Full wwPDB X-ray Structure Validation Report ⓘ

Jun 30, 2025 – 10:06 AM EDT

PDB ID	:	9CIS / pdb_00009cis
Title	:	Crystal structure of the pyrophosphate-dependent phosphofructokinase from Candidatus Prometheoarchaeum syntrophicum with fructose 6-phosphate
Authors	:	Compton, J.A.; Yosaatmadja, Y.; Bashiri, G.; Vickers, C.J.; Patrick, W.M.
Deposited on	:	2024-07-04
Resolution	:	2.35 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

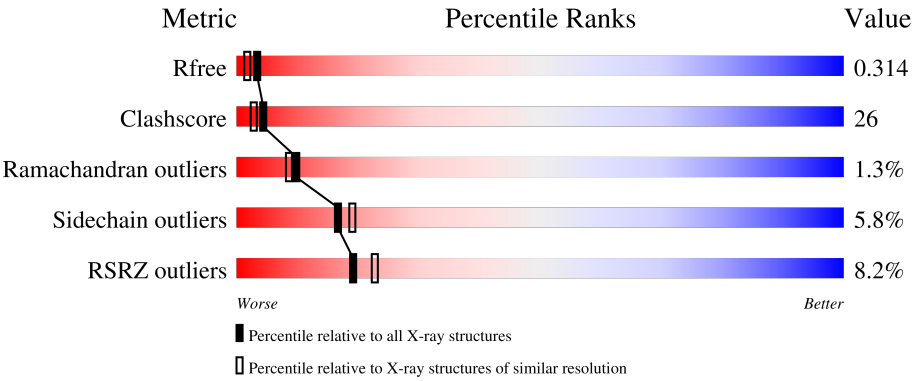
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.35 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}	164625	1460 (2.36-2.36)
Clashscore	180529	1571 (2.36-2.36)
Ramachandran outliers	177936	1559 (2.36-2.36)
Sidechain outliers	177891	1559 (2.36-2.36)
RSRZ outliers	164620	1460 (2.36-2.36)

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	424	11% 53% 35% • 9%
1	B	424	3% 53% 32% • 12%
1	C	424	6% 53% 35% • 11%
1	D	424	8% 51% 32% • 14%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 10732 atoms, of which 44 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 6-phosphofructokinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	375	Total	C	N	O	S	0	0	0
			2640	1666	453	510	11			
1	A	384	Total	C	N	O	S	0	0	0
			2692	1696	466	517	13			
1	C	377	Total	C	N	O	S	0	0	0
			2652	1672	456	511	13			
1	D	366	Total	C	N	O	S	0	0	0
			2555	1613	439	492	11			

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-17	MET	-	initiating methionine	UNP A0A5B9D762
B	-16	GLY	-	expression tag	UNP A0A5B9D762
B	-15	SER	-	expression tag	UNP A0A5B9D762
B	-14	SER	-	expression tag	UNP A0A5B9D762
B	-13	HIS	-	expression tag	UNP A0A5B9D762
B	-12	HIS	-	expression tag	UNP A0A5B9D762
B	-11	HIS	-	expression tag	UNP A0A5B9D762
B	-10	HIS	-	expression tag	UNP A0A5B9D762
B	-9	HIS	-	expression tag	UNP A0A5B9D762
B	-8	HIS	-	expression tag	UNP A0A5B9D762
B	-7	SER	-	expression tag	UNP A0A5B9D762
B	-6	SER	-	expression tag	UNP A0A5B9D762
B	-5	GLY	-	expression tag	UNP A0A5B9D762
B	-4	LEU	-	expression tag	UNP A0A5B9D762
B	-3	VAL	-	expression tag	UNP A0A5B9D762
B	-2	PRO	-	expression tag	UNP A0A5B9D762
B	-1	ARG	-	expression tag	UNP A0A5B9D762
B	0	GLY	-	expression tag	UNP A0A5B9D762
B	1	SER	-	expression tag	UNP A0A5B9D762
B	2	HIS	-	expression tag	UNP A0A5B9D762
A	-17	MET	-	initiating methionine	UNP A0A5B9D762

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-16	GLY	-	expression tag	UNP A0A5B9D762
A	-15	SER	-	expression tag	UNP A0A5B9D762
A	-14	SER	-	expression tag	UNP A0A5B9D762
A	-13	HIS	-	expression tag	UNP A0A5B9D762
A	-12	HIS	-	expression tag	UNP A0A5B9D762
A	-11	HIS	-	expression tag	UNP A0A5B9D762
A	-10	HIS	-	expression tag	UNP A0A5B9D762
A	-9	HIS	-	expression tag	UNP A0A5B9D762
A	-8	HIS	-	expression tag	UNP A0A5B9D762
A	-7	SER	-	expression tag	UNP A0A5B9D762
A	-6	SER	-	expression tag	UNP A0A5B9D762
A	-5	GLY	-	expression tag	UNP A0A5B9D762
A	-4	LEU	-	expression tag	UNP A0A5B9D762
A	-3	VAL	-	expression tag	UNP A0A5B9D762
A	-2	PRO	-	expression tag	UNP A0A5B9D762
A	-1	ARG	-	expression tag	UNP A0A5B9D762
A	0	GLY	-	expression tag	UNP A0A5B9D762
A	1	SER	-	expression tag	UNP A0A5B9D762
A	2	HIS	-	expression tag	UNP A0A5B9D762
C	-17	MET	-	initiating methionine	UNP A0A5B9D762
C	-16	GLY	-	expression tag	UNP A0A5B9D762
C	-15	SER	-	expression tag	UNP A0A5B9D762
C	-14	SER	-	expression tag	UNP A0A5B9D762
C	-13	HIS	-	expression tag	UNP A0A5B9D762
C	-12	HIS	-	expression tag	UNP A0A5B9D762
C	-11	HIS	-	expression tag	UNP A0A5B9D762
C	-10	HIS	-	expression tag	UNP A0A5B9D762
C	-9	HIS	-	expression tag	UNP A0A5B9D762
C	-8	HIS	-	expression tag	UNP A0A5B9D762
C	-7	SER	-	expression tag	UNP A0A5B9D762
C	-6	SER	-	expression tag	UNP A0A5B9D762
C	-5	GLY	-	expression tag	UNP A0A5B9D762
C	-4	LEU	-	expression tag	UNP A0A5B9D762
C	-3	VAL	-	expression tag	UNP A0A5B9D762
C	-2	PRO	-	expression tag	UNP A0A5B9D762
C	-1	ARG	-	expression tag	UNP A0A5B9D762
C	0	GLY	-	expression tag	UNP A0A5B9D762
C	1	SER	-	expression tag	UNP A0A5B9D762
C	2	HIS	-	expression tag	UNP A0A5B9D762
D	-17	MET	-	initiating methionine	UNP A0A5B9D762
D	-16	GLY	-	expression tag	UNP A0A5B9D762
D	-15	SER	-	expression tag	UNP A0A5B9D762

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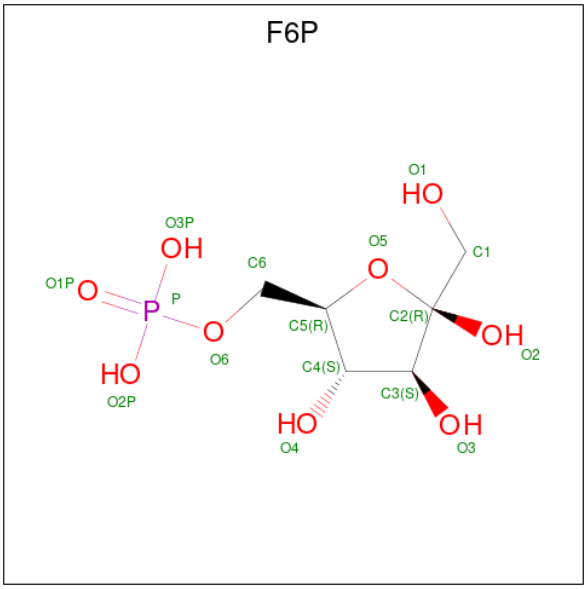
Chain	Residue	Modelled	Actual	Comment	Reference
D	-14	SER	-	expression tag	UNP A0A5B9D762
D	-13	HIS	-	expression tag	UNP A0A5B9D762
D	-12	HIS	-	expression tag	UNP A0A5B9D762
D	-11	HIS	-	expression tag	UNP A0A5B9D762
D	-10	HIS	-	expression tag	UNP A0A5B9D762
D	-9	HIS	-	expression tag	UNP A0A5B9D762
D	-8	HIS	-	expression tag	UNP A0A5B9D762
D	-7	SER	-	expression tag	UNP A0A5B9D762
D	-6	SER	-	expression tag	UNP A0A5B9D762
D	-5	GLY	-	expression tag	UNP A0A5B9D762
D	-4	LEU	-	expression tag	UNP A0A5B9D762
D	-3	VAL	-	expression tag	UNP A0A5B9D762
D	-2	PRO	-	expression tag	UNP A0A5B9D762
D	-1	ARG	-	expression tag	UNP A0A5B9D762
D	0	GLY	-	expression tag	UNP A0A5B9D762
D	1	SER	-	expression tag	UNP A0A5B9D762
D	2	HIS	-	expression tag	UNP A0A5B9D762

- Molecule 2 is 6-O-phosphono-beta-D-fructofuranose (CCD ID: F6P) (formula: $C_6H_{13}O_9P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	B	1	Total	C	H	O	P	0	0
			27	6	11	9	1		
2	A	1	Total	C	H	O	P	0	0
			27	6	11	9	1		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	H	O	P	0	0
			27	6	11	9	1		
2	D	1	Total	C	H	O	P	0	0
			27	6	11	9	1		

- Molecule 3 is water.

