



Full wwPDB X-ray Structure Validation Report ⓘ

May 23, 2020 – 02:25 am BST

PDB ID : 5IZK
Title : The crystal structure of human eEFSec in complex with GDP
Authors : Dobosz-Bartoszek, M.; Simonovic, M.
Deposited on : 2016-03-25
Resolution : 3.25 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

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

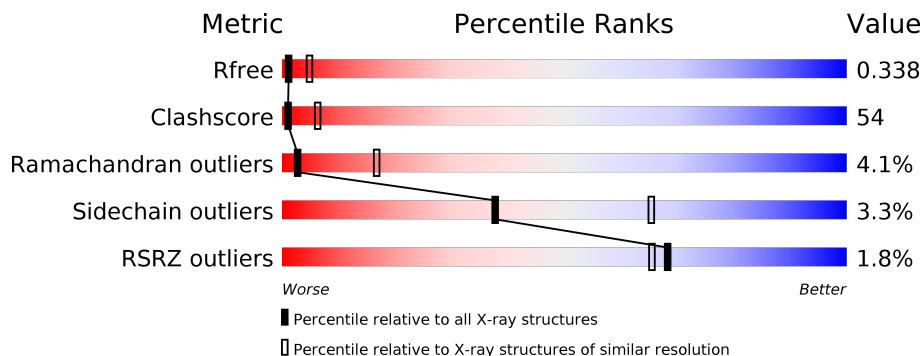
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.25 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	1191 (3.30-3.22)
Clashscore	141614	1251 (3.30-3.22)
Ramachandran outliers	138981	1229 (3.30-3.22)
Sidechain outliers	138945	1228 (3.30-3.22)
RSRZ outliers	127900	1154 (3.30-3.22)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	616	
1	B	616	

2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 6060 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 Selenocysteine-specific elongation factor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	480	3216	2046	566	585	19	0	1	0
1	B	451	2767	1746	499	514	8	0	1	0

There are 40 discrepancies between the modelled and reference sequences:

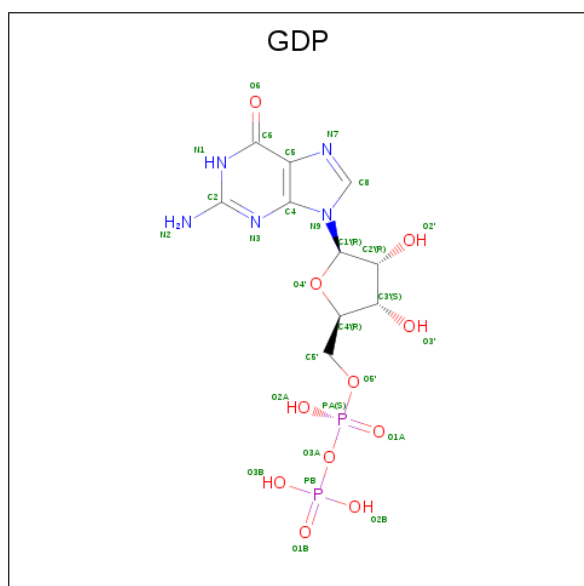
Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP P57772
A	-18	GLY	-	expression tag	UNP P57772
A	-17	SER	-	expression tag	UNP P57772
A	-16	SER	-	expression tag	UNP P57772
A	-15	HIS	-	expression tag	UNP P57772
A	-14	HIS	-	expression tag	UNP P57772
A	-13	HIS	-	expression tag	UNP P57772
A	-12	HIS	-	expression tag	UNP P57772
A	-11	HIS	-	expression tag	UNP P57772
A	-10	HIS	-	expression tag	UNP P57772
A	-9	SER	-	expression tag	UNP P57772
A	-8	SER	-	expression tag	UNP P57772
A	-7	GLY	-	expression tag	UNP P57772
A	-6	LEU	-	expression tag	UNP P57772
A	-5	VAL	-	expression tag	UNP P57772
A	-4	PRO	-	expression tag	UNP P57772
A	-3	ARG	-	expression tag	UNP P57772
A	-2	GLY	-	expression tag	UNP P57772
A	-1	SER	-	expression tag	UNP P57772
A	0	HIS	-	expression tag	UNP P57772
B	-19	MET	-	initiating methionine	UNP P57772
B	-18	GLY	-	expression tag	UNP P57772
B	-17	SER	-	expression tag	UNP P57772
B	-16	SER	-	expression tag	UNP P57772
B	-15	HIS	-	expression tag	UNP P57772

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-14	HIS	-	expression tag	UNP P57772
B	-13	HIS	-	expression tag	UNP P57772
B	-12	HIS	-	expression tag	UNP P57772
B	-11	HIS	-	expression tag	UNP P57772
B	-10	HIS	-	expression tag	UNP P57772
B	-9	SER	-	expression tag	UNP P57772
B	-8	SER	-	expression tag	UNP P57772
B	-7	GLY	-	expression tag	UNP P57772
B	-6	LEU	-	expression tag	UNP P57772
B	-5	VAL	-	expression tag	UNP P57772
B	-4	PRO	-	expression tag	UNP P57772
B	-3	ARG	-	expression tag	UNP P57772
B	-2	GLY	-	expression tag	UNP P57772
B	-1	SER	-	expression tag	UNP P57772
B	0	HIS	-	expression tag	UNP P57772

- Molecule 2 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	B	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

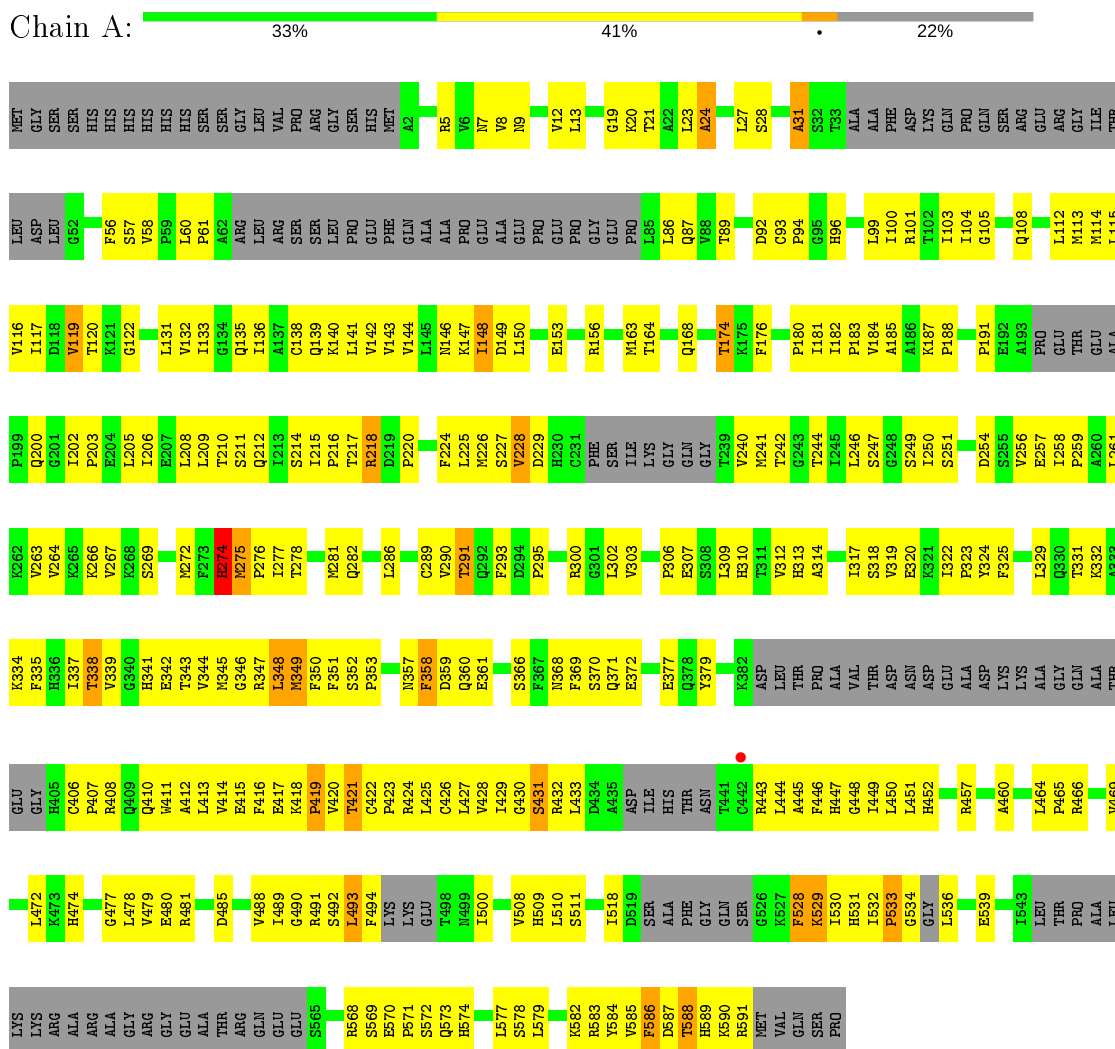
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	15	Total 15	O 15	0	0
3	B	6	Total 6	O 6	0	0

