Full wwPDB X-ray Structure Validation Report (i)

Jun 24, 2024 – 11:31 AM EDT

PDB ID	:	6SU1
Title	:	Trypanosoma congolense pyruvate kinase in complex with citrate and glycerol
Authors	:	Sterckx, Y.G.-J.; Pinto Torres, J.E.
Deposited on	:	2019-09-12
Resolution	:	3.00 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:

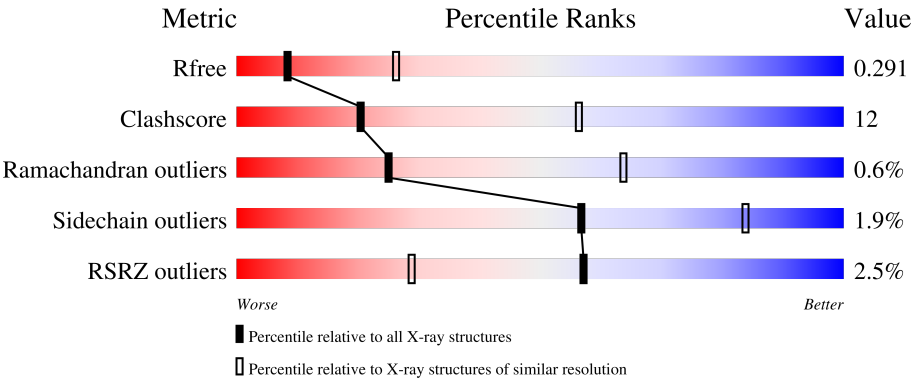
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 3.00 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	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

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	514	3% 69% 16% 15%
1	B	514	5% 74% 18% • 7%
1	C	514	77% 19% • •
1	D	514	3% 74% 22% • •
1	E	514	% 74% 22% • •

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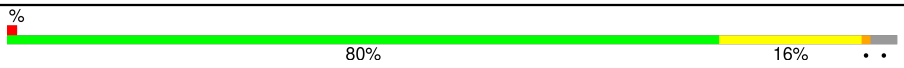
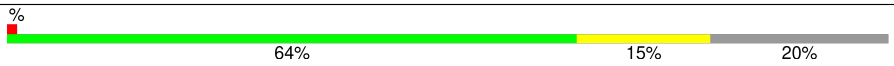
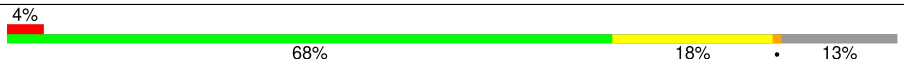
Mol	Chain	Length	Quality of chain
1	F	514	
1	G	514	
1	H	514	

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
3	CIT	H	601	-	X	-	-

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 28228 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 Pyruvate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	439	Total	C	N	O	S	0	0	0
			3226	2010	567	625	24			
1	B	476	Total	C	N	O	S	0	0	0
			3481	2164	623	667	27			
1	C	499	Total	C	N	O	S	0	1	0
			3726	2320	659	721	26			
1	D	498	Total	C	N	O	S	0	1	0
			3709	2306	660	717	26			
1	E	495	Total	C	N	O	S	0	0	0
			3710	2311	655	718	26			
1	F	498	Total	C	N	O	S	0	1	0
			3716	2316	658	716	26			
1	G	411	Total	C	N	O	S	0	1	0
			3054	1894	548	588	24			
1	H	449	Total	C	N	O	S	0	0	0
			3273	2029	586	635	23			

There are 120 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	500	GLU	-	expression tag	UNP G0UYF4
A	501	ASN	-	expression tag	UNP G0UYF4
A	502	LEU	-	expression tag	UNP G0UYF4
A	503	TYR	-	expression tag	UNP G0UYF4
A	504	PHE	-	expression tag	UNP G0UYF4
A	505	GLN	-	expression tag	UNP G0UYF4
A	506	SER	-	expression tag	UNP G0UYF4
A	507	GLY	-	expression tag	UNP G0UYF4
A	508	GLY	-	expression tag	UNP G0UYF4
A	509	HIS	-	expression tag	UNP G0UYF4
A	510	HIS	-	expression tag	UNP G0UYF4
A	511	HIS	-	expression tag	UNP G0UYF4
A	512	HIS	-	expression tag	UNP G0UYF4

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Chain	Residue	Modelled	Actual	Comment	Reference
A	513	HIS	-	expression tag	UNP G0UYF4
A	514	HIS	-	expression tag	UNP G0UYF4
B	500	GLU	-	expression tag	UNP G0UYF4
B	501	ASN	-	expression tag	UNP G0UYF4
B	502	LEU	-	expression tag	UNP G0UYF4
B	503	TYR	-	expression tag	UNP G0UYF4
B	504	PHE	-	expression tag	UNP G0UYF4
B	505	GLN	-	expression tag	UNP G0UYF4
B	506	SER	-	expression tag	UNP G0UYF4
B	507	GLY	-	expression tag	UNP G0UYF4
B	508	GLY	-	expression tag	UNP G0UYF4
B	509	HIS	-	expression tag	UNP G0UYF4
B	510	HIS	-	expression tag	UNP G0UYF4
B	511	HIS	-	expression tag	UNP G0UYF4
B	512	HIS	-	expression tag	UNP G0UYF4
B	513	HIS	-	expression tag	UNP G0UYF4
B	514	HIS	-	expression tag	UNP G0UYF4
C	500	GLU	-	expression tag	UNP G0UYF4
C	501	ASN	-	expression tag	UNP G0UYF4
C	502	LEU	-	expression tag	UNP G0UYF4
C	503	TYR	-	expression tag	UNP G0UYF4
C	504	PHE	-	expression tag	UNP G0UYF4
C	505	GLN	-	expression tag	UNP G0UYF4
C	506	SER	-	expression tag	UNP G0UYF4
C	507	GLY	-	expression tag	UNP G0UYF4
C	508	GLY	-	expression tag	UNP G0UYF4
C	509	HIS	-	expression tag	UNP G0UYF4
C	510	HIS	-	expression tag	UNP G0UYF4
C	511	HIS	-	expression tag	UNP G0UYF4
C	512	HIS	-	expression tag	UNP G0UYF4
C	513	HIS	-	expression tag	UNP G0UYF4
C	514	HIS	-	expression tag	UNP G0UYF4
D	500	GLU	-	expression tag	UNP G0UYF4
D	501	ASN	-	expression tag	UNP G0UYF4
D	502	LEU	-	expression tag	UNP G0UYF4
D	503	TYR	-	expression tag	UNP G0UYF4
D	504	PHE	-	expression tag	UNP G0UYF4
D	505	GLN	-	expression tag	UNP G0UYF4
D	506	SER	-	expression tag	UNP G0UYF4
D	507	GLY	-	expression tag	UNP G0UYF4
D	508	GLY	-	expression tag	UNP G0UYF4
D	509	HIS	-	expression tag	UNP G0UYF4

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Chain	Residue	Modelled	Actual	Comment	Reference
D	510	HIS	-	expression tag	UNP G0UYF4
D	511	HIS	-	expression tag	UNP G0UYF4
D	512	HIS	-	expression tag	UNP G0UYF4
D	513	HIS	-	expression tag	UNP G0UYF4
D	514	HIS	-	expression tag	UNP G0UYF4
E	500	GLU	-	expression tag	UNP G0UYF4
E	501	ASN	-	expression tag	UNP G0UYF4
E	502	LEU	-	expression tag	UNP G0UYF4
E	503	TYR	-	expression tag	UNP G0UYF4
E	504	PHE	-	expression tag	UNP G0UYF4
E	505	GLN	-	expression tag	UNP G0UYF4
E	506	SER	-	expression tag	UNP G0UYF4
E	507	GLY	-	expression tag	UNP G0UYF4
E	508	GLY	-	expression tag	UNP G0UYF4
E	509	HIS	-	expression tag	UNP G0UYF4
E	510	HIS	-	expression tag	UNP G0UYF4
E	511	HIS	-	expression tag	UNP G0UYF4
E	512	HIS	-	expression tag	UNP G0UYF4
E	513	HIS	-	expression tag	UNP G0UYF4
E	514	HIS	-	expression tag	UNP G0UYF4
F	500	GLU	-	expression tag	UNP G0UYF4
F	501	ASN	-	expression tag	UNP G0UYF4
F	502	LEU	-	expression tag	UNP G0UYF4
F	503	TYR	-	expression tag	UNP G0UYF4
F	504	PHE	-	expression tag	UNP G0UYF4
F	505	GLN	-	expression tag	UNP G0UYF4
F	506	SER	-	expression tag	UNP G0UYF4
F	507	GLY	-	expression tag	UNP G0UYF4
F	508	GLY	-	expression tag	UNP G0UYF4
F	509	HIS	-	expression tag	UNP G0UYF4
F	510	HIS	-	expression tag	UNP G0UYF4
F	511	HIS	-	expression tag	UNP G0UYF4
F	512	HIS	-	expression tag	UNP G0UYF4
F	513	HIS	-	expression tag	UNP G0UYF4
F	514	HIS	-	expression tag	UNP G0UYF4
G	500	GLU	-	expression tag	UNP G0UYF4
G	501	ASN	-	expression tag	UNP G0UYF4
G	502	LEU	-	expression tag	UNP G0UYF4
G	503	TYR	-	expression tag	UNP G0UYF4
G	504	PHE	-	expression tag	UNP G0UYF4
G	505	GLN	-	expression tag	UNP G0UYF4
G	506	SER	-	expression tag	UNP G0UYF4

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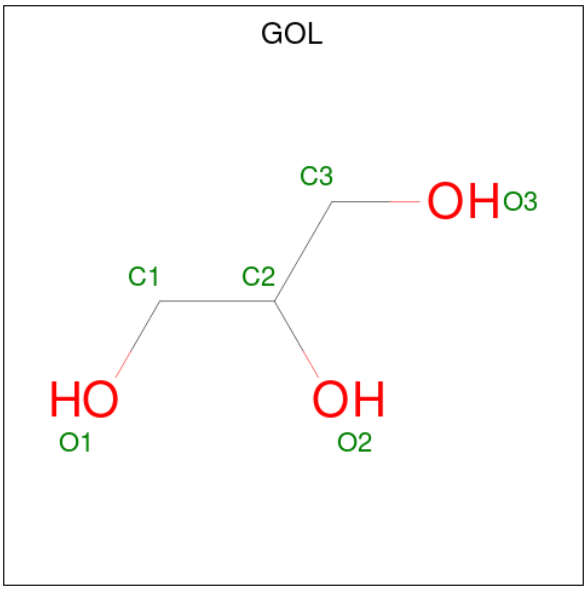
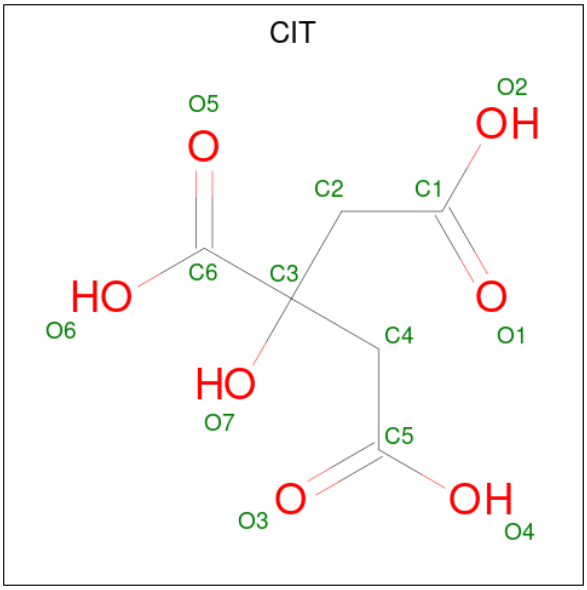
Chain	Residue	Modelled	Actual	Comment	Reference
G	507	GLY	-	expression tag	UNP G0UYF4
G	508	GLY	-	expression tag	UNP G0UYF4
G	509	HIS	-	expression tag	UNP G0UYF4
G	510	HIS	-	expression tag	UNP G0UYF4
G	511	HIS	-	expression tag	UNP G0UYF4
G	512	HIS	-	expression tag	UNP G0UYF4
G	513	HIS	-	expression tag	UNP G0UYF4
G	514	HIS	-	expression tag	UNP G0UYF4
H	500	GLU	-	expression tag	UNP G0UYF4
H	501	ASN	-	expression tag	UNP G0UYF4
H	502	LEU	-	expression tag	UNP G0UYF4
H	503	TYR	-	expression tag	UNP G0UYF4
H	504	PHE	-	expression tag	UNP G0UYF4
H	505	GLN	-	expression tag	UNP G0UYF4
H	506	SER	-	expression tag	UNP G0UYF4
H	507	GLY	-	expression tag	UNP G0UYF4
H	508	GLY	-	expression tag	UNP G0UYF4
H	509	HIS	-	expression tag	UNP G0UYF4
H	510	HIS	-	expression tag	UNP G0UYF4
H	511	HIS	-	expression tag	UNP G0UYF4
H	512	HIS	-	expression tag	UNP G0UYF4
H	513	HIS	-	expression tag	UNP G0UYF4
H	514	HIS	-	expression tag	UNP G0UYF4

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 6 3 3	0	0
2	A	1	Total C O 6 3 3	0	0
2	B	1	Total C O 6 3 3	0	0
2	C	1	Total C O 6 3 3	0	0
2	C	1	Total C O 6 3 3	0	0
2	D	1	Total C O 6 3 3	0	0
2	E	1	Total C O 6 3 3	0	0
2	F	1	Total C O 6 3 3	0	0
2	G	1	Total C O 6 3 3	0	0
2	H	1	Total C O 6 3 3	0	0

- Molecule 3 is CITRIC ACID (three-letter code: CIT) (formula: $C_6H_8O_7$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total C O 13 6 7	0	0

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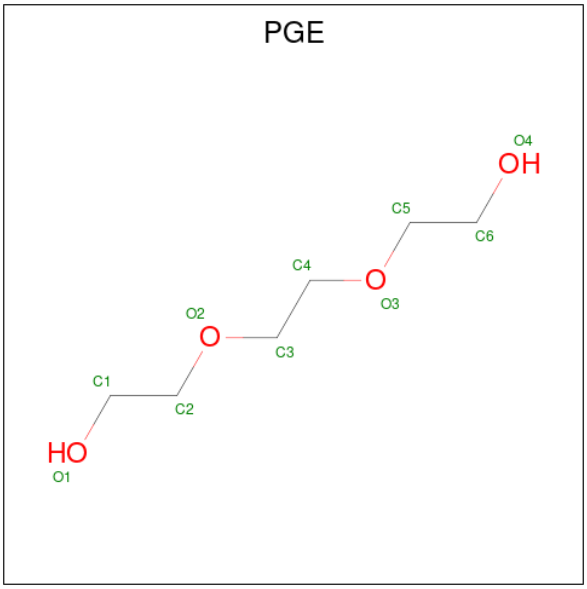
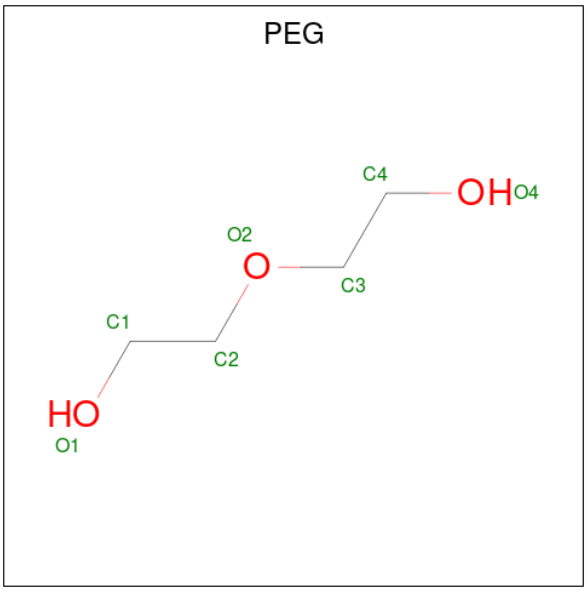
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	1	Total C O 13 6 7	0	0
3	D	1	Total C O 13 6 7	0	0
3	E	1	Total C O 13 6 7	0	0
3	F	1	Total C O 13 6 7	0	0
3	H	1	Total C O 13 6 7	0	0

- Molecule 4 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: $C_6H_{14}O_4$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	F	1	Total C O 10 6 4	0	0

- Molecule 5 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	F	1	Total C O 7 4 3	0	0

- Molecule 6 is water.

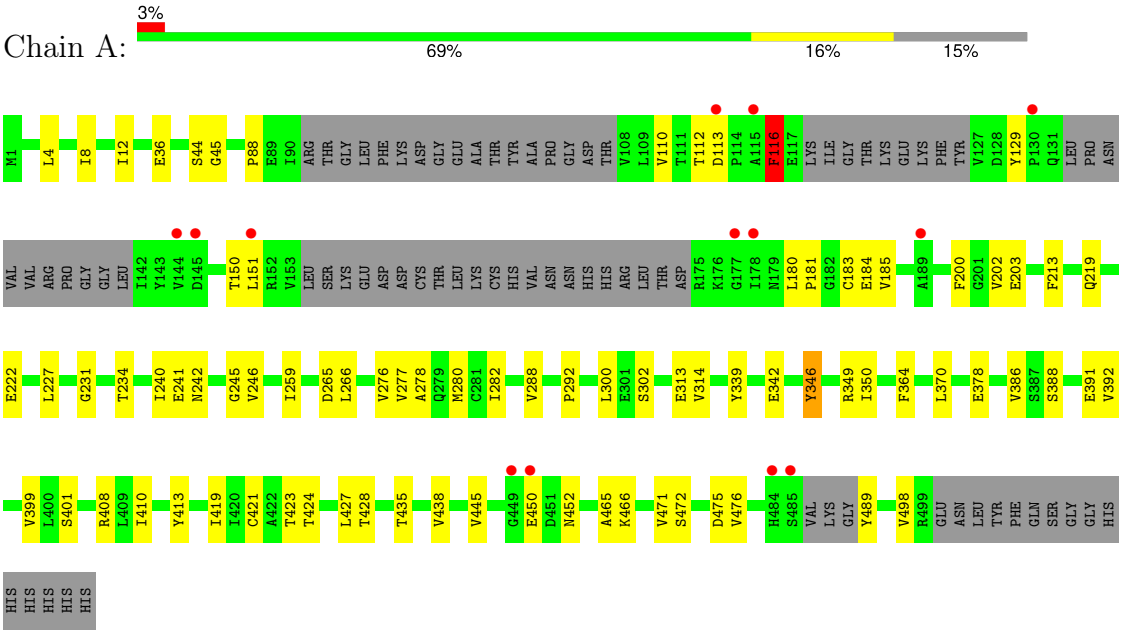
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	19	Total O 19 19	0	0
6	B	23	Total O 23 23	0	0
6	C	32	Total O 32 32	0	0
6	D	15	Total O 15 15	0	0
6	E	22	Total O 22 22	0	0
6	F	31	Total O 31 31	0	0
6	G	20	Total O 20 20	0	0
6	H	16	Total O 16 16	0	0

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.