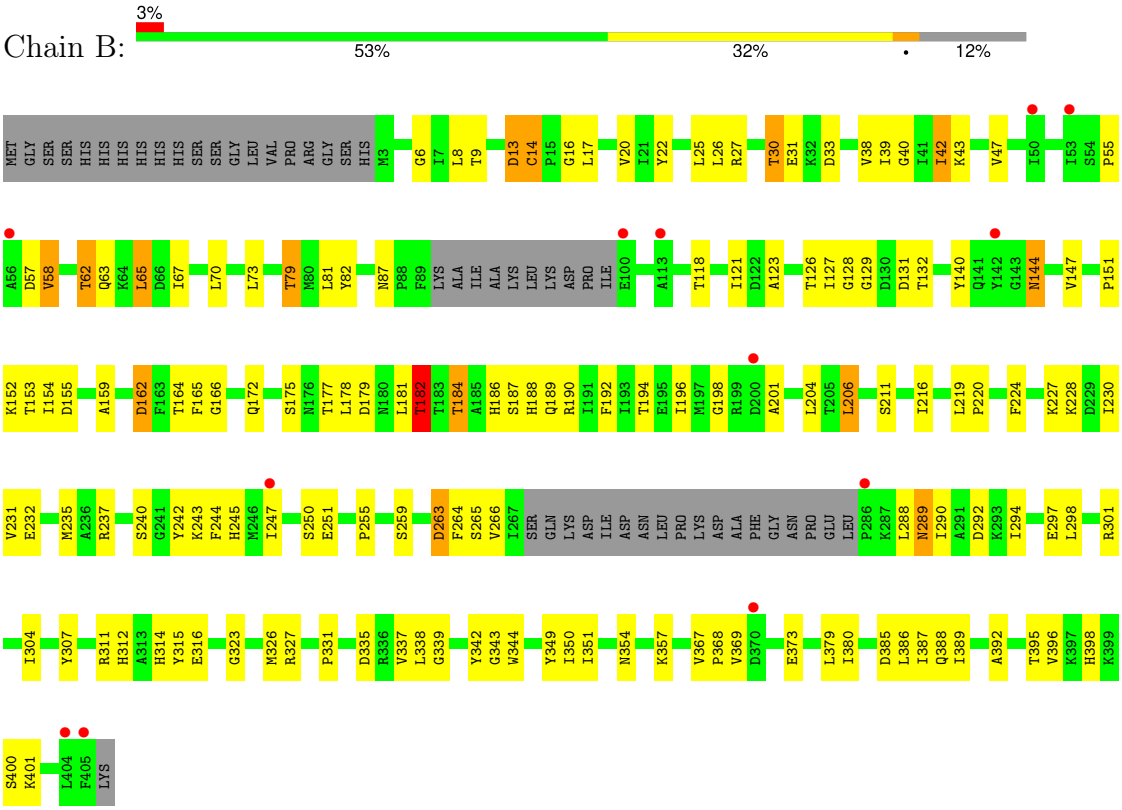
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	27	Total	O	0	0
			27	27		
3	A	15	Total	O	0	0
			15	15		
3	C	22	Total	O	0	0
			22	22		
3	D	21	Total	O	0	0
			21	21		

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.

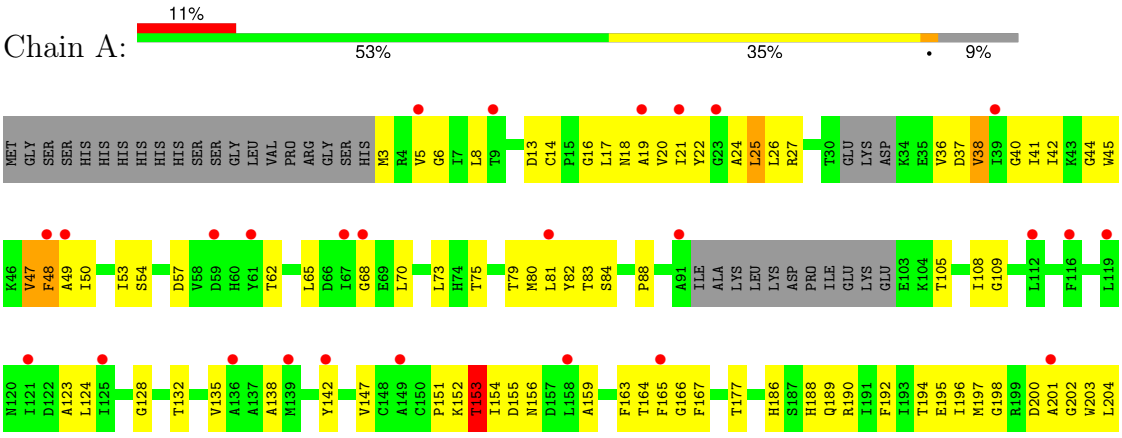
- Molecule 1: 6-phosphofructokinase

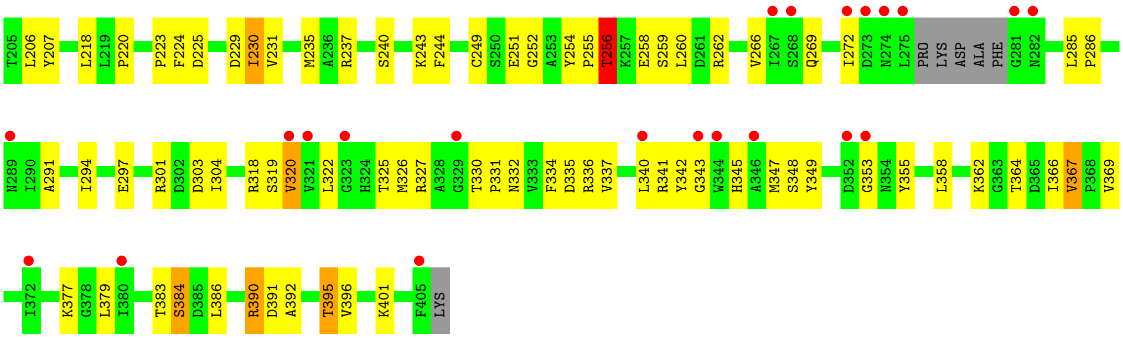
Chain B:



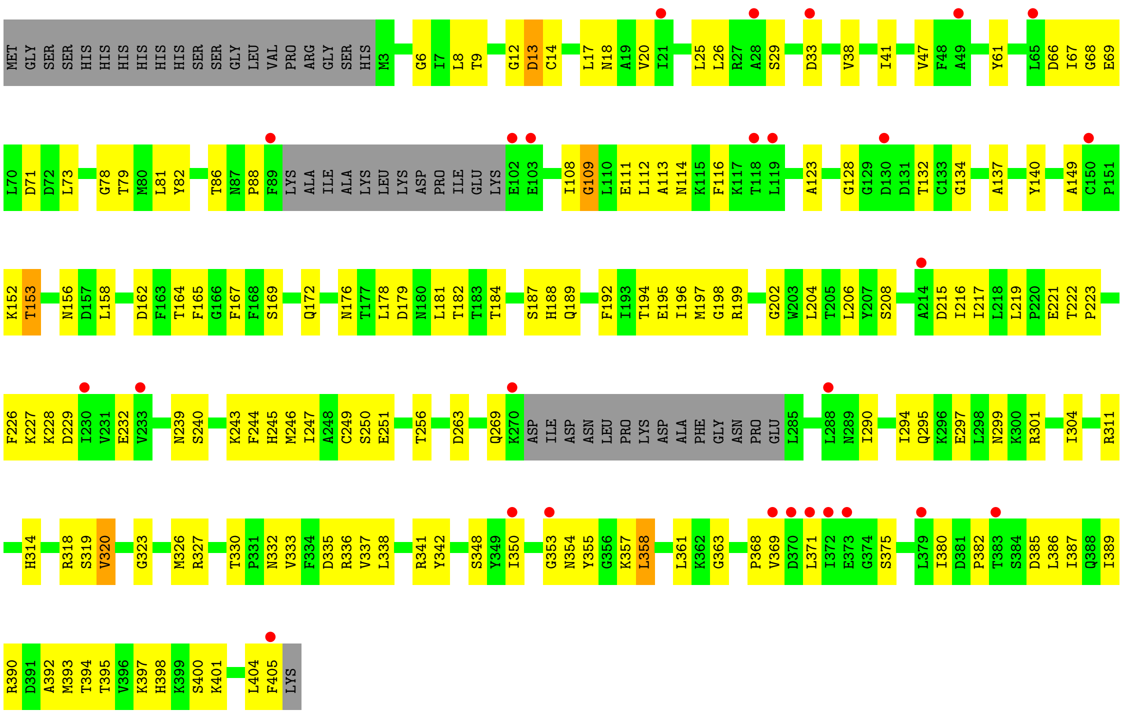
- Molecule 1: 6-phosphofructokinase

Chain A:

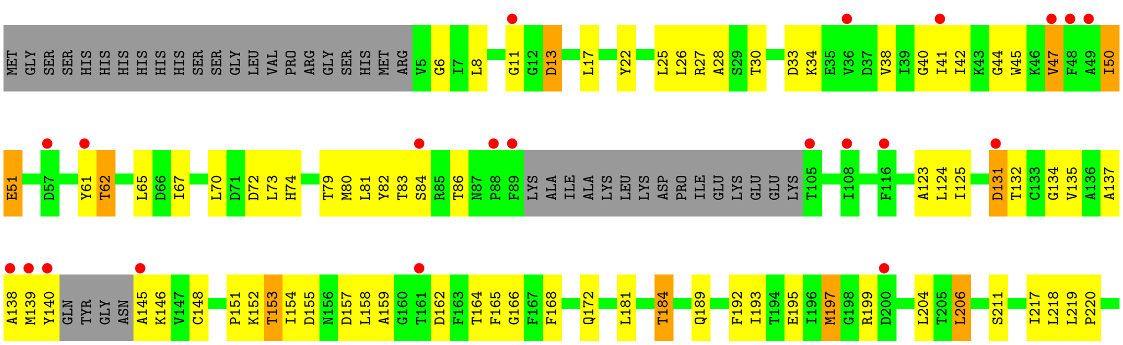


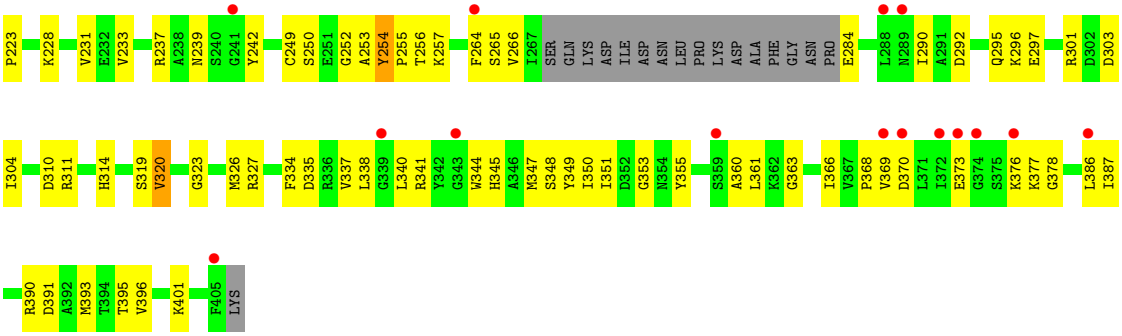


- Molecule 1: 6-phosphofructokinase



- Molecule 1: 6-phosphofructokinase




P223 K228 V231 E232 V233 R237 A238 N239 S240 G241 Y242 C249 S250 E251 G252 A253 Y254 P255 T256 K257 F264 S265 V266 I267 SER GLN LYS ASP ILE ASP ASN LEU PRO LYS ASP ALA PHE GLY ASN PRO E284 L288 N289 I290 A291 D292 Q295 K296 E297 R301 D302 D303
I304 D310 R311 H314 S319 V320 G323 M326 R327 F334 D335 R336 V337 L338 G339 L340 R341 Y342 G343 W344 H345 A346 M347 S348 Y349 I350 I351 D352 G353 N354 Y355 S359 A360 L361 K362 G363 I366 V367 P368 V369 D370 L371 I372 E373 G374 S375 K376 K377 G378 L386 I387
R390 D391 A392 M393 T394 T395 V396 K401 F405 LYS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	85.21Å 71.87Å 136.53Å 90.00° 91.08° 90.00°	Depositor
Resolution (Å)	45.50 – 2.35 45.50 – 2.35	Depositor EDS
% Data completeness (in resolution range)	99.8 (45.50-2.35) 99.9 (45.50-2.35)	Depositor EDS
R_{merge}	0.29	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.40 (at 2.34Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.244 , 0.314 0.243 , 0.314	Depositor DCC
R_{free} test set	3404 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	50.9	Xtriage
Anisotropy	0.475	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 50.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.023 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	10732	wwPDB-VP
Average B, all atoms (Å^2)	55.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.32% 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: F6P

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	0/2740	0.53	0/3740
1	B	0.37	0/2689	0.58	0/3673
1	C	0.36	0/2699	0.58	0/3684
1	D	0.35	0/2600	0.54	0/3551
All	All	0.36	0/10728	0.56	0/14648

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	2692	0	2394	167	0
1	B	2640	0	2344	138	1
1	C	2652	0	2376	125	1
1	D	2555	0	2280	136	0
2	A	16	11	11	2	0
2	B	16	11	11	2	0
2	C	16	11	11	1	0
2	D	16	11	11	1	0
3	A	15	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	27	0	0	5	0
3	C	22	0	0	2	0
3	D	21	0	0	0	0
All	All	10688	44	9438	525	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 26.

