/338 (84%)	273 (96%)	10 (4%)	36	62
1	E	284/338 (84%)	275 (97%)	9 (3%)	39	65
1	G	281/338 (83%)	277 (99%)	4 (1%)	67	85
1	I	287/338 (85%)	280 (98%)	7 (2%)	49	74
1	K	291/338 (86%)	283 (97%)	8 (3%)	44	71
2	B	289/326 (89%)	276 (96%)	13 (4%)	27	52
2	D	293/326 (90%)	277 (94%)	16 (6%)	21	43
2	F	294/326 (90%)	280 (95%)	14 (5%)	25	49
2	H	288/326 (88%)	274 (95%)	14 (5%)	25	48
2	J	292/326 (90%)	277 (95%)	15 (5%)	24	46
2	L	296/326 (91%)	280 (95%)	16 (5%)	22	44
3	M	4/11 (36%)	4 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	N	4/11 (36%)	4 (100%)	0	100	100
3	O	4/11 (36%)	4 (100%)	0	100	100
3	P	4/11 (36%)	4 (100%)	0	100	100
3	Q	4/11 (36%)	4 (100%)	0	100	100
3	R	5/11 (46%)	5 (100%)	0	100	100
All	All	3483/4050 (86%)	3353 (96%)	130 (4%)	34	60

All (130) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	55	PHE
1	A	71	GLU
1	A	214	ARG
1	A	287	ARG
2	B	33	LEU
2	B	39	ARG
2	B	113	THR
2	B	151	LEU
2	B	216	LEU
2	B	232	LEU
2	B	236	LEU
2	B	255	ARG
2	B	258	ASN
2	B	261	HIS
2	B	329	LEU
2	B	331	LEU
2	B	357	LEU
1	C	55	PHE
1	C	59	ASP
1	C	71	GLU
1	C	76	ASP
1	C	81	ASN
1	C	182	PRO
1	C	217	ASP
1	C	287	ARG
1	C	324	GLU
1	C	364	GLN
2	D	21	LEU
2	D	27	ARG
2	D	33	LEU

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Mol	Chain	Res	Type
2	D	39	ARG
2	D	110	ASN
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	81	ASN
1	E	191	ASP
1	E	214	ARG
1	E	257	GLU
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	306	VAL
2	F	329	LEU
2	F	331	LEU
2	F	353	ARG
1	G	71	GLU
1	G	224	ASP
1	G	287	ARG
1	G	353	LYS
2	H	18	LEU
2	H	21	LEU

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Mol	Chain	Res	Type
2	H	91	ASP
2	H	151	LEU
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	67	ARG
1	I	71	GLU
1	I	142	ARG
1	I	194	ASN
1	I	287	ARG
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	59	ASP
1	K	71	GLU
1	K	142	ARG
1	K	194	ASN
1	K	195	GLN
1	K	287	ARG
1	K	324	GLU

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Mol	Chain	Res	Type
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	284	LYS
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 (41) 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
1	A	335	ASN
2	B	208	ASN
1	C	108	GLN
1	C	201	HIS
1	C	218	ASN
1	C	298	GLN
1	C	364	GLN
2	D	246	ASN
1	E	184	GLN
1	E	201	HIS
1	E	298	GLN
1	E	335	ASN
2	F	30	GLN
2	F	212	GLN
2	F	246	ASN
1	G	80	GLN
1	G	89	GLN

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Mol	Chain	Res	Type
1	G	153	ASN
1	G	162	GLN
1	G	201	HIS
1	G	297	ASN
1	G	325	ASN
1	I	89	GLN
1	I	195	GLN
1	I	201	HIS
1	I	285	GLN
1	I	364	GLN
2	J	30	GLN
2	J	208	ASN
2	J	212	GLN
2	J	246	ASN
1	K	81	ASN
1	K	201	HIS
1	K	298	GLN
1	K	325	ASN
2	L	212	GLN

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 27 ligands modelled in this entry, 15 are monoatomic - leaving 12 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	$\#\|Z\| > 2$
7	GER	R	1608	3	19,19,19	0.91	0	22,22,22	0.69	0
6	GRG	F	1503	-	26,28,28	0.77	0	33,37,37	0.82	1 (3%)
6	GRG	L	1506	-	26,28,28	0.73	0	33,37,37	0.85	1 (3%)
6	GRG	H	1504	-	26,28,28	0.77	0	33,37,37	0.83	1 (3%)
7	GER	Q	1508	3	19,19,19	0.89	0	22,22,22	0.67	0
7	GER	M	1108	3	19,19,19	0.92	0	22,22,22	0.67	0
7	GER	P	1408	3	19,19,19	0.92	0	22,22,22	0.64	0
6	GRG	B	1501	-	26,28,28	0.77	0	33,37,37	0.83	1 (3%)
6	GRG	D	1502	-	26,28,28	0.80	0	33,37,37	0.82	1 (3%)
7	GER	N	1208	3	19,19,19	0.91	0	22,22,22	0.66	0
7	GER	O	1308	3	19,19,19	0.93	0	22,22,22	0.67	0
6	GRG	J	1505	-	26,28,28	0.77	0	33,37,37	0.81	1 (3%)

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
7	GER	R	1608	3	-	10/20/20/20	-
6	GRG	F	1503	-	-	6/31/31/31	-
6	GRG	L	1506	-	-	7/31/31/31	-
6	GRG	H	1504	-	-	8/31/31/31	-
7	GER	Q	1508	3	-	9/20/20/20	-
7	GER	M	1108	3	-	9/20/20/20	-
7	GER	P	1408	3	-	10/20/20/20	-
6	GRG	B	1501	-	-	8/31/31/31	-
6	GRG	D	1502	-	-	8/31/31/31	-
7	GER	N	1208	3	-	10/20/20/20	-
7	GER	O	1308	3	-	9/20/20/20	-
6	GRG	J	1505	-	-	8/31/31/31	-

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	H	1504	GRG	O1B-PB-O3A	2.65	113.52	104.64
6	J	1505	GRG	O1B-PB-O3A	2.60	113.37	104.64
6	L	1506	GRG	O1B-PB-O3A	2.58	113.29	104.64
6	B	1501	GRG	O1B-PB-O3A	2.58	113.28	104.64
6	D	1502	GRG	O1B-PB-O3A	2.57	113.24	104.64
6	F	1503	GRG	O1B-PB-O3A	2.40	112.70	104.64

There are no chirality outliers.