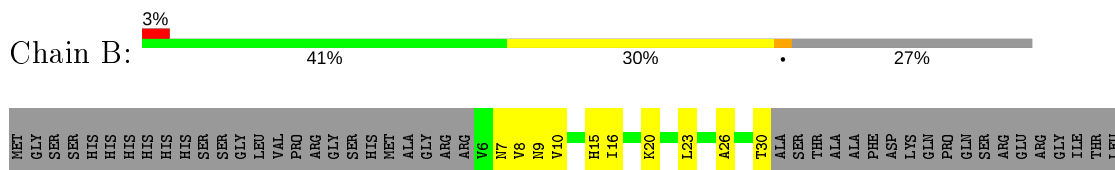
3 Residue-property plots

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

- Molecule 1: Selenocysteine-specific elongation factor



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GLN	K529	L454	K529	L454	ASP	V228	G134	ASP	I109	I117	V119	T120	L123	Q126	V132	I133
SER	I330	R485	R485	R485	GLU	ASP	Q135	HIS	I109	D118	V119	T120	L123	Q126	V132	I133
PRO	HE31	D456	D456	D456	ALA	HIS	I136	CYS	I110	V119	T120	L123	Q126	V132	I133	
	L532	S462	S462	S462	ASP	CYS	A137	PHE	L112	I117	V119	T120	L123	Q126	V132	I133
	P533	K468	K468	K468	LYS	SER	C138	ILE	D111	I117	V119	T120	L123	Q126	V132	I133
	G535	V469	V469	V469	ALA	LYS	Q139	LYS	L112	I117	V119	T120	L123	Q126	V132	I133
	L536	V470	V470	V470	GLY	ILE	K140	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	L543	L472	L472	L472	GLN	LYS	I148	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	L544	K471	K471	K471	ALA	LYS	D149	GLN	L112	I117	V119	T120	L123	Q126	V132	I133
	T545	L473	L473	L473	THR	THR	M163	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	P546	K472	K472	K472	GLU	VAL	K166	THR	L112	I117	V119	T120	L123	Q126	V132	I133
	ALA	K475	K475	K475	HIS	ASP	M167	VAL	L112	I117	V119	T120	L123	Q126	V132	I133
	LEU	H476	H476	H476	CYS	ASP	G243	ASP	L112	I117	V119	T120	L123	Q126	V132	I133
	LYS	G477	G477	G477	P407	HIS	G243	HIS	L112	I117	V119	T120	L123	Q126	V132	I133
	ARG	L478	L478	L478	R408	ASP	T244	ASP	L112	I117	V119	T120	L123	Q126	V132	I133
	ALA	V479	V479	V479	R409	LYS	I245	LYS	L112	I117	V119	T120	L123	Q126	V132	I133
	ARG	E480	E480	E480	O410	ALA	S249	ALA	L112	I117	V119	T120	L123	Q126	V132	I133
	ARG	R481	R481	R481	N411	THR	S251	THR	L112	I117	V119	T120	L123	Q126	V132	I133
	ALA	D484	D484	D484	A412	GLY	V263	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLY	D485	D485	D485	H415	HIS	V267	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	ARG	Y486	Y486	Y486	E415	ASP	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLY	S487	S487	S487	F416	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	ALA	V488	V488	V488	K416	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	THR	I489	I489	I489	P419	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	ARG	G490	G490	G490	W420	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLN	R491	R491	R491	T421	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLU	S492	S492	S492	C422	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLU	L493	L493	L493	O423	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	GLU	F494	F494	F494	R423	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	S565	F495	F495	F495	L425	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	A366	LYS	LYS	LYS	V428	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	E567	GLU	GLU	GLU	V428	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	R568	THR	THR	THR	L429	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	S569	THR	THR	THR	L429	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	E570	ASN	ASN	ASN	G430	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	P571	ILE	ILE	ILE	S431	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	S572	ILE	ILE	ILE	R432	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	Q573	L502	L502	L502	LEU	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	H574	L505	L505	L505	ASP	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	V575	G505	G505	G505	ALA	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	V576	G505	G505	G505	ALA	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	L577	H508	H508	H508	ASP	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	S578	H509	H509	H509	ILE	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	L579	L510	L510	L510	HIS	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	T580	L515	L515	L515	THR	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	F581	L515	L515	L515	ASN	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	K582	G516	G516	G516	THR	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	R583	G516	G516	G516	THR	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	V584	D519	D519	D519	R443	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	V585	S520	S520	S520	L444	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	F586	ALA	ALA	ALA	A445	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	D587	PHE	PHE	PHE	F446	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	T588	GLY	GLY	GLY	H447	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	H589	GLN	GLN	GLN	G448	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	K590	S525	S525	S525	L449	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	M591	G526	G526	G526	L460	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	MET	K527	K527	K527	L451	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
	VAL	F528	F528	F528	H452	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133
					G453	LYS	K288	GLY	L112	I117	V119	T120	L123	Q126	V132	I133

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	58.69Å 96.86Å 125.41Å 90.00° 90.25° 90.00°	Depositor
Resolution (Å)	42.94 – 3.25 42.94 – 3.00	Depositor EDS
% Data completeness (in resolution range)	99.0 (42.94-3.25) 91.2 (42.94-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.12 (at 3.01Å)	Xtrriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.296 , 0.338 0.296 , 0.338	Depositor DCC
R_{free} test set	1286 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å ²)	89.2	Xtrriage
Anisotropy	0.572	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.19 , 71.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	0.043 for h,-k,-l	Xtrriage
F_o, F_c correlation	0.87	EDS
Total number of atoms	6060	wwPDB-VP
Average B, all atoms (Å ²)	82.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.62% 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: GDP

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	0.36	0/3276	0.68	12/4477 (0.3%)
1	B	0.32	0/2816	0.66	8/3868 (0.2%)
All	All	0.34	0/6092	0.67	20/8345 (0.2%)

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	464	LEU	N-CA-C	8.09	132.84	111.00
1	A	274	HIS	CB-CA-C	-7.73	94.93	110.40
1	B	565	SER	CB-CA-C	-7.32	96.19	110.10
1	B	341	HIS	N-CA-C	7.23	130.53	111.00
1	A	588	THR	N-CA-C	6.56	128.71	111.00
1	B	588	THR	N-CA-C	6.56	128.71	111.00
1	A	275	MET	N-CA-C	6.44	128.38	111.00
1	B	566	ALA	N-CA-CB	-6.25	101.34	110.10
1	B	582	LYS	N-CA-C	-6.15	94.40	111.00
1	A	214	SER	CB-CA-C	6.04	121.57	110.10
1	B	491	ARG	CB-CA-C	6.03	122.46	110.40
1	B	492	SER	N-CA-CB	5.88	119.33	110.50
1	A	338	THR	N-CA-C	-5.66	95.71	111.00
1	A	215	ILE	N-CA-C	5.49	125.83	111.00
1	B	529	LYS	CB-CA-C	5.42	121.23	110.40
1	A	349	MET	N-CA-C	-5.41	96.40	111.00
1	A	431	SER	N-CA-CB	-5.36	102.46	110.50
1	A	349	MET	CB-CA-C	5.20	120.80	110.40
1	A	215	ILE	C-N-CD	5.14	139.19	128.40
1	A	60	LEU	C-N-CD	5.04	138.99	128.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3216	0	2771	331	0
1	B	2767	0	2027	258	0
2	A	28	0	12	4	0
2	B	28	0	12	7	0
3	A	15	0	0	19	0
3	B	6	0	0	10	0
All	All	6060	0	4822	583	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 54.

All (583) 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:B:477:GLY:HA2	1:B:492:SER:CB	1.25	1.59
1:B:477:GLY:CA	1:B:492:SER:CB	2.02	1.36
1:B:476:HIS:O	1:B:492:SER:CB	1.79	1.31
1:B:490:GLY:O	1:B:528:PHE:CD2	1.84	1.30
1:B:311:THR:CA	1:B:421:THR:HG22	1.65	1.24
1:A:588:THR:CG2	1:A:589:HIS:H	1.39	1.24
1:B:473:LYS:CD	1:B:579:LEU:HD21	1.71	1.20
1:B:473:LYS:HG2	1:B:579:LEU:CD1	1.72	1.19
1:B:473:LYS:CG	1:B:579:LEU:HD21	1.71	1.19
1:B:473:LYS:HG2	1:B:579:LEU:HD11	1.17	1.16
1:B:580:THR:HG23	1:B:590:LYS:HD3	1.18	1.16
1:B:205:LEU:O	1:B:209:LEU:HB2	1.48	1.14
1:B:20:LYS:N	2:B:1001:GDP:O1A	1.81	1.13
1:B:490:GLY:O	1:B:528:PHE:HD2	1.20	1.12
1:B:311:THR:CB	1:B:421:THR:HG22	1.79	1.12
1:B:372:GLU:CD	1:B:582:LYS:NZ	2.04	1.11
1:A:432:ARG:CB	1:A:443:ARG:O	1.99	1.11
1:B:311:THR:HA	1:B:421:THR:HG22	1.10	1.09