All (525) 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:A:25:LEU:HD11	1:A:38:VAL:HG11	1.21	1.10
1:B:301:ARG:HB3	1:B:304:ILE:HD12	1.24	1.09
1:C:67:ILE:HD13	1:D:396:VAL:HG11	1.44	0.99
1:A:25:LEU:CD1	1:A:38:VAL:HG11	1.93	0.97
1:A:206:LEU:HD21	1:A:386:LEU:HB3	1.47	0.96
1:D:206:LEU:HD21	1:D:386:LEU:HB3	1.48	0.96
1:A:70:LEU:HD22	1:A:80:MET:HE1	1.51	0.92
1:B:13:ASP:O	1:B:327:ARG:HD3	1.69	0.92
1:B:216:ILE:HB	1:B:247:ILE:HG12	1.53	0.91
1:B:298:LEU:O	1:B:315:TYR:OH	1.89	0.90
1:D:28:ALA:HB2	1:D:347:MET:HE2	1.56	0.87
1:A:3:MET:O	1:A:37:ASP:N	2.08	0.87
1:C:26:LEU:HD11	1:D:393:MET:HG3	1.55	0.86
1:B:58:VAL:O	1:B:62:THR:HG23	1.76	0.85
1:B:380:ILE:HG21	1:B:387:ILE:HD11	1.58	0.85
1:A:13:ASP:OD2	1:C:184:THR:HA	1.79	0.83
1:A:152:LYS:O	1:A:153:THR:OG1	1.97	0.82
1:A:301:ARG:NH2	1:A:303:ASP:OD2	2.12	0.82
1:C:337:VAL:O	1:C:341:ARG:HG3	1.80	0.82
1:A:79:THR:HG22	1:C:187:SER:HB3	1.60	0.82
1:A:154:ILE:HD11	1:A:197:MET:HE2	1.60	0.81
1:D:6:GLY:O	1:D:124:LEU:HA	1.80	0.81
1:C:386:LEU:HD21	1:D:341:ARG:HD2	1.63	0.81
1:A:197:MET:HE3	2:A:501:F6P:O3	1.81	0.80
1:B:386:LEU:HD21	1:A:341:ARG:HD2	1.65	0.79
1:A:225:ASP:OD2	1:A:262:ARG:NH2	2.16	0.78
1:D:217:ILE:HG22	1:D:219:LEU:HD21	1.65	0.78
1:A:337:VAL:O	1:A:341:ARG:HG3	1.84	0.77
1:B:228:LYS:HA	1:B:232:GLU:OE1	1.83	0.77
1:B:307:TYR:O	1:B:311:ARG:HG2	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:47:VAL:HG12	1:A:48:PHE:HD1	1.50	0.76
1:D:265:SER:N	1:D:297:GLU:OE2	2.19	0.76
1:A:38:VAL:HG12	1:A:65:LEU:HB2	1.67	0.75
1:C:206:LEU:HD13	1:C:219:LEU:HD11	1.68	0.75
1:D:154:ILE:HD12	1:D:327:ARG:CG	2.16	0.75
1:A:206:LEU:HD21	1:A:386:LEU:CB	2.17	0.74
1:B:189:GLN:HG2	1:B:243:LYS:CB	2.17	0.74
1:B:123:ALA:HB1	1:B:350:ILE:HD12	1.70	0.74
1:B:26:LEU:O	1:B:30:THR:HG23	1.88	0.74
1:B:327:ARG:NH2	2:B:501:F6P:O3P	2.15	0.73
1:A:391:ASP:O	1:A:395:THR:HG23	1.88	0.73
1:B:140:TYR:HB2	1:B:147:VAL:CG1	2.19	0.73
1:B:311:ARG:NH2	3:B:601:HOH:O	2.02	0.72
1:D:154:ILE:HD12	1:D:327:ARG:HG3	1.70	0.72
1:B:301:ARG:CB	1:B:304:ILE:HD12	2.12	0.72
1:C:29:SER:OG	1:D:396:VAL:HG21	1.89	0.72
1:B:301:ARG:HB3	1:B:304:ILE:CD1	2.12	0.72
1:C:227:LYS:O	1:C:232:GLU:HG3	1.90	0.71
1:D:139:MET:O	1:D:145:ALA:HB3	1.90	0.71
1:C:13:ASP:O	1:C:327:ARG:HD3	1.91	0.71
1:C:357:LYS:HG2	1:C:368:PRO:HB2	1.73	0.70
1:B:201:ALA:HB2	1:B:379:LEU:HD23	1.73	0.70
1:A:154:ILE:HD11	1:A:197:MET:CE	2.19	0.70
1:D:47:VAL:HG23	1:D:61:TYR:CD2	2.27	0.70
1:B:9:THR:HG22	1:B:127:ILE:HD12	1.72	0.70
1:C:66:ASP:HB3	1:C:69:GLU:HG2	1.73	0.70
1:C:197:MET:HE3	1:C:323:GLY:C	2.17	0.69
1:C:295:GLN:OE1	1:C:319:SER:OG	2.04	0.69
1:A:154:ILE:CD1	1:A:197:MET:HE2	2.22	0.69
1:A:196:ILE:HG23	1:A:326:MET:SD	2.33	0.69
1:D:292:ASP:OD2	1:D:296:LYS:HE3	1.93	0.68
1:B:385:ASP:O	1:B:389:ILE:HG13	1.93	0.68
1:C:9:THR:CG2	1:C:17:LEU:HD22	2.23	0.68
1:D:70:LEU:HD13	1:D:73:LEU:HD22	1.75	0.68
1:A:353:GLY:HA2	1:A:355:TYR:CZ	2.29	0.68
1:A:154:ILE:HD12	1:A:204:LEU:HD11	1.76	0.67
1:B:152:LYS:HE2	1:B:152:LYS:O	1.94	0.67
1:C:67:ILE:HD13	1:D:396:VAL:CG1	2.21	0.67
1:B:144:ASN:OD1	1:B:144:ASN:N	2.28	0.67
1:A:124:LEU:O	1:A:147:VAL:HA	1.95	0.67
1:B:265:SER:OG	3:B:602:HOH:O	2.11	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:297:GLU:HA	1:D:297:GLU:OE1	1.93	0.67
1:C:392:ALA:HB2	1:D:30:THR:HG21	1.75	0.66
1:C:204:LEU:O	1:C:208:SER:OG	2.07	0.66
1:B:22:TYR:HB2	1:B:73:LEU:HD23	1.77	0.66
1:D:218:LEU:C	1:D:219:LEU:HD23	2.21	0.66
1:A:70:LEU:CD2	1:A:80:MET:HE1	2.25	0.65
1:B:162:ASP:HB3	1:A:364:THR:HG23	1.77	0.65
1:A:252:GLY:HA2	1:A:286:PRO:HB3	1.79	0.65
1:B:188:HIS:CB	1:B:190:ARG:HG3	2.27	0.65
1:B:401:LYS:HE2	1:A:68:GLY:O	1.97	0.65
1:D:40:GLY:O	1:D:62:THR:HA	1.97	0.65
1:D:70:LEU:HD22	1:D:80:MET:HE1	1.78	0.65
1:A:258:GLU:O	1:A:262:ARG:HB3	1.97	0.64
1:C:240:SER:HB3	1:C:401:LYS:HB2	1.78	0.64
1:C:202:GLY:C	1:C:380:ILE:HD11	2.23	0.64
1:D:6:GLY:C	1:D:124:LEU:HD12	2.22	0.64
1:B:87:ASN:ND2	1:B:131:ASP:HB3	2.12	0.64
1:C:222:THR:HG22	1:C:382:PRO:HB3	1.79	0.64
1:A:194:THR:HG23	1:A:320:VAL:CG1	2.27	0.64
1:A:151:PRO:HB3	1:A:358:LEU:HD11	1.79	0.64
1:A:190:ARG:HD3	1:A:318:ARG:HG2	1.80	0.64
1:B:242:TYR:OH	1:B:401:LYS:NZ	2.30	0.63
1:B:337:VAL:HG11	1:A:207:TYR:CE2	2.33	0.63
1:A:153:THR:HG22	1:A:155:ASP:H	1.61	0.63
1:C:25:LEU:HD23	1:C:38:VAL:HG21	1.79	0.63
1:C:86:THR:HG22	1:C:88:PRO:HD3	1.78	0.63
1:B:67:ILE:HD13	1:A:396:VAL:HG11	1.79	0.63
1:A:177:THR:HG21	1:A:322:LEU:HD21	1.79	0.63
1:C:311:ARG:HG3	1:C:311:ARG:HH11	1.62	0.63
1:D:197:MET:HE3	1:D:323:GLY:C	2.23	0.63
1:B:204:LEU:HD13	1:B:326:MET:CE	2.29	0.63
1:D:8:LEU:HB2	1:D:44:GLY:HA2	1.81	0.63
1:C:301:ARG:HB2	1:C:304:ILE:HD12	1.80	0.62
1:C:47:VAL:HG23	1:C:61:TYR:CD2	2.35	0.62
1:B:17:LEU:HD13	1:B:79:THR:HB	1.80	0.62
1:B:22:TYR:O	1:B:26:LEU:HG	1.99	0.62
1:C:382:PRO:HA	1:C:387:ILE:HG13	1.82	0.62
1:B:288:LEU:O	1:B:290:ILE:N	2.33	0.62
1:B:159:ALA:HB3	1:B:373:GLU:O	2.00	0.62
1:A:8:LEU:HD12	1:A:8:LEU:O	2.00	0.62
1:A:186:HIS:HB2	1:A:244:PHE:CE2	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:154:ILE:CD1	1:D:327:ARG:HB2	2.30	0.62
1:B:153:THR:O	1:B:164:THR:OG1	2.17	0.61
1:C:217:ILE:O	1:C:390:ARG:NH1	2.33	0.61
1:B:26:LEU:HD23	1:B:67:ILE:HD11	1.81	0.61
1:A:124:LEU:O	1:A:147:VAL:HG23	2.01	0.61
1:B:224:PHE:O	1:B:255:PRO:HA	2.01	0.61
1:A:151:PRO:HB2	1:A:164:THR:HG22	1.83	0.61
1:A:186:HIS:HB2	1:A:244:PHE:CD2	2.36	0.60
1:B:26:LEU:CD2	1:B:67:ILE:HD11	2.31	0.60
1:B:211:SER:OG	1:A:336:ARG:HD2	2.02	0.60
1:A:88:PRO:HG2	1:A:135:VAL:HG21	1.83	0.60
1:D:253:ALA:O	1:D:254:TYR:HB3	2.02	0.60
1:B:289:ASN:O	1:B:292:ASP:N	2.33	0.60
1:B:216:ILE:HD12	1:B:247:ILE:HD11	1.82	0.60
1:C:215:ASP:OD2	1:C:246:MET:N	2.31	0.60
1:B:126:THR:HB	1:B:132:THR:CG2	2.32	0.60
1:A:189:GLN:HA	1:A:243:LYS:O	2.02	0.60
1:C:172:GLN:HE21	1:C:176:ASN:HD21	1.49	0.60
1:D:25:LEU:CD2	1:D:38:VAL:HG11	2.32	0.60
1:B:206:LEU:HD13	1:B:219:LEU:HD11	1.84	0.60
1:A:79:THR:CG2	1:C:187:SER:HB3	2.30	0.59
1:A:5:VAL:HG21	1:A:347:MET:HE1	1.83	0.59
1:B:187:SER:HB3	1:D:79:THR:HG22	1.84	0.59
1:A:301:ARG:HB3	1:A:304:ILE:HD12	1.85	0.59
1:C:301:ARG:CB	1:C:304:ILE:HD12	2.33	0.58
1:C:172:GLN:HE21	1:C:176:ASN:ND2	2.01	0.58
1:A:16:GLY:N	1:A:331:PRO:HG3	2.19	0.58
1:C:194:THR:HG22	1:C:196:ILE:CD1	2.32	0.58
1:A:25:LEU:HD11	1:A:38:VAL:CG1	2.15	0.58
1:A:75:THR:O	1:A:330:THR:OG1	2.19	0.58
1:D:6:GLY:O	1:D:124:LEU:HD12	2.04	0.58
1:D:70:LEU:CD2	1:D:80:MET:HE1	2.34	0.58
1:A:197:MET:HB3	2:A:501:F6P:O3	2.04	0.58
1:B:26:LEU:HD23	1:B:67:ILE:CD1	2.33	0.58
1:D:353:GLY:HA2	1:D:355:TYR:CZ	2.38	0.58
1:C:393:MET:HA	1:D:26:LEU:HD21	1.86	0.57
1:C:66:ASP:O	1:C:69:GLU:HG3	2.05	0.57
1:B:396:VAL:HG12	1:B:396:VAL:O	2.04	0.57
1:C:228:LYS:HA	1:C:232:GLU:HG3	1.86	0.57
1:D:125:ILE:HA	1:D:148:CYS:O	2.04	0.57
1:B:9:THR:HG22	1:B:127:ILE:CD1	2.33	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:347:MET:HE3	1:D:351:ILE:HD11	1.86	0.57
1:B:297:GLU:O	1:B:301:ARG:HG2	2.04	0.57
1:A:47:VAL:HG12	1:A:48:PHE:CD1	2.38	0.57
1:B:230:ILE:CD1	1:B:294:ILE:HD13	2.35	0.56
1:C:172:GLN:NE2	1:C:176:ASN:HD21	2.03	0.56
1:D:151:PRO:HB3	1:D:158:LEU:HD12	1.87	0.56
1:B:231:VAL:O	1:B:235:MET:HG3	2.04	0.56
1:A:272:ILE:HD12	1:A:272:ILE:H	1.70	0.56
1:B:188:HIS:HB3	1:B:190:ARG:HG3	1.86	0.56
1:C:114:ASN:HA	3:C:603:HOH:O	2.04	0.56
1:B:175:SER:O	1:B:179:ASP:OD2	2.24	0.56
1:C:357:LYS:NZ	3:C:601:HOH:O	2.38	0.56
1:D:22:TYR:HD2	1:D:340:LEU:HD21	1.70	0.56
1:B:187:SER:O	1:D:83:THR:HG22	2.06	0.56
1:A:47:VAL:C	1:A:49:ALA:H	2.14	0.56
1:D:42:ILE:HD13	1:D:42:ILE:N	2.21	0.56
1:B:349:TYR:CZ	1:B:368:PRO:HB3	2.40	0.55
1:A:156:ASN:OD1	1:A:163:PHE:HA	2.06	0.55
1:D:264:PHE:HA	1:D:297:GLU:OE2	2.06	0.55
1:B:227:LYS:O	1:B:232:GLU:HB2	2.07	0.55
1:A:27:ARG:HG2	1:A:347:MET:HB3	1.87	0.55