All (102) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	1501	GRG	PA-O3A-PB-O1B
6	D	1502	GRG	PA-O3A-PB-O1B
6	F	1503	GRG	PA-O3A-PB-O1B
6	H	1504	GRG	PA-O3A-PB-O1B
6	J	1505	GRG	PA-O3A-PB-O1B
6	L	1506	GRG	PA-O3A-PB-O1B
7	M	1108	GER	C11-C10-C8-C7
7	M	1108	GER	C11-C10-C8-C9
7	N	1208	GER	C11-C10-C8-C7
7	N	1208	GER	C11-C10-C8-C9
7	O	1308	GER	C11-C10-C8-C7
7	O	1308	GER	C11-C10-C8-C9
7	P	1408	GER	C11-C10-C8-C7
7	P	1408	GER	C11-C10-C8-C9
7	Q	1508	GER	C11-C10-C8-C7
7	Q	1508	GER	C11-C10-C8-C9
7	R	1608	GER	C11-C10-C8-C7
7	R	1608	GER	C11-C10-C8-C9
7	M	1108	GER	C4-C3-C5-C6
7	N	1208	GER	C4-C3-C5-C6
7	O	1308	GER	C4-C3-C5-C6
7	P	1408	GER	C4-C3-C5-C6
7	Q	1508	GER	C4-C3-C5-C6
7	R	1608	GER	C4-C3-C5-C6
7	M	1108	GER	C2-C3-C5-C6
7	Q	1508	GER	C2-C3-C5-C6
7	O	1308	GER	C2-C3-C5-C6
7	P	1408	GER	C2-C3-C5-C6
7	M	1108	GER	C13-C15-C16-C17
7	O	1308	GER	C13-C15-C16-C17
7	R	1608	GER	C2-C3-C5-C6
7	N	1208	GER	C2-C3-C5-C6

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Mol	Chain	Res	Type	Atoms
7	P	1408	GER	C14-C13-C15-C16
7	Q	1508	GER	C14-C13-C15-C16
7	R	1608	GER	C14-C13-C15-C16
7	P	1408	GER	C12-C13-C15-C16
7	Q	1508	GER	C12-C13-C15-C16
7	R	1608	GER	C12-C13-C15-C16
7	M	1108	GER	C14-C13-C15-C16
7	M	1108	GER	C12-C13-C15-C16
7	N	1208	GER	C12-C13-C15-C16
7	O	1308	GER	C12-C13-C15-C16
7	N	1208	GER	C14-C13-C15-C16
7	O	1308	GER	C14-C13-C15-C16
7	N	1208	GER	C13-C15-C16-C17
7	P	1408	GER	C13-C15-C16-C17
7	Q	1508	GER	C13-C15-C16-C17
7	R	1608	GER	C13-C15-C16-C17
6	F	1503	GRG	C14-C13-C15-C16
6	J	1505	GRG	C14-C13-C15-C16
6	D	1502	GRG	C10-C8-C9-C11
6	H	1504	GRG	C10-C8-C9-C11
6	L	1506	GRG	C10-C8-C9-C11
6	B	1501	GRG	C14-C13-C15-C16
6	B	1501	GRG	C10-C8-C9-C11
6	D	1502	GRG	C14-C13-C15-C16
6	D	1502	GRG	C4-C3-C5-C6
6	L	1506	GRG	C14-C13-C15-C16
6	B	1501	GRG	C4-C3-C5-C6
6	F	1503	GRG	C10-C8-C9-C11
6	H	1504	GRG	C14-C13-C15-C16
6	J	1505	GRG	C10-C8-C9-C11
6	J	1505	GRG	C4-C3-C5-C6
6	J	1505	GRG	PA-O3A-PB-O3B
6	L	1506	GRG	PA-O3A-PB-O3B
6	H	1504	GRG	C4-C3-C5-C6
6	L	1506	GRG	C4-C3-C5-C6
6	B	1501	GRG	PA-O3A-PB-O2B
6	D	1502	GRG	PA-O3A-PB-O2B
6	F	1503	GRG	PA-O3A-PB-O2B
6	H	1504	GRG	PA-O3A-PB-O2B
6	J	1505	GRG	PA-O3A-PB-O2B
6	L	1506	GRG	PA-O3A-PB-O2B
6	B	1501	GRG	C12-C13-C15-C16

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Mol	Chain	Res	Type	Atoms
6	H	1504	GRG	C12-C13-C15-C16
6	B	1501	GRG	C9-C11-C12-C13
6	D	1502	GRG	C9-C11-C12-C13
6	F	1503	GRG	C9-C11-C12-C13
6	H	1504	GRG	C9-C11-C12-C13
6	J	1505	GRG	C9-C11-C12-C13
6	L	1506	GRG	C9-C11-C12-C13
7	M	1108	GER	C10-C11-C12-C13
7	M	1108	GER	C15-C16-C17-C18
7	N	1208	GER	C5-C6-C7-C8
7	N	1208	GER	C10-C11-C12-C13
7	N	1208	GER	C15-C16-C17-C18
7	O	1308	GER	C10-C11-C12-C13
7	O	1308	GER	C15-C16-C17-C18
7	P	1408	GER	C10-C11-C12-C13
7	P	1408	GER	C15-C16-C17-C18
7	Q	1508	GER	C10-C11-C12-C13
7	Q	1508	GER	C15-C16-C17-C18
7	R	1608	GER	C10-C11-C12-C13
7	R	1608	GER	C15-C16-C17-C18
6	D	1502	GRG	C12-C13-C15-C16
7	P	1408	GER	C5-C6-C7-C8
6	F	1503	GRG	C4-C3-C5-C6
6	D	1502	GRG	C15-C16-C17-C18
6	H	1504	GRG	C15-C16-C17-C18
6	J	1505	GRG	C15-C16-C17-C18
7	R	1608	GER	C5-C6-C7-C8
6	B	1501	GRG	C15-C16-C17-C18

There are no ring outliers.

12 monomers are involved in 43 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	R	1608	GER	6	0
6	F	1503	GRG	2	0
6	L	1506	GRG	2	0
6	H	1504	GRG	1	0
7	Q	1508	GER	4	0
7	M	1108	GER	5	0
7	P	1408	GER	6	0
6	B	1501	GRG	1	0
6	D	1502	GRG	2	0

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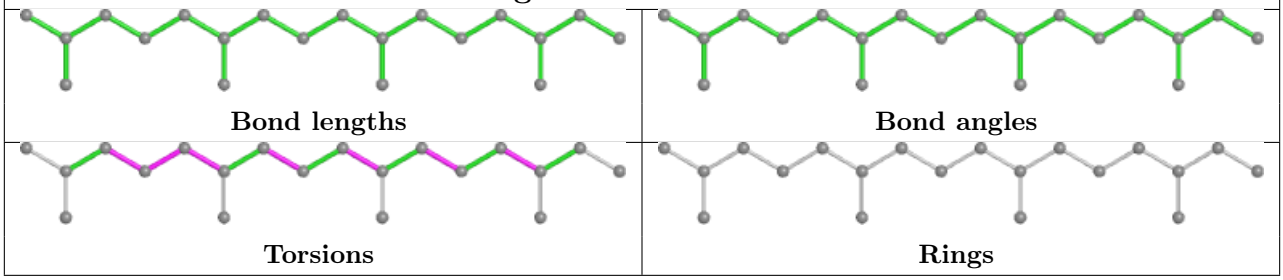
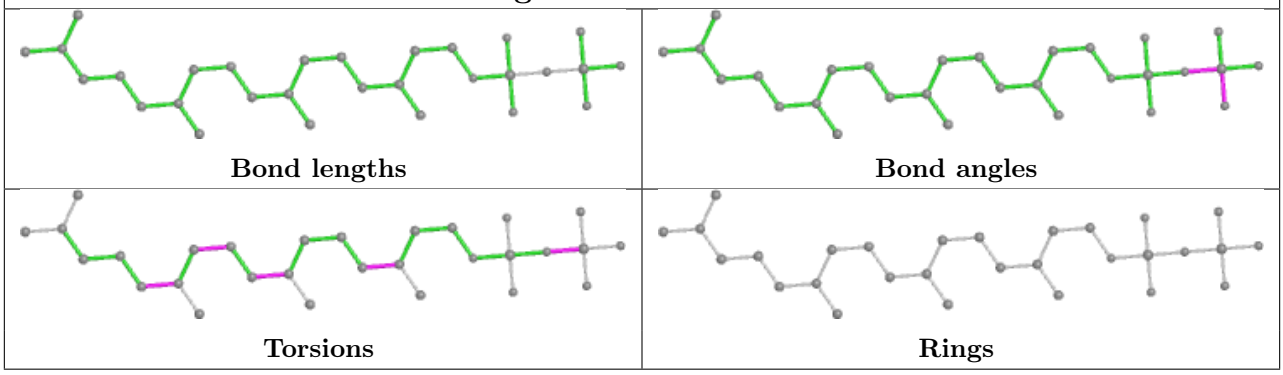
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	N	1208	GER	6	0
7	O	1308	GER	7	0
6	J	1505	GRG	1	0