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:490:GLY:O	1:A:528:PHE:HB2	1.53	1.08
1:B:473:LYS:HG2	1:B:579:LEU:CG	1.83	1.07
1:A:588:THR:HG22	1:A:589:HIS:N	1.64	1.05
1:A:588:THR:HG22	1:A:589:HIS:H	0.95	1.05
1:B:580:THR:HG23	1:B:590:LYS:CD	1.87	1.03
1:A:433:LEU:HD12	1:A:433:LEU:O	1.59	1.01
1:B:347:ARG:HB2	1:B:415:GLU:HB2	1.43	1.00
1:A:583:ARG:N	3:A:1101:HOH:O	1.82	0.99
1:B:473:LYS:CG	1:B:579:LEU:CD2	2.40	0.99
1:A:469:VAL:O	3:A:1101:HOH:O	1.81	0.97
1:B:311:THR:HA	1:B:421:THR:CG2	1.95	0.96
1:B:187:LYS:O	2:B:1001:GDP:C6	2.17	0.96
1:B:543:ILE:HD13	1:B:571:PRO:HD2	1.48	0.96
1:A:113:MET:O	1:A:141:LEU:HG	1.66	0.95
1:B:322:ILE:HD13	1:B:444:LEU:HB3	1.47	0.95
1:A:226:MET:O	3:A:1102:HOH:O	1.85	0.93
1:B:311:THR:CB	1:B:421:THR:CG2	2.46	0.92
1:A:372:GLU:OE2	1:A:582:LYS:NZ	2.02	0.92
1:B:491:ARG:HA	1:B:528:PHE:CE2	2.05	0.91
1:A:302:LEU:HA	3:A:1102:HOH:O	1.70	0.91
1:B:473:LYS:CG	1:B:579:LEU:CG	2.49	0.91
1:A:153[B]:GLU:OE2	3:A:1103:HOH:O	1.88	0.90
1:A:478:LEU:O	3:A:1104:HOH:O	1.89	0.90
1:A:224:PHE:CD1	1:A:250:ILE:HD11	2.05	0.90
1:B:476:HIS:C	1:B:492:SER:CB	2.39	0.90
1:B:475:LYS:HD3	1:B:493:LEU:CB	2.02	0.90
1:B:471:LYS:N	1:B:581:PHE:O	2.05	0.90
1:B:428:VAL:N	1:B:448:GLY:O	2.05	0.89
1:B:491:ARG:HA	1:B:528:PHE:HE2	1.34	0.89
1:A:422:CYS:SG	3:A:1114:HOH:O	2.32	0.88
1:B:110:ILE:O	3:B:1101:HOH:O	1.92	0.88
1:B:431:SER:OG	1:B:445:ALA:N	2.07	0.88
1:A:250:ILE:HG22	1:A:251:SER:H	1.36	0.87
1:B:473:LYS:HG2	1:B:579:LEU:CD2	2.02	0.87
1:A:148:ILE:HG22	1:A:185:ALA:HB2	1.56	0.87
1:B:362:PRO:HA	1:B:409:GLN:NE2	1.90	0.86
1:A:144:VAL:HG12	1:A:182:ILE:HB	1.57	0.86
1:A:229:ASP:OD1	1:A:242:THR:O	1.95	0.85
1:A:224:PHE:CE1	1:A:250:ILE:HD11	2.12	0.84
1:B:473:LYS:HG2	1:B:579:LEU:HD21	1.58	0.84
1:A:359:ASP:HA	1:A:408:ARG:HG3	1.58	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:588:THR:HG23	1:A:589:HIS:H	1.40	0.84
1:A:588:THR:CG2	1:A:589:HIS:N	2.17	0.84
1:B:322:ILE:CD1	1:B:444:LEU:HB3	2.07	0.84
1:B:148:ILE:HD11	1:B:183:PRO:HB2	1.59	0.84
1:A:149:ASP:OD2	1:A:188:PRO:HA	1.79	0.83
1:B:480:GLU:HG2	1:B:481:ARG:HG2	1.58	0.83
1:B:57:SER:HA	1:B:86:LEU:O	1.78	0.83
1:B:473:LYS:CG	1:B:579:LEU:HD11	2.06	0.83
1:A:579:LEU:HA	1:A:590:LYS:HB2	1.60	0.82
1:B:16:ILE:O	3:B:1102:HOH:O	1.98	0.81
1:A:148:ILE:HG22	1:A:185:ALA:CB	2.11	0.81
1:A:488:VAL:HG12	1:A:489:ILE:H	1.45	0.81
1:A:335:PHE:HD1	1:A:431:SER:HA	1.46	0.81
1:A:205:LEU:O	1:A:209:LEU:HG	1.80	0.80
1:B:148:ILE:CD1	1:B:183:PRO:HB2	2.10	0.80
1:A:337:ILE:HA	1:A:430:GLY:HA3	1.62	0.80
1:A:570:GLU:OE1	3:A:1105:HOH:O	2.00	0.80
1:A:511:SER:N	1:A:574:HIS:O	2.16	0.79
1:A:258:ILE:HD12	1:A:261:LEU:HD21	1.64	0.79
1:A:13:LEU:HD21	1:A:113:MET:HE3	1.64	0.79
1:B:224:PHE:CD2	1:B:304:CYS:HA	2.18	0.79
1:A:490:GLY:O	1:A:528:PHE:CB	2.31	0.78
1:B:479:VAL:HB	1:B:573:GLN:CB	2.12	0.78
1:A:331:THR:HG23	1:A:349:MET:HA	1.66	0.78
1:A:510:LEU:O	3:A:1106:HOH:O	2.01	0.78
1:A:465:PRO:HA	1:A:584:TYR:HB2	1.65	0.78
1:A:220:PRO:HG3	1:A:281:MET:HE2	1.66	0.77
1:B:329:LEU:HD12	1:B:379:TYR:HD2	1.50	0.77
1:A:212:GLN:OE1	1:A:212:GLN:N	2.18	0.77
1:A:138:CYS:SG	1:A:139:GLN:N	2.58	0.76
1:A:587:ASP:O	1:A:588:THR:OG1	2.02	0.76
1:A:119:VAL:HG23	1:A:146:ASN:O	1.85	0.76
1:A:338:THR:O	1:A:429:ILE:O	2.02	0.76
1:A:342:GLU:OE1	1:A:418:LYS:NZ	2.15	0.76
1:B:485:ASP:OD1	1:B:536:LEU:HB2	1.86	0.75
1:A:153[A]:GLU:OE1	1:A:156:ARG:NH2	2.18	0.75
1:B:136:ILE:HD13	1:B:447:HIS:HB3	1.68	0.75
1:B:319:VAL:HG22	1:B:410:GLN:O	1.86	0.74
1:A:112:LEU:HD11	1:A:212:GLN:HB3	1.68	0.74
1:A:148:ILE:HG22	1:A:185:ALA:N	2.03	0.74
1:B:372:GLU:CD	1:B:582:LYS:HZ2	1.88	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:225:LEU:HD11	1:A:302:LEU:HD22	1.69	0.73
1:A:351:PHE:CE1	1:A:411:TRP:HB2	2.22	0.73
1:B:317:ILE:HG22	1:B:450:LEU:HA	1.71	0.73
1:B:187:LYS:O	2:B:1001:GDP:N1	2.21	0.73
1:B:148:ILE:HG13	1:B:184:VAL:O	1.89	0.73
1:B:570:GLU:O	1:B:572:SER:N	2.21	0.73
1:A:266:LYS:O	1:A:290:VAL:HG13	1.88	0.72
1:A:112:LEU:HA	1:A:138:CYS:SG	2.30	0.72
1:A:413:LEU:HD23	1:A:413:LEU:O	1.90	0.72
1:A:310:HIS:CD2	1:A:312:VAL:CG2	2.72	0.72
1:A:13:LEU:HD21	1:A:113:MET:CE	2.20	0.72
1:B:431:SER:HB3	1:B:443:ARG:O	1.89	0.72
1:B:580:THR:CG2	1:B:590:LYS:HD3	2.10	0.72
1:A:113:MET:HB2	1:A:141:LEU:HD12	1.72	0.71
1:A:302:LEU:HD23	3:A:1102:HOH:O	1.90	0.71
1:B:477:GLY:N	1:B:492:SER:CB	2.52	0.71
1:B:588:THR:OG1	1:B:589:HIS:N	2.23	0.71
1:A:349:MET:O	1:A:412:ALA:HB1	1.90	0.71
1:B:10:VAL:HG13	1:B:112:LEU:O	1.91	0.71
1:A:105:GLY:HA3	1:A:341:HIS:CE1	2.26	0.70
1:A:101:ARG:HD2	1:A:341:HIS:O	1.90	0.70
1:A:246:LEU:O	1:A:282:GLN:NE2	2.19	0.70
1:B:473:LYS:CG	1:B:579:LEU:HG	2.22	0.70
1:B:570:GLU:OE2	3:B:1103:HOH:O	2.10	0.70
1:A:322:ILE:N	1:A:445:ALA:O	2.20	0.70
1:A:313:HIS:CD2	1:A:419:PRO:HB3	2.27	0.69
1:A:148:ILE:CG2	1:A:185:ALA:HB2	2.21	0.69
1:A:366:SER:O	1:A:451:LEU:HD13	1.92	0.69
1:B:490:GLY:C	1:B:528:PHE:CD2	2.66	0.69
1:A:249:SER:O	1:A:250:ILE:HD13	1.92	0.69
1:B:293:PHE:O	1:B:295:PRO:HD3	1.93	0.69
1:B:275:MET:N	1:B:276:PRO:HD2	2.08	0.68
1:A:220:PRO:HD3	1:A:281:MET:HE1	1.74	0.68
1:A:528:PHE:C	1:A:529:LYS:HG3	2.14	0.68
1:A:5:ARG:HH12	1:A:272:MET:C	1.96	0.68
1:B:274:HIS:C	1:B:276:PRO:HD2	2.14	0.68
1:A:310:HIS:CD2	1:A:312:VAL:HG23	2.27	0.68
1:A:117:ILE:O	1:A:146:ASN:N	2.26	0.68
1:A:228:VAL:HG12	1:A:300:ARG:HA	1.73	0.67
1:A:23:LEU:HD23	1:A:23:LEU:O	1.95	0.67
1:A:348:LEU:HD23	1:A:350:PHE:CZ	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:317:ILE:HD11	1:A:319:VAL:HG22	1.76	0.67
1:B:148:ILE:H	1:B:185:ALA:HB2	1.60	0.67
1:A:293:PHE:O	1:A:295:PRO:HD3	1.95	0.67
1:B:187:LYS:N	2:B:1001:GDP:O6	2.27	0.67
1:A:274:HIS:C	1:A:276:PRO:HD2	2.15	0.67
1:B:149:ASP:OD2	1:B:188:PRO:HA	1.95	0.67
1:B:580:THR:O	1:B:588:THR:HG23	1.95	0.67
1:B:338:THR:HA	1:B:342:GLU:O	1.94	0.67
1:B:354:ALA:O	1:B:358:PHE:N	2.28	0.67
1:A:250:ILE:HG22	1:A:251:SER:N	2.09	0.66
1:A:103:ILE:CD1	1:A:113:MET:HE1	2.25	0.66
1:A:224:PHE:HA	1:A:247:SER:O	1.95	0.66
1:A:480:GLU:HG3	1:A:481:ARG:H	1.61	0.66
1:A:570:GLU:HG3	1:A:570:GLU:O	1.96	0.65
1:B:373:TYR:O	1:B:469:VAL:HA	1.96	0.65
1:B:486:TYR:HD1	1:B:535:GLY:HA2	1.61	0.65
1:A:310:HIS:CE1	1:A:424:ARG:HG2	2.32	0.65
1:B:322:ILE:HG13	1:B:446:PHE:HA	1.79	0.65