1:C:71:ASP:OD2	1:D:242:TYR:OH	2.21	0.55
1:D:295:GLN:OE1	1:D:319:SER:HB3	2.06	0.55
1:A:240:SER:HB3	1:A:401:LYS:HB2	1.87	0.55
1:D:166:GLY:H	1:D:335:ASP:CG	2.14	0.55
1:D:303:ASP:OD2	1:D:303:ASP:N	2.40	0.55
1:B:204:LEU:HD13	1:B:326:MET:HE2	1.89	0.55
1:B:392:ALA:O	1:B:396:VAL:HG23	2.07	0.55
1:A:392:ALA:O	1:A:396:VAL:HB	2.06	0.55
1:C:167:PHE:CE1	1:C:204:LEU:HD23	2.41	0.55
1:A:156:ASN:O	1:A:156:ASN:ND2	2.40	0.55
1:B:31:GLU:OE2	1:B:351:ILE:HG21	2.07	0.54
1:A:195:GLU:HA	1:A:249:CYS:O	2.07	0.54
1:B:179:ASP:O	1:B:182:THR:HB	2.07	0.54
1:C:108:ILE:O	1:C:112:LEU:HD12	2.08	0.54
1:B:255:PRO:HG3	1:B:264:PHE:CE2	2.43	0.54
1:C:295:GLN:O	1:C:299:ASN:HB2	2.06	0.54
1:A:156:ASN:HB2	1:A:167:PHE:HB2	1.89	0.54
1:A:224:PHE:CZ	1:A:294:ILE:HD11	2.42	0.54
1:A:255:PRO:HB2	1:A:259:SER:HB3	1.88	0.54
1:D:40:GLY:C	1:D:41:ILE:HD13	2.33	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:ASN:HB3	1:A:73:LEU:O	2.08	0.54
1:C:8:LEU:HD12	1:C:8:LEU:C	2.33	0.54
1:D:22:TYR:CE2	1:D:26:LEU:HD11	2.43	0.54
1:D:217:ILE:HB	1:D:390:ARG:HD2	1.89	0.54
1:A:156:ASN:HA	1:A:164:THR:OG1	2.07	0.54
1:A:195:GLU:HG3	1:A:291:ALA:HB2	1.89	0.54
1:A:38:VAL:HG12	1:A:38:VAL:O	2.07	0.54
1:A:177:THR:HG21	1:A:322:LEU:CD2	2.38	0.54
1:D:168:PHE:HD2	1:D:334:PHE:CE2	2.26	0.54
1:A:224:PHE:O	1:A:255:PRO:HA	2.08	0.53
1:D:47:VAL:HG23	1:D:61:TYR:CG	2.43	0.53
1:D:292:ASP:CG	1:D:296:LYS:HE3	2.33	0.53
1:C:354:ASN:OD1	1:C:357:LYS:HD3	2.08	0.53
1:B:27:ARG:HA	1:B:344:TRP:CZ3	2.44	0.53
1:C:194:THR:HG22	1:C:196:ILE:HD12	1.88	0.53
1:A:6:GLY:N	1:A:123:ALA:O	2.41	0.53
1:B:194:THR:HG22	1:B:196:ILE:HG13	1.89	0.53
1:A:225:ASP:N	1:A:229:ASP:OD2	2.38	0.53
1:B:20:VAL:HA	1:B:339:GLY:O	2.08	0.53
1:A:5:VAL:HA	1:A:123:ALA:O	2.09	0.53
1:C:195:GLU:C	1:C:196:ILE:HD12	2.34	0.53
1:D:25:LEU:CB	1:D:67:ILE:HD12	2.39	0.53
1:B:216:ILE:HB	1:B:247:ILE:CG1	2.32	0.53
1:A:303:ASP:OD1	1:A:303:ASP:N	2.42	0.53
1:B:255:PRO:HB2	1:B:259:SER:HB3	1.91	0.52
1:A:190:ARG:HD3	1:A:318:ARG:CG	2.40	0.52
1:D:11:GLY:O	1:D:83:THR:OG1	2.24	0.52
1:A:88:PRO:HD2	1:A:135:VAL:HG21	1.90	0.52
1:A:105:THR:O	1:A:108:ILE:N	2.42	0.52
1:D:25:LEU:HB3	1:D:67:ILE:HD12	1.91	0.52
1:D:349:TYR:CE1	1:D:368:PRO:HB3	2.44	0.52
1:C:9:THR:HG21	1:C:17:LEU:HD22	1.91	0.52
1:D:154:ILE:HD12	1:D:327:ARG:CB	2.40	0.52
1:C:385:ASP:OD1	1:C:386:LEU:N	2.42	0.52
1:D:72:ASP:HA	1:D:74:HIS:CE1	2.45	0.52
1:C:395:THR:HA	1:C:398:HIS:NE2	2.25	0.52
1:D:193:ILE:HD12	1:D:295:GLN:HB2	1.92	0.52
1:A:194:THR:HG23	1:A:320:VAL:HG13	1.91	0.51
1:A:272:ILE:HG22	1:A:272:ILE:O	2.10	0.51
1:D:228:LYS:O	1:D:233:VAL:HG23	2.11	0.51
1:D:157:ASP:O	1:D:378:GLY:N	2.33	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:393:MET:O	1:C:397:LYS:HG3	2.11	0.51
1:C:330:THR:OG1	1:C:336:ARG:NH2	2.40	0.51
1:B:14:CYS:SG	1:B:166:GLY:HA3	2.50	0.51
1:B:189:GLN:HA	1:B:243:LYS:O	2.11	0.51
1:A:206:LEU:HD23	1:A:386:LEU:HD13	1.92	0.51
1:A:285:LEU:N	1:A:286:PRO:HD2	2.25	0.51
1:D:199:ARG:O	1:D:252:GLY:HA3	2.11	0.51
1:B:154:ILE:HD13	1:B:327:ARG:HG3	1.92	0.51
1:B:337:VAL:HG21	1:A:207:TYR:CD2	2.45	0.51
1:C:152:LYS:HB2	1:C:165:PHE:CZ	2.46	0.51
1:D:154:ILE:HD12	1:D:327:ARG:HB2	1.93	0.51
1:A:8:LEU:HD12	1:A:8:LEU:C	2.36	0.50
1:B:87:ASN:HD21	1:B:131:ASP:HB3	1.75	0.50
1:A:237:ARG:HD2	3:A:607:HOH:O	2.12	0.50
1:A:13:ASP:O	1:A:327:ARG:HD2	2.12	0.50
1:B:220:PRO:HD3	1:B:250:SER:CB	2.41	0.50
1:A:362:LYS:HG3	1:A:367:VAL:HG22	1.94	0.50
1:C:239:ASN:OD1	1:C:311:ARG:NE	2.36	0.50
1:B:30:THR:HG21	1:A:392:ALA:HB2	1.93	0.50
1:B:395:THR:HG22	1:B:398:HIS:NE2	2.27	0.50
1:A:83:THR:OG1	1:A:84:SER:N	2.44	0.49
1:D:162:ASP:HB2	1:D:361:LEU:O	2.12	0.49
1:B:140:TYR:HB2	1:B:147:VAL:HG12	1.91	0.49
1:B:237:ARG:NH2	1:B:244:PHE:O	2.44	0.49
1:A:17:LEU:HD13	1:A:79:THR:HB	1.93	0.49
1:D:231:VAL:HG13	1:D:304:ILE:CD1	2.42	0.49
1:B:25:LEU:CD1	1:B:38:VAL:HG11	2.42	0.49
1:D:360:ALA:O	1:D:366:ILE:HA	2.12	0.49
1:B:25:LEU:HD21	1:B:70:LEU:HD12	1.94	0.49
1:B:385:ASP:OD2	1:A:341:ARG:NE	2.43	0.49
1:B:140:TYR:HB2	1:B:147:VAL:HG13	1.95	0.49
1:A:166:GLY:H	1:A:335:ASP:CG	2.21	0.49
1:B:166:GLY:H	1:B:335:ASP:CG	2.21	0.49
1:B:201:ALA:HB2	1:B:379:LEU:CD2	2.40	0.49
1:D:132:THR:HA	1:D:135:VAL:CG2	2.43	0.49
1:A:47:VAL:CG1	1:A:48:PHE:HD1	2.23	0.49
1:A:188:HIS:CE1	1:C:12:GLY:HA2	2.47	0.49
1:D:152:LYS:O	1:D:153:THR:CB	2.61	0.49
1:A:54:SER:H	1:A:57:ASP:HB2	1.77	0.48
1:C:195:GLU:HA	1:C:249:CYS:O	2.12	0.48
1:B:25:LEU:HD12	1:B:38:VAL:HG11	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:201:ALA:HB2	1:A:379:LEU:HD23	1.95	0.48
1:A:285:LEU:N	1:A:286:PRO:CD	2.76	0.48
1:D:345:HIS:O	1:D:348:SER:HB2	2.13	0.48
1:C:386:LEU:CD2	1:D:341:ARG:HD2	2.41	0.48
1:B:190:ARG:NE	1:B:316:GLU:OE1	2.42	0.48
1:C:108:ILE:O	1:C:111:GLU:N	2.47	0.48
1:C:400:SER:OG	1:C:401:LYS:NZ	2.46	0.48
1:D:73:LEU:CD1	1:D:80:MET:HE3	2.44	0.48
1:D:73:LEU:HD13	1:D:80:MET:HE3	1.94	0.48
1:A:88:PRO:HG2	1:A:135:VAL:CG2	2.42	0.48
1:C:216:ILE:HB	1:C:247:ILE:HG12	1.95	0.48
1:A:154:ILE:HD12	1:A:204:LEU:CD1	2.43	0.48
1:A:159:ALA:HB2	1:A:377:LYS:O	2.12	0.48
1:C:182:THR:HG23	1:C:244:PHE:CE2	2.49	0.48
1:B:204:LEU:HD13	1:B:326:MET:HE1	1.93	0.48
1:C:192:PHE:CE1	1:C:318:ARG:HB2	2.48	0.48
1:C:290:ILE:O	1:C:294:ILE:HG13	2.13	0.48
1:B:206:LEU:HD21	1:B:386:LEU:HB3	1.95	0.48
1:C:162:ASP:OD2	1:C:363:GLY:N	2.21	0.48
1:B:259:SER:O	1:B:263:ASP:OD1	2.32	0.47
1:B:307:TYR:CD2	1:B:311:ARG:NH2	2.81	0.47
1:B:30:THR:HG21	1:A:392:ALA:CB	2.44	0.47
1:A:152:LYS:C	1:A:153:THR:HG1	2.11	0.47
1:D:223:PRO:HB2	1:D:256:THR:HG22	1.95	0.47
1:B:155:ASP:OD1	1:B:198:GLY:HA2	2.14	0.47
1:A:128:GLY:HA3	1:A:132:THR:CB	2.44	0.47
1:D:27:ARG:HD3	1:D:344:TRP:O	2.14	0.47
1:C:189:GLN:HA	1:C:243:LYS:O	2.15	0.47
1:C:215:ASP:OD2	1:C:245:HIS:HA	2.14	0.47
1:D:218:LEU:O	1:D:219:LEU:HD23	2.15	0.47
1:B:396:VAL:O	1:B:396:VAL:CG1	2.61	0.47
1:A:231:VAL:HG12	1:A:235:MET:HE2	1.96	0.47
1:B:188:HIS:HB3	1:B:190:ARG:CG	2.45	0.47
1:C:338:LEU:O	1:C:338:LEU:HG	2.14	0.47
1:A:17:LEU:O	1:A:21:ILE:HG13	2.15	0.47
1:A:24:ALA:HA	1:A:343:GLY:O	2.14	0.47
1:C:18:ASN:OD1	1:C:79:THR:HA	2.14	0.47
1:C:181:LEU:HD13	1:C:192:PHE:CE2	2.49	0.47
1:D:189:GLN:HB2	1:D:314:HIS:HB3	1.97	0.47
1:B:27:ARG:NH2	1:B:31:GLU:OE2	2.45	0.47
1:B:81:LEU:O	1:B:82:TYR:HB2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:27:ARG:HG3	1:A:27:ARG:HH11	1.79	0.47
1:D:155:ASP:OD2	2:D:501:F6P:H11	2.15	0.47
1:D:338:LEU:HD12	1:D:338:LEU:O	2.15	0.47
1:A:27:ARG:HG3	1:A:27:ARG:NH1	2.30	0.47
1:C:113:ALA:O	1:C:116:PHE:HB2	2.15	0.47
1:C:294:ILE:O	1:C:295:GLN:C	2.58	0.47
1:D:154:ILE:HD11	1:D:327:ARG:HB2	1.97	0.47
1:D:27:ARG:NE	1:D:348:SER:OG	2.48	0.46
1:A:301:ARG:CB	1:A:304:ILE:HD12	2.45	0.46
1:C:8:LEU:HD12	1:C:8:LEU:O	2.15	0.46
1:B:237:ARG:NE	1:B:245:HIS:ND1	2.59	0.46
1:A:38:VAL:HG23	1:A:347:MET:HE1	1.96	0.46
1:D:50:ILE:O	1:D:51:GLU:C	2.58	0.46
1:B:6:GLY:N	1:B:123:ALA:O	2.45	0.46
1:A:155:ASP:OD1	1:A:198:GLY:HA2	2.15	0.46
1:C:14:CYS:HB2	1:C:152:LYS:HD2	1.97	0.46
1:D:42:ILE:HG23	1:D:81:LEU:O	2.14	0.46
1:D:131:ASP:O	1:D:134:GLY:N	2.49	0.46
1:A:200:ASP:O	1:A:220:PRO:HB2	2.15	0.46
1:A:19:ALA:O	1:A:340:LEU:HD23	2.15	0.46
1:A:189:GLN:O	3:A:601:HOH:O	2.21	0.46
1:D:33:ASP:O	1:D:34:LYS:CB	2.63	0.46
1:B:42:ILE:CG2	1:B:43:LYS:HE3	2.45	0.46
1:B:349:TYR:HB3	1:B:354:ASN:O	2.16	0.46
1:A:20:VAL:HG21	1:A:165:PHE:CZ	2.50	0.46
1:D:237:ARG:O	1:D:242:TYR:HB2	2.16	0.46
1:B:401:LYS:CE	1:A:68:GLY:O	2.62	0.46
1:C:341:ARG:NE	1:D:386:LEU:HD21	2.31	0.46
1:B:152:LYS:O	1:B:153:THR:HB	2.16	0.46
1:B:189:GLN:HG3	1:D:82:TYR:CD1	2.50	0.46
1:A:40:GLY:O	1:A:62:THR:HA	2.16	0.46
1:D:146:LYS:CB	1:D:355:TYR:CD1	2.99	0.46
1:B:8:LEU:C	1:B:8:LEU:HD12	2.41	0.45
1:A:13:ASP:OD1	1:A:14:CYS:N	2.49	0.45