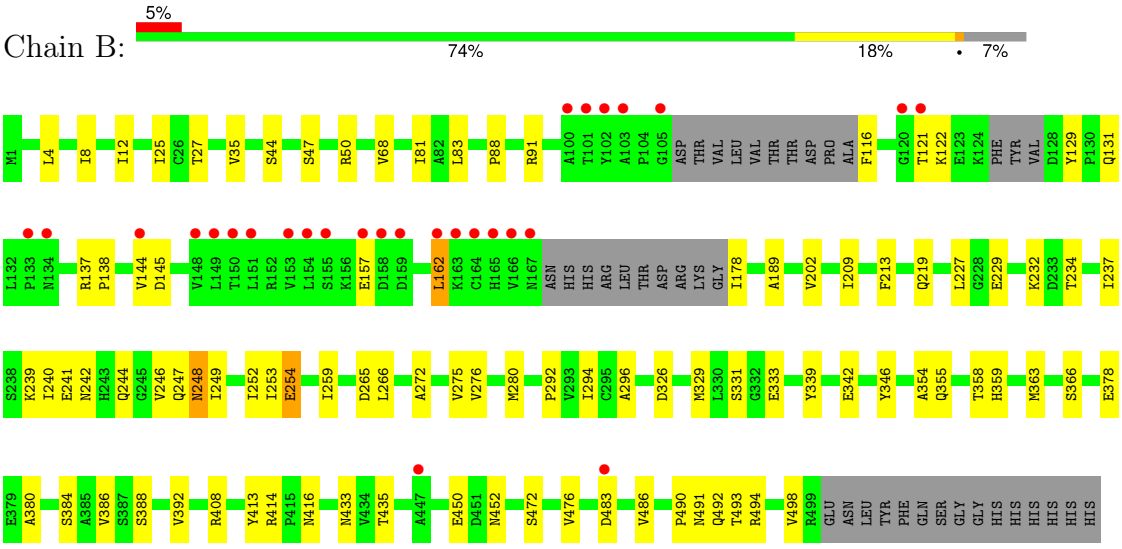
• Molecule 1: Pyruvate kinase

Chain A:



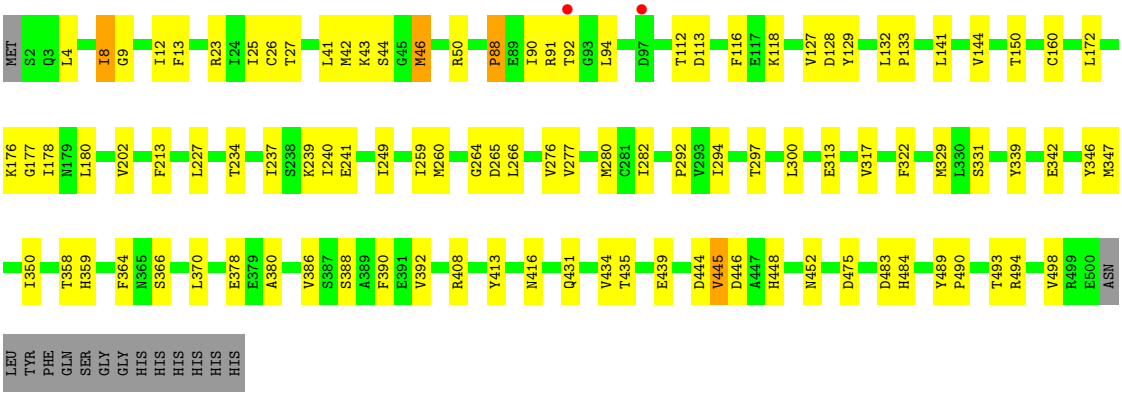
• Molecule 1: Pyruvate kinase

Chain B:



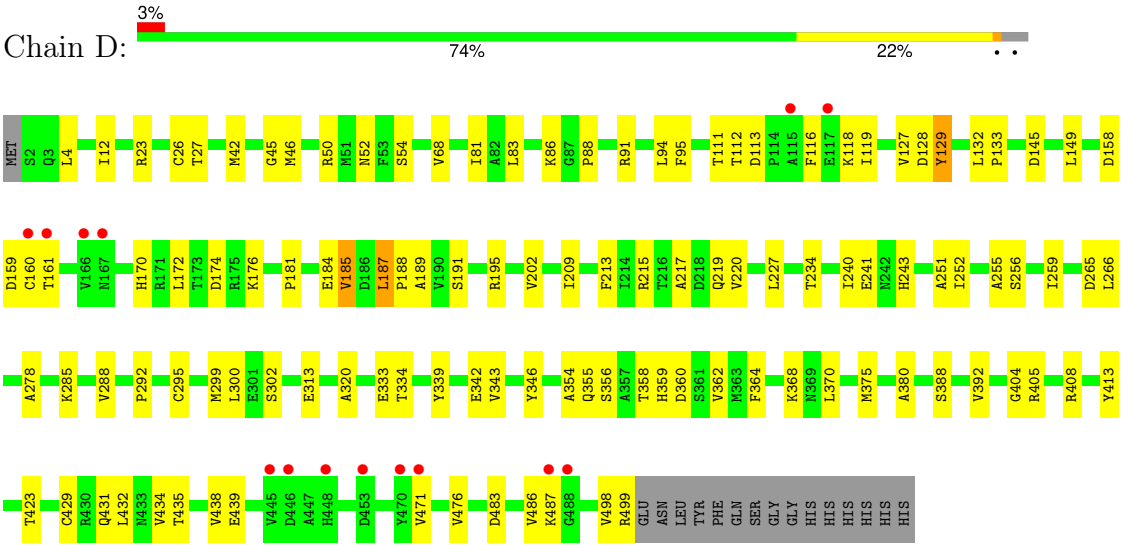
• Molecule 1: Pyruvate kinase

Chain C:



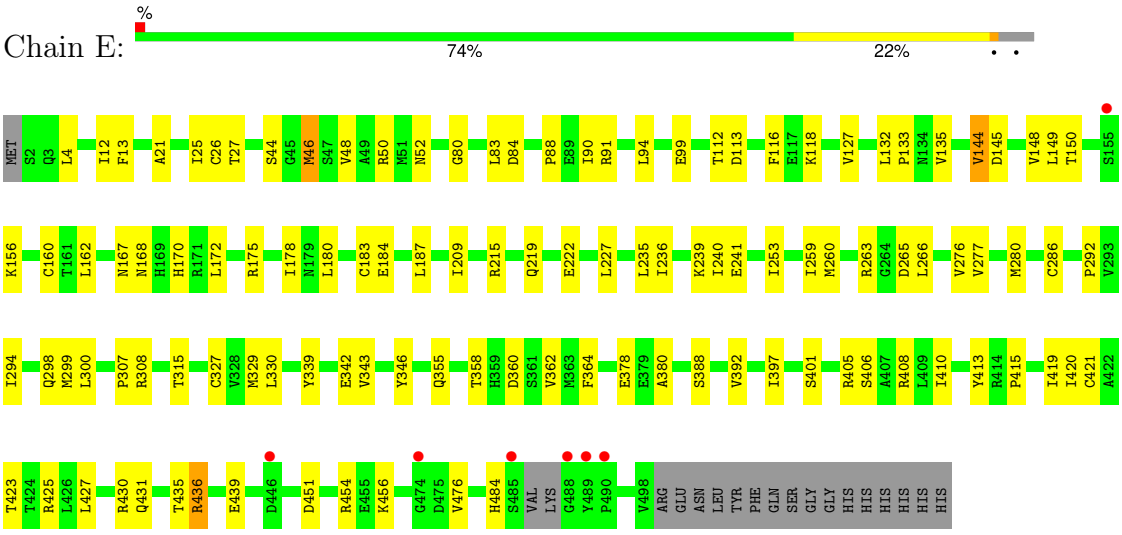
• Molecule 1: Pyruvate kinase

Chain D:

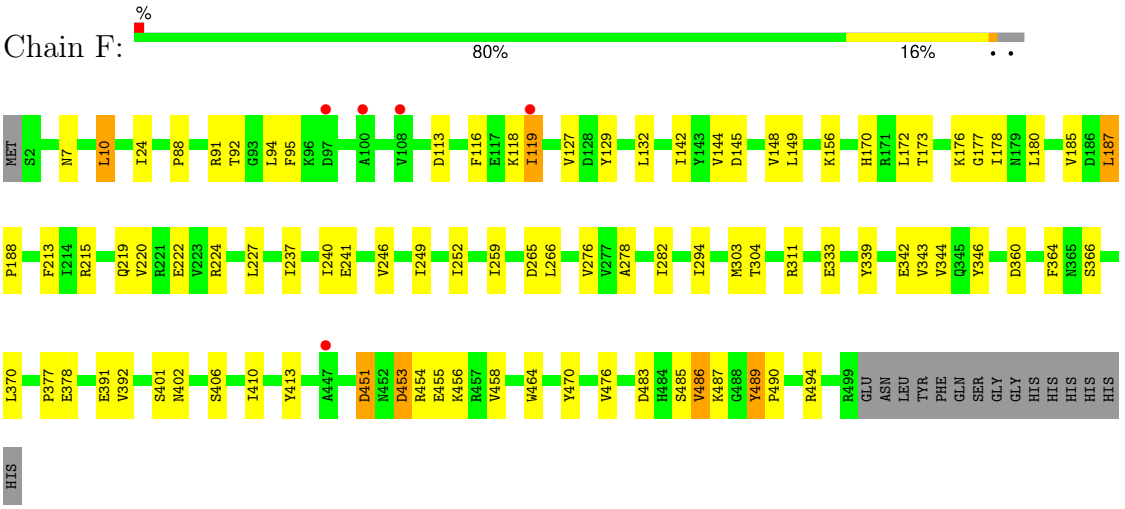


• Molecule 1: Pyruvate kinase

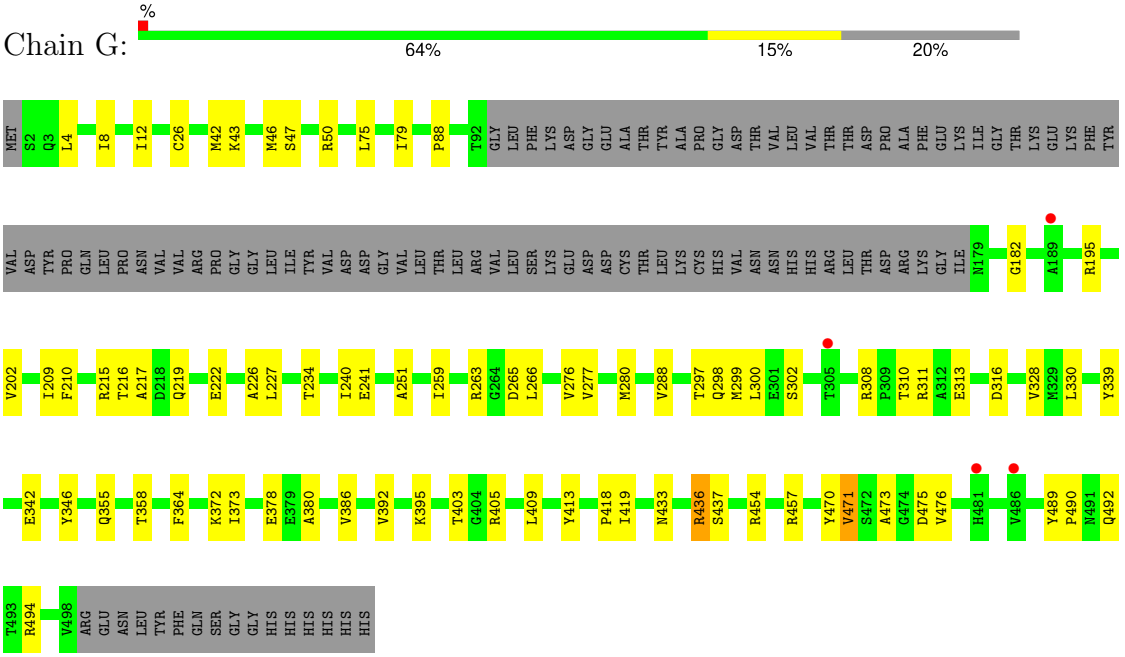
Chain E:



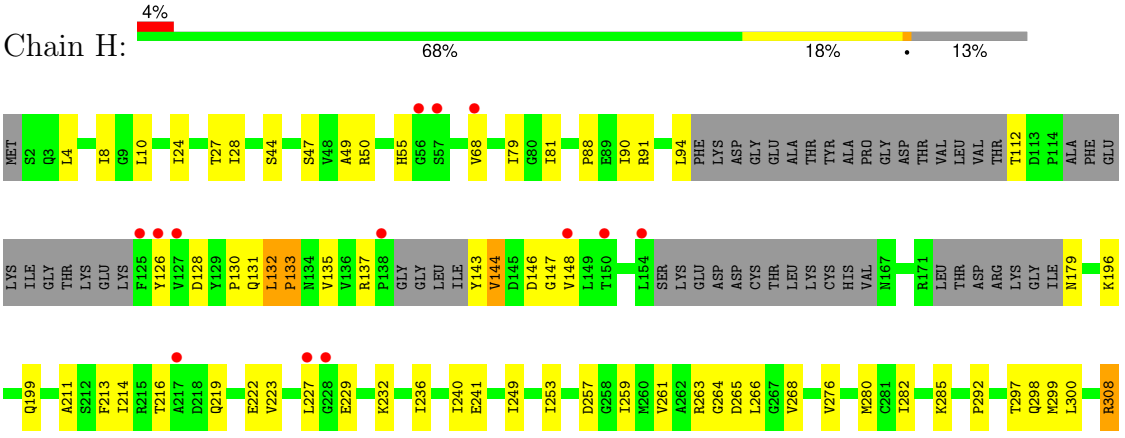
• Molecule 1: Pyruvate kinase

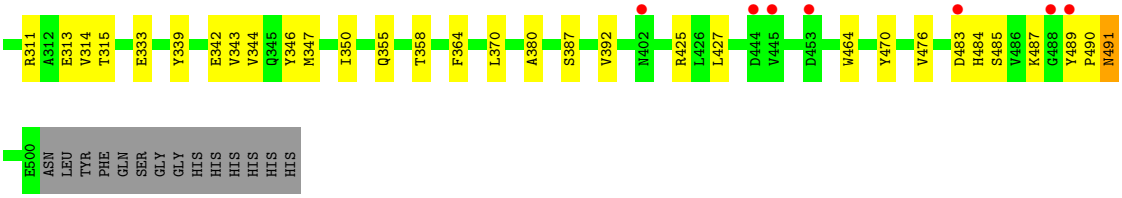


• Molecule 1: Pyruvate kinase



• Molecule 1: Pyruvate kinase




R311
A312
E313
V314
T315
E333
Y339
E342
V343
V344
Q345
Y346
M347
I350
Q355
T358
F364
L370
A380
S387
V392
N402
R425
L426
L427
D444
V445
D453
W464
Y470
V476
D483
H484
S485
V486
K487
G488
Y489
P490
N491

E500
ASN
LEU
TYR
PHE
GLN
SER
GLY
GLY
HIS
HIS
HIS
HIS
HIS
HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	83.45Å 107.15Å 148.00Å 109.74° 90.51° 106.78°	Depositor
Resolution (Å)	49.33 – 3.00 49.33 – 2.79	Depositor EDS
% Data completeness (in resolution range)	93.4 (49.33-3.00) 92.8 (49.33-2.79)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.96 (at 2.77Å)	Xtriage
Refinement program	BUSTER 2.10.3	Depositor
R, R_{free}	0.208 , 0.257 0.243 , 0.291	Depositor DCC
R_{free} test set	5317 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	76.8	Xtriage
Anisotropy	0.073	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 80.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.44$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	28228	wwPDB-VP
Average B, all atoms (Å^2)	86.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 16.27% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PGE, PEG, CIT, GOL

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	0.51	0/3268	0.75	0/4440
1	B	0.55	0/3529	0.77	0/4792
1	C	0.53	0/3787	0.76	0/5150
1	D	0.48	0/3770	0.74	0/5130
1	E	0.50	0/3767	0.74	0/5117
1	F	0.51	0/3776	0.75	0/5133
1	G	0.53	0/3098	0.75	0/4201
1	H	0.48	0/3317	0.73	0/4515
All	All	0.51	0/28312	0.75	0/38478

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	3226	0	3135	84	0
1	B	3481	0	3400	94	0
1	C	3726	0	3664	102	0
1	D	3709	0	3630	113	0
1	E	3710	0	3667	118	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	3716	0	3671	90	0
1	G	3054	0	3026	80	0
1	H	3273	0	3139	81	0
2	A	12	0	16	1	0
2	B	6	0	8	0	0
2	C	12	0	16	0	0
2	D	6	0	8	0	0
2	E	6	0	8	0	0
2	F	6	0	8	2	0
2	G	6	0	8	1	0
2	H	6	0	8	1	0
3	B	13	0	5	4	0
3	C	13	0	5	1	0
3	D	13	0	5	1	0
3	E	13	0	5	0	0
3	F	13	0	5	0	0
3	H	13	0	5	3	0
4	F	10	0	14	0	0
5	F	7	0	10	0	0
6	A	19	0	0	0	0
6	B	23	0	0	0	0
6	C	32	0	0	2	0
6	D	15	0	0	0	0
6	E	22	0	0	0	0
6	F	31	0	0	0	0
6	G	20	0	0	0	0
6	H	16	0	0	0	0
All	All	28228	0	27466	689	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 12.