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

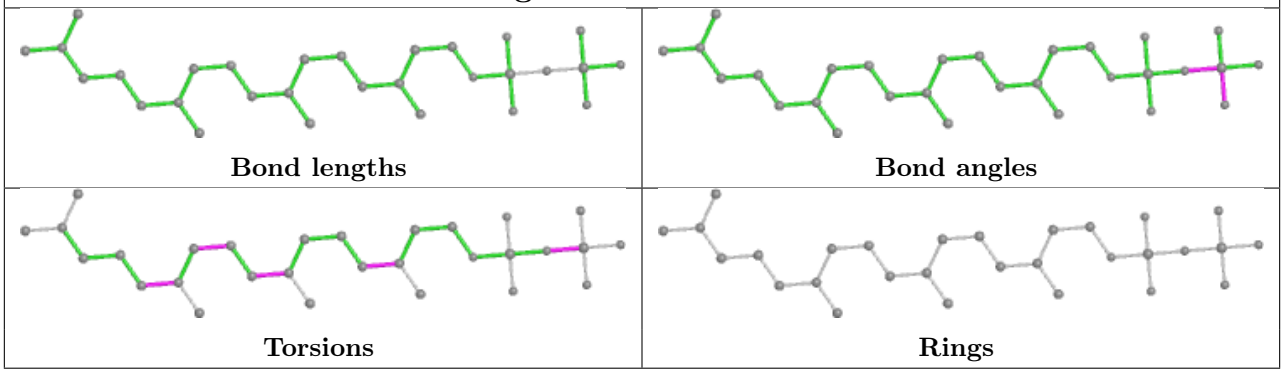
Ligand GER R 1608



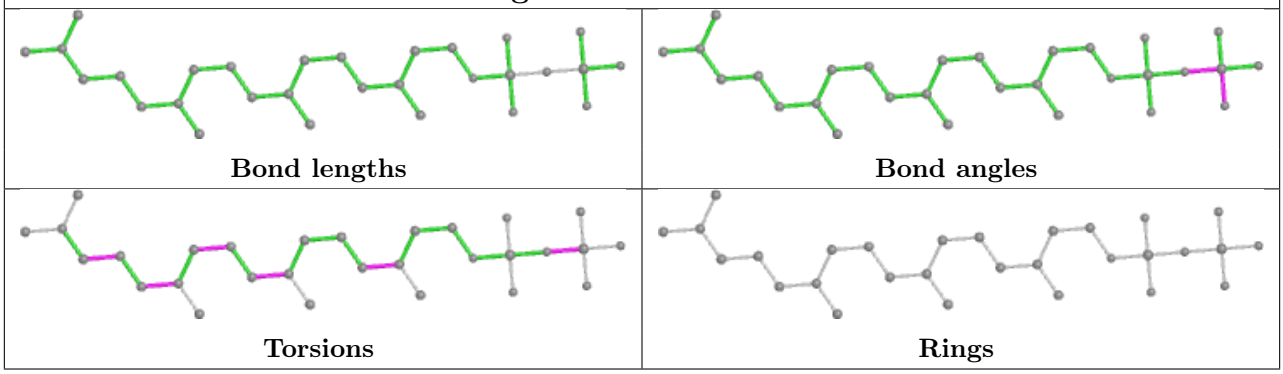
Ligand GRG F 1503



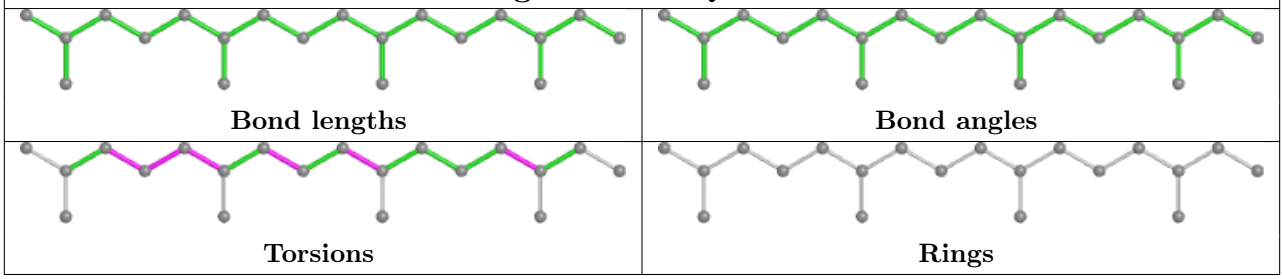
Ligand GRG L 1506



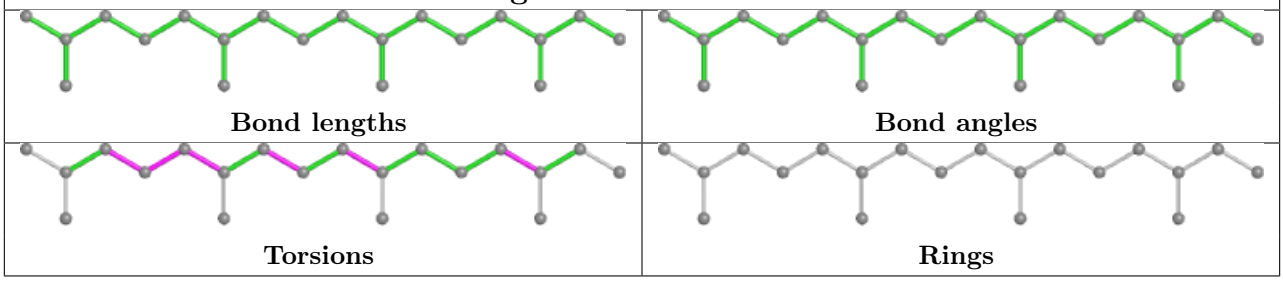
Ligand GRG H 1504



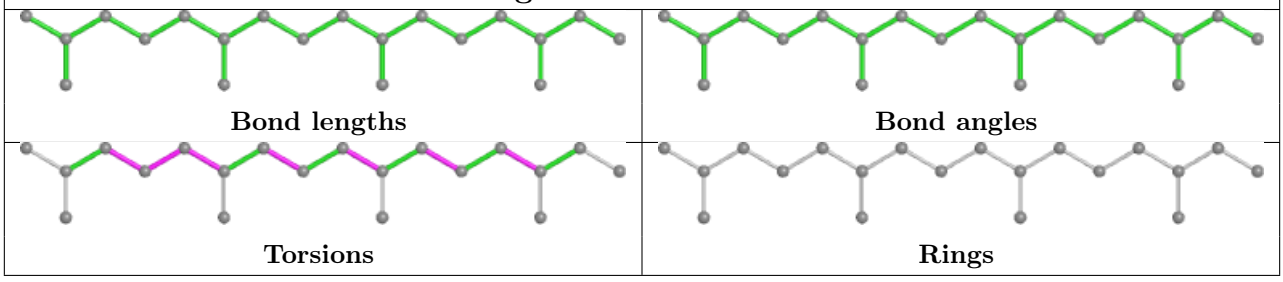
Ligand GER Q 1508



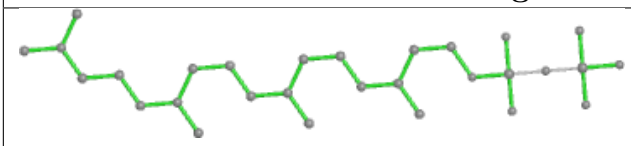
Ligand GER M 1108



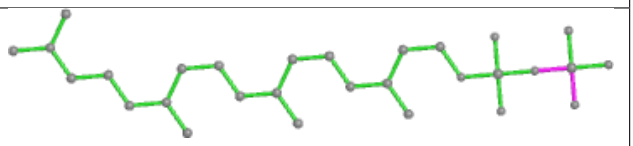
Ligand GER P 1408



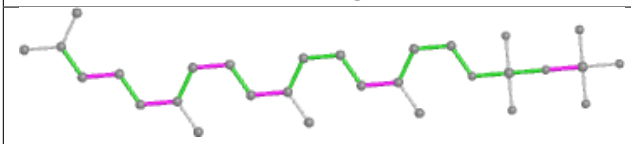
Ligand GRG B 1501



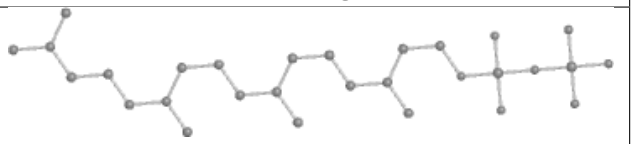
Bond lengths



Bond angles

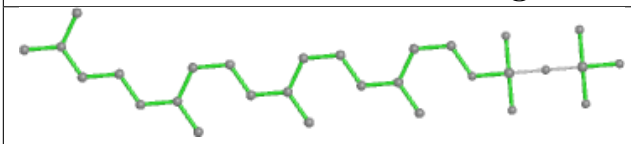


Torsions

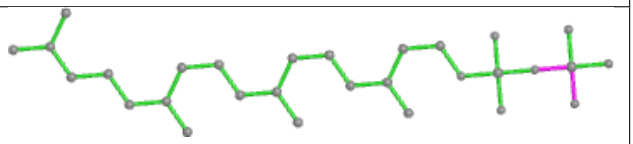


Rings

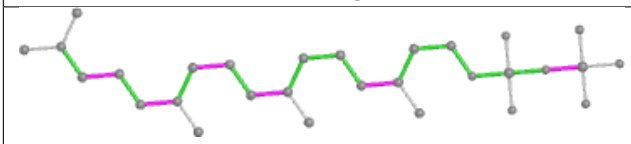