1:B:224:PHE:O	1:B:304:CYS:HB2	1.97	0.65
1:B:473:LYS:HG3	1:B:579:LEU:HG	1.78	0.64
1:A:335:PHE:CD1	1:A:431:SER:HA	2.31	0.64
1:A:122:GLY:HA2	1:A:163:MET:CE	2.28	0.64
1:A:417:GLU:HG3	1:A:418:LYS:N	2.11	0.64
1:A:13:LEU:HD11	1:A:113:MET:CE	2.27	0.64
1:A:431:SER:HB2	1:A:445:ALA:CB	2.28	0.64
1:A:491:ARG:N	3:A:1104:HOH:O	2.06	0.64
1:B:245:ILE:O	1:B:283:GLY:N	2.26	0.64
1:B:312:VAL:HG13	1:B:454:LEU:O	1.98	0.64
1:B:133:ILE:HG13	1:B:444:LEU:HD11	1.80	0.64
1:A:585:VAL:HG22	1:A:586:PHE:N	2.11	0.63
1:B:372:GLU:HA	1:B:468:LYS:O	1.98	0.63
1:B:580:THR:CG2	1:B:590:LYS:CD	2.69	0.63
1:A:578:SER:O	1:A:590:LYS:HG2	1.97	0.63
1:B:148:ILE:O	1:B:148:ILE:HG22	1.98	0.63
1:A:335:PHE:O	1:A:345:MET:HG3	1.99	0.63
1:A:570:GLU:O	1:A:572:SER:N	2.31	0.63
1:B:321:LYS:H	1:B:379:TYR:HE2	1.46	0.63
1:B:585:VAL:HG22	1:B:586:PHE:N	2.11	0.63
1:A:428:VAL:O	1:A:429:ILE:HG13	1.99	0.62
1:A:112:LEU:CD1	1:A:212:GLN:HB3	2.27	0.62
1:B:501:GLN:C	1:B:502:LEU:HD12	2.19	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:20:LYS:N	2:A:1001:GDP:O2A	2.32	0.62
1:A:92:ASP:OD1	1:A:93:CYS:N	2.24	0.62
1:A:274:HIS:HB3	1:A:276:PRO:HD2	1.81	0.62
1:A:372:GLU:CD	1:A:582:LYS:NZ	2.53	0.62
1:B:220:PRO:HB2	1:B:249:SER:HB2	1.82	0.62
1:A:359:ASP:HA	1:A:408:ARG:CG	2.27	0.62
1:B:224:PHE:HD2	1:B:304:CYS:HA	1.62	0.62
1:B:372:GLU:OE1	1:B:582:LYS:NZ	2.32	0.62
1:B:372:GLU:CD	1:B:582:LYS:HZ1	1.80	0.62
1:A:431:SER:OG	1:A:444:LEU:HA	1.98	0.62
1:A:57:SER:HA	1:A:86:LEU:O	1.99	0.62
1:A:257:GLU:OE2	1:A:306:PRO:HA	2.00	0.61
1:B:372:GLU:OE2	1:B:582:LYS:NZ	2.15	0.61
1:A:450:LEU:HD23	1:A:452:HIS:H	1.64	0.61
1:A:539:GLU:OE1	1:A:539:GLU:N	2.32	0.61
1:B:338:THR:CB	1:B:343:THR:HG22	2.30	0.61
1:A:21:THR:HB	2:A:1001:GDP:O1A	2.01	0.61
1:B:203:PRO:O	1:B:206:ILE:N	2.34	0.61
1:A:488:VAL:HG12	1:A:489:ILE:N	2.16	0.61
1:B:472:LEU:O	1:B:472:LEU:HD23	2.01	0.61
1:B:456:ASP:OD2	1:B:462:SER:CB	2.48	0.60
1:A:251:SER:HA	1:A:278:THR:O	2.00	0.60
1:B:491:ARG:CA	1:B:528:PHE:CE2	2.80	0.60
1:A:258:ILE:CG2	1:A:261:LEU:HG	2.31	0.60
1:B:570:GLU:HG2	1:B:570:GLU:O	2.00	0.60
1:A:258:ILE:HG12	1:A:303:VAL:HG22	1.84	0.60
1:A:583:ARG:CB	3:A:1101:HOH:O	2.49	0.60
1:B:97:ALA:N	3:B:1105:HOH:O	2.26	0.60
1:B:409:GLN:OE1	1:B:411:TRP:NE1	2.35	0.60
1:A:183:PRO:O	1:A:184:VAL:HG23	2.02	0.60
1:A:174:THR:CG2	1:A:176:PHE:H	2.15	0.59
1:A:420:VAL:HG22	1:A:421:THR:N	2.17	0.59
1:B:136:ILE:HD13	1:B:447:HIS:CB	2.33	0.59
1:A:420:VAL:HG22	1:A:421:THR:H	1.66	0.59
1:B:357:ASN:O	1:B:360:GLN:N	2.26	0.59
1:B:472:LEU:HA	1:B:579:LEU:O	2.03	0.59
1:B:490:GLY:O	1:B:528:PHE:CG	2.53	0.59
1:B:532:ILE:HD12	1:B:532:ILE:N	2.16	0.59
1:A:310:HIS:HD2	1:A:312:VAL:CG2	2.15	0.59
1:A:334:LYS:CE	1:A:345:MET:HG2	2.33	0.59
1:A:431:SER:HB2	1:A:445:ALA:HB3	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:117:ILE:HG22	1:B:118:ASP:H	1.68	0.59
1:B:543:ILE:HD13	1:B:571:PRO:CD	2.29	0.59
1:A:259:PRO:HG2	1:A:309:LEU:HD12	1.83	0.59
1:B:138:CYS:SG	1:B:139:GLN:N	2.75	0.59
1:B:515:LEU:HD12	1:B:516:GLY:H	1.67	0.59
1:A:24:ALA:O	1:A:27:LEU:N	2.36	0.59
1:A:589:HIS:NE2	3:A:1112:HOH:O	2.32	0.58
1:B:473:LYS:HG3	1:B:579:LEU:CD2	2.29	0.58
1:A:313:HIS:NE2	1:A:419:PRO:HB3	2.17	0.58
1:B:311:THR:CA	1:B:421:THR:CG2	2.58	0.58
1:B:491:ARG:CB	1:B:528:PHE:HD2	2.17	0.58
1:A:269:SER:O	1:A:289:CYS:N	2.37	0.58
1:A:258:ILE:HB	1:A:261:LEU:HG	1.86	0.58
1:A:13:LEU:HD11	1:A:113:MET:HE2	1.85	0.58
1:A:579:LEU:O	1:A:579:LEU:HD12	2.03	0.58
1:A:352:SER:CB	1:A:410:GLN:NE2	2.67	0.57
1:A:174:THR:HG22	1:A:176:PHE:H	1.69	0.57
1:A:148:ILE:O	1:A:148:ILE:HG23	2.04	0.57
1:A:122:GLY:HA2	1:A:163:MET:HE2	1.85	0.57
1:B:148:ILE:N	1:B:185:ALA:HB2	2.19	0.57
1:B:578:SER:O	1:B:590:LYS:HG2	2.05	0.57
1:B:7:ASN:OD1	1:B:8:VAL:N	2.38	0.57
1:A:108:GLN:N	3:A:1107:HOH:O	2.06	0.57
1:A:472:LEU:HG	1:A:474:HIS:NE2	2.19	0.57
1:A:530:ILE:HG22	1:A:531:HIS:O	2.04	0.57
1:A:120:THR:HG21	1:A:150:LEU:HD23	1.87	0.57
1:A:590:LYS:HG3	1:A:591:ARG:N	2.20	0.57
1:B:364:LEU:O	1:B:451:LEU:HD21	2.04	0.57
1:B:485:ASP:HA	1:B:536:LEU:HD12	1.87	0.57
1:A:115:LEU:HD22	1:A:131:LEU:HD13	1.85	0.57
1:A:422:CYS:HB3	1:A:423:PRO:HD2	1.86	0.57
1:B:590:LYS:HG3	1:B:591:ARG:N	2.20	0.57
1:A:290:VAL:HG12	1:A:291:THR:H	1.69	0.56
1:B:140:LYS:HE2	1:B:179:ALA:HA	1.88	0.56
1:B:570:GLU:CD	3:B:1103:HOH:O	2.43	0.56
1:A:113:MET:O	1:A:141:LEU:HA	2.05	0.56
1:A:358:PHE:CE1	1:A:407:PRO:HB3	2.41	0.56
1:A:577:LEU:HD21	1:A:579:LEU:HG	1.87	0.56
1:B:317:ILE:HG21	1:B:428:VAL:HG21	1.86	0.56
1:A:143:VAL:O	1:A:181:ILE:HA	2.06	0.56
1:B:163:MET:O	1:B:166:LYS:HB3	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:317:ILE:O	1:B:411:TRP:HB3	2.06	0.56
1:A:257:GLU:HB2	1:A:306:PRO:HA	1.87	0.56
1:A:479:VAL:N	1:A:573:GLN:O	2.32	0.56
1:A:533:PRO:HG2	1:A:534:GLY:H	1.71	0.56
1:A:349:MET:O	1:A:412:ALA:CB	2.53	0.56
1:B:251:SER:HA	1:B:278:THR:O	2.05	0.56
1:B:471:LYS:HE3	1:B:581:PHE:CD2	2.41	0.56
1:B:486:TYR:CD1	1:B:535:GLY:HA2	2.40	0.56
1:A:429:ILE:HG12	1:A:447:HIS:CB	2.36	0.55
1:B:337:ILE:HA	1:B:430:GLY:HA3	1.89	0.55
1:B:475:LYS:HB2	1:B:577:LEU:HD23	1.88	0.55
1:A:430:GLY:O	1:A:431:SER:HB3	2.05	0.55
1:A:141:LEU:HD23	1:A:142:VAL:N	2.21	0.55
1:A:460:ALA:O	1:A:465:PRO:HD3	2.07	0.55
1:B:349:MET:O	1:B:412:ALA:HB1	2.07	0.55
1:A:586:PHE:CD2	1:A:586:PHE:N	2.72	0.55
1:B:510:LEU:HA	1:B:574:HIS:O	2.07	0.55
1:B:325:PHE:CD1	1:B:445:ALA:HA	2.42	0.55
1:A:136:ILE:HD13	1:A:429:ILE:HD11	1.89	0.55
1:A:465:PRO:HA	1:A:584:TYR:CB	2.36	0.55
1:A:317:ILE:CD1	1:A:319:VAL:HG22	2.37	0.55
1:B:117:ILE:HG22	1:B:118:ASP:N	2.22	0.55
1:A:20:LYS:HG3	2:A:1001:GDP:O3B	2.07	0.55
1:B:491:ARG:CB	1:B:528:PHE:CD2	2.90	0.55
1:A:368:ASN:O	1:A:370:SER:N	2.40	0.54
1:A:319:VAL:HG21	1:A:412:ALA:CB	2.37	0.54
1:A:56:PHE:O	1:A:87:GLN:HA	2.07	0.54
1:B:545:THR:CB	1:B:546:PRO:CD	2.85	0.54
1:A:422:CYS:HB3	1:A:423:PRO:CD	2.37	0.54
1:A:334:LYS:HE2	1:A:345:MET:HG2	1.90	0.54
1:B:347:ARG:NH1	1:B:417:GLU:OE2	2.40	0.54
1:A:531:HIS:CG	1:A:532:ILE:H	2.25	0.54
1:B:508:VAL:HG12	1:B:509:HIS:N	2.23	0.54
1:A:135:GLN:HA	1:A:176:PHE:CZ	2.43	0.54
1:A:187:LYS:O	2:A:1001:GDP:C6	2.61	0.54
1:A:335:PHE:CA	1:A:433:LEU:HD23	2.38	0.54
1:B:425:LEU:HA	1:B:450:LEU:O	2.08	0.54
1:B:329:LEU:HD12	1:B:379:TYR:CD2	2.36	0.54