All (689) 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:D:187:LEU:CD2	1:D:188:PRO:HD2	1.45	1.45
1:G:299:MET:CE	1:G:328:VAL:HG22	1.46	1.43
1:C:202:VAL:CG2	1:C:227:LEU:HD22	1.56	1.35
1:G:202:VAL:CG2	1:G:227:LEU:HD22	1.56	1.34
1:D:202:VAL:CG2	1:D:227:LEU:HD22	1.57	1.32
1:B:202:VAL:CG2	1:B:227:LEU:HD22	1.61	1.28

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:299:MET:HE1	1:G:328:VAL:CG2	1.59	1.28
1:E:401:SER:O	1:E:423:THR:HG22	1.32	1.24
1:D:187:LEU:HD23	1:D:188:PRO:CD	1.70	1.19
1:E:12:ILE:HD11	1:F:278:ALA:HB2	1.24	1.14
1:A:202:VAL:CG2	1:A:227:LEU:HD22	1.77	1.14
1:B:292:PRO:HA	1:B:326:ASP:OD2	1.50	1.10
1:A:401:SER:O	1:A:423:THR:HG22	1.52	1.09
1:A:246:VAL:HG11	1:B:12:ILE:HD11	1.11	1.09
1:C:90:ILE:HD13	1:C:129:TYR:CB	1.82	1.08
1:A:292:PRO:HG3	1:A:435:THR:HG22	1.33	1.08
1:C:90:ILE:CD1	1:C:129:TYR:HB2	1.82	1.08
1:E:277:VAL:CG1	1:F:10:LEU:HD22	1.84	1.06
1:C:202:VAL:HG23	1:C:227:LEU:HD22	1.36	1.06
1:B:202:VAL:HG23	1:B:227:LEU:HD22	1.34	1.05
1:C:317:VAL:HG13	1:C:350:ILE:HG21	1.39	1.05
1:E:12:ILE:CD1	1:F:278:ALA:HB2	1.87	1.04
1:G:378:GLU:HB2	1:G:489:TYR:CD1	1.90	1.04
1:E:277:VAL:HG13	1:F:10:LEU:HD22	1.04	1.04
1:A:277:VAL:HG12	1:B:12:ILE:CG2	1.88	1.04
1:A:277:VAL:CG1	1:B:12:ILE:HG22	1.86	1.04
1:D:202:VAL:CG2	1:D:227:LEU:CD2	2.35	1.03
1:C:144:VAL:HG11	1:C:172:LEU:HD21	1.41	1.02
1:E:277:VAL:HG13	1:F:10:LEU:CD2	1.88	1.02
1:G:202:VAL:CG2	1:G:227:LEU:CD2	2.37	1.02
1:F:88:PRO:HA	1:F:187:LEU:HD22	1.39	1.01
1:A:421:CYS:SG	1:A:423:THR:HG23	2.00	1.01
1:C:202:VAL:CG2	1:C:227:LEU:CD2	2.40	0.99
1:D:187:LEU:HD22	1:D:188:PRO:HD2	1.42	0.98
1:A:472:SER:O	1:A:498:VAL:HG11	1.64	0.98
1:B:202:VAL:HG21	1:B:227:LEU:HD22	1.46	0.98
1:H:132:LEU:H	1:H:133:PRO:HD2	1.28	0.97
1:B:408:ARG:HG2	1:B:435:THR:HG21	1.47	0.96
1:A:399:VAL:HG21	1:A:410:ILE:HD12	1.45	0.96
1:G:299:MET:CE	1:G:328:VAL:CG2	2.27	0.96
1:A:277:VAL:HG12	1:B:12:ILE:HG22	0.98	0.96
1:G:202:VAL:HG23	1:G:227:LEU:HD22	1.43	0.96
1:C:144:VAL:CG1	1:C:172:LEU:HD21	1.97	0.95
1:G:378:GLU:HB2	1:G:489:TYR:CE1	2.00	0.95
1:H:50:ARG:HH22	3:H:601:CIT:H41	1.30	0.95
1:C:202:VAL:HG23	1:C:227:LEU:CD2	1.96	0.94
1:F:303:MET:HB3	1:F:343:VAL:HG12	1.50	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:144:VAL:HG12	1:C:172:LEU:CD2	1.96	0.94
1:G:202:VAL:HG23	1:G:227:LEU:CD2	1.98	0.94
1:E:12:ILE:HG23	1:E:13:PHE:CD2	2.03	0.93
1:D:187:LEU:HD23	1:D:188:PRO:HD2	0.95	0.93
1:D:202:VAL:HG23	1:D:227:LEU:HD22	1.49	0.93
1:E:410:ILE:HG22	1:E:419:ILE:CD1	1.99	0.93
1:C:144:VAL:HG22	1:C:178:ILE:CG2	1.98	0.92
1:F:489:TYR:HB2	1:F:490:PRO:HD2	1.49	0.92
1:C:144:VAL:CG1	1:C:172:LEU:CD2	2.47	0.92
1:C:292:PRO:HG3	1:C:435:THR:HG22	1.49	0.91
1:D:202:VAL:HG23	1:D:227:LEU:CD2	1.99	0.91
1:C:144:VAL:HG22	1:C:178:ILE:HG22	1.52	0.91
1:E:26:CYS:SG	1:E:46:MET:HG3	2.11	0.91
1:A:246:VAL:CG1	1:B:12:ILE:HD11	2.00	0.90
1:B:292:PRO:HG3	1:B:435:THR:HG22	1.53	0.90
1:E:12:ILE:HG23	1:E:13:PHE:CE2	2.06	0.90
1:A:202:VAL:HG23	1:A:227:LEU:HD22	1.54	0.89
1:A:292:PRO:HG3	1:A:435:THR:CG2	2.02	0.89
1:G:202:VAL:HG21	1:G:227:LEU:HD22	1.53	0.88
1:A:242:ASN:OD1	1:A:245:GLY:HA3	1.73	0.88
1:G:395:LYS:HB2	1:G:471:VAL:HG23	1.55	0.88
1:C:202:VAL:HG21	1:C:227:LEU:HD22	1.57	0.86
1:F:7:ASN:HA	1:F:10:LEU:HD12	1.57	0.86
1:G:26:CYS:SG	1:G:46:MET:HG3	2.15	0.86
1:D:202:VAL:HG22	1:D:227:LEU:HD22	1.58	0.86
1:D:292:PRO:HG3	1:D:435:THR:HG22	1.55	0.85
1:A:246:VAL:HG11	1:B:12:ILE:CD1	2.03	0.85
1:A:472:SER:O	1:A:498:VAL:CG1	2.25	0.85
1:H:263:ARG:NH2	1:H:299:MET:SD	2.49	0.85
1:F:303:MET:HB3	1:F:343:VAL:CG1	2.07	0.85
1:C:317:VAL:HG13	1:C:350:ILE:CG2	2.06	0.85
1:D:359:HIS:O	1:D:359:HIS:ND1	2.10	0.85
1:B:483:ASP:CG	1:B:491:ASN:HD21	1.80	0.84
1:E:410:ILE:HG22	1:E:419:ILE:HD13	1.58	0.83
1:A:150:THR:O	1:A:151:LEU:HG	1.77	0.83
1:B:27:THR:HB	1:B:331:SER:O	1.80	0.82
1:F:187:LEU:HG	1:F:188:PRO:HD2	1.62	0.82
1:D:202:VAL:HG21	1:D:227:LEU:HD22	1.56	0.82
1:H:143:TYR:HB2	1:H:179:ASN:O	1.79	0.81
1:D:158:ASP:HB2	1:D:161:THR:OG1	1.81	0.81
1:E:253:ILE:HG12	1:E:259:ILE:HG13	1.64	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:27:THR:HG22	1:H:50:ARG:HD3	1.63	0.80
1:A:399:VAL:CG2	1:A:410:ILE:HD12	2.11	0.80
1:A:421:CYS:SG	1:A:423:THR:CG2	2.69	0.80
1:F:88:PRO:CA	1:F:187:LEU:HD22	2.13	0.79
1:C:317:VAL:CG1	1:C:350:ILE:HG21	2.13	0.79
1:C:180:LEU:HD12	1:C:180:LEU:O	1.83	0.79
1:C:264:GLY:CA	1:C:297:THR:HG21	2.12	0.79
1:D:189:ALA:HB2	1:D:219:GLN:HE21	1.49	0.78
1:A:408:ARG:HG2	1:A:435:THR:HG21	1.63	0.78
1:E:425:ARG:HE	1:E:427:LEU:HD23	1.48	0.78
1:C:26:CYS:SG	1:C:46:MET:HG3	2.24	0.78
1:F:303:MET:CB	1:F:343:VAL:HG12	2.14	0.77
1:G:202:VAL:HG22	1:G:227:LEU:HD22	1.66	0.77
1:G:298:GLN:OE1	1:H:311:ARG:HG2	1.83	0.77
1:E:12:ILE:CD1	1:F:278:ALA:CB	2.61	0.77
1:F:489:TYR:HB2	1:F:490:PRO:CD	2.13	0.77
1:E:12:ILE:HD12	1:F:278:ALA:HA	1.65	0.76
1:F:483:ASP:OD2	1:G:494:ARG:HD3	1.85	0.76
1:H:297:THR:HG21	3:H:601:CIT:O1	1.85	0.76
1:D:119:ILE:HG22	1:D:119:ILE:O	1.86	0.75
1:E:436:ARG:HG2	1:E:436:ARG:HH11	1.52	0.75
1:F:172:LEU:CD2	1:F:173:THR:O	2.35	0.75
1:A:202:VAL:CG2	1:A:227:LEU:CD2	2.61	0.75
1:C:4:LEU:O	1:C:8:ILE:HG13	1.85	0.75
1:C:90:ILE:HD13	1:C:129:TYR:HB2	0.89	0.75
1:A:370:LEU:HD22	1:B:4:LEU:HD23	1.69	0.75
1:D:187:LEU:CD2	1:D:188:PRO:CD	2.40	0.75
1:G:436:ARG:HG2	1:G:436:ARG:HH11	1.50	0.74
1:E:358:THR:O	1:E:358:THR:HG22	1.85	0.74
1:E:94:LEU:HB2	1:E:118:LYS:HA	1.68	0.73
1:F:92:THR:HG22	1:F:178:ILE:HD11	1.70	0.73
1:B:202:VAL:HG23	1:B:227:LEU:CD2	2.13	0.72
1:E:144:VAL:HG13	1:E:178:ILE:HD13	1.72	0.72
1:E:410:ILE:HG22	1:E:419:ILE:HD11	1.69	0.72
1:H:146:ASP:OD1	1:H:268:VAL:CG1	2.38	0.72
1:F:455:GLU:O	1:F:458:VAL:N	2.23	0.71
1:A:202:VAL:HG23	1:A:227:LEU:CD2	2.20	0.71
1:H:146:ASP:OD1	1:H:268:VAL:HG11	1.90	0.71
1:C:264:GLY:HA2	1:C:297:THR:HG21	1.70	0.71
1:E:410:ILE:CG2	1:E:419:ILE:HD13	2.21	0.71
1:E:12:ILE:HD12	1:F:278:ALA:CA	2.20	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:172:LEU:HD23	1:F:173:THR:O	1.92	0.70
1:G:299:MET:HE3	1:G:328:VAL:CG2	2.21	0.70
1:D:202:VAL:HG21	1:D:227:LEU:CD2	2.16	0.70
1:G:202:VAL:HG21	1:G:227:LEU:CD2	2.17	0.70
1:B:359:HIS:O	1:B:416:ASN:ND2	2.25	0.70
1:C:4:LEU:HD23	1:D:370:LEU:HD22	1.72	0.69
1:E:307:PRO:HG3	1:F:170:HIS:CE1	2.27	0.69
1:B:326:ASP:OD1	1:B:414:ARG:NH2	2.25	0.69
1:B:354:ALA:O	1:B:358:THR:HG22	1.92	0.69
1:G:471:VAL:HG22	1:G:475:ASP:CB	2.22	0.69
1:E:145:ASP:O	1:E:148:VAL:HG23	1.92	0.69
1:D:354:ALA:O	1:D:358:THR:HG22	1.91	0.69
1:H:297:THR:CG2	3:H:601:CIT:O1	2.41	0.69
1:A:202:VAL:HG21	1:A:227:LEU:HD22	1.75	0.69
1:C:359:HIS:HA	1:C:416:ASN:OD1	1.93	0.68
1:C:8:ILE:HD11	1:D:288:VAL:HG21	1.76	0.68
1:F:132:LEU:CD1	1:F:180:LEU:HD11	2.23	0.68
1:G:88:PRO:HG2	1:G:215:ARG:HH22	1.58	0.68
1:B:254:GLU:OE1	1:B:254:GLU:C	2.32	0.68
1:D:483:ASP:OD1	1:D:486:VAL:HG12	1.93	0.68
1:C:364:PHE:HD1	1:C:413:TYR:HB3	1.59	0.68
1:E:253:ILE:CD1	1:E:286:CYS:SG	2.81	0.68
1:G:310:THR:OG1	1:H:298:GLN:HB3	1.94	0.68
1:C:202:VAL:HG22	1:C:227:LEU:HD22	1.68	0.67
1:C:133:PRO:HG2	1:C:160:CYS:HA	1.74	0.67
1:E:436:ARG:HH11	1:E:436:ARG:CG	2.08	0.66
1:G:298:GLN:HE22	1:H:308:ARG:HH12	1.42	0.66
1:B:333:GLU:OE1	1:B:333:GLU:N	2.25	0.66
1:H:88:PRO:HD2	1:H:213:PHE:HB2	1.75	0.66
1:C:144:VAL:CG2	1:C:178:ILE:HG22	2.25	0.66
1:F:453:ASP:OD1	1:F:453:ASP:N	2.27	0.66
1:B:239:LYS:NZ	3:B:601:CIT:H41	2.11	0.66
1:D:133:PRO:HG2	1:D:160:CYS:HA	1.76	0.66
1:A:242:ASN:OD1	1:A:245:GLY:CA	2.44	0.66
1:C:144:VAL:HG12	1:C:172:LEU:HD22	1.74	0.66
1:D:217:ALA:HB2	1:D:251:ALA:HB1	1.77	0.66
1:H:55:HIS:HE1	1:H:91:ARG:HH21	1.44	0.66
1:D:408:ARG:HG2	1:D:435:THR:HG21	1.77	0.66
1:F:172:LEU:HD23	1:F:173:THR:N	2.11	0.66
1:C:112:THR:OG1	1:C:160:CYS:HB2	1.95	0.66
1:E:253:ILE:HG12	1:E:259:ILE:CG1	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:356:SER:O	1:D:359:HIS:HD2	1.78	0.65
1:B:68:VAL:HG21	1:B:81:ILE:HG12	1.77	0.65
1:E:144:VAL:HG21	1:E:149:LEU:HD23	1.77	0.65
1:E:253:ILE:HD13	1:E:286:CYS:SG	2.37	0.65
1:E:21:ALA:N	1:E:355:GLN:HE22	1.94	0.65
1:E:408:ARG:HG2	1:E:435:THR:HG21	1.79	0.64
1:C:8:ILE:CD1	1:D:288:VAL:HG21	2.27	0.64
1:D:355:GLN:HA	1:D:358:THR:CG2	2.28	0.64
1:D:23:ARG:NH2	1:D:438:VAL:O	2.29	0.64
1:G:288:VAL:HG22	1:H:4:LEU:HD21	1.79	0.64
1:D:68:VAL:HG21	1:D:81:ILE:HG12	1.79	0.64
1:F:401:SER:HA	2:F:602:GOL:H12	1.80	0.64
1:D:112:THR:OG1	1:D:160:CYS:HB2	1.98	0.64
1:E:83:LEU:HB3	1:E:209:ILE:HD13	1.79	0.63
1:F:145:ASP:HB3	1:F:148:VAL:HG22	1.80	0.63
1:H:68:VAL:HG21	1:H:81:ILE:HG12	1.81	0.63
1:C:25:ILE:HB	1:C:329:MET:HG3	1.81	0.63
1:G:471:VAL:HG22	1:G:475:ASP:HB3	1.79	0.63
1:C:90:ILE:HG22	1:C:128:ASP:OD2	1.99	0.63
1:C:92:THR:HG22	1:C:176:LYS:H	1.63	0.63
1:A:180:LEU:N	1:A:180:LEU:HD12	2.13	0.63
1:B:254:GLU:OE1	1:B:254:GLU:O	2.16	0.63
1:B:378:GLU:HG3	1:B:490:PRO:HD2	1.81	0.63
1:D:189:ALA:HB2	1:D:219:GLN:HG2	1.81	0.63
1:H:132:LEU:N	1:H:133:PRO:HD2	2.02	0.63
1:C:144:VAL:HG22	1:C:178:ILE:HG23	1.80	0.62
1:E:132:LEU:HD12	1:E:180:LEU:HD11	1.82	0.62
1:B:227:LEU:HD13	1:B:234:THR:OG1	1.98	0.62
1:E:21:ALA:CB	1:E:355:GLN:NE2	2.61	0.62
1:G:308:ARG:HD3	1:H:147:GLY:CA	2.30	0.62
1:C:364:PHE:CD1	1:C:413:TYR:HB3	2.35	0.62
1:D:83:LEU:HB3	1:D:209:ILE:HD13	1.81	0.62
1:A:346:TYR:CE2	1:A:349:ARG:NH2	2.67	0.62
1:F:172:LEU:HD21	1:F:173:THR:O	1.99	0.62
1:G:195:ARG:NH2	1:G:226:ALA:HA	2.15	0.62
1:D:94:LEU:HB2	1:D:118:LYS:HA	1.82	0.62
1:A:399:VAL:CG2	1:A:410:ILE:CD1	2.78	0.62
1:B:247:GLN:O	1:B:247:GLN:HG2	1.98	0.61
1:D:220:VAL:HG11	1:D:255:ALA:HB3	1.81	0.61
1:E:133:PRO:HG2	1:E:160:CYS:HA	1.81	0.61
1:G:355:GLN:HA	1:G:358:THR:HG22	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:227:LEU:HD13	1:A:234:THR:OG1	1.99	0.61
1:G:227:LEU:HD13	1:G:234:THR:OG1	2.00	0.61
1:C:41:LEU:O	1:C:44:SER:HB2	1.99	0.61
1:E:27:THR:CG2	1:E:50:ARG:HH11	2.14	0.61
1:B:296:ALA:CA	1:B:329:MET:HE2	2.31	0.61
1:D:111:THR:CB	1:D:161:THR:HG22	2.31	0.61
1:C:292:PRO:HG3	1:C:435:THR:CG2	2.26	0.60
1:C:127:VAL:HG21	1:C:132:LEU:HD22	1.82	0.60
1:D:127:VAL:HG21	1:D:132:LEU:HD22	1.82	0.60
1:D:355:GLN:HA	1:D:358:THR:HG22	1.83	0.60
1:E:127:VAL:HG21	1:E:132:LEU:HD22	1.82	0.60
1:F:127:VAL:HG21	1:F:132:LEU:HD22	1.82	0.60
1:C:227:LEU:HD13	1:C:234:THR:OG1	2.01	0.60
1:F:132:LEU:HD12	1:F:180:LEU:HD11	1.84	0.60
1:C:264:GLY:N	1:C:297:THR:HG21	2.16	0.60
1:F:494:ARG:HG2	1:G:492:GLN:HG3	1.82	0.60
1:B:83:LEU:HB3	1:B:209:ILE:HD13	1.84	0.59
1:C:88:PRO:HD2	1:C:213:PHE:HB2	1.83	0.59
1:A:423:THR:HG21	1:A:428:THR:CG2	2.33	0.59
1:D:359:HIS:O	1:D:359:HIS:CG	2.53	0.59
1:F:94:LEU:HB2	1:F:118:LYS:HA	1.85	0.59
1:F:95:PHE:CE1	1:F:172:LEU:CD2	2.86	0.59
1:D:300:LEU:HD23	1:D:313:GLU:HB3	1.85	0.59
1:F:88:PRO:HA	1:F:187:LEU:CD2	2.23	0.59
1:G:298:GLN:OE1	1:H:311:ARG:N	2.32	0.59
1:C:408:ARG:HG3	1:C:435:THR:HG21	1.84	0.59
1:E:144:VAL:HG13	1:E:178:ILE:CD1	2.31	0.59
1:E:298:GLN:OE1	1:F:311:ARG:HD2	2.03	0.59
1:H:24:ILE:HG23	1:H:347:MET:HE2	1.84	0.59
1:E:88:PRO:CB	1:E:187:LEU:HB3	2.33	0.58
1:E:112:THR:OG1	1:E:160:CYS:HB2	2.03	0.58
1:H:489:TYR:HB3	1:H:490:PRO:HD2	1.84	0.58
1:B:202:VAL:CG2	1:B:227:LEU:CD2	2.57	0.58
1:D:220:VAL:HG13	1:D:255:ALA:HB1	1.83	0.58
1:E:12:ILE:CG2	1:E:13:PHE:CE2	2.84	0.58
1:H:28:ILE:HD11	1:H:49:ALA:HB1	1.84	0.58
1:A:36:GLU:O	1:A:36:GLU:HG3	2.02	0.58
1:B:145:ASP:H	1:B:178:ILE:HG13	1.68	0.58
1:D:240:ILE:HD11	1:D:252:ILE:HG21	1.85	0.58
1:F:132:LEU:HD11	1:F:180:LEU:HD11	1.86	0.58
1:C:90:ILE:CD1	1:C:178:ILE:HD11	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:95:PHE:CE1	1:F:172:LEU:HD22	2.38	0.58
1:C:26:CYS:SG	1:C:46:MET:CG	2.91	0.58
1:H:491:ASN:ND2	1:H:491:ASN:O	2.36	0.58
1:E:277:VAL:CG1	1:F:10:LEU:CD2	2.65	0.58
1:A:8:ILE:HG13	1:A:8:ILE:O	2.02	0.58
1:A:183:CYS:O	1:A:185:VAL:N	2.35	0.58
1:B:272:ALA:O	1:B:275:VAL:HG22	2.04	0.58
1:B:380:ALA:CB	1:C:392:VAL:HG13	2.33	0.58
1:E:253:ILE:CG1	1:E:259:ILE:HG13	2.33	0.58
1:G:471:VAL:HG22	1:G:475:ASP:HB2	1.86	0.58
1:C:90:ILE:HD12	1:C:178:ILE:HD11	1.86	0.57
1:D:227:LEU:HD13	1:D:234:THR:OG1	2.03	0.57
1:A:116:PHE:N	1:A:116:PHE:CD1	2.71	0.57
1:A:450:GLU:CD	1:A:452:ASN:ND2	2.57	0.57
1:C:50:ARG:HH22	3:C:601:CIT:H42	1.70	0.57
1:D:27:THR:HG22	1:D:50:ARG:HD3	1.85	0.57
1:H:464:TRP:CZ3	1:H:470:TYR:HE2	2.21	0.57
1:C:202:VAL:HG21	1:C:227:LEU:CD2	2.22	0.57
1:B:492:GLN:HG3	1:C:494:ARG:HG2	1.87	0.57
1:B:27:THR:OG1	1:B:331:SER:HA	2.04	0.57
1:B:380:ALA:HB2	1:C:392:VAL:HG13	1.86	0.57
1:G:299:MET:HE1	1:G:328:VAL:HG22	0.65	0.57
1:F:215:ARG:O	1:F:252:ILE:HD11	2.05	0.57
1:H:229:GLU:HA	1:H:232:LYS:HB3	1.86	0.57
1:A:466:LYS:HA	1:A:471:VAL:O	2.05	0.56
1:F:489:TYR:N	1:F:489:TYR:CD2	2.73	0.56
1:A:391:GLU:OE1	1:D:375:MET:CE	2.54	0.56
1:F:489:TYR:N	1:F:489:TYR:HD2	2.03	0.56
1:A:200:PHE:O	1:A:203:GLU:HG2	2.05	0.56
1:E:12:ILE:HD12	1:F:278:ALA:CB	2.35	0.56
1:C:378:GLU:HG3	1:C:490:PRO:HD2	1.86	0.56
1:A:423:THR:HG21	1:A:428:THR:HG22	1.86	0.56
1:B:483:ASP:OD2	1:B:491:ASN:ND2	2.38	0.56
1:B:494:ARG:NE	1:C:483:ASP:OD2	2.38	0.55
1:D:241:GLU:HB2	1:D:265:ASP:HB2	1.88	0.55
1:B:296:ALA:HA	1:B:329:MET:HE2	1.86	0.55
1:F:378:GLU:HB2	1:F:489:TYR:HD1	1.70	0.55
1:G:489:TYR:HB2	1:G:490:PRO:HD2	1.87	0.55
1:A:183:CYS:O	1:A:185:VAL:HG12	2.07	0.55
1:E:88:PRO:HB2	1:E:187:LEU:HB3	1.88	0.55
1:A:465:ALA:C	1:A:471:VAL:HG22	2.26	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:322:PHE:HD1	1:C:358:THR:HG21	1.71	0.55
1:E:253:ILE:HD11	1:E:286:CYS:SG	2.47	0.55
1:H:27:THR:HG21	1:H:50:ARG:NH1	2.22	0.55
1:D:159:ASP:OD1	1:D:160:CYS:N	2.38	0.55
1:B:384:SER:HB3	6:C:704:HOH:O	2.06	0.55
1:C:241:GLU:HB2	1:C:265:ASP:HB2	1.89	0.55
1:G:403:THR:H	2:G:601:GOL:H12	1.72	0.55
1:A:391:GLU:OE1	1:D:375:MET:HE3	2.08	0.54
1:H:483:ASP:OD1	1:H:484:HIS:N	2.38	0.54
1:C:144:VAL:CG1	1:C:172:LEU:HD22	2.34	0.54
1:G:419:ILE:HD12	1:G:437:SER:HB2	1.89	0.54
1:D:302:SER:OG	1:D:313:GLU:OE1	2.24	0.54
1:D:220:VAL:CG1	1:D:255:ALA:CB	2.86	0.54
1:F:187:LEU:CG	1:F:188:PRO:HD2	2.36	0.54
1:H:211:ALA:HB1	1:H:214:ILE:HD11	1.89	0.54
1:F:144:VAL:HB	1:F:149:LEU:HB3	1.90	0.54
1:E:241:GLU:HB2	1:E:265:ASP:HB2	1.90	0.54
1:B:292:PRO:HG3	1:B:435:THR:CG2	2.31	0.54
1:D:23:ARG:NH2	1:D:439:GLU:OE2	2.39	0.54
1:E:21:ALA:HB2	1:E:355:GLN:NE2	2.21	0.54
1:G:298:GLN:NE2	1:H:308:ARG:HH12	2.06	0.54
1:D:95:PHE:CZ	1:D:172:LEU:HD23	2.43	0.53
1:B:483:ASP:OD2	1:C:494:ARG:HD2	2.08	0.53
1:D:94:LEU:HG	1:D:174:ASP:OD1	2.09	0.53
1:G:43:LYS:HE2	1:G:75:LEU:HD21	1.91	0.53
1:F:187:LEU:HG	1:F:188:PRO:CD	2.35	0.53
1:A:288:VAL:HG21	1:B:8:ILE:HD11	1.90	0.53
1:H:364:PHE:CZ	1:H:387:SER:HB3	2.44	0.53
1:G:216:THR:HG22	1:G:219:GLN:HG3	1.90	0.53
1:A:392:VAL:HG13	1:D:380:ALA:HB2	1.91	0.53
1:B:249:ILE:O	1:B:252:ILE:HB	2.09	0.53
1:E:421:CYS:SG	1:E:423:THR:HG23	2.48	0.53
1:A:241:GLU:HB2	1:A:265:ASP:HB2	1.90	0.53
1:C:91:ARG:HA	1:C:177:GLY:HA2	1.90	0.53
1:D:299:MET:HE1	1:D:320:ALA:HB2	1.90	0.53
1:E:410:ILE:CG2	1:E:419:ILE:CD1	2.79	0.53
1:B:239:LYS:HZ2	3:B:601:CIT:H41	1.73	0.53
1:F:241:GLU:HB2	1:F:265:ASP:HB2	1.91	0.52
1:C:8:ILE:HD11	1:D:288:VAL:CG2	2.38	0.52
1:D:86:LYS:HE2	1:D:91:ARG:HH22	1.73	0.52
1:E:292:PRO:HG3	1:E:435:THR:HG22	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:180:LEU:N	1:A:180:LEU:CD1	2.72	0.52
1:E:12:ILE:HD13	1:F:246:VAL:HG11	1.91	0.52
1:G:8:ILE:HG23	1:H:285:LYS:HG2	1.91	0.52
1:C:475:ASP:O	1:C:498:VAL:HG22	2.09	0.52
1:G:47:SER:HB3	1:G:433:ASN:HB3	1.91	0.52
1:G:436:ARG:HH11	1:G:436:ARG:CG	2.17	0.52
1:A:378:GLU:HG3	1:A:489:TYR:HB3	1.90	0.52
1:B:137:ARG:HB3	1:B:138:PRO:HD2	1.91	0.52
1:B:144:VAL:HA	1:B:178:ILE:HB	1.91	0.52
1:C:90:ILE:HB	1:C:128:ASP:HB3	1.92	0.52
1:D:185:VAL:HG21	1:D:215:ARG:CZ	2.40	0.52
1:H:241:GLU:HB2	1:H:265:ASP:HB2	1.91	0.52
1:G:241:GLU:HB2	1:G:265:ASP:HB2	1.91	0.52