1:A:252:GLY:HA2	1:A:286:PRO:CB	2.46	0.45
1:C:363:GLY:HA2	1:D:363:GLY:HA2	1.98	0.45
1:B:230:ILE:HD11	1:B:294:ILE:HD13	1.97	0.45
1:B:400:SER:HB2	1:A:68:GLY:CA	2.46	0.45
1:D:370:ASP:O	1:D:373:GLU:N	2.48	0.45
1:C:169:SER:OG	1:C:335:ASP:OD2	2.32	0.45
1:A:88:PRO:CD	1:A:135:VAL:HG21	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:272:ILE:HD12	1:A:272:ILE:N	2.31	0.45
1:B:20:VAL:HG11	1:B:127:ILE:HG12	1.97	0.45
1:A:38:VAL:HG23	1:A:347:MET:CE	2.47	0.45
1:A:362:LYS:HG3	1:A:367:VAL:CG2	2.47	0.45
1:C:199:ARG:N	1:C:251:GLU:OE2	2.47	0.45
1:D:25:LEU:HD21	1:D:38:VAL:HG11	1.97	0.45
1:D:301:ARG:HB3	1:D:304:ILE:HG13	1.98	0.45
1:A:109:GLY:HA3	1:A:138:ALA:C	2.42	0.45
1:C:326:MET:HE3	1:C:326:MET:HB2	1.77	0.45
1:B:20:VAL:O	1:B:343:GLY:HA3	2.16	0.45
1:B:323:GLY:HA3	3:B:608:HOH:O	2.16	0.45
1:B:188:HIS:HB2	1:B:190:ARG:HG3	1.97	0.45
1:B:251:GLU:OE2	2:B:501:F6P:O4	2.26	0.45
1:B:357:LYS:HA	1:B:357:LYS:HD3	1.64	0.45
1:A:197:MET:HA	1:A:251:GLU:CD	2.42	0.45
1:D:391:ASP:O	1:D:395:THR:HG23	2.16	0.45
1:A:165:PHE:HD2	1:A:342:TYR:CD2	2.35	0.45
1:C:9:THR:HG22	1:C:17:LEU:HD22	1.97	0.45
1:C:134:GLY:O	1:C:137:ALA:N	2.50	0.45
1:D:254:TYR:HB3	1:D:284:GLU:N	2.32	0.45
1:A:327:ARG:O	1:A:327:ARG:HG2	2.17	0.45
1:C:363:GLY:CA	1:D:363:GLY:HA2	2.47	0.45
1:D:123:ALA:HB1	1:D:146:LYS:O	2.16	0.45
1:B:14:CYS:HB2	3:B:621:HOH:O	2.17	0.44
1:B:263:ASP:OD1	1:B:263:ASP:N	2.50	0.44
1:A:223:PRO:HB2	1:A:256:THR:HG22	1.99	0.44
1:C:198:GLY:O	1:C:199:ARG:HB2	2.17	0.44
1:B:152:LYS:HB2	1:B:165:PHE:CZ	2.51	0.44
1:A:254:TYR:CD2	1:A:286:PRO:HG3	2.53	0.44
1:D:72:ASP:HA	1:D:74:HIS:ND1	2.33	0.44
1:B:20:VAL:HG21	1:B:165:PHE:CE2	2.52	0.44
1:A:3:MET:O	1:A:37:ASP:HB2	2.17	0.44
1:C:67:ILE:CD1	1:D:396:VAL:HG11	2.31	0.44
1:B:40:GLY:O	1:B:62:THR:HA	2.17	0.44
1:A:202:GLY:CA	1:A:220:PRO:HD2	2.47	0.44
1:A:358:LEU:N	1:A:369:VAL:O	2.51	0.44
1:C:112:LEU:HD12	1:C:112:LEU:H	1.83	0.44
1:B:57:ASP:OD1	1:B:58:VAL:N	2.50	0.44
1:A:192:PHE:CE1	1:A:318:ARG:HB3	2.52	0.44
1:A:195:GLU:HG3	1:A:291:ALA:CB	2.46	0.44
1:C:156:ASN:HA	1:C:164:THR:OG1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:326:MET:O	1:D:326:MET:HG3	2.16	0.44
1:A:8:LEU:HD21	1:A:45:TRP:CZ3	2.53	0.44
1:A:47:VAL:C	1:A:49:ALA:N	2.76	0.44
1:C:68:GLY:O	1:D:401:LYS:HE3	2.18	0.44
1:C:223:PRO:HB2	1:C:256:THR:OG1	2.17	0.44
1:D:162:ASP:OD2	1:D:363:GLY:N	2.46	0.44
1:C:6:GLY:N	1:C:123:ALA:O	2.31	0.44
1:C:226:PHE:HB3	1:C:263:ASP:HB3	1.99	0.44
1:D:195:GLU:HA	1:D:249:CYS:O	2.18	0.44
1:B:38:VAL:C	1:B:39:ILE:HD13	2.43	0.44
1:B:307:TYR:CZ	1:B:311:ARG:NH1	2.86	0.44
1:A:390:ARG:HG2	1:A:391:ASP:OD1	2.17	0.44
1:C:165:PHE:CD1	1:C:165:PHE:C	2.96	0.44
1:D:151:PRO:O	1:D:165:PHE:CD1	2.71	0.44
1:D:337:VAL:O	1:D:341:ARG:HG3	2.17	0.43
1:D:41:ILE:HD13	1:D:41:ILE:N	2.33	0.43
1:D:137:ALA:O	1:D:138:ALA:C	2.62	0.43
1:A:22:TYR:CE2	1:A:26:LEU:HD11	2.53	0.43
1:C:81:LEU:O	1:C:82:TYR:HB2	2.18	0.43
1:C:152:LYS:O	1:C:153:THR:CB	2.66	0.43
1:C:123:ALA:HB1	1:C:350:ILE:HD12	2.00	0.43
1:D:45:TRP:HE1	1:D:132:THR:HG23	1.84	0.43
1:C:134:GLY:O	1:C:137:ALA:HB3	2.19	0.43
1:C:178:LEU:O	1:C:179:ASP:C	2.62	0.43
1:D:159:ALA:HB3	1:D:376:LYS:CB	2.48	0.43
1:C:389:ILE:HG12	1:D:344:TRP:CD2	2.53	0.43
1:D:138:ALA:O	1:D:140:TYR:N	2.52	0.43
1:B:314:HIS:NE2	1:B:316:GLU:HB2	2.34	0.43
1:D:153:THR:O	1:D:164:THR:OG1	2.26	0.43
1:B:380:ILE:CG2	1:B:387:ILE:HD11	2.40	0.43
1:B:184:THR:HG22	1:D:13:ASP:OD1	2.18	0.43
1:B:186:HIS:HB2	1:B:244:PHE:CE1	2.54	0.43
1:B:151:PRO:HD2	1:B:342:TYR:CD2	2.53	0.42
1:A:383:THR:O	1:A:384:SER:C	2.62	0.42
1:A:390:ARG:HG2	1:A:391:ASP:N	2.34	0.42
1:D:138:ALA:C	1:D:140:TYR:N	2.77	0.42
1:A:8:LEU:HB2	1:A:44:GLY:HA2	2.01	0.42
1:A:38:VAL:CG1	1:A:65:LEU:HB2	2.43	0.42
1:A:45:TRP:HZ3	1:A:48:PHE:CD2	2.37	0.42
1:A:334:PHE:CD1	1:A:334:PHE:C	2.96	0.42
1:D:181:LEU:HD13	1:D:192:PHE:CD1	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:20:VAL:HG21	1:C:165:PHE:CE2	2.54	0.42
1:C:227:LYS:O	1:C:232:GLU:CG	2.64	0.42
1:D:65:LEU:HD23	1:D:65:LEU:HA	1.80	0.42
1:D:154:ILE:O	1:D:204:LEU:HD11	2.19	0.42
1:D:168:PHE:CD2	1:D:334:PHE:CE2	3.05	0.42
1:A:81:LEU:O	1:A:82:TYR:HB2	2.19	0.42
1:B:128:GLY:HA3	1:B:132:THR:CB	2.49	0.42
1:B:178:LEU:HD21	1:B:194:THR:HG21	2.01	0.42
3:B:608:HOH:O	1:D:320:VAL:HG23	2.19	0.42
1:C:158:LEU:HD23	1:C:158:LEU:HA	1.83	0.42
1:D:139:MET:O	1:D:145:ALA:CB	2.63	0.42
1:D:256:THR:O	1:D:257:LYS:C	2.63	0.42
1:B:13:ASP:OD1	1:D:184:THR:HA	2.19	0.42
1:B:55:PRO:HA	1:B:58:VAL:HG23	2.01	0.42
1:B:63:GLN:O	1:B:65:LEU:HD13	2.19	0.42
1:C:18:ASN:ND2	1:C:78:GLY:O	2.52	0.42
1:C:338:LEU:HD11	1:C:342:TYR:CZ	2.55	0.42
1:B:338:LEU:HD12	1:B:338:LEU:HA	1.81	0.42
1:C:221:GLU:CD	1:C:380:ILE:H	2.26	0.42
1:C:333:VAL:HG23	1:D:211:SER:CB	2.48	0.42
1:C:371:LEU:HD23	1:C:371:LEU:HA	1.92	0.42
1:B:177:THR:O	1:B:181:LEU:HG	2.20	0.42
1:A:203:TRP:HB2	3:A:609:HOH:O	2.19	0.42
1:A:301:ARG:HB3	1:A:301:ARG:HE	1.64	0.42
1:C:66:ASP:O	1:C:69:GLU:CG	2.68	0.42
1:C:189:GLN:CB	1:C:314:HIS:HB3	2.49	0.42
1:C:229:ASP:OD1	1:C:229:ASP:N	2.53	0.42
1:D:146:LYS:HA	1:D:355:TYR:HB3	2.02	0.42
1:D:231:VAL:HG13	1:D:304:ILE:HD11	2.02	0.41
1:B:311:ARG:O	1:B:312:HIS:HB2	2.20	0.41
1:D:254:TYR:HA	1:D:255:PRO:HD3	1.91	0.41
1:D:264:PHE:CD1	1:D:297:GLU:HG3	2.55	0.41
1:A:88:PRO:CG	1:A:135:VAL:HG21	2.48	0.41
1:A:269:GLN:CB	1:A:272:ILE:HD13	2.51	0.41
1:C:194:THR:HG22	1:C:196:ILE:HD11	1.99	0.41
1:D:17:LEU:HD23	1:D:165:PHE:HZ	1.86	0.41
1:D:310:ASP:HB2	1:D:311:ARG:NH1	2.35	0.41
1:C:108:ILE:O	1:C:109:GLY:C	2.63	0.41
1:C:128:GLY:HA3	1:C:132:THR:HG21	2.02	0.41
1:C:149:ALA:HB3	1:C:358:LEU:HD12	2.03	0.41
1:C:361:LEU:HD11	1:C:363:GLY:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:220:PRO:HD3	1:D:250:SER:CB	2.50	0.41
1:B:172:GLN:OE1	1:A:332:ASN:HB2	2.21	0.41
1:A:13:ASP:HB2	1:C:188:HIS:CD2	2.55	0.41
1:A:341:ARG:NH2	1:A:366:ILE:HG12	2.36	0.41
1:C:295:GLN:OE1	1:C:319:SER:CB	2.68	0.41
1:D:159:ALA:HB2	1:D:378:GLY:CA	2.51	0.41
1:B:128:GLY:HA3	1:B:132:THR:OG1	2.20	0.41
1:B:395:THR:HA	1:B:398:HIS:NE2	2.35	0.41
1:A:347:MET:O	1:A:348:SER:C	2.64	0.41
1:D:239:ASN:HA	1:D:311:ARG:HD3	2.03	0.41
1:A:254:TYR:HD2	1:A:286:PRO:HG3	1.85	0.41
1:A:285:LEU:HD13	1:A:285:LEU:HA	1.89	0.41
1:A:8:LEU:HB3	1:A:41:ILE:HB	2.02	0.41
1:C:199:ARG:HG3	2:C:501:F6P:H3	2.03	0.41
1:C:217:ILE:HD12	1:C:390:ARG:HG3	2.03	0.41
1:B:121:ILE:O	1:B:121:ILE:HG13	2.19	0.41
1:A:318:ARG:HD3	1:A:318:ARG:HA	1.73	0.41
1:C:404:LEU:O	1:C:405:PHE:C	2.64	0.41
1:D:217:ILE:O	1:D:390:ARG:NH1	2.54	0.41
1:C:353:GLY:HA2	1:C:355:TYR:CZ	2.56	0.41
1:D:159:ALA:HB2	1:D:377:LYS:C	2.46	0.41
1:B:16:GLY:N	1:B:331:PRO:HG3	2.36	0.40
1:A:165:PHE:CD2	1:A:342:TYR:CD2	3.08	0.40
1:C:41:ILE:HD12	1:C:41:ILE:N	2.36	0.40
1:C:165:PHE:HD2	1:C:342:TYR:CD2	2.39	0.40
1:D:17:LEU:HD23	1:D:17:LEU:HA	1.94	0.40
1:D:72:ASP:HA	1:D:74:HIS:HD1	1.85	0.40
1:A:266:VAL:HG13	1:A:297:GLU:OE1	2.21	0.40
1:C:18:ASN:HB3	1:C:73:LEU:HG	2.02	0.40
1:C:332:ASN:HB2	1:D:172:GLN:OE1	2.21	0.40
1:D:83:THR:O	1:D:84:SER:HB3	2.20	0.40
1:A:50:ILE:HG21	1:A:53:ILE:HA	2.03	0.40
1:A:124:LEU:HB3	1:A:147:VAL:HG23	2.04	0.40
1:A:218:LEU:HD11	1:A:230:ILE:HD11	2.04	0.40
1:A:252:GLY:CA	1:A:286:PRO:HB3	2.49	0.40
1:A:325:THR:HG23	1:C:320:VAL:HG21	2.03	0.40
1:A:345:HIS:O	1:A:349:TYR:CD1	2.75	0.40
1:C:294:ILE:O	1:C:297:GLU:N	2.55	0.40
1:D:255:PRO:CG	1:D:264:PHE:CE2	3.03	0.40
1:B:301:ARG:CB	1:B:304:ILE:CD1	2.88	0.40
1:D:254:TYR:CB	1:D:284:GLU:N	2.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:ALA:HB2	1:A:377:LYS:C	2.47	0.40
1:A:194:THR:HA	1:A:320:VAL:O	2.21	0.40
1:A:322:LEU:HD23	1:A:322:LEU:HA	1.74	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:33:ASP:OD2	1:C:140:TYR:OH[1_545]	1.89	0.31