Ligand GRG D 1502



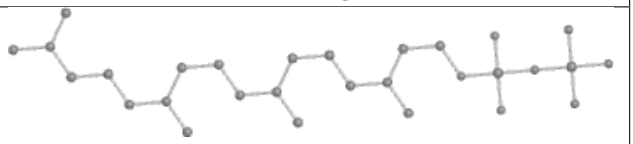
Bond lengths



Bond angles

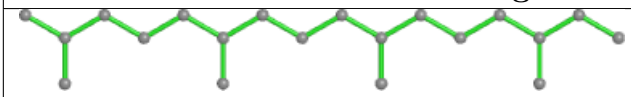


Torsions

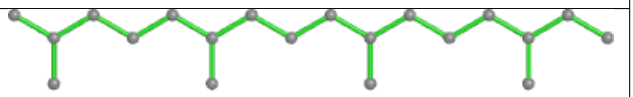


Rings

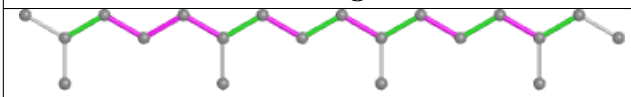
Ligand GER N 1208



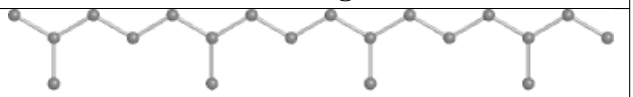
Bond lengths



Bond angles

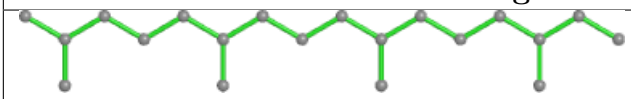


Torsions

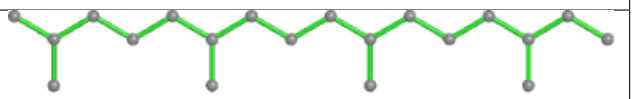


Rings

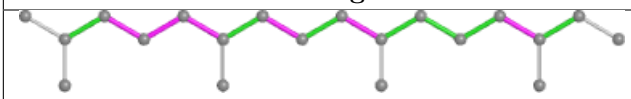
Ligand GER O 1308



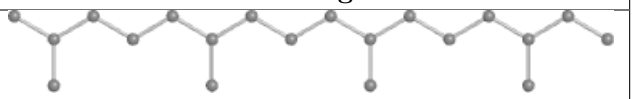
Bond lengths



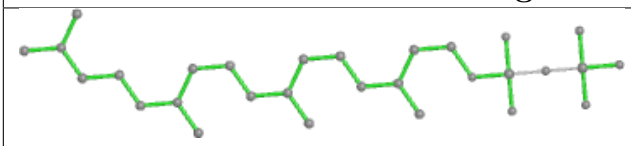
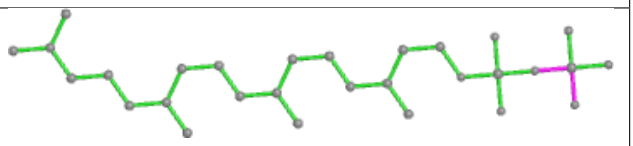
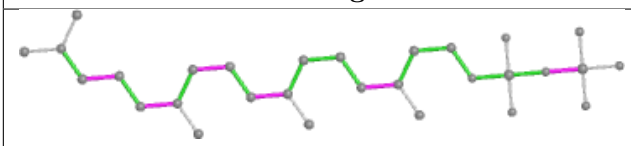
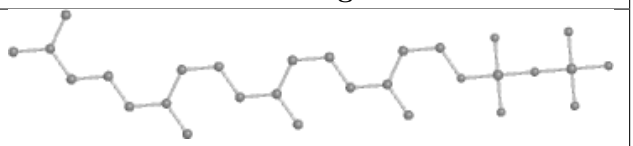
Bond angles