1:H:55:HIS:CE1	1:H:91:ARG:HE	2.28	0.52
1:A:475:ASP:H	1:A:498:VAL:HG12	1.75	0.51
1:B:241:GLU:HB2	1:B:265:ASP:HB2	1.90	0.51
1:B:339:TYR:HB3	1:B:342:GLU:HB2	1.92	0.51
1:E:27:THR:HG23	1:E:50:ARG:HH11	1.75	0.51
1:F:240:ILE:HD13	1:F:259:ILE:HG23	1.92	0.51
1:A:450:GLU:OE1	1:A:452:ASN:ND2	2.43	0.51
1:C:180:LEU:O	1:C:180:LEU:CD1	2.57	0.51
1:G:263:ARG:NH2	1:G:297:THR:O	2.41	0.51
1:F:88:PRO:HD2	1:F:213:PHE:HB2	1.92	0.51
1:G:471:VAL:CG2	1:G:475:ASP:HB3	2.39	0.51
1:F:129:TYR:CZ	1:F:185:VAL:HG23	2.45	0.51
1:D:187:LEU:HD23	1:D:188:PRO:HD3	1.82	0.51
1:H:112:THR:HB	1:H:126:TYR:HE1	1.75	0.51
1:B:50:ARG:HH22	3:B:601:CIT:H42	1.74	0.51
1:B:91:ARG:HA	1:B:178:ILE:HD13	1.92	0.51
1:F:92:THR:CG2	1:F:178:ILE:HD11	2.41	0.51
1:G:308:ARG:HD3	1:H:147:GLY:HA3	1.93	0.51
1:B:363:MET:O	1:B:366:SER:HB3	2.11	0.51
1:D:88:PRO:HD2	1:D:213:PHE:HB2	1.93	0.51
1:H:24:ILE:HG21	1:H:344:VAL:HG13	1.93	0.51
1:C:23:ARG:NH2	1:C:439:GLU:OE2	2.44	0.50
1:C:94:LEU:HB2	1:C:118:LYS:HA	1.92	0.50
1:F:145:ASP:HB2	1:F:172:LEU:HD12	1.93	0.50
1:B:248:ASN:O	1:B:252:ILE:HG12	2.11	0.50
1:E:401:SER:O	1:E:423:THR:CG2	2.28	0.50
1:A:424:THR:OG1	1:A:445:VAL:HG23	2.12	0.50
1:A:427:LEU:H	2:A:601:GOL:H11	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:25:ILE:HG12	1:E:48:VAL:HB	1.93	0.50
1:F:24:ILE:HG21	1:F:344:VAL:HG13	1.93	0.50
1:C:300:LEU:HD23	1:C:313:GLU:HB3	1.94	0.50
1:E:392:VAL:HG13	1:H:380:ALA:CB	2.42	0.49
1:G:277:VAL:HG13	1:H:10:LEU:HD13	1.93	0.49
1:E:263:ARG:NH2	1:E:299:MET:SD	2.85	0.49
1:A:424:THR:OG1	1:A:445:VAL:CG2	2.61	0.49
1:D:220:VAL:CG1	1:D:255:ALA:HB3	2.41	0.49
1:E:50:ARG:HH21	1:E:84:ASP:CG	2.16	0.49
1:H:112:THR:HB	1:H:126:TYR:CE1	2.48	0.49
1:A:399:VAL:HG22	1:A:410:ILE:CD1	2.41	0.49
1:G:300:LEU:HD12	1:G:330:LEU:HD21	1.94	0.49
1:D:431:GLN:O	1:D:434:VAL:HG12	2.13	0.49
1:F:483:ASP:OD2	1:G:494:ARG:CD	2.58	0.49
1:C:8:ILE:O	1:D:285:LYS:NZ	2.44	0.49
1:D:145:ASP:CG	1:D:145:ASP:O	2.50	0.49
1:D:240:ILE:HD13	1:D:259:ILE:HG23	1.94	0.49
1:E:90:ILE:HG22	1:E:178:ILE:HB	1.93	0.49
1:D:360:ASP:HB3	1:D:362:VAL:H	1.77	0.49
1:E:240:ILE:HD13	1:E:259:ILE:HG23	1.95	0.49
1:E:436:ARG:CG	1:E:436:ARG:NH1	2.73	0.49
1:B:493:THR:HB	1:C:493:THR:HG23	1.94	0.49
1:E:91:ARG:HD2	1:E:175:ARG:HB3	1.94	0.49
1:F:391:GLU:HA	1:G:373:ILE:HD12	1.95	0.49
1:G:240:ILE:HD13	1:G:259:ILE:HG23	1.95	0.49
1:A:240:ILE:HD13	1:A:259:ILE:HG23	1.95	0.48
1:E:380:ALA:CB	1:H:392:VAL:HG13	2.43	0.48
1:E:358:THR:O	1:E:358:THR:CG2	2.56	0.48
1:C:141:LEU:HD22	1:C:150:THR:HG22	1.95	0.48
1:D:119:ILE:O	1:D:119:ILE:CG2	2.58	0.48
1:D:423:THR:CG2	1:D:429:CYS:SG	3.02	0.48
1:B:88:PRO:HD2	1:B:213:PHE:HB2	1.95	0.48
1:B:392:VAL:HB	1:B:476:VAL:HG11	1.94	0.48
1:G:88:PRO:HG2	1:G:215:ARG:NH2	2.27	0.48
1:H:223:VAL:HG23	1:H:236:ILE:HD13	1.95	0.48
1:A:288:VAL:HG22	1:B:4:LEU:HD21	1.95	0.48
1:H:4:LEU:O	1:H:8:ILE:HG23	2.13	0.48
1:B:483:ASP:OD1	1:B:486:VAL:HB	2.13	0.48
1:C:90:ILE:CD1	1:C:129:TYR:CB	2.65	0.48
1:E:415:PRO:HG3	1:E:419:ILE:HD11	1.96	0.48
1:A:391:GLU:OE2	1:D:368:LYS:HE3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:300:LEU:HA	1:C:313:GLU:HG2	1.95	0.48
1:E:88:PRO:HB3	1:E:187:LEU:HB3	1.96	0.48
1:E:454:ARG:HH22	1:E:484:HIS:HA	1.79	0.48
1:B:296:ALA:O	1:B:329:MET:CE	2.62	0.47
1:C:370:LEU:HD22	1:D:4:LEU:HD23	1.95	0.47
1:F:220:VAL:HG12	1:F:224:ARG:HH12	1.78	0.47
1:A:300:LEU:HD23	1:A:313:GLU:HB3	1.95	0.47
1:B:296:ALA:CB	1:B:329:MET:HE2	2.44	0.47
1:D:83:LEU:HB3	1:D:209:ILE:CD1	2.44	0.47
1:F:91:ARG:HG2	1:F:177:GLY:HA2	1.96	0.47
1:G:339:TYR:HB3	1:G:342:GLU:HB2	1.96	0.47
1:G:378:GLU:CB	1:G:489:TYR:CD1	2.80	0.47
1:C:27:THR:HB	1:C:331:SER:O	2.14	0.47
1:C:339:TYR:HB3	1:C:342:GLU:HB2	1.95	0.47
1:B:237:ILE:HG21	1:B:294:ILE:HD12	1.96	0.47
1:E:360:ASP:HB3	1:E:362:VAL:H	1.79	0.47
1:F:304:THR:HG22	1:F:333:GLU:HA	1.96	0.47
1:A:278:ALA:HA	1:B:12:ILE:HG21	1.97	0.47
1:A:302:SER:OG	1:A:313:GLU:OE1	2.25	0.47
1:C:240:ILE:HD13	1:C:259:ILE:HG23	1.96	0.47
1:G:405:ARG:O	1:G:409:LEU:N	2.41	0.47
1:A:421:CYS:HG	1:A:423:THR:HG23	1.73	0.47
1:C:277:VAL:HG12	1:D:12:ILE:HG13	1.97	0.47
1:D:434:VAL:O	1:D:434:VAL:HG22	2.14	0.47
1:D:54:SER:HA	1:D:86:LYS:HG3	1.95	0.47
1:H:489:TYR:HD2	2:H:602:GOL:HO1	1.60	0.47
1:D:145:ASP:O	1:D:145:ASP:OD1	2.32	0.47
1:D:220:VAL:CG1	1:D:255:ALA:HB1	2.45	0.47
1:E:339:TYR:HB3	1:E:342:GLU:HB2	1.97	0.47
1:G:4:LEU:HD23	1:H:370:LEU:HD22	1.97	0.47
1:C:9:GLY:HA3	6:C:726:HOH:O	2.14	0.47
1:F:392:VAL:HG13	1:G:380:ALA:CB	2.45	0.47
1:H:314:VAL:HG13	1:H:350:ILE:HG12	1.97	0.47
1:D:471:VAL:HG11	1:D:498:VAL:HG11	1.97	0.46
1:E:364:PHE:HD1	1:E:413:TYR:HB3	1.80	0.46
1:G:436:ARG:CG	1:G:436:ARG:NH1	2.78	0.46
1:G:454:ARG:HG2	1:G:457:ARG:NH2	2.30	0.46
1:B:292:PRO:CA	1:B:326:ASP:OD2	2.43	0.46
1:D:292:PRO:HB3	1:D:434:VAL:HG22	1.97	0.46
1:A:180:LEU:HB3	1:A:183:CYS:SG	2.55	0.46
1:C:13:PHE:CZ	1:D:243:HIS:ND1	2.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:423:THR:HG23	1:D:429:CYS:SG	2.55	0.46
1:E:144:VAL:HG23	1:E:149:LEU:O	2.16	0.46
1:G:12:ILE:HD12	1:G:12:ILE:H	1.80	0.46
1:H:146:ASP:OD1	1:H:268:VAL:HG13	2.12	0.46
1:A:339:TYR:HB3	1:A:342:GLU:HB2	1.97	0.46
1:D:95:PHE:HZ	1:D:172:LEU:HD23	1.81	0.46
1:F:402:ASN:H	2:F:602:GOL:H2	1.80	0.46
1:C:4:LEU:O	1:C:8:ILE:CG1	2.60	0.46
1:D:339:TYR:HB3	1:D:342:GLU:HB2	1.98	0.46
1:E:135:VAL:HG13	1:E:184:GLU:O	2.15	0.46
1:H:196:LYS:HA	1:H:199:GLN:HB2	1.97	0.46
1:B:244:GLN:O	1:B:248:ASN:HB2	2.16	0.46
1:G:209:ILE:HD13	1:G:227:LEU:HD11	1.96	0.46
1:H:355:GLN:HA	1:H:358:THR:HG22	1.96	0.46
1:C:239:LYS:HE3	1:C:260:MET:HE2	1.97	0.46
1:G:276:VAL:HG22	1:H:315:THR:HG22	1.97	0.46
1:C:317:VAL:HG11	1:C:350:ILE:HD13	1.98	0.46
1:E:4:LEU:HD23	1:F:370:LEU:HD22	1.98	0.46
1:E:149:LEU:HA	1:E:168:ASN:OD1	2.15	0.46
1:A:227:LEU:HB3	1:A:231:GLY:HA3	1.98	0.46
1:G:219:GLN:O	1:G:222:GLU:HB2	2.15	0.46
1:A:419:ILE:O	1:A:438:VAL:HA	2.16	0.45
1:B:129:TYR:CZ	1:B:131:GLN:HB2	2.51	0.45
1:E:50:ARG:HH12	1:E:52:ASN:HB2	1.81	0.45
1:E:50:ARG:NH2	1:E:84:ASP:CG	2.70	0.45
1:H:216:THR:HG23	1:H:219:GLN:H	1.81	0.45
1:C:378:GLU:HB2	1:C:489:TYR:HB2	1.98	0.45
1:D:111:THR:HA	1:D:161:THR:HG22	1.97	0.45
1:D:129:TYR:HE1	1:D:187:LEU:HG	1.81	0.45
1:E:150:THR:HG23	1:E:167:ASN:HB2	1.98	0.45
1:F:142:ILE:HG12	1:F:180:LEU:HD21	1.97	0.45
1:H:47:SER:O	1:H:79:ILE:HG23	2.15	0.45
1:D:295:CYS:SG	1:D:299:MET:CE	3.05	0.45
1:E:27:THR:HA	1:E:50:ARG:HB3	1.98	0.45
1:F:88:PRO:CB	1:F:187:LEU:HD22	2.46	0.45
1:E:83:LEU:HB3	1:E:209:ILE:CD1	2.46	0.45
1:F:95:PHE:HE1	1:F:172:LEU:CD2	2.28	0.45
1:B:239:LYS:HZ1	3:B:601:CIT:H41	1.80	0.45
1:H:240:ILE:HD13	1:H:259:ILE:HG23	1.98	0.45
1:H:257:ASP:O	1:H:292:PRO:HD2	2.16	0.45
1:F:118:LYS:O	1:F:119:ILE:HG13	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:50:ARG:HD2	1:G:210:PHE:HD2	1.81	0.45
1:B:240:ILE:HD13	1:B:259:ILE:HG23	1.99	0.45
1:D:364:PHE:HD1	1:D:413:TYR:HB3	1.82	0.45
1:E:27:THR:OG1	1:E:50:ARG:HD3	2.17	0.45
1:F:95:PHE:CZ	1:F:172:LEU:HD22	2.52	0.45
1:F:339:TYR:HB3	1:F:342:GLU:HB2	1.99	0.45
1:H:339:TYR:HB3	1:H:342:GLU:HB2	1.98	0.45
1:F:113:ASP:HB3	1:F:116:PHE:HD2	1.82	0.45
1:A:392:VAL:HG13	1:D:380:ALA:CB	2.46	0.45
1:C:113:ASP:HB3	1:C:116:PHE:HD2	1.82	0.45
1:E:21:ALA:N	1:E:355:GLN:NE2	2.65	0.45
1:G:298:GLN:HE22	1:H:308:ARG:NH1	2.10	0.45
1:G:418:PRO:HG2	1:G:470:TYR:CD1	2.52	0.45
1:C:249:ILE:HG12	1:C:282:ILE:HG12	2.00	0.44
1:C:276:VAL:O	1:C:280:MET:HG3	2.17	0.44
1:D:27:THR:HA	1:D:50:ARG:HB3	2.00	0.44
1:F:392:VAL:HB	1:F:476:VAL:HG11	1.98	0.44
1:B:359:HIS:O	1:B:416:ASN:OD1	2.35	0.44
1:B:450:GLU:HG3	1:B:452:ASN:HD21	1.82	0.44
1:A:202:VAL:HG21	1:A:227:LEU:CD2	2.42	0.44
1:B:157:GLU:H	1:B:162:LEU:HD12	1.82	0.44
1:D:215:ARG:HB2	1:D:219:GLN:OE1	2.16	0.44
1:D:300:LEU:HA	1:D:313:GLU:HG2	1.99	0.44
1:E:420:ILE:HA	1:E:439:GLU:O	2.17	0.44
1:B:116:PHE:CG	1:B:116:PHE:O	2.70	0.44
1:D:113:ASP:HB3	1:D:116:PHE:HD2	1.83	0.44
1:E:364:PHE:CD1	1:E:413:TYR:HB3	2.53	0.44
1:G:42:MET:HG2	1:G:79:ILE:HD13	2.00	0.44
1:H:264:GLY:N	1:H:297:THR:OG1	2.50	0.44
1:B:83:LEU:HB3	1:B:209:ILE:CD1	2.48	0.44
1:B:116:PHE:O	1:B:116:PHE:CD1	2.70	0.44
1:F:364:PHE:HD1	1:F:413:TYR:HB3	1.81	0.44
1:H:132:LEU:O	1:H:135:VAL:N	2.51	0.44
1:C:322:PHE:CE1	1:C:358:THR:HG23	2.52	0.44
1:E:215:ARG:HG3	1:E:219:GLN:HE22	1.82	0.44
1:H:94:LEU:N	1:H:94:LEU:HD22	2.32	0.44
1:B:386:VAL:HG21	1:B:413:TYR:HB2	2.00	0.44
1:F:249:ILE:HG12	1:F:282:ILE:HG12	2.00	0.44
1:F:486:VAL:HG21	1:F:489:TYR:O	2.18	0.44
1:H:253:ILE:HG12	1:H:259:ILE:HG13	2.00	0.44
1:D:189:ALA:HB2	1:D:219:GLN:NE2	2.26	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:172:LEU:HD11	1:F:176:LYS:HB2	2.00	0.44
1:A:242:ASN:OD1	1:A:245:GLY:N	2.50	0.43
1:B:249:ILE:HG13	1:B:253:ILE:HD11	1.98	0.43
1:D:364:PHE:CD1	1:D:413:TYR:HB3	2.53	0.43
1:G:392:VAL:HB	1:G:476:VAL:HG11	1.99	0.43
1:A:314:VAL:HG13	1:A:350:ILE:HG12	2.00	0.43
1:C:317:VAL:CG1	1:C:350:ILE:HD13	2.48	0.43
1:F:364:PHE:CD1	1:F:413:TYR:HB3	2.53	0.43
1:H:144:VAL:HG12	1:H:148:VAL:HG21	2.01	0.43
1:C:388:SER:O	1:C:392:VAL:HG22	2.18	0.43
1:A:241:GLU:HA	1:A:266:LEU:HB2	2.00	0.43
1:B:35:VAL:HG21	1:G:372:LYS:HB2	2.00	0.43
1:B:253:ILE:HG22	1:B:253:ILE:O	2.18	0.43
1:E:149:LEU:HD13	1:E:170:HIS:HB3	2.00	0.43
1:E:378:GLU:HB3	1:E:405:ARG:HH22	1.82	0.43
1:E:392:VAL:HB	1:E:476:VAL:HG11	1.99	0.43
1:E:405:ARG:HG3	1:E:406:SER:N	2.33	0.43
1:E:241:GLU:HA	1:E:266:LEU:HB2	2.00	0.43
1:G:302:SER:OG	1:G:313:GLU:OE1	2.20	0.43
1:H:261:VAL:HG13	1:H:282:ILE:HD11	2.01	0.43
1:B:25:ILE:HB	1:B:329:MET:HG3	2.00	0.43
1:E:113:ASP:HB3	1:E:116:PHE:HD2	1.83	0.43
1:H:249:ILE:HG12	1:H:282:ILE:HG22	1.99	0.43
1:B:189:ALA:HB2	1:B:219:GLN:HG2	2.00	0.43
1:C:42:MET:C	1:C:44:SER:N	2.71	0.43
1:D:129:TYR:HB3	1:D:132:LEU:HB2	2.01	0.43
1:E:378:GLU:CB	1:E:405:ARG:HH22	2.32	0.43
1:H:392:VAL:HB	1:H:476:VAL:HG11	2.01	0.43
1:A:278:ALA:O	1:A:282:ILE:HD12	2.19	0.43
1:E:21:ALA:H	1:E:355:GLN:NE2	2.17	0.43
1:E:144:VAL:CG2	1:E:149:LEU:HD23	2.45	0.43
1:H:425:ARG:HG3	1:H:427:LEU:H	1.84	0.43
1:E:392:VAL:HG13	1:H:380:ALA:HB2	1.99	0.43
1:E:397:ILE:HB	1:E:419:ILE:HG12	2.01	0.43
1:H:276:VAL:O	1:H:280:MET:HG3	2.19	0.43
1:A:12:ILE:HD12	1:A:12:ILE:H	1.84	0.42
1:G:364:PHE:HD1	1:G:413:TYR:HB3	1.84	0.42
1:H:364:PHE:HZ	1:H:387:SER:HB3	1.83	0.42
1:D:42:MET:HG3	1:D:46:MET:CE	2.49	0.42
1:A:219:GLN:O	1:A:222:GLU:HB2	2.19	0.42
1:F:303:MET:CB	1:F:343:VAL:CG1	2.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:405:ARG:O	1:G:409:LEU:HB2	2.19	0.42
1:A:88:PRO:HD2	1:A:213:PHE:HB2	2.00	0.42
1:D:241:GLU:HA	1:D:266:LEU:HB2	2.01	0.42
1:E:4:LEU:HD22	1:F:366:SER:HB3	2.01	0.42
1:E:292:PRO:HG3	1:E:435:THR:CG2	2.49	0.42
1:E:300:LEU:HD12	1:E:330:LEU:HD21	2.01	0.42
1:G:300:LEU:HD23	1:G:313:GLU:HB3	2.01	0.42
1:A:4:LEU:HD22	1:B:366:SER:OG	2.19	0.42
1:A:392:VAL:HB	1:A:476:VAL:HG11	2.01	0.42
1:B:242:ASN:O	1:B:246:VAL:HG23	2.19	0.42
1:B:359:HIS:O	1:B:416:ASN:CG	2.57	0.42
1:D:392:VAL:HB	1:D:476:VAL:HG11	2.00	0.42
1:D:486:VAL:HG22	1:D:487:LYS:H	1.85	0.42
1:E:21:ALA:HB3	1:E:355:GLN:NE2	2.35	0.42
1:H:241:GLU:HA	1:H:266:LEU:HB2	2.02	0.42
1:A:401:SER:O	1:A:423:THR:CG2	2.43	0.42
1:C:390:PHE:HE1	1:C:416:ASN:ND2	2.17	0.42
1:E:276:VAL:O	1:E:280:MET:HG3	2.18	0.42
1:B:388:SER:O	1:B:392:VAL:HG22	2.19	0.42
1:D:191:SER:O	1:D:195:ARG:HG3	2.20	0.42
1:E:451:ASP:HB2	1:E:456:LYS:HD2	2.01	0.42
1:G:217:ALA:HB2	1:G:251:ALA:HB1	2.01	0.42
1:B:450:GLU:HG3	1:B:452:ASN:ND2	2.35	0.42
1:E:330:LEU:HD13	1:E:343:VAL:HG13	2.02	0.42
1:F:451:ASP:OD2	1:F:456:LYS:CB	2.68	0.42
1:B:27:THR:HG1	1:B:331:SER:HA	1.84	0.42
1:D:404:GLY:HA3	1:D:432:LEU:HD11	2.01	0.42
1:E:156:LYS:HA	1:E:162:LEU:HD23	2.01	0.42
1:E:388:SER:O	1:E:392:VAL:HG22	2.20	0.42
1:H:94:LEU:HD22	1:H:94:LEU:H	1.84	0.42
1:B:47:SER:HB3	1:B:433:ASN:HB3	2.01	0.41
1:B:202:VAL:HG21	1:B:227:LEU:CD2	2.32	0.41
1:B:241:GLU:HA	1:B:266:LEU:HB2	2.02	0.41
1:C:366:SER:HB3	1:D:4:LEU:HD22	2.02	0.41
1:D:388:SER:O	1:D:392:VAL:HG22	2.20	0.41
1:E:235:LEU:HD11	1:E:431:GLN:HG2	2.02	0.41
1:E:239:LYS:HE3	1:E:260:MET:HE1	2.02	0.41
1:G:241:GLU:HA	1:G:266:LEU:HB2	2.02	0.41
1:H:132:LEU:N	1:H:133:PRO:CD	2.78	0.41
1:C:237:ILE:HG21	1:C:294:ILE:HD12	2.02	0.41
1:F:241:GLU:HA	1:F:266:LEU:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:406:SER:O	1:F:410:ILE:N	2.51	0.41
1:A:364:PHE:HD1	1:A:413:TYR:HB3	1.84	0.41
1:F:464:TRP:HZ3	1:F:470:TYR:HE2	1.69	0.41
1:G:299:MET:HE3	1:G:328:VAL:HG23	2.01	0.41
1:H:94:LEU:H	1:H:94:LEU:CD2	2.33	0.41
1:A:386:VAL:HG21	1:A:413:TYR:HB2	2.02	0.41
1:G:299:MET:HA	1:G:316:ASP:OD2	2.20	0.41
1:A:388:SER:O	1:A:392:VAL:HG22	2.19	0.41
1:C:12:ILE:HD12	1:D:278:ALA:HA	2.03	0.41
1:C:42:MET:C	1:C:44:SER:H	2.24	0.41
1:C:317:VAL:HG21	1:C:347:MET:HG3	2.02	0.41
1:E:27:THR:HG21	1:E:50:ARG:NH1	2.36	0.41
1:E:315:THR:HG22	1:F:276:VAL:HG22	2.02	0.41
1:D:26:CYS:HB3	1:D:334:THR:HG21	2.02	0.41
1:G:364:PHE:CD1	1:G:413:TYR:HB3	2.55	0.41
1:C:431:GLN:O	1:C:434:VAL:HG22	2.21	0.41
1:D:111:THR:CA	1:D:161:THR:HG22	2.51	0.41
1:E:80:GLY:HA2	1:E:430:ARG:HB3	2.03	0.41
1:E:135:VAL:HG12	1:E:183:CYS:HB3	2.02	0.41
1:E:307:PRO:HG3	1:F:170:HIS:HE1	1.80	0.41
1:H:227:LEU:HD11	1:H:236:ILE:HD11	2.03	0.41
1:D:42:MET:HG3	1:D:46:MET:HE3	2.01	0.41
1:D:333:GLU:HB3	1:D:343:VAL:HG11	2.03	0.41
1:G:311:ARG:HG2	1:H:298:GLN:OE1	2.20	0.41
1:H:143:TYR:CB	1:H:179:ASN:O	2.61	0.41
1:A:242:ASN:CG	1:A:245:GLY:H	2.25	0.41
1:B:408:ARG:CG	1:B:435:THR:HG21	2.35	0.41
1:D:52:ASN:HD21	3:D:601:CIT:C1	2.34	0.41
1:H:263:ARG:HB2	1:H:297:THR:OG1	2.21	0.41
1:A:129:TYR:CZ	1:A:185:VAL:HG23	2.56	0.41
1:C:322:PHE:CD1	1:C:358:THR:HG21	2.54	0.41
1:D:113:ASP:HB3	1:D:116:PHE:CD2	2.56	0.41
1:D:172:LEU:HD11	1:D:176:LYS:CB	2.51	0.41
1:D:220:VAL:HG21	1:D:256:SER:OG	2.21	0.41
1:B:392:VAL:HG13	1:C:380:ALA:CB	2.51	0.40
1:B:472:SER:O	1:B:498:VAL:HB	2.21	0.40
1:A:202:VAL:HG22	1:A:227:LEU:HD22	1.85	0.40
1:A:292:PRO:CG	1:A:435:THR:CG2	2.88	0.40
1:E:150:THR:HG22	1:E:168:ASN:HD21	1.86	0.40
1:F:118:LYS:HD3	1:F:119:ILE:H	1.86	0.40
1:F:219:GLN:O	1:F:222:GLU:HB2	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:455:GLU:O	1:F:456:LYS:C	2.58	0.40
1:G:386:VAL:HG21	1:G:413:TYR:HB2	2.03	0.40
1:H:90:ILE:HA	1:H:128:ASP:HB3	2.04	0.40
1:H:132:LEU:HD12	1:H:132:LEU:HA	1.82	0.40
1:H:219:GLN:O	1:H:222:GLU:HB2	2.21	0.40
1:H:333:GLU:HB3	1:H:343:VAL:HG11	2.03	0.40
1:A:276:VAL:O	1:A:280:MET:HG3	2.21	0.40
1:C:386:VAL:HG21	1:C:413:TYR:HB2	2.04	0.40
1:D:220:VAL:HG11	1:D:255:ALA:CB	2.47	0.40
1:E:113:ASP:HB3	1:E:116:PHE:CD2	2.57	0.40
1:E:219:GLN:O	1:E:222:GLU:HB2	2.22	0.40
1:B:229:GLU:HA	1:B:232:LYS:HD3	2.02	0.40
1:B:276:VAL:O	1:B:280:MET:HG3	2.21	0.40
1:D:292:PRO:CB	1:D:434:VAL:HG22	2.51	0.40
1:E:25:ILE:HB	1:E:329:MET:HG3	2.03	0.40
1:E:227:LEU:HD22	1:E:236:ILE:HD11	2.03	0.40
1:E:294:ILE:HG12	1:E:327:CYS:HB2	2.04	0.40
1:F:377:PRO:HB2	1:F:489:TYR:HE1	1.87	0.40
1:F:378:GLU:HB2	1:F:489:TYR:CD1	2.52	0.40
1:B:355:GLN:HA	1:B:358:THR:HG22	2.04	0.40
1:C:241:GLU:HA	1:C:266:LEU:HB2	2.03	0.40
1:C:446:ASP:C	1:C:448:HIS:H	2.25	0.40
1:D:149:LEU:HD13	1:D:170:HIS:HB3	2.02	0.40
1:F:237:ILE:HG21	1:F:294:ILE:HD12	2.04	0.40
1:G:276:VAL:O	1:G:280:MET:HG3	2.22	0.40
1:H:24:ILE:HG23	1:H:347:MET:CE	2.51	0.40
1:H:300:LEU:HD23	1:H:313:GLU:HB3	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	427/514 (83%)	387 (91%)	33 (8%)	7 (2%)	9 40
1	B	468/514 (91%)	429 (92%)	38 (8%)	1 (0%)	47 82
1	C	498/514 (97%)	454 (91%)	41 (8%)	3 (1%)	25 64
1	D	497/514 (97%)	457 (92%)	38 (8%)	2 (0%)	34 72
1	E	491/514 (96%)	466 (95%)	25 (5%)	0	100 100
1	F	497/514 (97%)	460 (93%)	36 (7%)	1 (0%)	47 82
1	G	408/514 (79%)	382 (94%)	24 (6%)	2 (0%)	29 68
1	H	437/514 (85%)	399 (91%)	33 (8%)	5 (1%)	14 50
All	All	3723/4112 (90%)	3434 (92%)	268 (7%)	21 (1%)	25 64