1:A:348:LEU:HD23	1:A:350:PHE:CE1	2.43	0.54
1:B:205:LEU:O	1:B:209:LEU:CB	2.40	0.54
1:B:227:SER:O	1:B:243:GLY:HA3	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:SER:O	1:A:31:ALA:HB2	2.08	0.53
1:B:140:LYS:CE	1:B:179:ALA:HA	2.38	0.53
1:B:508:VAL:HG12	1:B:509:HIS:H	1.71	0.53
1:B:491:ARG:CA	1:B:528:PHE:CD2	2.91	0.53
1:B:473:LYS:O	1:B:579:LEU:HG	2.08	0.53
1:B:226:MET:O	1:B:303:VAL:N	2.37	0.53
1:A:140:LYS:HD2	1:A:141:LEU:H	1.73	0.53
1:A:250:ILE:CG2	1:A:251:SER:H	2.16	0.53
1:A:23:LEU:HD23	1:A:27:LEU:HG	1.91	0.53
1:B:479:VAL:HG13	1:B:489:ILE:O	2.07	0.53
1:A:208:LEU:O	1:A:211:SER:N	2.41	0.53
1:B:15:HIS:ND1	1:B:126:GLN:HB3	2.23	0.53
1:B:316:LEU:HD21	1:B:367:PHE:CZ	2.43	0.53
1:A:290:VAL:HG12	1:A:291:THR:N	2.24	0.53
1:A:353:PRO:HG2	1:A:358:PHE:CD1	2.44	0.53
1:B:245:ILE:CD1	1:B:280:ALA:HB3	2.39	0.53
1:A:120:THR:HG21	1:A:150:LEU:CD2	2.39	0.53
1:A:227:SER:HA	3:A:1102:HOH:O	2.09	0.53
1:A:334:LYS:HD2	1:A:347:ARG:HG2	1.91	0.53
1:A:96:HIS:O	1:A:99:LEU:N	2.42	0.53
1:B:477:GLY:N	1:B:575:VAL:O	2.42	0.52
1:A:148:ILE:HG22	1:A:185:ALA:CA	2.39	0.52
1:A:174:THR:HG22	1:A:176:PHE:N	2.24	0.52
1:A:508:VAL:C	1:A:509:HIS:CD2	2.83	0.52
1:A:114:MET:CE	1:A:209:LEU:HD21	2.40	0.52
1:A:257:GLU:OE2	1:A:307:GLU:N	2.40	0.52
1:B:570:GLU:OE1	3:B:1103:HOH:O	2.19	0.52
1:B:148:ILE:HD11	1:B:183:PRO:CB	2.33	0.52
1:B:346:GLY:HA2	1:B:417:GLU:OE1	2.09	0.52
1:A:100:ILE:HG22	1:A:101:ARG:N	2.25	0.52
1:A:101:ARG:CD	1:A:341:HIS:O	2.58	0.52
1:A:319:VAL:HG21	1:A:412:ALA:HB2	1.91	0.52
1:A:274:HIS:O	1:A:276:PRO:HD2	2.09	0.51
1:A:220:PRO:HB3	1:A:281:MET:CG	2.40	0.51
1:B:348:LEU:HD21	1:B:350:PHE:CE1	2.45	0.51
1:B:317:ILE:CG2	1:B:428:VAL:HG21	2.40	0.51
1:B:487:SER:O	1:B:536:LEU:HD21	2.10	0.51
1:A:206:ILE:O	1:A:210:THR:HG23	2.09	0.51
1:A:58:VAL:O	1:A:86:LEU:HB3	2.11	0.51
1:B:322:ILE:HD12	1:B:444:LEU:C	2.31	0.51
1:A:490:GLY:HA3	1:A:528:PHE:HD2	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:477:GLY:HA2	1:A:492:SER:CB	2.40	0.51
1:A:577:LEU:HD23	1:A:578:SER:N	2.26	0.51
1:B:205:LEU:HG	1:B:209:LEU:HD12	1.93	0.51
1:B:515:LEU:HD12	1:B:516:GLY:N	2.26	0.51
1:A:425:LEU:N	1:A:425:LEU:HD23	2.24	0.51
1:A:589:HIS:CD2	3:A:1112:HOH:O	2.64	0.51
1:B:133:ILE:O	1:B:136:ILE:HB	2.11	0.51
1:B:330:GLN:N	3:B:1104:HOH:O	2.26	0.51
1:A:258:ILE:CD1	1:A:261:LEU:HD21	2.39	0.50
1:A:132:VAL:O	1:A:135:GLN:N	2.43	0.50
1:B:119:VAL:HA	1:B:163:MET:CE	2.41	0.50
1:A:345:MET:O	1:A:417:GLU:HG2	2.11	0.50
1:B:473:LYS:CG	1:B:579:LEU:CD1	2.66	0.50
1:A:220:PRO:HB3	1:A:281:MET:HG2	1.94	0.50
1:A:577:LEU:HD23	1:A:577:LEU:C	2.31	0.50
1:B:9:ASN:HB2	1:B:109:ILE:O	2.11	0.49
1:A:346:GLY:HA2	1:A:416:PHE:HA	1.94	0.49
1:A:433:LEU:O	1:A:433:LEU:CD1	2.46	0.49
1:B:579:LEU:C	1:B:579:LEU:HD12	2.33	0.49
1:A:13:LEU:HD11	1:A:113:MET:HE3	1.92	0.49
1:A:341:HIS:N	3:A:1114:HOH:O	2.45	0.49
1:A:585:VAL:CG2	1:A:586:PHE:N	2.76	0.49
1:A:320:GLU:O	1:A:446:PHE:HB2	2.12	0.49
1:B:329:LEU:HA	3:B:1104:HOH:O	2.12	0.49
1:B:490:GLY:C	1:B:528:PHE:HD2	2.06	0.49
1:B:585:VAL:CG2	1:B:586:PHE:N	2.76	0.49
1:A:103:ILE:HD12	1:A:113:MET:HE1	1.93	0.49
1:A:334:LYS:HE3	1:A:345:MET:HG2	1.94	0.48
1:A:508:VAL:C	1:A:509:HIS:HD2	2.15	0.48
1:A:490:GLY:H	1:A:528:PHE:HB3	1.77	0.48
1:A:531:HIS:CG	1:A:532:ILE:N	2.81	0.48
1:B:311:THR:CB	1:B:421:THR:HG21	2.39	0.48
1:B:485:ASP:C	1:B:536:LEU:HG	2.33	0.48
1:A:338:THR:N	1:A:429:ILE:O	2.32	0.48
1:B:329:LEU:HB2	1:B:379:TYR:HB3	1.93	0.48
1:B:422:CYS:HB2	1:B:423:PRO:CD	2.44	0.48
1:B:471:LYS:CB	1:B:581:PHE:HB3	2.43	0.48
1:A:433:LEU:HD12	1:A:433:LEU:C	2.31	0.48
1:A:272:MET:HB3	1:A:286:LEU:CB	2.44	0.48
1:B:519:ASP:O	1:B:520:SER:CB	2.61	0.48
1:B:329:LEU:O	1:B:378:GLN:HA	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:466:ARG:HG3	1:B:505:GLY:HA3	1.95	0.48
1:A:217:THR:C	1:A:218:ARG:HG2	2.34	0.48
1:A:582:LYS:HB2	1:A:585:VAL:HG12	1.95	0.48
1:B:117:ILE:HG23	1:B:123:MET:HA	1.95	0.48
1:A:164:THR:O	1:A:168:GLN:HG3	2.14	0.47
1:A:335:PHE:HA	1:A:433:LEU:HD23	1.96	0.47
1:B:311:THR:HA	1:B:421:THR:CB	2.44	0.47
1:B:590:LYS:HG3	1:B:591:ARG:H	1.79	0.47
1:A:313:HIS:ND1	1:A:457:ARG:HA	2.29	0.47
1:B:373:TYR:N	1:B:468:LYS:O	2.42	0.47
1:A:114:MET:HE2	1:A:209:LEU:HD21	1.97	0.47
1:A:329:LEU:HB2	1:A:379:TYR:HB3	1.97	0.47
1:A:5:ARG:NH1	1:A:272:MET:O	2.48	0.47
1:B:372:GLU:HG2	1:B:468:LYS:CB	2.45	0.47
1:B:469:VAL:O	1:B:582:LYS:HA	2.13	0.47
1:A:100:ILE:O	1:A:103:ILE:HG22	2.14	0.47
1:A:351:PHE:CZ	1:A:411:TRP:HB2	2.48	0.47
1:B:317:ILE:HD12	1:B:317:ILE:O	2.14	0.47
1:A:334:LYS:HD2	1:A:347:ARG:CG	2.45	0.47
1:A:318:SER:O	1:A:448:GLY:HA3	2.15	0.47
1:A:568:ARG:O	1:A:569:SER:OG	2.24	0.47
1:A:259:PRO:HD2	3:A:1109:HOH:O	2.15	0.47
1:A:93:CYS:CB	1:A:94:PRO:HD2	2.45	0.47
1:A:153[B]:GLU:CD	3:A:1103:HOH:O	2.46	0.47
1:A:9:ASN:HD21	1:A:244:THR:HG21	1.80	0.47
1:B:528:PHE:O	1:B:529:LYS:CB	2.60	0.47
1:B:245:ILE:HB	1:B:281:MET:O	2.15	0.47
1:A:99:LEU:O	1:A:103:ILE:HG22	2.14	0.46
1:A:115:LEU:HA	1:A:115:LEU:HD12	1.60	0.46
1:A:225:LEU:HD11	1:A:302:LEU:CD2	2.41	0.46
1:A:224:PHE:CG	1:A:250:ILE:HD11	2.49	0.46
1:B:132:VAL:O	1:B:136:ILE:HG13	2.16	0.46
1:B:347:ARG:HG2	3:B:1106:HOH:O	2.15	0.46
1:B:202:ILE:CB	1:B:203:PRO:HD3	2.45	0.46
1:B:338:THR:HA	1:B:343:THR:HA	1.96	0.46
1:B:580:THR:HG23	1:B:590:LYS:HD2	1.88	0.46
1:B:346:GLY:O	1:B:347:ARG:HD3	2.16	0.46
1:A:466:ARG:NH1	1:B:589:HIS:ND1	2.64	0.46
1:A:477:GLY:HA3	1:A:492:SER:OG	2.15	0.46
1:A:258:ILE:CB	1:A:261:LEU:HG	2.44	0.46
1:B:348:LEU:HG	1:B:349:MET:N	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:8:VAL:CG2	1:B:88:VAL:HG22	2.45	0.46
1:B:316:LEU:HD12	1:B:412:ALA:O	2.16	0.46
1:B:477:GLY:HA3	1:B:492:SER:CB	2.30	0.46
1:B:8:VAL:HG23	1:B:88:VAL:HG13	1.96	0.46
1:A:485:ASP:O	1:A:536:LEU:N	2.49	0.46
1:B:347:ARG:O	1:B:348:LEU:HB2	2.16	0.46
1:A:115:LEU:HB2	1:A:141:LEU:HD21	1.98	0.46
1:A:13:LEU:HD11	1:A:113:MET:HB3	1.98	0.46
1:A:267:VAL:O	1:A:267:VAL:HG12	2.15	0.46
1:A:132:VAL:HG13	1:A:133:ILE:H	1.81	0.46
1:A:352:SER:CB	1:A:410:GLN:HE21	2.27	0.46
1:A:313:HIS:HE2	1:A:419:PRO:HB3	1.78	0.46
1:A:480:GLU:HG3	1:A:481:ARG:N	2.27	0.46
1:A:413:LEU:HD23	1:A:415:GLU:HG3	1.97	0.46
1:B:473:LYS:H	1:B:579:LEU:CD1	2.29	0.46
1:A:353:PRO:HG2	1:A:358:PHE:HD1	1.80	0.45