Torsions



Rings

Ligand GRG J 1505	
 Bond lengths	 Bond angles
 Torsions	 Rings

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 (i)

6.1 Protein, DNA and RNA chains (i)

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%)	-0.10	8 (2%)	57	51	35, 57, 91, 109	0
1	C	314/377 (83%)	-0.14	6 (1%)	66	62	33, 54, 82, 99	0
1	E	314/377 (83%)	-0.03	7 (2%)	62	56	33, 58, 86, 104	0
1	G	314/377 (83%)	-0.01	7 (2%)	62	56	36, 58, 88, 102	0
1	I	314/377 (83%)	-0.18	6 (1%)	66	62	29, 53, 84, 95	0
1	K	314/377 (83%)	-0.38	3 (0%)	82	80	23, 43, 67, 82	0
2	B	346/377 (91%)	-0.13	7 (2%)	65	60	36, 51, 77, 102	0
2	D	346/377 (91%)	-0.01	8 (2%)	60	54	31, 47, 74, 94	0
2	F	346/377 (91%)	-0.16	9 (2%)	56	50	32, 47, 75, 100	0
2	H	346/377 (91%)	0.34	23 (6%)	18	13	37, 65, 95, 113	0
2	J	346/377 (91%)	0.02	12 (3%)	44	36	30, 50, 78, 104	0
2	L	346/377 (91%)	-0.13	7 (2%)	65	60	26, 41, 64, 95	0
3	M	4/11 (36%)	6.70	4 (100%)	0	0	58, 64, 70, 80	4 (100%)
3	N	4/11 (36%)	6.17	4 (100%)	0	0	60, 64, 71, 78	4 (100%)
3	O	4/11 (36%)	7.91	4 (100%)	0	0	58, 64, 70, 80	4 (100%)
3	P	4/11 (36%)	6.15	4 (100%)	0	0	60, 64, 70, 78	4 (100%)
3	Q	4/11 (36%)	5.20	4 (100%)	0	0	58, 63, 72, 81	4 (100%)
3	R	5/11 (45%)	3.41	5 (100%)	0	0	57, 62, 83, 84	5 (100%)
All	All	3985/4590 (86%)	-0.04	128 (3%)	47	40	23, 52, 84, 113	25 (0%)

All (128) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	O	308	CYS	11.4
3	M	108	CYS	10.1
3	N	208	CYS	8.0

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Mol	Chain	Res	Type	RSRZ
3	M	109	VAL	7.6
3	O	310	ILE	7.2
3	O	309	VAL	7.2
3	P	408	CYS	6.9
3	P	410	ILE	6.6
3	N	211	LEU	6.3
1	C	306	HIS	6.2
3	N	210	ILE	6.1
2	H	304	ARG	6.0
3	Q	510	ILE	6.0
3	Q	508	CYS	5.9
3	O	311	LEU	5.8
3	P	409	VAL	5.7
3	M	110	ILE	5.5
1	G	306	HIS	5.5
3	P	411	LEU	5.4
1	G	55	PHE	5.0
2	L	113	THR	4.9
3	Q	511	LEU	4.8
2	J	108	SER	4.8
1	E	306	HIS	4.5
1	G	305	SER	4.5
2	H	305	LEU	4.4
3	N	209	VAL	4.3
1	C	305	SER	4.3
3	R	610	ILE	4.2
3	Q	509	VAL	4.1
3	R	611	LEU	3.9
2	D	111	PRO	3.7
2	F	113	THR	3.7
3	R	609	VAL	3.6
2	H	111	PRO	3.6
2	D	305	LEU	3.6
2	F	112	GLY	3.5
2	H	108	SER	3.5
1	C	304	PRO	3.5
3	M	111	LEU	3.5
1	A	306	HIS	3.5
2	J	111	PRO	3.4
1	A	328	ASP	3.4
2	B	363	THR	3.3
2	H	110	ASN	3.3

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Mol	Chain	Res	Type	RSRZ
2	H	306	VAL	3.2
2	D	110	ASN	3.2
2	D	113	THR	3.2
2	J	85	GLU	3.2
2	L	110	ASN	3.1
2	L	111	PRO	3.1
2	F	314	ASP	3.1
2	H	363	THR	3.1
2	H	84	THR	3.0
2	H	86	ASP	3.0
2	J	84	THR	3.0
2	H	88	SER	3.0
2	B	86	ASP	3.0
1	I	306	HIS	2.9
2	B	305	LEU	2.9
2	J	114	ALA	2.9
2	J	86	ASP	2.9
1	A	304	PRO	2.9
2	B	113	THR	2.9
2	B	111	PRO	2.8
2	H	361	TRP	2.8
2	H	87	ARG	2.8
3	R	607	LYS	2.8
1	G	304	PRO	2.7
2	F	88	SER	2.7
2	H	307	GLY	2.7
1	A	330	LYS	2.7
2	L	49	THR	2.7
1	I	328	ASP	2.7
1	I	304	PRO	2.6
1	C	55	PHE	2.6
1	E	331	GLU	2.6
2	H	85	GLU	2.6
2	H	65	ASP	2.6
2	J	46	SER	2.6
2	H	314	ASP	2.6
3	R	608	CYS	2.6
2	F	86	ASP	2.6
2	D	108	SER	2.6
2	L	363	THR	2.5
2	H	316	HIS	2.5
1	C	329	ASN	2.5

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Mol	Chain	Res	Type	RSRZ
2	J	112	GLY	2.5
2	D	314	ASP	2.5
2	J	363	THR	2.4
2	H	112	GLY	2.4
1	E	304	PRO	2.4
2	L	314	ASP	2.4
1	E	55	PHE	2.4
2	J	360	SER	2.4
2	D	363	THR	2.3
1	A	326	GLN	2.3
1	A	368	SER	2.3
1	I	368	SER	2.3
2	F	111	PRO	2.3
2	H	23	ASP	2.3
2	H	303	ASP	2.3
1	E	368	SER	2.2
2	F	363	THR	2.2
2	F	305	LEU	2.2
2	D	304	ARG	2.2
2	J	314	ASP	2.2
1	A	342	GLU	2.2
1	K	306	HIS	2.2
1	C	331	GLU	2.2
2	B	110	ASN	2.2
2	H	113	THR	2.2
1	G	78	VAL	2.1
1	A	217	ASP	2.1
2	B	362	LYS	2.1
1	I	305	SER	2.1
1	K	304	PRO	2.1
2	F	110	ASN	2.1
1	E	328	ASP	2.1
2	H	40	TYR	2.1
2	H	83	PRO	2.1
1	K	305	SER	2.1
2	L	112	GLY	2.1
1	E	330	LYS	2.0
1	G	326	GLN	2.0
1	G	303	GLN	2.0
1	I	367	HIS	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)

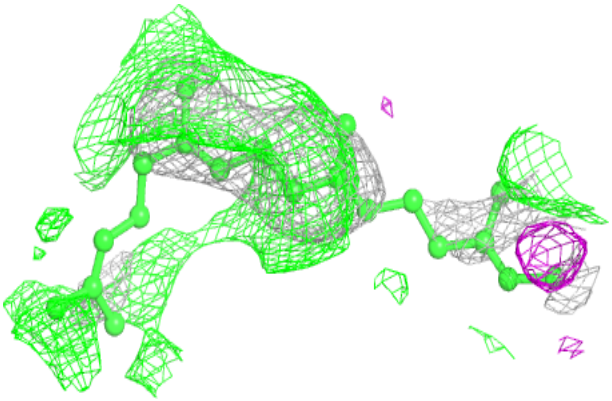
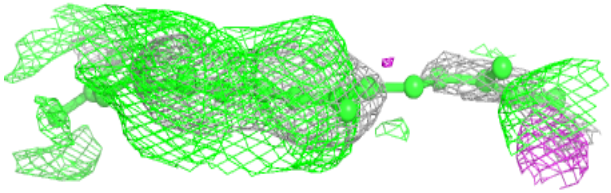
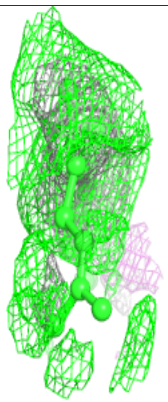
There are no monosaccharides in this entry.