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	122	LYS
1	A	110	VAL
1	A	184	GLU
1	C	445	VAL
1	C	484	HIS
1	A	45	GLY
1	A	112	THR
1	A	181	PRO
1	H	131	GLN
1	A	113	ASP
1	A	116	PHE
1	C	88	PRO
1	G	473	ALA
1	H	132	LEU
1	H	487	LYS
1	H	130	PRO
1	H	133	PRO
1	D	181	PRO
1	F	119	ILE
1	D	45	GLY
1	G	182	GLY

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	338/435 (78%)	335 (99%)	3 (1%)	78	92
1	B	364/435 (84%)	358 (98%)	6 (2%)	62	86
1	C	401/435 (92%)	394 (98%)	7 (2%)	60	85
1	D	397/435 (91%)	389 (98%)	8 (2%)	55	83
1	E	402/435 (92%)	394 (98%)	8 (2%)	55	83
1	F	400/435 (92%)	387 (97%)	13 (3%)	38	73
1	G	327/435 (75%)	324 (99%)	3 (1%)	78	92
1	H	340/435 (78%)	333 (98%)	7 (2%)	53	82
All	All	2969/3480 (85%)	2914 (98%)	55 (2%)	57	84

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	44	SER
1	A	116	PHE
1	A	346	TYR
1	B	44	SER
1	B	121	THR
1	B	162	LEU
1	B	248	ASN
1	B	254	GLU
1	B	346	TYR
1	C	8	ILE
1	C	43	LYS
1	C	46	MET
1	C	346	TYR
1	C	444	ASP
1	C	445	VAL
1	C	452	ASN
1	D	128	ASP
1	D	129	TYR
1	D	184	GLU
1	D	185	VAL
1	D	187	LEU
1	D	346	TYR
1	D	405	ARG
1	D	499	ARG