1:B:582:LYS:HB2	1:B:585:VAL:HG12	1.98	0.45
1:A:251:SER:N	1:A:254:ASP:OD2	2.49	0.45
1:A:590:LYS:HG3	1:A:591:ARG:H	1.79	0.45
1:B:187:LYS:O	2:B:1001:GDP:C5	2.66	0.45
1:B:417:GLU:HG3	3:B:1106:HOH:O	2.16	0.45
1:A:339:VAL:O	1:A:427:LEU:O	2.35	0.45
1:B:275:MET:N	1:B:276:PRO:CD	2.77	0.45
1:B:136:ILE:CD1	1:B:447:HIS:HB3	2.41	0.45
1:A:114:MET:HE2	1:A:209:LEU:CD2	2.47	0.45
1:A:258:ILE:HB	1:A:261:LEU:CG	2.46	0.45
1:A:180:PRO:HG2	1:A:208:LEU:HD21	1.99	0.45
1:A:21:THR:HG22	1:A:21:THR:O	2.16	0.45
1:A:493:LEU:O	1:A:494:PHE:C	2.54	0.45
1:B:208:LEU:O	1:B:211:SER:CB	2.65	0.45
1:B:494:PHE:O	1:B:495:LYS:CB	2.64	0.45
1:A:113:MET:HB2	1:A:141:LEU:CD1	2.46	0.45
1:B:20:LYS:CA	2:B:1001:GDP:O1A	2.61	0.44
1:B:203:PRO:O	1:B:204:GLU:C	2.55	0.44
1:B:322:ILE:HG13	1:B:446:PHE:CA	2.45	0.44
1:A:140:LYS:CD	1:A:141:LEU:H	2.31	0.44
1:A:431:SER:CB	1:A:445:ALA:HB3	2.46	0.44
1:B:372:GLU:CG	1:B:582:LYS:HZ2	2.28	0.44
1:A:202:ILE:HB	1:A:203:PRO:HD3	2.00	0.44
1:B:411:TRP:O	1:B:412:ALA:HB2	2.17	0.44
1:B:318:SER:HA	1:B:411:TRP:CD1	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:424:ARG:HD2	1:B:486:TYR:CE2	2.53	0.44
1:B:590:LYS:CG	1:B:591:ARG:N	2.81	0.44
1:A:261:LEU:HD12	1:A:261:LEU:C	2.38	0.44
1:A:258:ILE:HG22	1:A:261:LEU:HG	2.00	0.44
1:A:256:VAL:O	1:A:264:VAL:HA	2.18	0.44
1:A:338:THR:HA	1:A:343:THR:HA	1.99	0.44
1:A:423:PRO:HB2	1:A:426:CYS:HB3	1.99	0.44
1:A:7:ASN:HD21	1:A:89:THR:CG2	2.31	0.44
1:A:224:PHE:CZ	1:A:226:MET:HB2	2.53	0.44
1:A:431:SER:CB	1:A:445:ALA:H	2.30	0.44
1:A:590:LYS:CG	1:A:591:ARG:N	2.81	0.44
1:B:148:ILE:HB	1:B:185:ALA:HB2	2.00	0.44
1:B:527:LYS:O	1:B:528:PHE:HB2	2.17	0.44
1:A:319:VAL:HG12	1:A:320:GLU:N	2.33	0.44
1:A:334:LYS:HB3	1:A:433:LEU:HD21	1.99	0.44
1:A:588:THR:HG23	1:A:589:HIS:N	2.13	0.44
1:B:425:LEU:HD23	1:B:425:LEU:N	2.32	0.44
1:A:142:VAL:HG22	1:A:180:PRO:HG2	1.99	0.43
1:A:144:VAL:HG11	1:A:205:LEU:HD13	2.00	0.43
1:B:579:LEU:HA	1:B:590:LYS:HB2	2.00	0.43
1:A:101:ARG:HG3	1:A:341:HIS:C	2.39	0.43
1:A:323:PRO:O	1:A:325:PHE:N	2.51	0.43
1:A:332:LYS:O	1:A:347:ARG:NH1	2.52	0.43
1:B:584:TYR:C	1:B:585:VAL:O	2.51	0.43
1:B:212:GLN:C	1:B:214:SER:H	2.22	0.43
1:A:322:ILE:HG23	1:A:323:PRO:HD2	2.00	0.43
1:B:166:LYS:HG2	1:B:167:MET:N	2.33	0.43
1:B:224:PHE:HD2	1:B:304:CYS:CA	2.28	0.43
1:A:100:ILE:HA	1:A:103:ILE:HG22	2.01	0.43
1:B:245:ILE:HD12	1:B:280:ALA:CB	2.48	0.43
1:B:316:LEU:CD2	1:B:367:PHE:CE2	3.02	0.43
1:A:420:VAL:CG2	1:A:421:THR:H	2.30	0.43
1:A:477:GLY:HA2	1:A:492:SER:HB3	2.01	0.43
1:A:113:MET:HG2	1:A:138:CYS:CB	2.49	0.43
1:A:317:ILE:HA	1:A:449:ILE:O	2.18	0.43
1:A:7:ASN:OD1	1:A:8:VAL:N	2.51	0.43
1:B:584:TYR:O	1:B:585:VAL:C	2.56	0.43
1:A:317:ILE:HG23	1:A:414:VAL:CG2	2.48	0.43
1:A:339:VAL:HG12	1:A:426:CYS:SG	2.58	0.43
1:B:26:ALA:O	1:B:30:THR:N	2.50	0.43
1:B:317:ILE:HD12	1:B:317:ILE:C	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:502:LEU:HD12	1:B:502:LEU:N	2.34	0.43
1:A:377:GLU:HG3	1:A:377:GLU:O	2.19	0.43
1:A:12:VAL:O	1:A:99:LEU:HD11	2.19	0.43
1:B:220:PRO:CB	1:B:249:SER:HB2	2.47	0.43
1:B:545:THR:CB	1:B:546:PRO:HD2	2.49	0.43
1:A:319:VAL:CG2	1:A:412:ALA:HB3	2.49	0.42
1:B:347:ARG:CZ	1:B:417:GLU:OE2	2.67	0.42
1:A:116:VAL:O	1:A:117:ILE:HD13	2.19	0.42
1:A:117:ILE:HG23	1:A:122:GLY:O	2.17	0.42
1:A:406:CYS:CB	1:A:407:PRO:CD	2.97	0.42
1:A:466:ARG:HD2	1:B:589:HIS:CE1	2.54	0.42
1:B:450:LEU:HD23	1:B:452:HIS:N	2.34	0.42
1:B:484:ASP:O	1:B:536:LEU:HD11	2.20	0.42
1:B:568:ARG:O	1:B:569:SER:CB	2.66	0.42
1:B:580:THR:OG1	1:B:589:HIS:O	2.30	0.42
1:A:360:GLN:HG2	1:A:361:GLU:N	2.34	0.42
1:B:362:PRO:HA	1:B:409:GLN:HE21	1.78	0.42
1:B:447:HIS:O	1:B:447:HIS:ND1	2.52	0.42
1:B:473:LYS:H	1:B:579:LEU:HD12	1.84	0.42
1:B:119:VAL:HA	1:B:163:MET:HE1	2.01	0.42
1:B:337:ILE:HA	1:B:430:GLY:CA	2.49	0.42
1:A:323:PRO:C	1:A:325:PHE:H	2.23	0.42
1:A:420:VAL:CG2	1:A:421:THR:N	2.82	0.42
1:A:220:PRO:HD3	1:A:281:MET:CE	2.48	0.42
1:A:466:ARG:CD	1:B:589:HIS:HE1	2.32	0.42
1:A:466:ARG:HD3	1:A:466:ARG:HA	1.92	0.42
1:A:140:LYS:CG	1:A:141:LEU:H	2.33	0.42
1:A:250:ILE:HG23	1:A:250:ILE:HD12	1.76	0.42
1:B:322:ILE:HD12	1:B:445:ALA:N	2.34	0.42
1:A:144:VAL:HG12	1:A:182:ILE:CB	2.39	0.42
1:A:368:ASN:O	1:A:371:GLN:HG2	2.19	0.42
1:A:579:LEU:HA	1:A:590:LYS:CB	2.39	0.42
1:A:149:ASP:OD1	1:A:150:LEU:HD13	2.20	0.42
1:B:587:ASP:O	1:B:588:THR:HB	2.20	0.42
1:B:245:ILE:HD12	1:B:280:ALA:HB3	2.02	0.41
1:A:114:MET:HA	1:A:142:VAL:O	2.19	0.41
1:A:422:CYS:CB	1:A:423:PRO:CD	2.97	0.41
1:B:471:LYS:HB2	1:B:581:PHE:HB3	2.02	0.41
1:A:140:LYS:HD2	1:A:141:LEU:N	2.36	0.41
1:A:185:ALA:HB3	1:A:200:GLN:OE1	2.20	0.41
1:A:466:ARG:HH11	1:B:589:HIS:CE1	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:224:PHE:CE2	1:B:304:CYS:HA	2.55	0.41
1:B:364:LEU:C	1:B:451:LEU:HD21	2.40	0.41
1:A:147:LYS:C	1:A:149:ASP:H	2.24	0.41
1:B:486:TYR:HB3	1:B:532:ILE:O	2.20	0.41
1:A:469:VAL:O	1:A:582:LYS:HA	2.20	0.41
1:A:490:GLY:CA	1:A:528:PHE:HD2	2.33	0.41
1:B:313:HIS:CD2	1:B:419:PRO:HB3	2.55	0.41
1:B:346:GLY:O	1:B:347:ARG:NH1	2.49	0.41
1:B:475:LYS:HB3	1:B:493:LEU:CB	2.50	0.41
1:A:220:PRO:CG	1:A:281:MET:HE2	2.45	0.41
1:A:19:GLY:HA3	1:A:146:ASN:ND2	2.36	0.41
1:A:590:LYS:CG	1:A:591:ARG:H	2.34	0.41
1:B:590:LYS:O	1:B:591:ARG:CB	2.69	0.41
1:A:23:LEU:HD23	1:A:23:LEU:C	2.40	0.41
1:A:312:VAL:HG13	1:A:314:ALA:O	2.21	0.41
1:B:529:LYS:O	1:B:530:ILE:HD12	2.21	0.41
1:A:149:ASP:OD1	1:A:150:LEU:CD1	2.69	0.41
1:B:187:LYS:C	2:B:1001:GDP:C6	2.90	0.41
1:B:335:PHE:CE2	1:B:446:PHE:HE2	2.39	0.41
1:A:344:VAL:HG11	1:A:420:VAL:HB	2.03	0.41
1:A:451:LEU:O	1:A:452:HIS:HB2	2.20	0.41
1:B:528:PHE:HD1	1:B:529:LYS:H	1.67	0.41
1:A:240:VAL:HG12	1:A:241:MET:N	2.36	0.40
1:A:590:LYS:O	1:A:591:ARG:CB	2.69	0.40
1:A:272:MET:O	1:A:272:MET:HG3	2.21	0.40
1:A:357:ASN:ND2	1:A:360:GLN:OE1	2.54	0.40
1:A:418:LYS:O	1:A:420:VAL:N	2.54	0.40
1:B:318:SER:HA	1:B:411:TRP:HD1	1.86	0.40
1:A:528:PHE:HD1	1:A:528:PHE:HA	1.66	0.40
1:A:511:SER:CB	1:A:574:HIS:CB	2.99	0.40
1:A:86:LEU:HD12	1:A:87:GLN:N	2.36	0.40
1:A:492:SER:O	1:A:493:LEU:CB	2.69	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	459/616 (74%)	340 (74%)	99 (22%)	20 (4%)	2	15
1	B	428/616 (70%)	330 (77%)	82 (19%)	16 (4%)	3	19
All	All	887/1232 (72%)	670 (76%)	181 (20%)	36 (4%)	3	17