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.

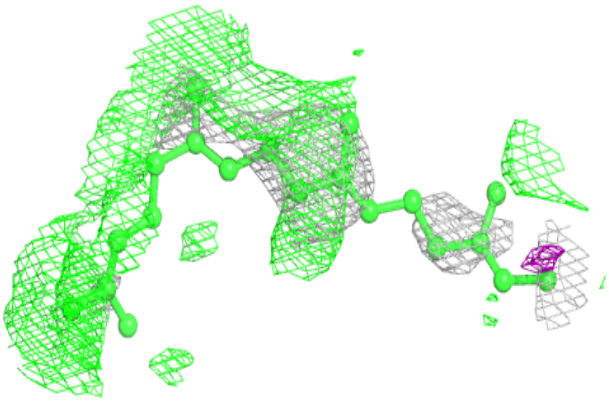
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
7	GER	M	1108	20/20	0.50	0.58	69,76,83,84	20
7	GER	P	1408	20/20	0.52	0.57	72,78,81,82	20
7	GER	O	1308	20/20	0.54	0.56	71,78,83,83	20
7	GER	N	1208	20/20	0.62	0.51	67,76,84,84	20
7	GER	Q	1508	20/20	0.71	0.47	69,76,84,84	20
7	GER	R	1608	20/20	0.72	0.51	64,72,82,83	20
6	GRG	D	1502	29/29	0.94	0.27	49,56,65,66	0
6	GRG	H	1504	29/29	0.94	0.27	61,65,75,77	0
6	GRG	F	1503	29/29	0.95	0.27	50,58,70,71	0
6	GRG	B	1501	29/29	0.95	0.27	56,60,69,71	0
6	GRG	J	1505	29/29	0.95	0.25	43,48,56,58	0
6	GRG	L	1506	29/29	0.95	0.26	40,45,53,58	0
5	CL	J	1407	1/1	0.95	0.12	61,61,61,61	0
5	CL	H	1406	1/1	0.96	0.13	60,60,60,60	0
5	CL	G	1405	1/1	0.96	0.21	53,53,53,53	0
5	CL	C	1402	1/1	0.97	0.25	59,59,59,59	0
5	CL	B	1401	1/1	0.98	0.13	61,61,61,61	0
5	CL	K	1408	1/1	0.98	0.16	57,57,57,57	0
5	CL	D	1403	1/1	0.99	0.13	43,43,43,43	0
5	CL	F	1404	1/1	0.99	0.13	47,47,47,47	0
5	CL	L	1409	1/1	0.99	0.07	45,45,45,45	0
4	ZN	H	378	1/1	0.99	0.11	60,60,60,60	0
4	ZN	J	378	1/1	0.99	0.14	42,42,42,42	0
4	ZN	B	378	1/1	1.00	0.11	47,47,47,47	0
4	ZN	D	378	1/1	1.00	0.14	45,45,45,45	0
4	ZN	L	378	1/1	1.00	0.12	34,34,34,34	0
4	ZN	F	378	1/1	1.00	0.10	47,47,47,47	0

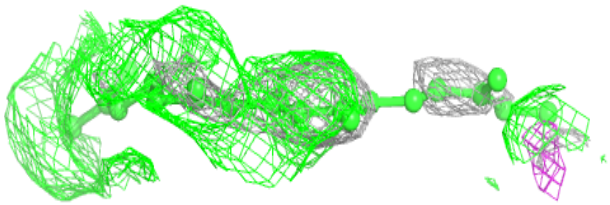
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

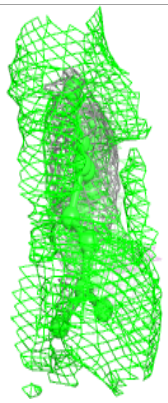
Electron density around GER M 1108: 2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative) and green (positive)	
	

Electron density around GER P 1408:

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

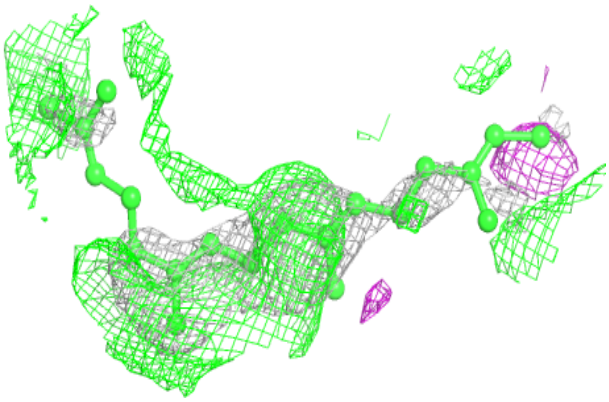


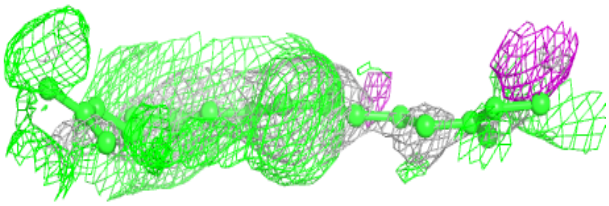


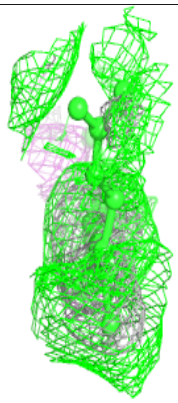


Electron density around GER O 1308:

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

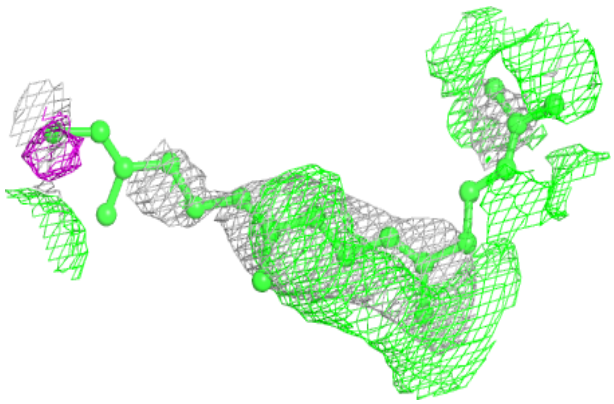


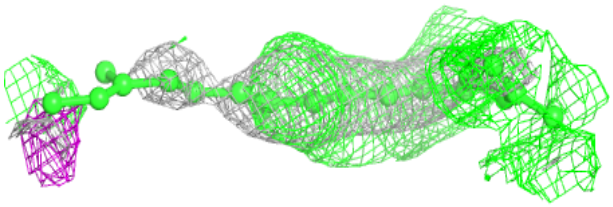


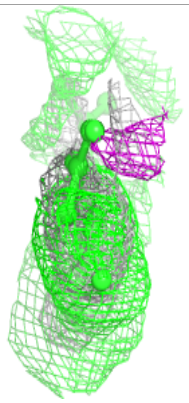


Electron density around GER N 1208:

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

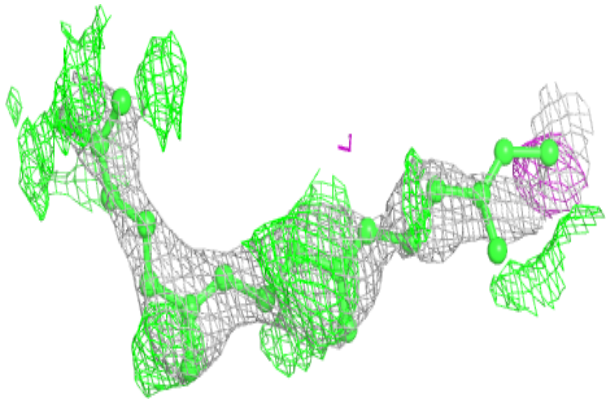


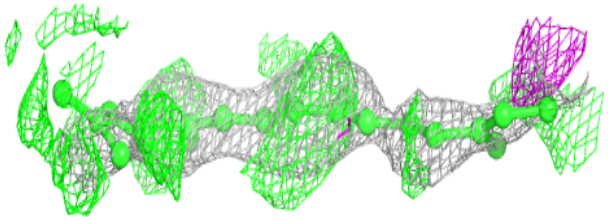


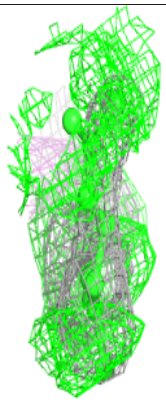


Electron density around GER Q 1508:

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

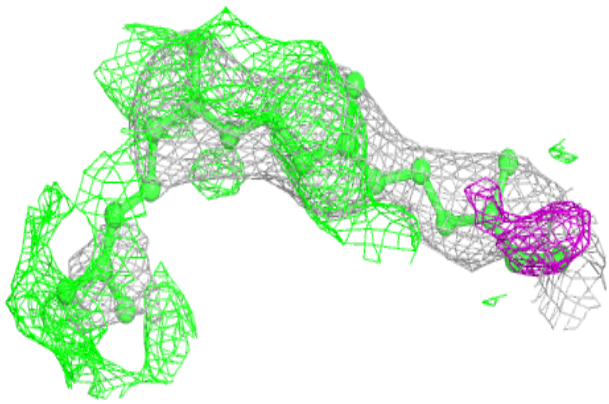


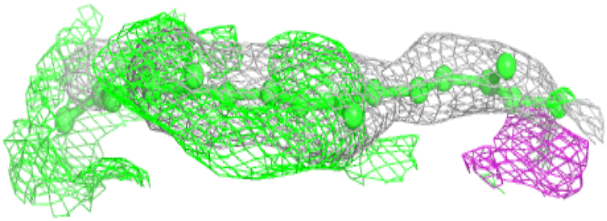


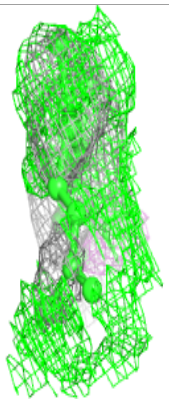


Electron density around GER R 1608:

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

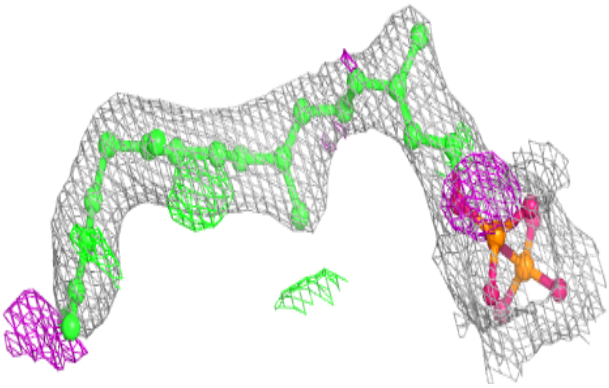


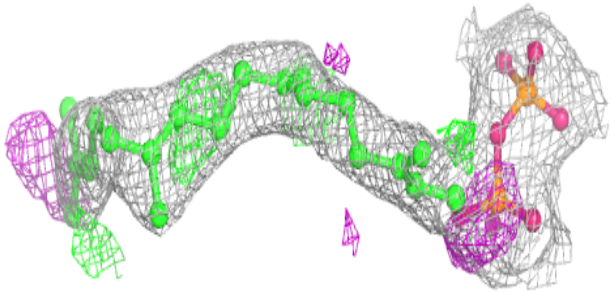


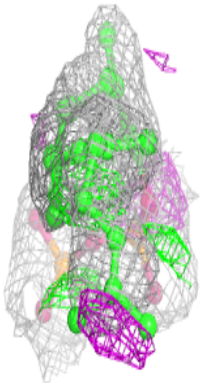


Electron density around GRG D 1502:

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

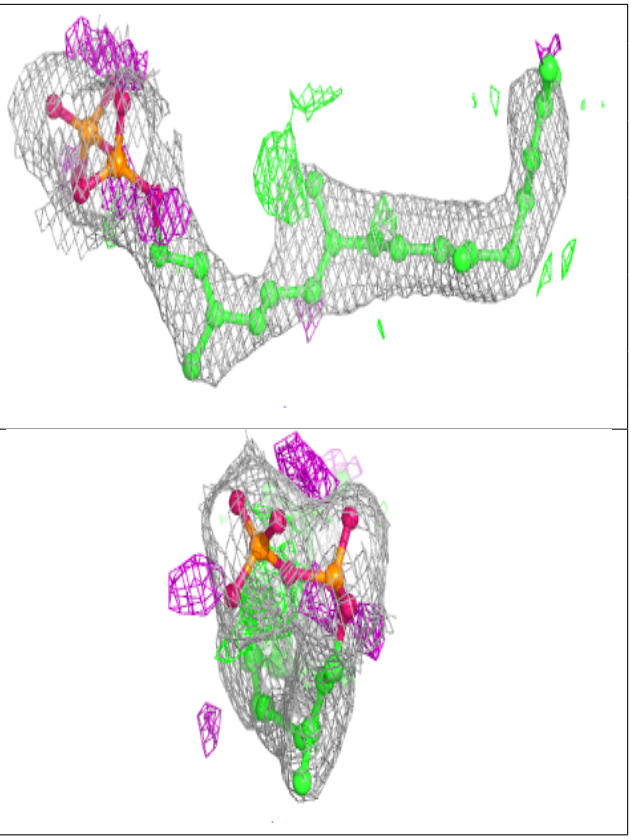






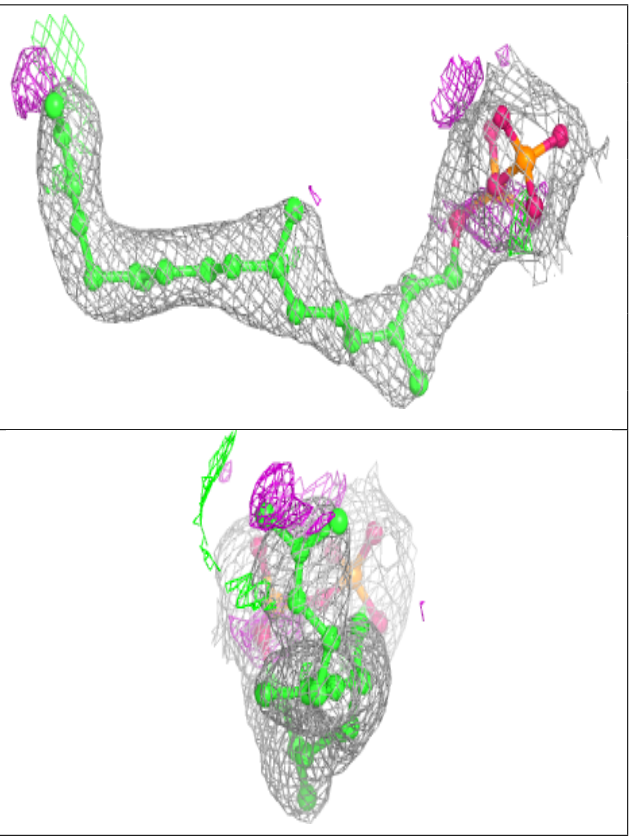
Electron density around GRG H 1504:

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



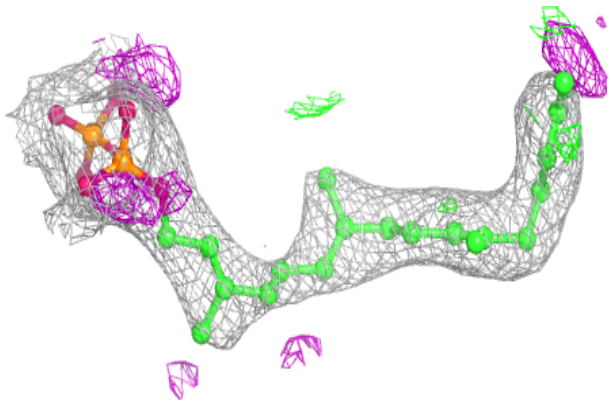
Electron density around GRG F 1503:

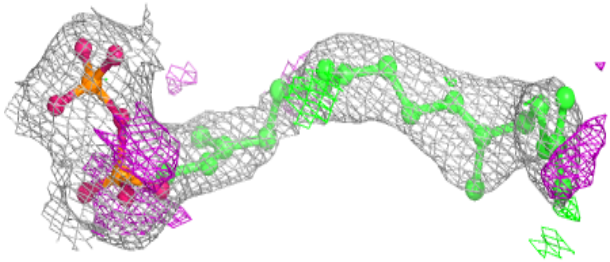
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

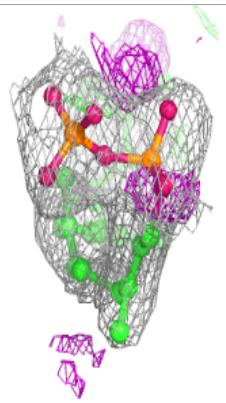


Electron density around GRG B 1501:

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

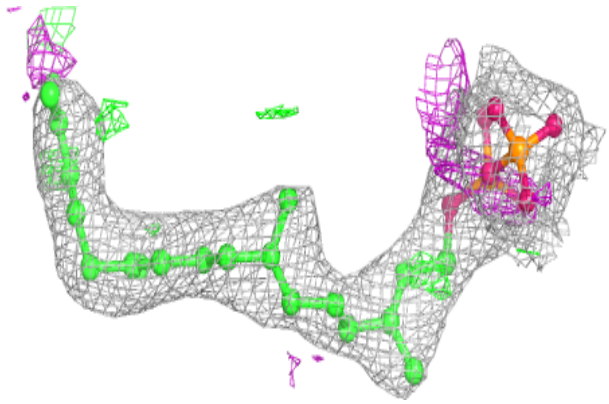


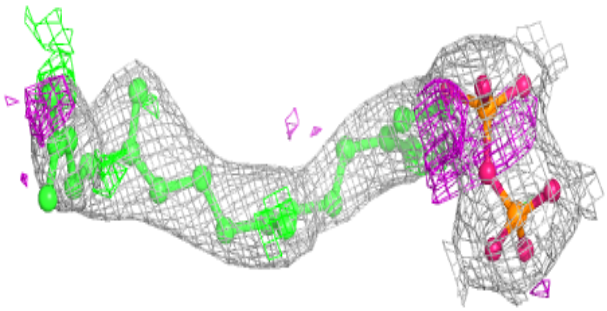


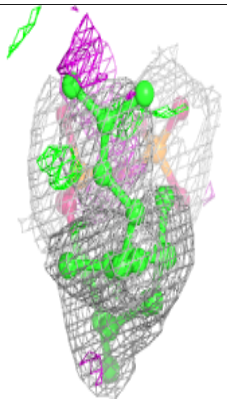


Electron density around GRG J 1505:

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

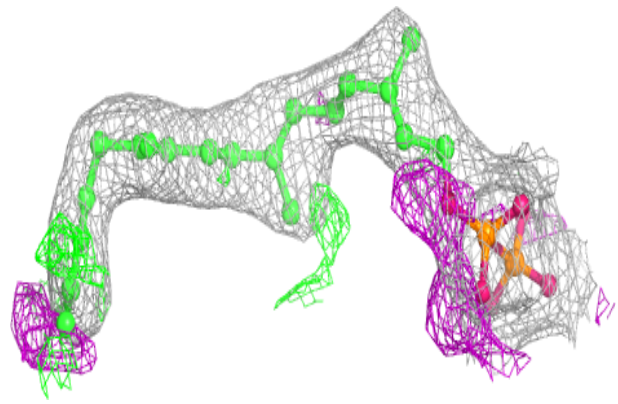


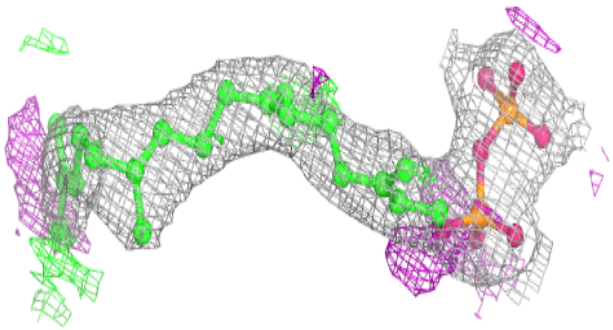


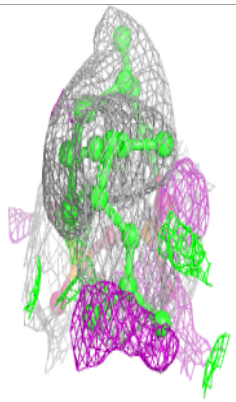


Electron density around GRG L 1506:

$2mF_o$-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.