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Mol	Chain	Res	Type
1	E	44	SER
1	E	46	MET
1	E	99	GLU
1	E	144	VAL
1	E	172	LEU
1	E	308	ARG
1	E	346	TYR
1	E	436	ARG
1	F	10	LEU
1	F	156	LYS
1	F	187	LEU
1	F	227	LEU
1	F	346	TYR
1	F	360	ASP
1	F	451	ASP
1	F	453	ASP
1	F	454	ARG
1	F	485	SER
1	F	486	VAL
1	F	487	LYS
1	F	489	TYR
1	G	346	TYR
1	G	436	ARG
1	G	471	VAL
1	H	44	SER
1	H	137	ARG
1	H	144	VAL
1	H	308	ARG
1	H	346	TYR
1	H	485	SER
1	H	491	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	319	ASN
1	A	323	ASN
1	A	452	ASN
1	B	179	ASN
1	B	319	ASN
1	B	452	ASN
1	D	219	GLN

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Mol	Chain	Res	Type
1	D	359	HIS
1	F	459	GLN
1	G	492	GLN
1	H	55	HIS
1	H	279	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

18 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	GOL	H	602	-	5,5,5	0.06	0	5,5,5	0.35	0
3	CIT	H	601	-	12,12,12	1.95	6 (50%)	17,17,17	2.39	7 (41%)
2	GOL	D	602	-	5,5,5	0.12	0	5,5,5	0.29	0
4	PGE	F	603	-	9,9,9	0.16	0	8,8,8	0.12	0
2	GOL	F	602	-	5,5,5	0.09	0	5,5,5	0.70	0
2	GOL	A	601	-	5,5,5	0.14	0	5,5,5	0.46	0
2	GOL	A	602	-	5,5,5	0.15	0	5,5,5	0.30	0
2	GOL	C	602	-	5,5,5	0.11	0	5,5,5	0.31	0
2	GOL	B	602	-	5,5,5	0.11	0	5,5,5	0.23	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	GOL	G	601	-	5,5,5	0.08	0	5,5,5	0.28	0
3	CIT	E	601	-	12,12,12	1.85	6 (50%)	17,17,17	2.41	6 (35%)
3	CIT	F	601	-	12,12,12	0.30	0	17,17,17	0.89	1 (5%)
5	PEG	F	604	-	6,6,6	0.26	0	5,5,5	0.16	0
3	CIT	D	601	-	12,12,12	1.97	6 (50%)	17,17,17	2.39	8 (47%)
2	GOL	C	603	-	5,5,5	0.07	0	5,5,5	0.20	0
3	CIT	C	601	-	12,12,12	1.63	4 (33%)	17,17,17	1.53	4 (23%)
3	CIT	B	601	-	12,12,12	0.31	0	17,17,17	0.68	1 (5%)
2	GOL	E	602	-	5,5,5	0.10	0	5,5,5	0.18	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	GOL	H	602	-	-	1/4/4/4	-
3	CIT	H	601	-	-	5/16/16/16	-
2	GOL	D	602	-	-	0/4/4/4	-
4	PGE	F	603	-	-	3/7/7/7	-
2	GOL	F	602	-	-	1/4/4/4	-
2	GOL	A	601	-	-	0/4/4/4	-
2	GOL	A	602	-	-	2/4/4/4	-
2	GOL	C	602	-	-	0/4/4/4	-
2	GOL	B	602	-	-	0/4/4/4	-
2	GOL	G	601	-	-	3/4/4/4	-
3	CIT	E	601	-	-	0/16/16/16	-
3	CIT	F	601	-	-	5/16/16/16	-
5	PEG	F	604	-	-	1/4/4/4	-
3	CIT	D	601	-	-	0/16/16/16	-
2	GOL	C	603	-	-	0/4/4/4	-
3	CIT	C	601	-	-	0/16/16/16	-
3	CIT	B	601	-	-	3/16/16/16	-
2	GOL	E	602	-	-	0/4/4/4	-

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	601	CIT	O4-C5	-3.29	1.19	1.30
3	C	601	CIT	O1-C1	3.16	1.32	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	601	CIT	O5-C6	3.03	1.31	1.22
3	H	601	CIT	O5-C6	2.98	1.31	1.22
3	D	601	CIT	O1-C1	2.96	1.31	1.22
3	H	601	CIT	O3-C5	2.95	1.31	1.22
3	H	601	CIT	O2-C1	-2.93	1.21	1.30
3	E	601	CIT	O1-C1	2.87	1.31	1.22
3	C	601	CIT	O3-C5	2.77	1.31	1.22
3	E	601	CIT	O4-C5	-2.74	1.21	1.30
3	H	601	CIT	O1-C1	2.70	1.30	1.22
3	E	601	CIT	O3-C5	2.68	1.30	1.22
3	H	601	CIT	O4-C5	-2.64	1.22	1.30
3	D	601	CIT	O3-C5	2.61	1.30	1.22
3	E	601	CIT	O2-C1	-2.58	1.22	1.30
3	C	601	CIT	O2-C1	-2.55	1.22	1.30
3	C	601	CIT	O4-C5	-2.50	1.22	1.30
3	E	601	CIT	O5-C6	2.48	1.29	1.22
3	D	601	CIT	O2-C1	-2.42	1.22	1.30
3	E	601	CIT	O6-C6	-2.27	1.22	1.30
3	H	601	CIT	O6-C6	-2.20	1.22	1.30
3	D	601	CIT	O6-C6	-2.07	1.23	1.30

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	601	CIT	O6-C6-C3	5.34	123.39	113.14
3	H	601	CIT	O6-C6-C3	5.31	123.33	113.14
3	E	601	CIT	O6-C6-C3	5.09	122.91	113.14
3	E	601	CIT	O5-C6-C3	-4.69	113.00	122.09
3	D	601	CIT	O5-C6-C3	-4.59	113.19	122.09
3	H	601	CIT	O5-C6-C3	-4.47	113.43	122.09
3	E	601	CIT	O1-C1-C2	-3.81	112.17	122.95
3	E	601	CIT	O3-C5-C4	-3.71	112.44	122.95
3	H	601	CIT	O3-C5-C4	-3.63	112.68	122.95
3	H	601	CIT	O1-C1-C2	-3.35	113.47	122.95
3	C	601	CIT	O3-C5-C4	-3.30	113.60	122.95
3	D	601	CIT	O1-C1-C2	-3.20	113.90	122.95
3	H	601	CIT	O4-C5-C4	3.11	124.19	114.35
3	E	601	CIT	O2-C1-C2	2.97	123.75	114.35
3	D	601	CIT	O3-C5-C4	-2.91	114.72	122.95
3	C	601	CIT	O4-C5-C4	2.91	123.55	114.35
3	E	601	CIT	O4-C5-C4	2.90	123.53	114.35
3	C	601	CIT	O1-C1-C2	-2.77	115.09	122.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	H	601	CIT	O2-C1-C2	2.77	123.13	114.35
3	D	601	CIT	O2-C1-C2	2.75	123.07	114.35
3	F	601	CIT	C3-C4-C5	2.68	121.24	113.92
3	D	601	CIT	O4-C5-C4	2.60	122.58	114.35
3	C	601	CIT	O2-C1-C2	2.47	122.17	114.35
3	B	601	CIT	C3-C2-C1	2.15	119.81	113.92
3	D	601	CIT	C3-C2-C1	2.09	119.65	113.92
3	H	601	CIT	C3-C4-C5	2.07	119.57	113.92
3	D	601	CIT	C4-C3-C2	-2.01	104.17	109.31

There are no chirality outliers.

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	602	GOL	O1-C1-C2-O2
2	A	602	GOL	O1-C1-C2-C3
3	F	601	CIT	C1-C2-C3-O7
3	F	601	CIT	C1-C2-C3-C6
3	B	601	CIT	C1-C2-C3-O7
3	B	601	CIT	C1-C2-C3-C6
3	F	601	CIT	C1-C2-C3-C4
3	H	601	CIT	C1-C2-C3-O7
3	H	601	CIT	C1-C2-C3-C6
2	F	602	GOL	C1-C2-C3-O3
2	G	601	GOL	O1-C1-C2-C3
2	H	602	GOL	O1-C1-C2-C3
3	B	601	CIT	C1-C2-C3-C4
3	H	601	CIT	C1-C2-C3-C4
4	F	603	PGE	C6-C5-O3-C4
4	F	603	PGE	C3-C4-O3-C5
4	F	603	PGE	C4-C3-O2-C2
3	F	601	CIT	C3-C4-C5-O4
2	G	601	GOL	O1-C1-C2-O2
3	F	601	CIT	C3-C4-C5-O3
3	H	601	CIT	C3-C4-C5-O4
3	H	601	CIT	C3-C4-C5-O3
2	G	601	GOL	O2-C2-C3-O3
5	F	604	PEG	O2-C3-C4-O4

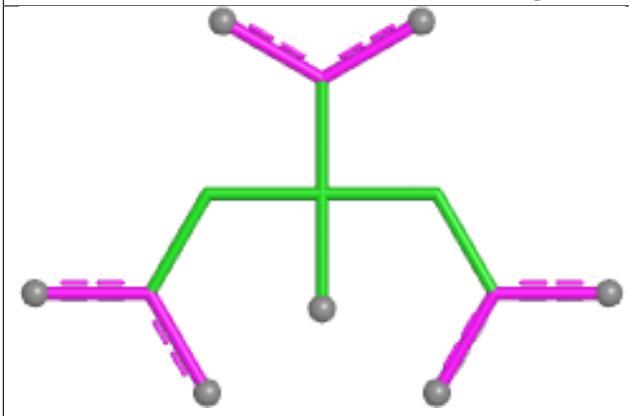
There are no ring outliers.

8 monomers are involved in 14 short contacts:

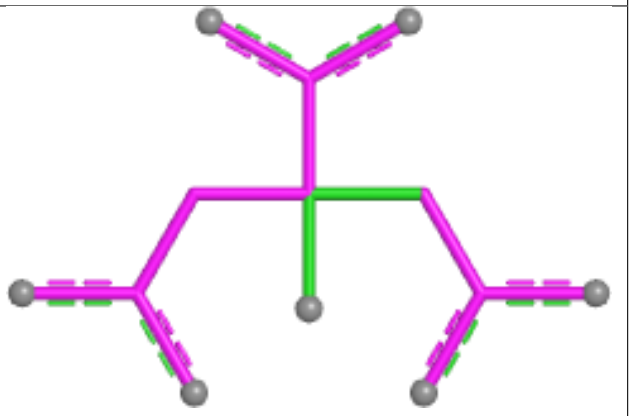
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	H	602	GOL	1	0
3	H	601	CIT	3	0
2	F	602	GOL	2	0
2	A	601	GOL	1	0
2	G	601	GOL	1	0
3	D	601	CIT	1	0
3	C	601	CIT	1	0
3	B	601	CIT	4	0

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.

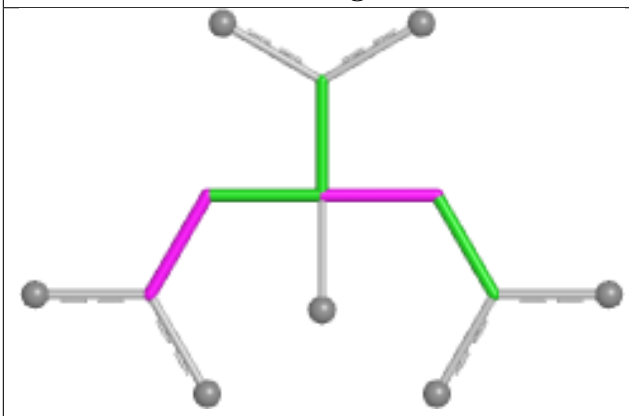
Ligand CIT H 601



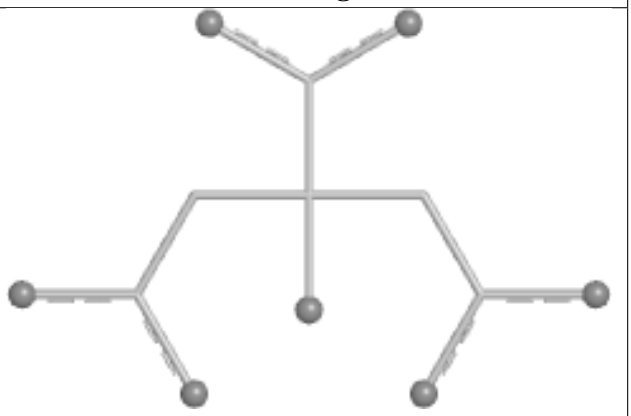
Bond lengths



Bond angles

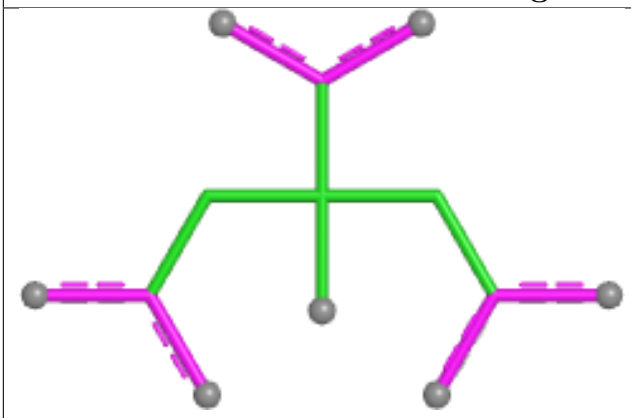


Torsions



Rings

Ligand CIT E 601



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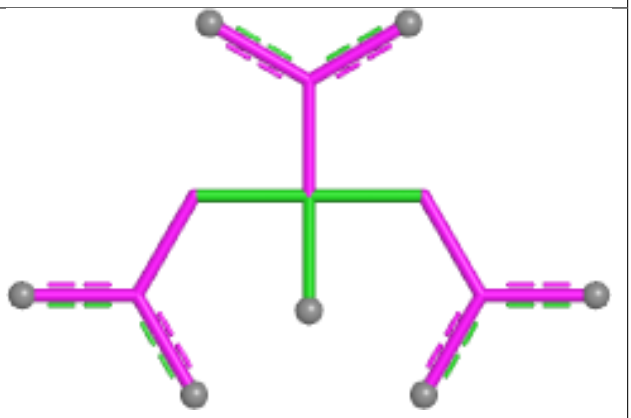
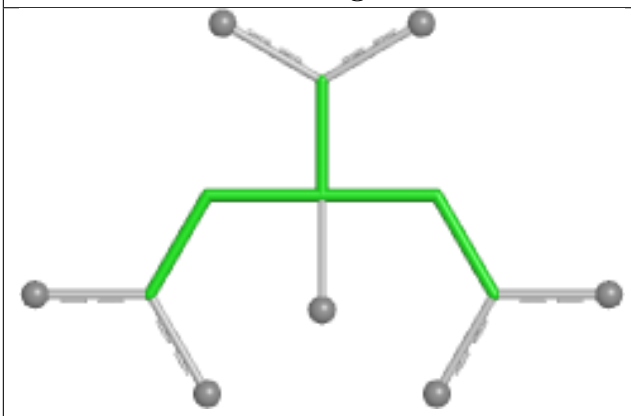


Bond angles



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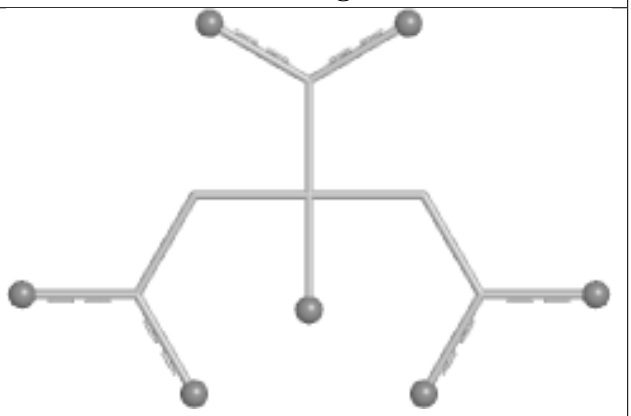
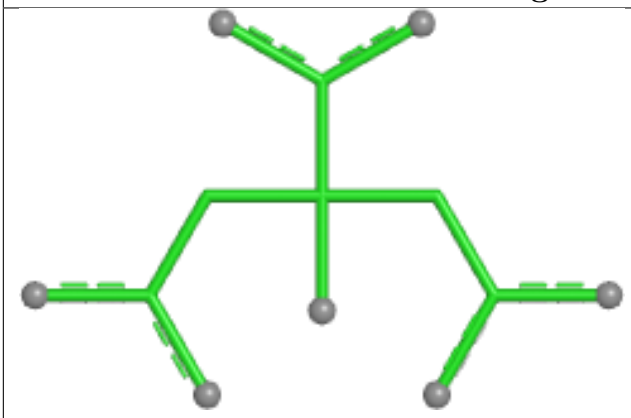
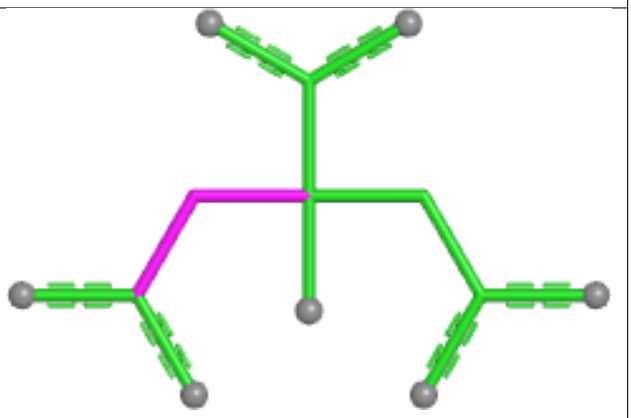