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	376/424 (89%)	343 (91%)	28 (7%)	5 (1%)	10 8
1	B	369/424 (87%)	332 (90%)	32 (9%)	5 (1%)	9 7
1	C	371/424 (88%)	328 (88%)	38 (10%)	5 (1%)	10 8
1	D	358/424 (84%)	323 (90%)	31 (9%)	4 (1%)	12 11
All	All	1474/1696 (87%)	1326 (90%)	129 (9%)	19 (1%)	10 8

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	289	ASN
1	C	13	ASP
1	C	153	THR
1	D	153	THR
1	B	182	THR
1	A	48	PHE
1	A	142	TYR

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Mol	Chain	Res	Type
1	A	384	SER
1	C	33	ASP
1	D	197	MET
1	A	153	THR
1	A	256	THR
1	D	51	GLU
1	B	206	LEU
1	B	266	VAL
1	C	375	SER
1	D	254	TYR
1	B	129	GLY
1	C	109	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	241/355 (68%)	227 (94%)	14 (6%)	17 19
1	B	236/355 (66%)	216 (92%)	20 (8%)	8 8
1	C	240/355 (68%)	233 (97%)	7 (3%)	37 48
1	D	229/355 (64%)	215 (94%)	14 (6%)	15 17
All	All	946/1420 (67%)	891 (94%)	55 (6%)	17 19