All (36) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	500	ILE
1	A	275	MET
1	A	277	ILE
1	A	324	TYR
1	A	369	PHE
1	B	166	LYS
1	A	31	ALA
1	A	119	VAL
1	A	291	THR
1	B	23	LEU
1	B	545	THR
1	A	148	ILE
1	A	216	PRO
1	A	493	LEU
1	A	533	PRO
1	B	100	ILE
1	B	527	LYS
1	B	533	PRO
1	B	572	SER
1	A	24	ALA
1	B	202	ILE
1	B	277	ILE
1	B	472	LEU
1	B	491	ARG
1	A	191	PRO
1	A	571	PRO
1	B	571	PRO
1	A	61	PRO
1	A	104	ILE
1	B	148	ILE
1	B	213	ILE

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Mol	Chain	Res	Type
1	A	263	VAL
1	A	518	ILE
1	A	419	PRO
1	B	488	VAL
1	B	543	ILE

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	261/524 (50%)	251 (96%)	10 (4%)	33	62
1	B	160/524 (30%)	156 (98%)	4 (2%)	47	71
All	All	421/1048 (40%)	407 (97%)	14 (3%)	38	65

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	174	THR
1	A	218	ARG
1	A	228	VAL
1	A	274	HIS
1	A	348	LEU
1	A	358	PHE
1	A	421	THR
1	A	528	PHE
1	A	529	LYS
1	A	586	PHE
1	B	135	GLN
1	B	324	TYR
1	B	528	PHE
1	B	584	TYR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	9	ASN
1	A	310	HIS
1	A	341	HIS
1	A	410	GLN
1	A	509	HIS

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

2 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
2	GDP	A	1001	-	24,30,30	1.69	5 (20%)	31,47,47	1.91	5 (16%)
2	GDP	B	1001	-	24,30,30	1.69	5 (20%)	31,47,47	1.93	7 (22%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	GDP	A	1001	-	-	3/12/32/32	0/3/3/3
2	GDP	B	1001	-	-	3/12/32/32	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1001	GDP	C6-C5	-4.51	1.33	1.41
2	B	1001	GDP	C6-C5	-4.51	1.33	1.41
2	A	1001	GDP	C6-N1	4.09	1.40	1.33
2	B	1001	GDP	C6-N1	4.05	1.40	1.33
2	A	1001	GDP	C5-C4	-2.66	1.33	1.40
2	B	1001	GDP	C5-C4	-2.66	1.33	1.40
2	B	1001	GDP	C2-N1	2.53	1.39	1.35
2	A	1001	GDP	C2-N1	2.53	1.39	1.35
2	A	1001	GDP	O4'-C1'	2.06	1.44	1.41
2	B	1001	GDP	O4'-C1'	2.00	1.43	1.41

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1001	GDP	N3-C2-N1	-5.95	119.28	127.22
2	A	1001	GDP	N3-C2-N1	-5.88	119.38	127.22
2	B	1001	GDP	C2-N3-C4	4.71	120.74	115.36
2	A	1001	GDP	C2-N3-C4	4.66	120.67	115.36
2	B	1001	GDP	PA-O3A-PB	-3.75	119.97	132.83
2	A	1001	GDP	PA-O3A-PB	-3.73	120.03	132.83
2	A	1001	GDP	C5-C6-N1	-2.76	119.66	123.43
2	B	1001	GDP	C5-C6-N1	-2.74	119.68	123.43
2	B	1001	GDP	O3B-PB-O2B	2.25	116.25	107.64
2	B	1001	GDP	C3'-C2'-C1'	2.07	104.09	100.98
2	A	1001	GDP	C3'-C2'-C1'	2.06	104.09	100.98
2	B	1001	GDP	N2-C2-N1	2.00	120.37	117.25

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1001	GDP	C5'-O5'-PA-O1A
2	B	1001	GDP	C5'-O5'-PA-O1A
2	B	1001	GDP	C5'-O5'-PA-O2A
2	A	1001	GDP	C5'-O5'-PA-O2A
2	A	1001	GDP	C5'-O5'-PA-O3A

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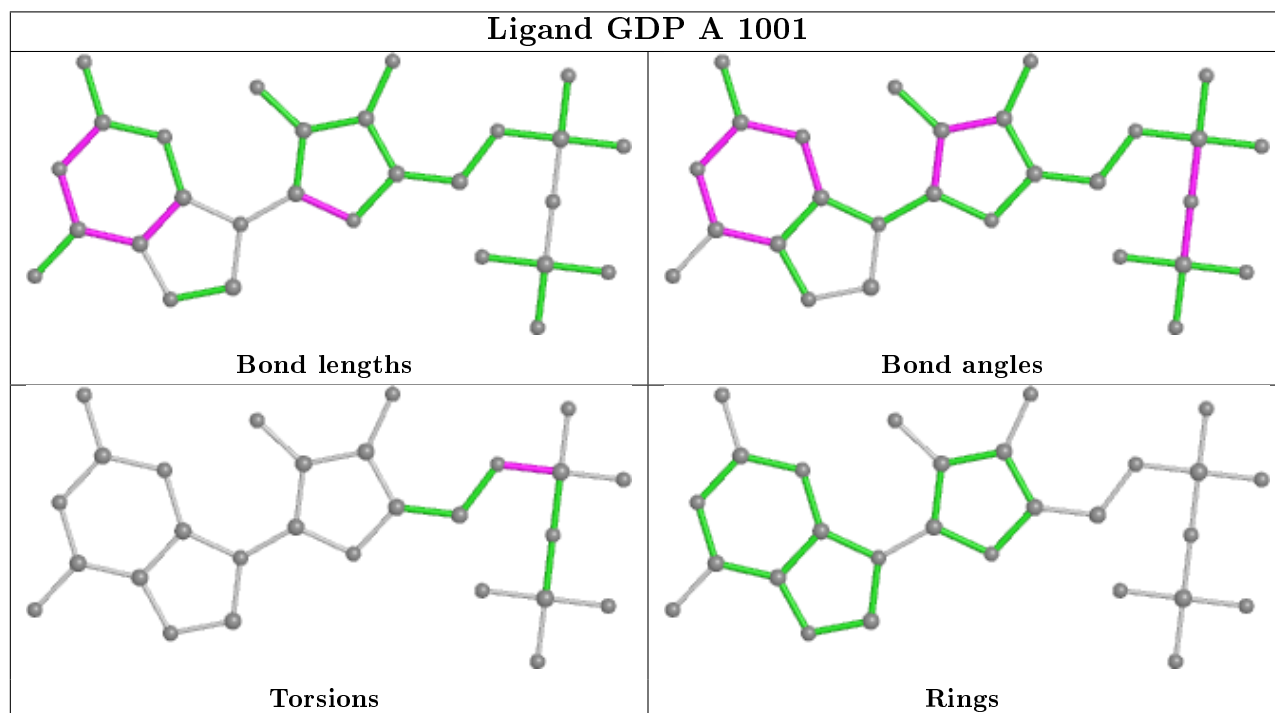
Mol	Chain	Res	Type	Atoms
2	B	1001	GDP	C5'-O5'-PA-O3A