Rings

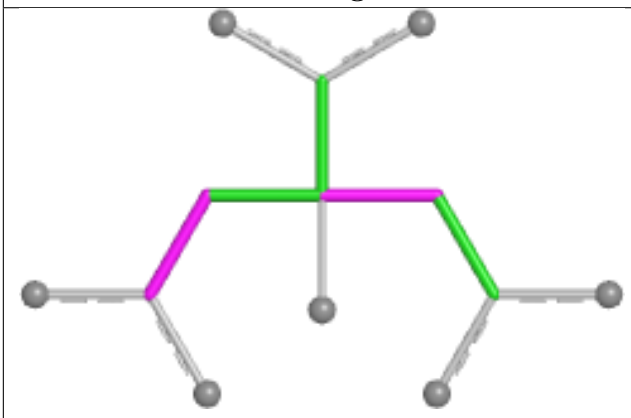
Ligand CIT F 601



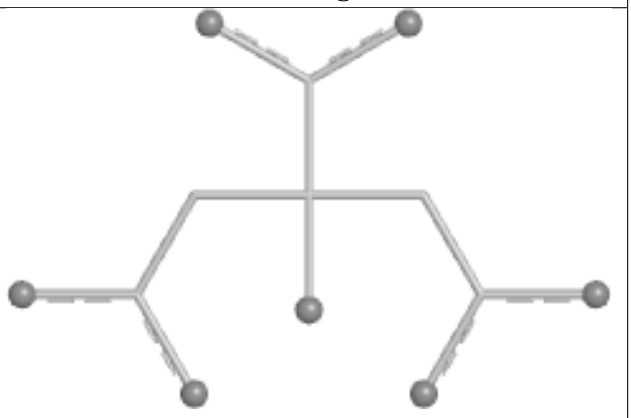
Bond lengths



Bond angles

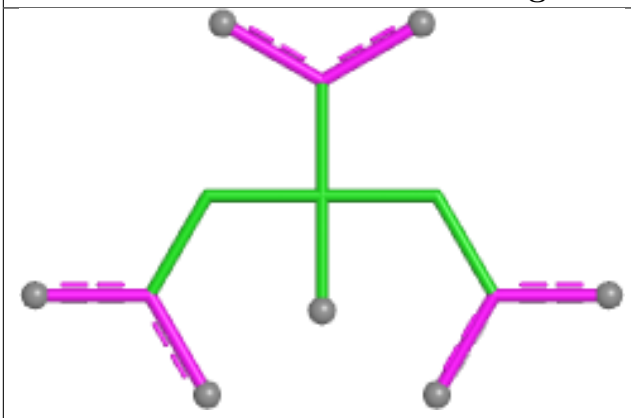


Torsions

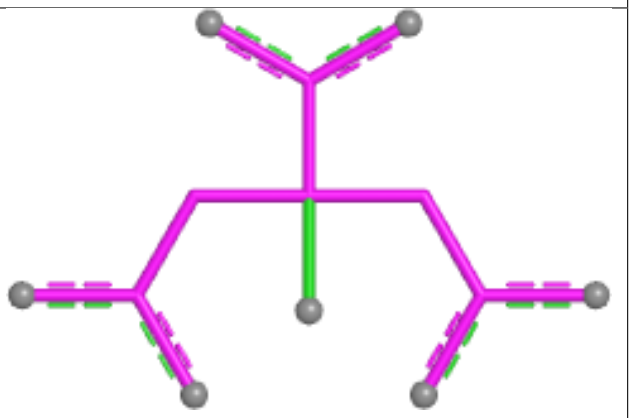


Rings

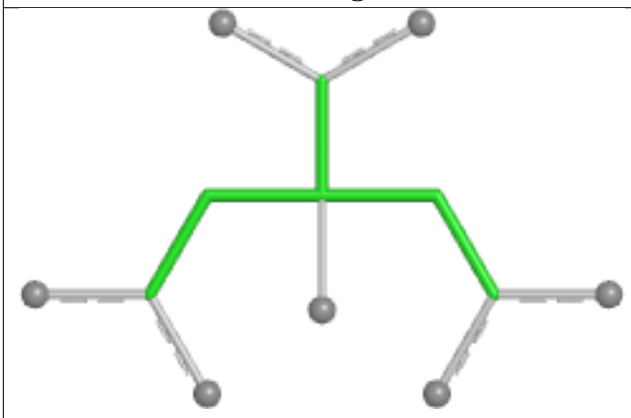
Ligand CIT D 601



Bond lengths



Bond angles



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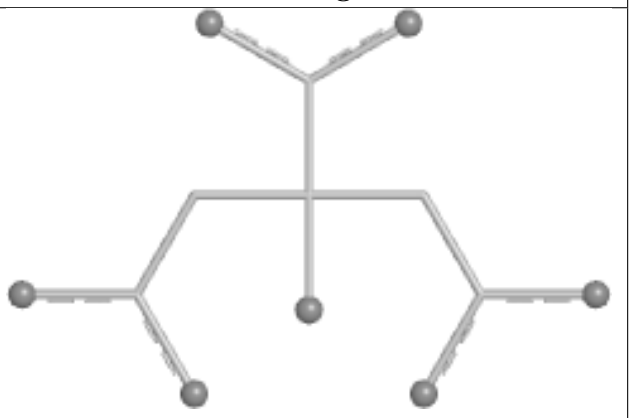
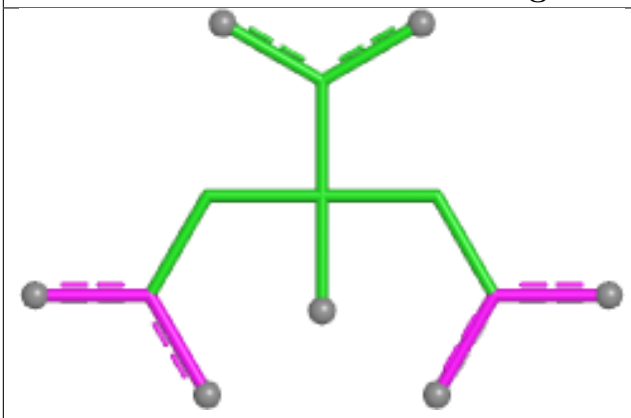
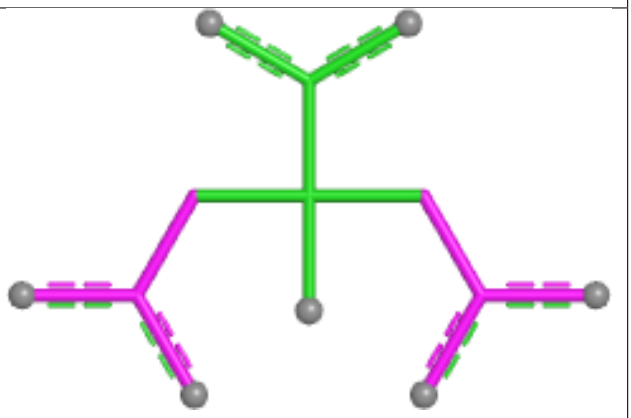


Rings

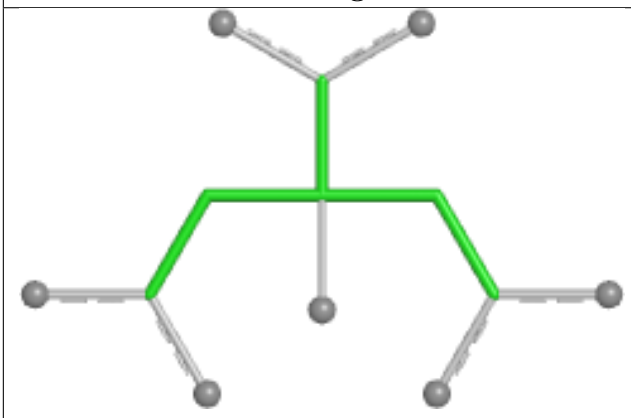
Ligand CIT C 601



Bond lengths



Bond angles



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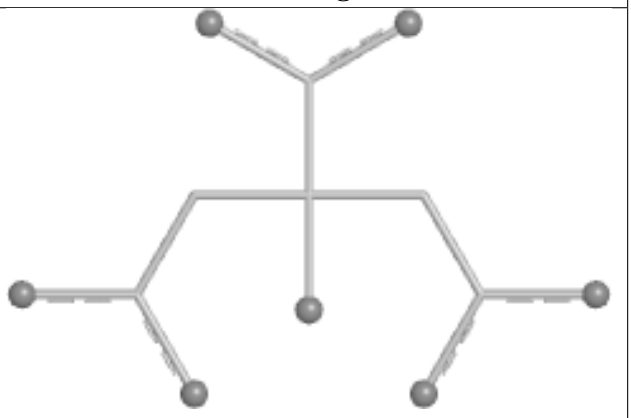
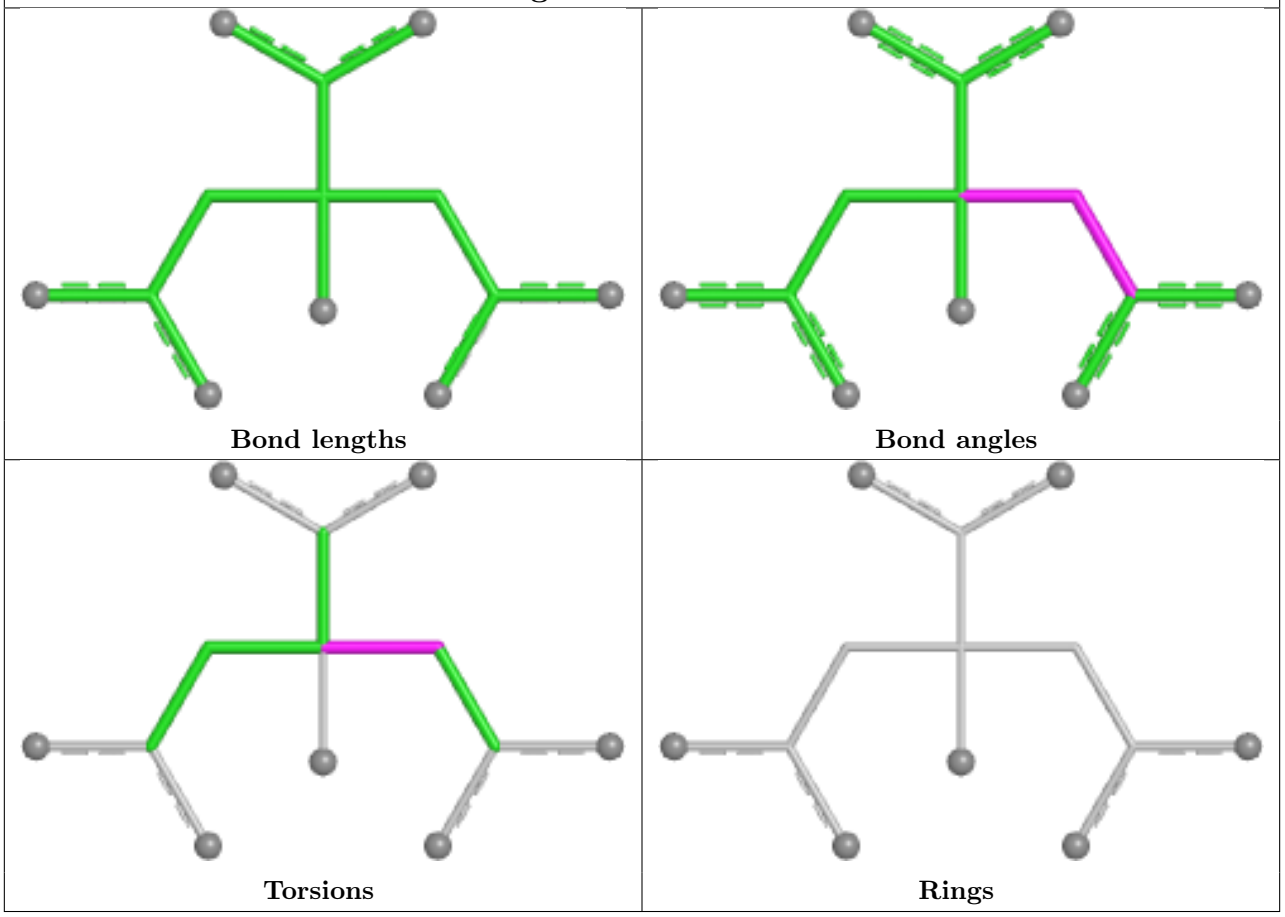


Rings

Ligand CIT B 601



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	439/514 (85%)	-0.06	13 (2%) 50 22	51, 85, 134, 165	0
1	B	476/514 (92%)	-0.13	28 (5%) 22 7	41, 73, 174, 272	0
1	C	499/514 (97%)	-0.27	2 (0%) 92 79	48, 80, 110, 137	0
1	D	498/514 (96%)	-0.16	14 (2%) 53 25	56, 88, 133, 179	0
1	E	495/514 (96%)	-0.28	7 (1%) 75 49	56, 79, 112, 171	0
1	F	498/514 (96%)	-0.28	5 (1%) 82 59	47, 78, 107, 127	0
1	G	411/514 (79%)	-0.37	4 (0%) 82 59	49, 74, 115, 155	0
1	H	449/514 (87%)	0.10	20 (4%) 33 12	56, 103, 144, 175	0
All	All	3765/4112 (91%)	-0.18	93 (2%) 57 29	41, 82, 129, 272	0

All (93) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	488	GLY	8.8
1	H	402	ASN	6.5
1	B	164	CYS	6.4
1	A	144	VAL	6.1
1	A	151	LEU	4.9
1	B	163	LYS	4.7
1	B	483	ASP	4.6
1	B	166	VAL	4.5
1	A	177	GLY	4.3
1	H	150	THR	4.3
1	E	155	SER	4.3
1	B	167	ASN	4.1
1	A	485	SER	4.0
1	B	159	ASP	3.8
1	H	125	PHE	3.8
1	H	228	GLY	3.6

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Mol	Chain	Res	Type	RSRZ
1	F	97	ASP	3.6
1	H	488	GLY	3.5
1	H	138	PRO	3.4
1	B	447	ALA	3.4
1	B	155	SER	3.4
1	B	153	VAL	3.3
1	D	445	VAL	3.3
1	B	157	GLU	3.3
1	D	471	VAL	3.2
1	A	145	ASP	3.2
1	B	165	HIS	3.2
1	D	115	ALA	3.2
1	B	120	GLY	3.1
1	H	444	ASP	3.1
1	D	117	GLU	3.0
1	D	487	LYS	3.0
1	D	453	ASP	3.0
1	A	130	PRO	3.0
1	F	100	ALA	2.9
1	C	97	ASP	2.9
1	B	100	ALA	2.9
1	H	56	GLY	2.9
1	E	446	ASP	2.8
1	B	154	LEU	2.8
1	G	481	HIS	2.8
1	E	485	SER	2.7
1	D	446	ASP	2.7
1	D	161	THR	2.7
1	H	445	VAL	2.7
1	H	483	ASP	2.7
1	G	305	THR	2.7
1	B	134	ASN	2.6
1	B	144	VAL	2.6
1	B	101	THR	2.6
1	H	148	VAL	2.6
1	H	154	LEU	2.6
1	B	105	GLY	2.5
1	E	488	GLY	2.5
1	B	103	ALA	2.5
1	A	113	ASP	2.5
1	B	158	ASP	2.5
1	B	102	TYR	2.5

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Mol	Chain	Res	Type	RSRZ
1	G	486	VAL	2.4
1	H	127	VAL	2.4
1	A	115	ALA	2.4
1	G	189	ALA	2.4
1	D	166	VAL	2.3
1	C	92	THR	2.3
1	D	167	ASN	2.3
1	A	484	HIS	2.3
1	H	57	SER	2.3
1	D	470	TYR	2.3
1	H	489	TYR	2.3
1	E	474	GLY	2.2
1	H	217	ALA	2.2
1	H	126	TYR	2.2
1	A	178	ILE	2.2
1	B	133	PRO	2.2
1	B	162	LEU	2.2
1	B	151	LEU	2.2
1	B	121	THR	2.2
1	H	68	VAL	2.2
1	D	448	HIS	2.2
1	E	489	TYR	2.2
1	F	119	ILE	2.2
1	A	449	GLY	2.1
1	F	108	VAL	2.1
1	F	447	ALA	2.1
1	B	150	THR	2.1
1	B	149	LEU	2.1
1	B	148	VAL	2.1
1	H	227	LEU	2.1
1	A	450	GLU	2.1
1	E	490	PRO	2.0
1	A	189	ALA	2.0
1	D	160	CYS	2.0
1	H	453	ASP	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)

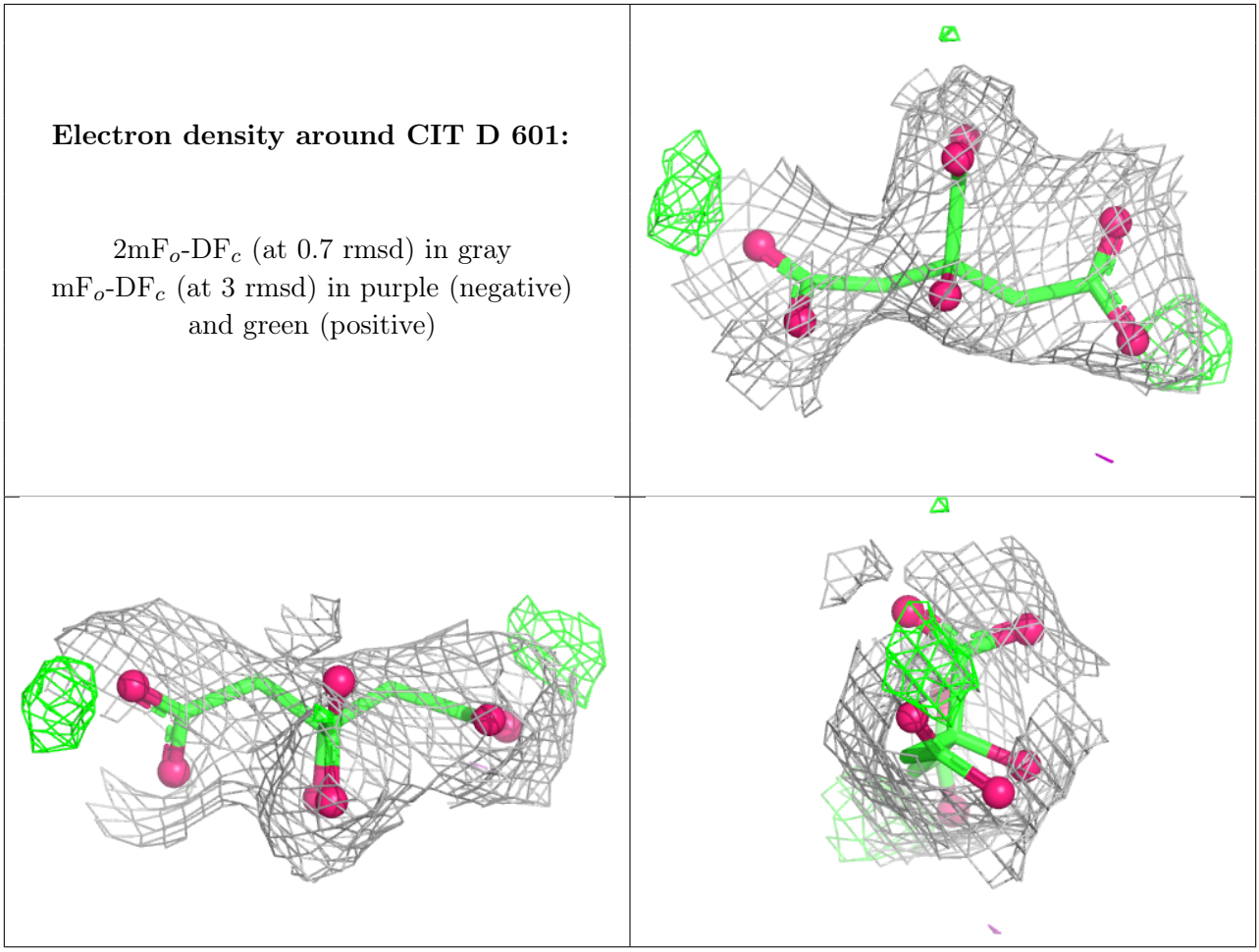
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
3	CIT	D	601	13/13	0.58	0.33	112,123,127,128	0
2	GOL	F	602	6/6	0.75	0.18	85,88,89,91	0
4	PGE	F	603	10/10	0.78	0.21	90,98,101,101	0
3	CIT	H	601	13/13	0.80	0.29	141,145,149,150	0
3	CIT	F	601	13/13	0.81	0.20	101,109,117,117	0
2	GOL	A	602	6/6	0.83	0.16	76,80,81,81	0
3	CIT	C	601	13/13	0.83	0.35	96,105,108,110	0
2	GOL	G	601	6/6	0.85	0.14	88,89,89,90	0
5	PEG	F	604	7/7	0.85	0.16	83,84,87,87	0
2	GOL	B	602	6/6	0.86	0.20	80,82,84,85	0
3	CIT	B	601	13/13	0.88	0.16	107,121,124,127	0
2	GOL	C	602	6/6	0.89	0.14	91,93,93,94	0
2	GOL	C	603	6/6	0.90	0.19	85,89,89,89	0
2	GOL	A	601	6/6	0.90	0.15	59,67,68,69	0
2	GOL	E	602	6/6	0.91	0.13	71,79,82,82	0
2	GOL	D	602	6/6	0.92	0.25	76,80,83,84	0
3	CIT	E	601	13/13	0.92	0.18	103,108,111,115	0
2	GOL	H	602	6/6	0.92	0.21	80,83,86,88	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.