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

Mol	Chain	Res	Type
1	B	13	ASP
1	B	14	CYS
1	B	30	THR
1	B	42	ILE
1	B	47	VAL
1	B	58	VAL
1	B	62	THR
1	B	65	LEU
1	B	79	THR

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Mol	Chain	Res	Type
1	B	118	THR
1	B	144	ASN
1	B	162	ASP
1	B	182	THR
1	B	184	THR
1	B	192	PHE
1	B	240	SER
1	B	263	ASP
1	B	367	VAL
1	B	369	VAL
1	B	388	GLN
1	A	25	LEU
1	A	36	VAL
1	A	38	VAL
1	A	42	ILE
1	A	47	VAL
1	A	153	THR
1	A	230	ILE
1	A	256	THR
1	A	260	LEU
1	A	319	SER
1	A	320	VAL
1	A	367	VAL
1	A	390	ARG
1	A	395	THR
1	C	250	SER
1	C	269	GLN
1	C	320	VAL
1	C	348	SER
1	C	358	LEU
1	C	369	VAL
1	C	394	THR
1	D	13	ASP
1	D	47	VAL
1	D	50	ILE
1	D	62	THR
1	D	86	THR
1	D	131	ASP
1	D	184	THR
1	D	206	LEU
1	D	266	VAL
1	D	290	ILE

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Mol	Chain	Res	Type
1	D	320	VAL
1	D	350	ILE
1	D	369	VAL
1	D	387	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	87	ASN
1	B	388	GLN
1	A	60	HIS
1	C	176	ASN

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 oligosaccharides in this entry.

5.6 Ligand geometry

4 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	F6P	B	501	-	15,16,16	3.62	5 (33%)	16,25,25	1.54	3 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	F6P	D	501	-	15,16,16	3.44	4 (26%)	16,25,25	0.96	1 (6%)
2	F6P	C	501	-	15,16,16	3.40	5 (33%)	16,25,25	1.26	2 (12%)
2	F6P	A	501	-	15,16,16	3.54	4 (26%)	16,25,25	1.55	3 (18%)

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	F6P	B	501	-	-	0/9/28/28	0/1/1/1
2	F6P	D	501	-	-	8/9/28/28	0/1/1/1
2	F6P	C	501	-	-	3/9/28/28	0/1/1/1
2	F6P	A	501	-	-	7/9/28/28	0/1/1/1

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	F6P	O5-C2	11.27	1.61	1.43
2	A	501	F6P	O5-C2	10.90	1.60	1.43
2	D	501	F6P	O5-C2	10.16	1.59	1.43
2	C	501	F6P	O5-C2	10.15	1.59	1.43
2	C	501	F6P	C4-C5	-5.99	1.37	1.53
2	D	501	F6P	C4-C5	-5.88	1.38	1.53
2	A	501	F6P	C4-C5	-5.77	1.38	1.53
2	B	501	F6P	C4-C5	-5.77	1.38	1.53
2	D	501	F6P	O5-C5	5.19	1.55	1.43
2	A	501	F6P	O5-C5	4.65	1.54	1.43
2	C	501	F6P	O5-C5	4.47	1.53	1.43
2	B	501	F6P	O5-C5	4.34	1.53	1.43
2	B	501	F6P	C4-C3	2.71	1.64	1.53
2	A	501	F6P	C4-C3	2.61	1.63	1.53
2	C	501	F6P	C4-C3	2.50	1.63	1.53
2	D	501	F6P	C4-C3	2.44	1.62	1.53
2	B	501	F6P	P-O6	2.31	1.67	1.60
2	C	501	F6P	P-O6	2.01	1.66	1.60

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	501	F6P	O3-C3-C4	-3.61	100.49	113.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	501	F6P	C5-C4-C3	2.72	110.52	102.07
2	A	501	F6P	O3P-P-O6	2.57	113.38	106.67
2	A	501	F6P	O3-C3-C4	-2.46	104.56	113.25
2	C	501	F6P	O2-C2-O5	2.35	113.84	109.33
2	D	501	F6P	O6-P-O1P	2.29	112.63	106.44
2	B	501	F6P	O4-C4-C5	-2.09	105.07	111.08
2	B	501	F6P	O3P-P-O6	2.08	112.08	106.67
2	C	501	F6P	O5-C5-C6	-2.07	104.64	109.50

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	501	F6P	O1-C1-C2-C3
2	D	501	F6P	O1-C1-C2-O5
2	D	501	F6P	C6-O6-P-O2P
2	D	501	F6P	C6-O6-P-O3P
2	A	501	F6P	C4-C5-C6-O6
2	D	501	F6P	O5-C5-C6-O6
2	A	501	F6P	O5-C5-C6-O6
2	D	501	F6P	C4-C5-C6-O6
2	A	501	F6P	O1-C1-C2-O5
2	C	501	F6P	O1-C1-C2-O5
2	A	501	F6P	C6-O6-P-O2P
2	D	501	F6P	O1-C1-C2-O2
2	A	501	F6P	C6-O6-P-O1P
2	A	501	F6P	C6-O6-P-O3P
2	C	501	F6P	C6-O6-P-O2P
2	D	501	F6P	C6-O6-P-O1P
2	A	501	F6P	O1-C1-C2-C3
2	C	501	F6P	O1-C1-C2-C3

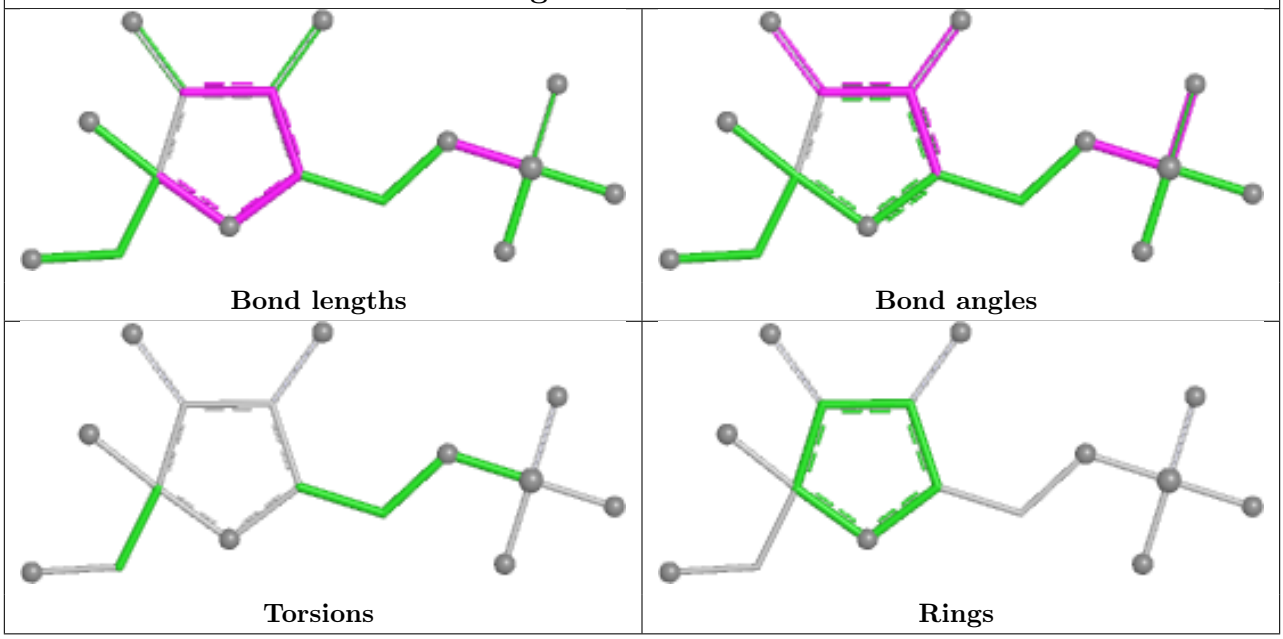
There are no ring outliers.