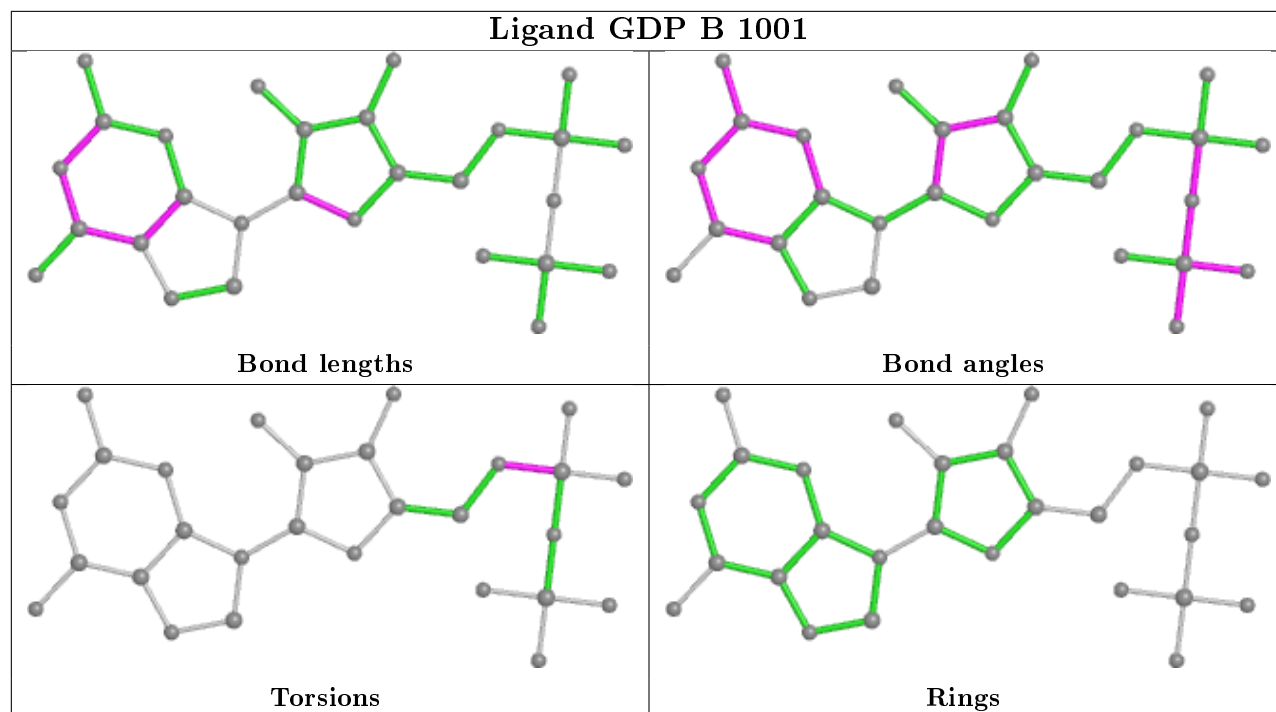
There are no ring outliers.

2 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1001	GDP	4	0
2	B	1001	GDP	7	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 [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	480/616 (77%)	-0.54	1 (0%) 95 95	27, 69, 101, 114	0
1	B	451/616 (73%)	-0.26	16 (3%) 44 40	44, 95, 149, 168	0
All	All	931/1232 (75%)	-0.40	17 (1%) 68 65	27, 81, 129, 168	0

All (17) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	267	VAL	5.5
1	B	268	LYS	5.0
1	B	299	GLU	5.0
1	B	287	GLY	4.5
1	B	269	SER	4.1
1	B	288	ILE	3.9
1	B	298	LEU	3.7
1	B	292	GLN	3.3
1	B	117	ILE	2.9
1	B	251	SER	2.8
1	B	286	LEU	2.6
1	A	442	CYS	2.3
1	B	271	GLN	2.3
1	B	242	THR	2.2
1	B	293	PHE	2.2
1	B	263	VAL	2.1
1	B	278	THR	2.1

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

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

6.3 Carbohydrates [i](#)

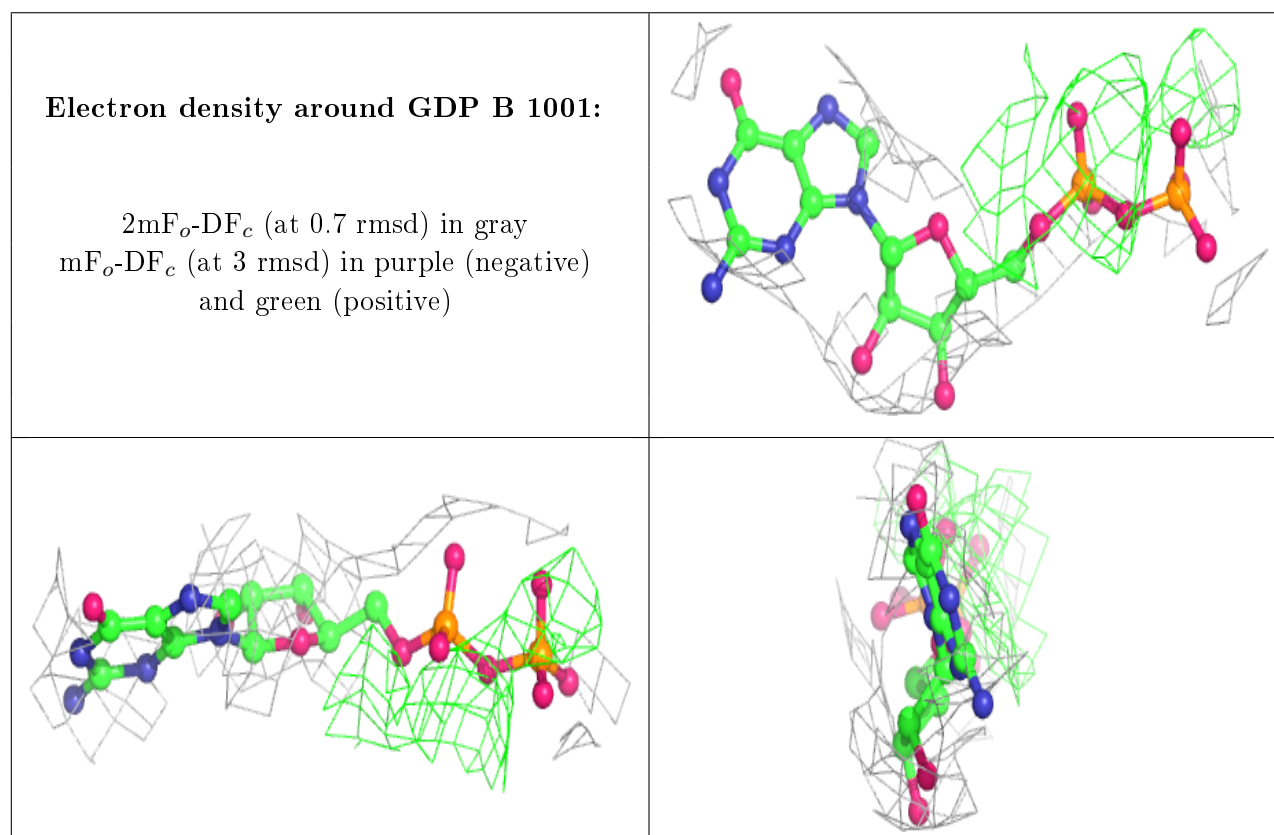
There are no carbohydrates in this entry.

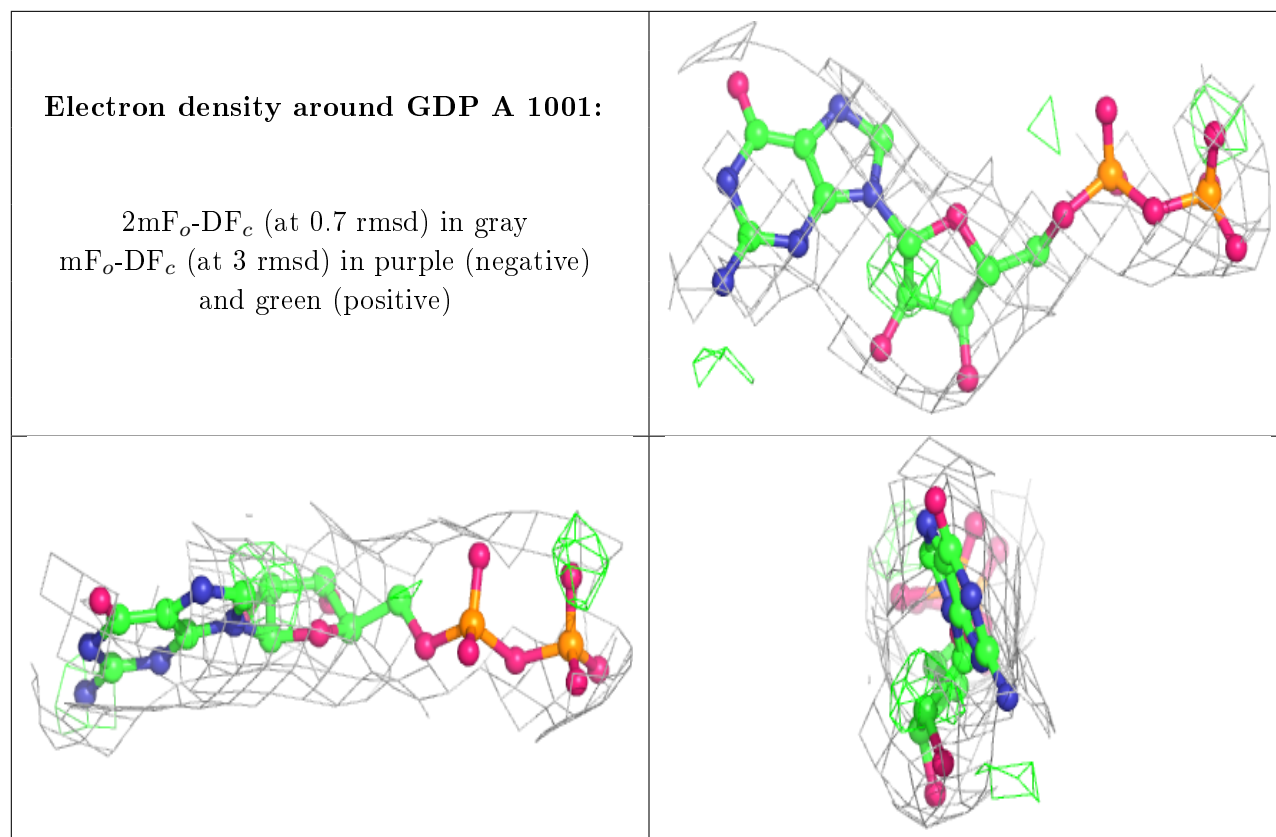
6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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
2	GDP	B	1001	28/28	0.80	0.18	122,135,153,158	0
2	GDP	A	1001	28/28	0.89	0.17	72,93,113,129	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.





6.5 Other polymers [i](#)

There are no such residues in this entry.