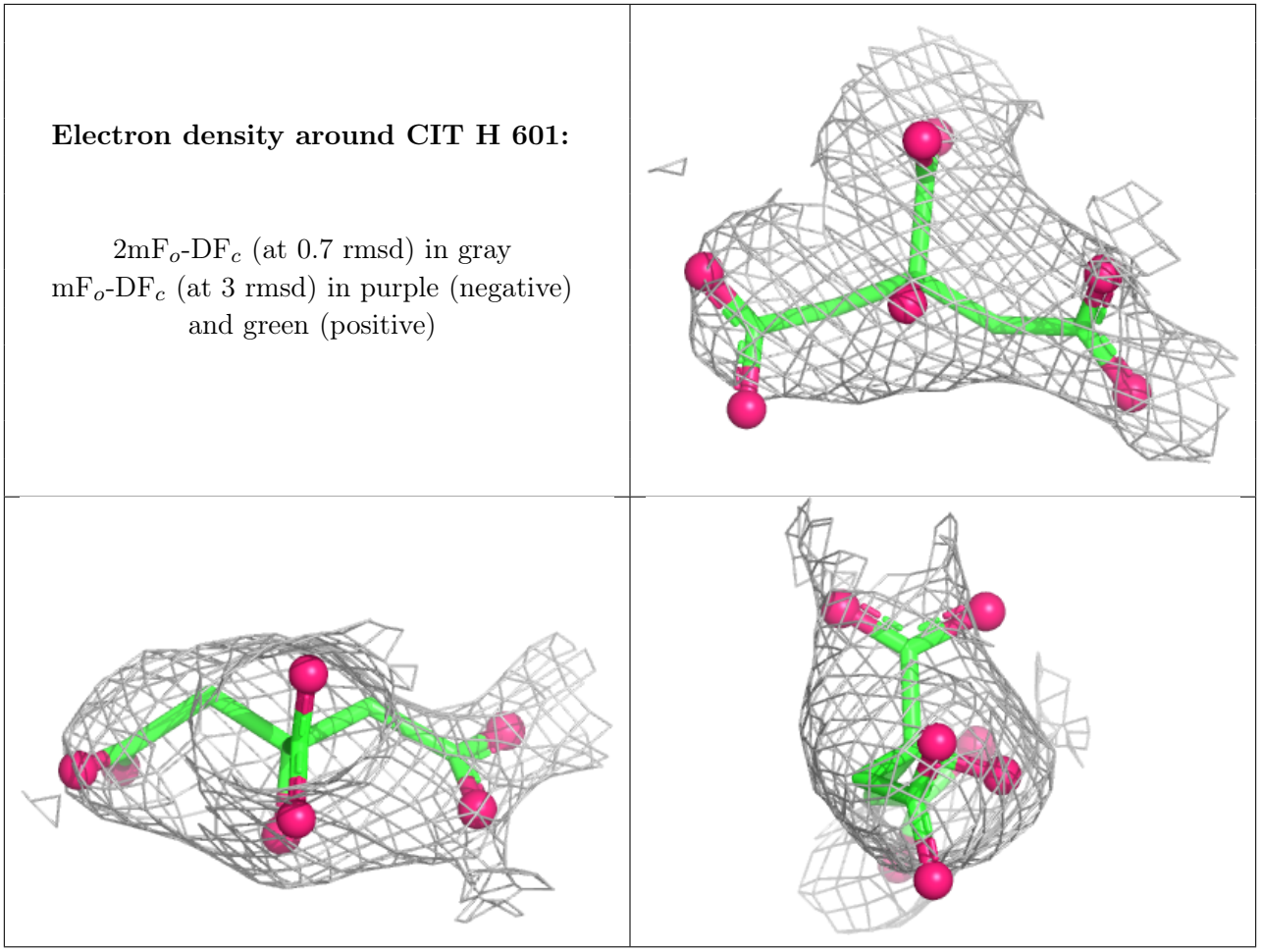
Electron density around CIT D 601:

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



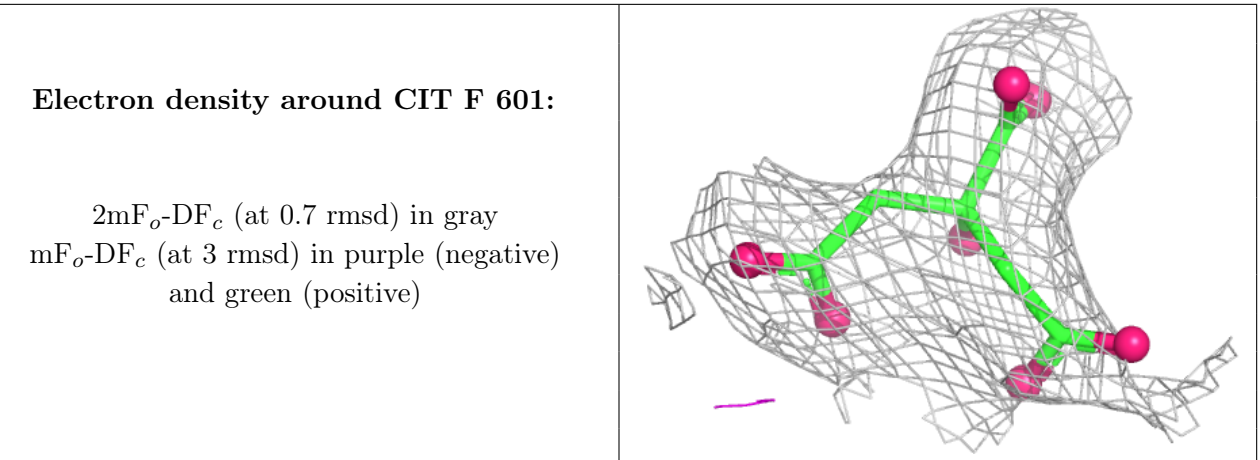
Electron density around CIT H 601:

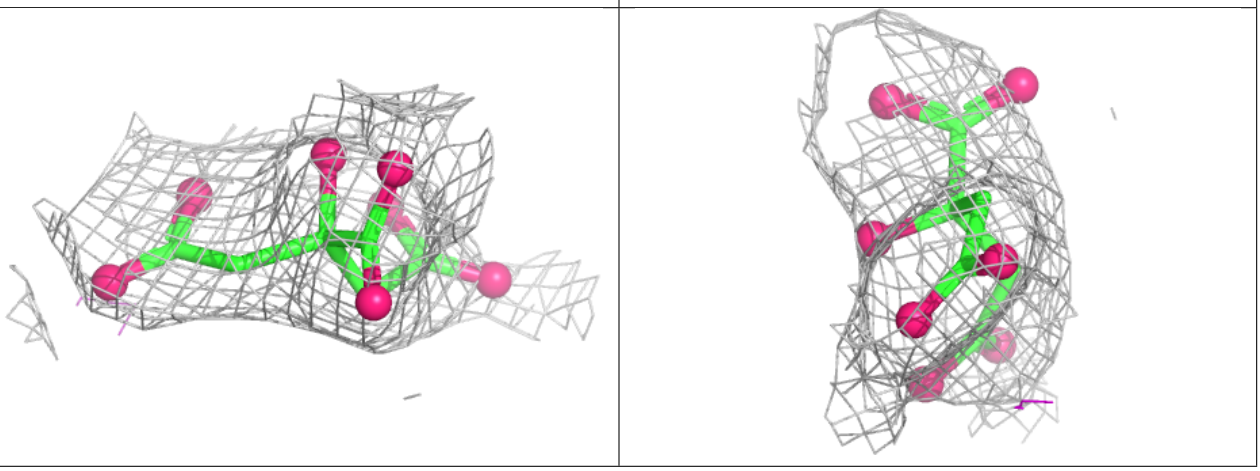
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around CIT F 601:

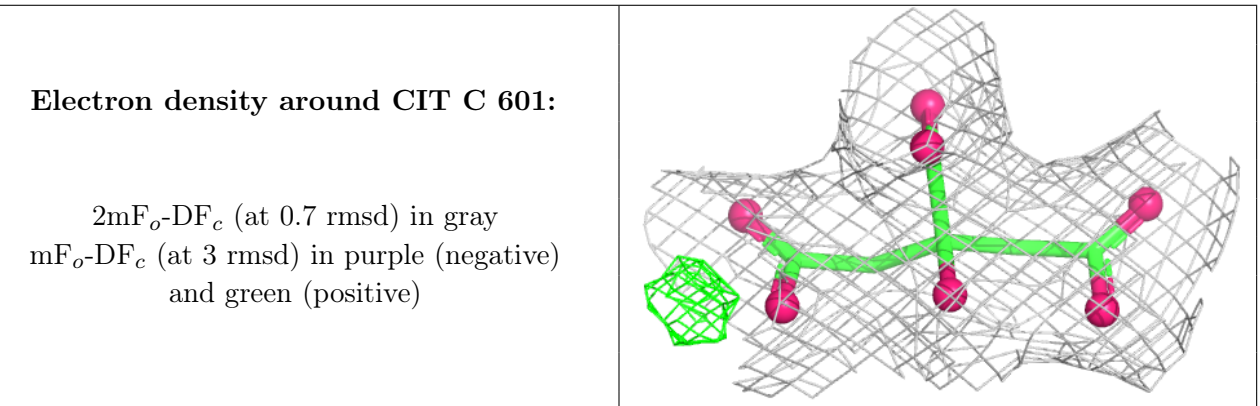
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

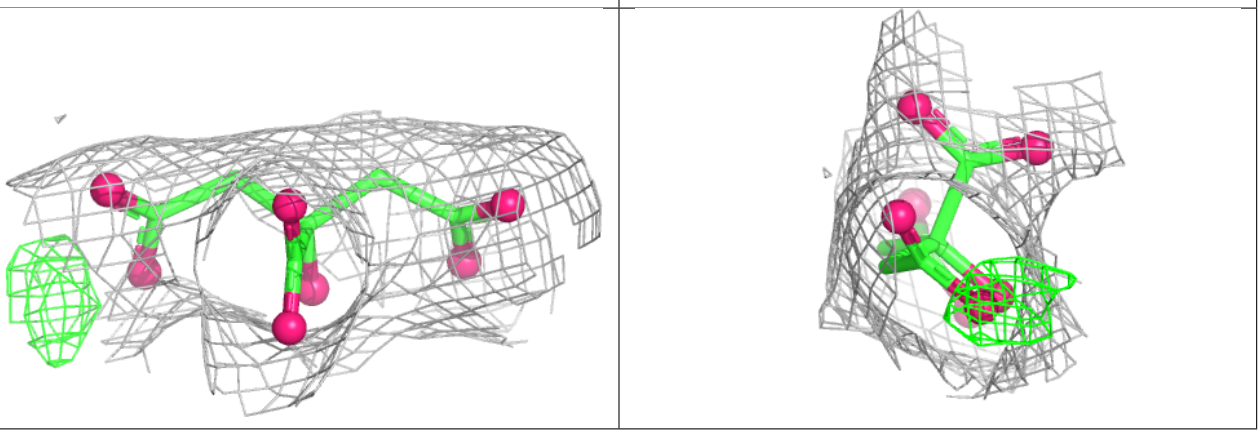




Electron density around CIT C 601:

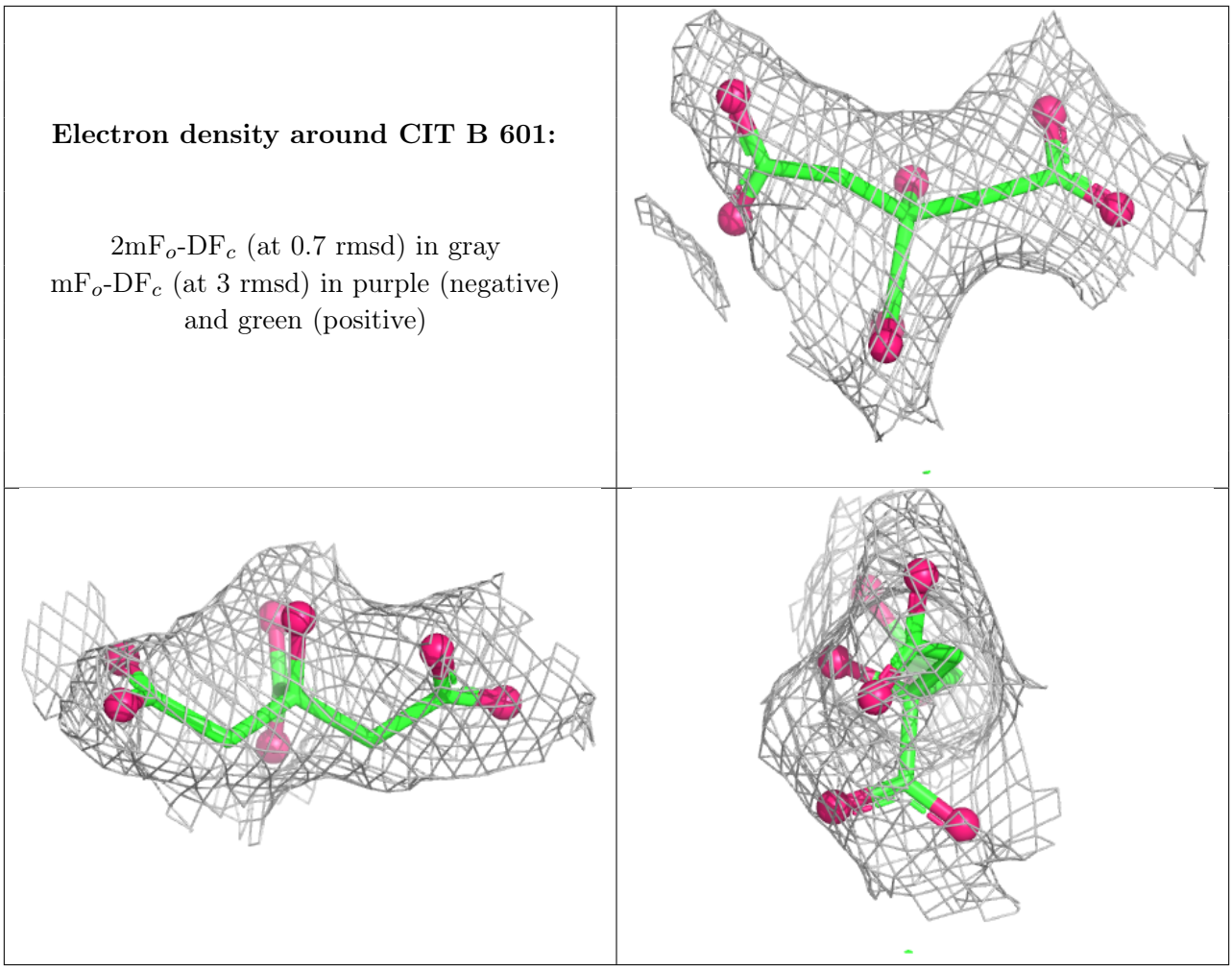
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)





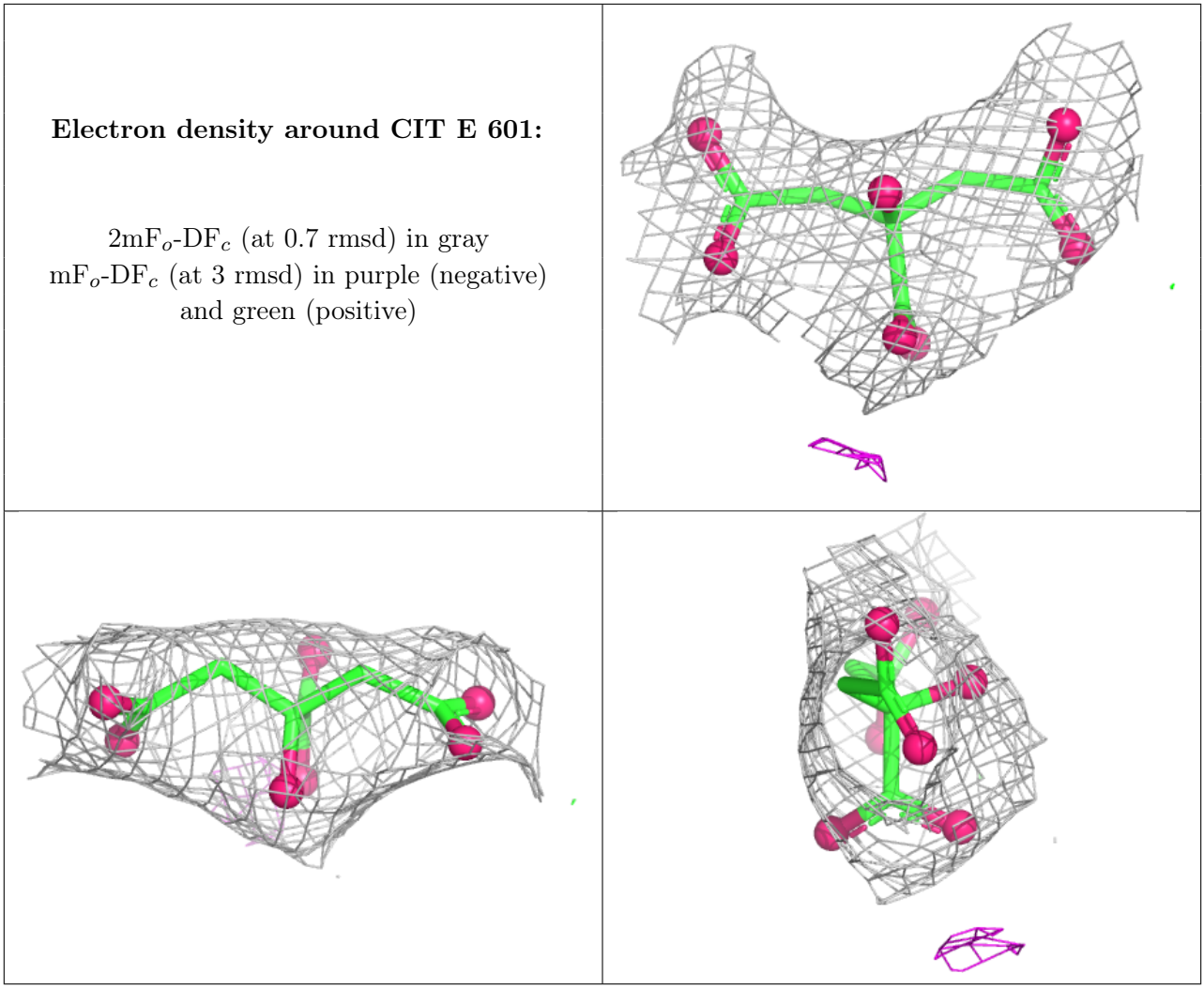
Electron density around CIT B 601:

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



Electron density around CIT E 601:

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



6.5 Other polymers

There are no such residues in this entry.