4 monomers are involved in 6 short contacts:

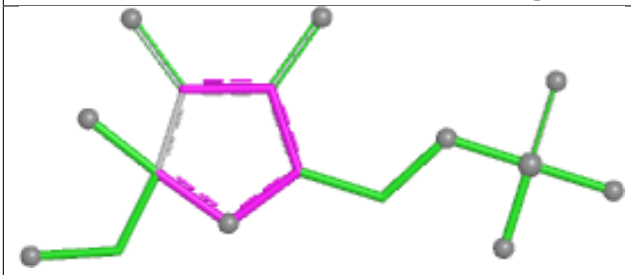
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	501	F6P	2	0
2	D	501	F6P	1	0
2	C	501	F6P	1	0
2	A	501	F6P	2	0

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

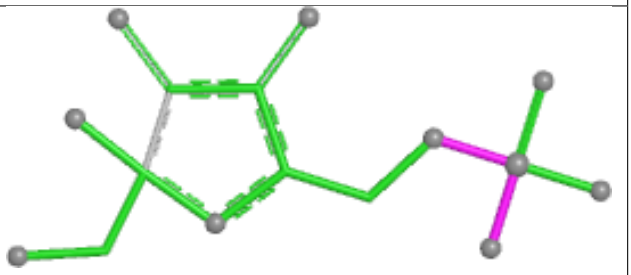
Ligand F6P B 501



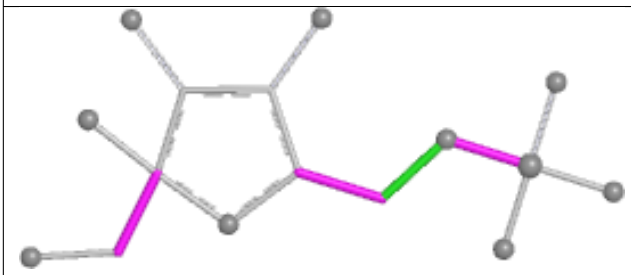
Ligand F6P D 501



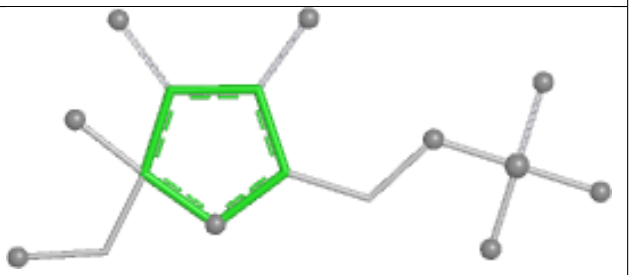
Bond lengths



Bond angles

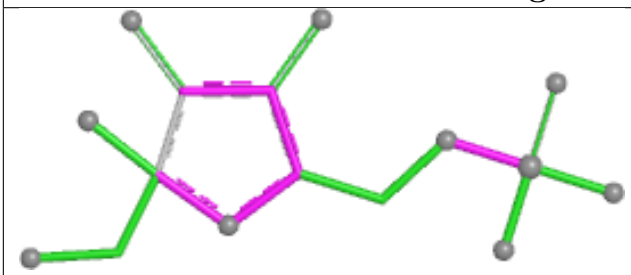


Torsions

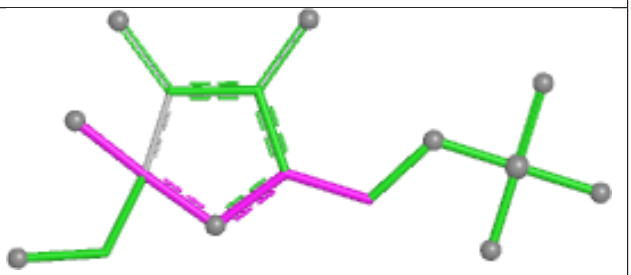


Rings

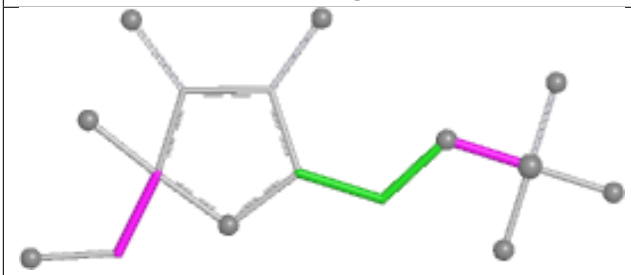
Ligand F6P C 501



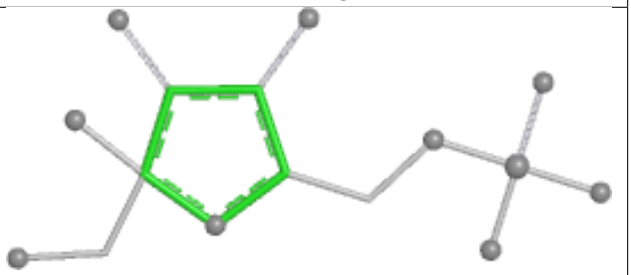
Bond lengths



Bond angles

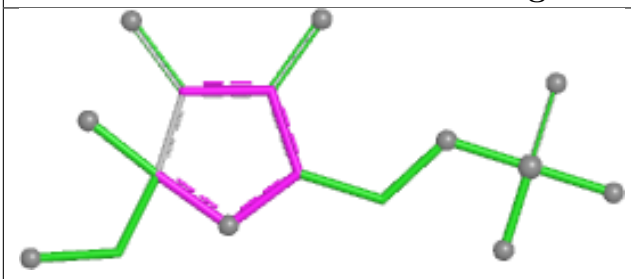


Torsions

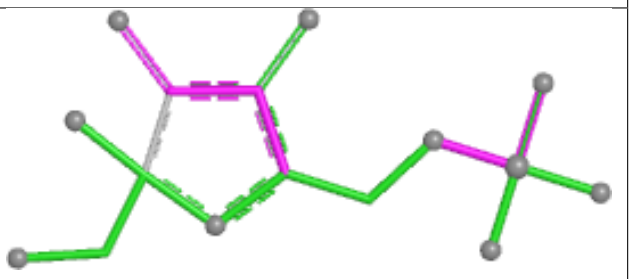


Rings

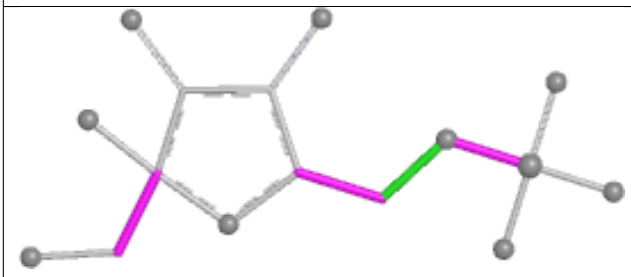
Ligand F6P A 501



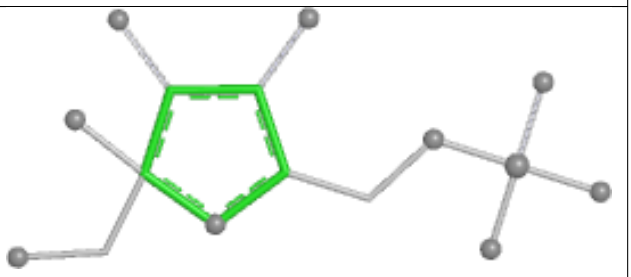
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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	384/424 (90%)	0.89	48 (12%) 9 11	34, 58, 82, 94	0
1	B	375/424 (88%)	0.62	12 (3%) 50 57	37, 52, 72, 84	0
1	C	377/424 (88%)	0.77	27 (7%) 23 27	35, 55, 77, 98	0
1	D	366/424 (86%)	0.86	36 (9%) 14 17	35, 58, 78, 90	0
All	All	1502/1696 (88%)	0.79	123 (8%) 19 23	34, 55, 79, 98	0

All (123) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	138	ALA	4.7
1	B	100	GLU	4.4
1	C	118	THR	3.9
1	A	125	ILE	3.7
1	D	41	ILE	3.7
1	A	119	LEU	3.7
1	A	321	VAL	3.7
1	B	404	LEU	3.7
1	A	352	ASP	3.7
1	C	102	GLU	3.6
1	A	320	VAL	3.5
1	A	91	ALA	3.5
1	B	405	PHE	3.4
1	D	84	SER	3.4
1	C	49	ALA	3.4
1	A	67	ILE	3.3
1	D	200	ASP	3.2
1	C	28	ALA	3.2
1	D	373	GLU	3.2
1	D	140	TYR	3.1
1	D	241	GLY	3.1

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Mol	Chain	Res	Type	RSRZ
1	D	369	VAL	3.1
1	C	103	GLU	3.1
1	D	105	THR	3.1
1	D	36	VAL	3.0
1	A	61	TYR	3.0
1	A	275	LEU	2.9
1	C	379	LEU	2.9
1	D	11	GLY	2.9
1	D	405	PHE	2.9
1	C	373	GLU	2.8
1	A	49	ALA	2.8
1	D	139	MET	2.8
1	C	372	ILE	2.8
1	A	346	ALA	2.8
1	A	39	ILE	2.7
1	D	89	PHE	2.7
1	C	150	CYS	2.7
1	C	371	LEU	2.7
1	C	21	ILE	2.7
1	A	273	ASP	2.7
1	B	142	TYR	2.7
1	A	165	PHE	2.7
1	A	323	GLY	2.6
1	A	267	ILE	2.6
1	A	268	SER	2.6
1	A	405	PHE	2.6
1	B	113	ALA	2.6
1	A	201	ALA	2.6
1	C	214	ALA	2.6
1	A	112	LEU	2.6
1	A	289	ASN	2.6
1	A	59	ASP	2.6
1	D	88	PRO	2.6
1	C	33	ASP	2.6
1	D	145	ALA	2.5
1	D	370	ASP	2.5
1	A	353	GLY	2.5
1	A	142	TYR	2.5
1	D	61	TYR	2.5
1	A	23	GLY	2.5
1	C	288	LEU	2.5
1	D	386	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
1	D	161	THR	2.5
1	D	108	ILE	2.5
1	B	286	PRO	2.5
1	C	350	ILE	2.4
1	B	56	ALA	2.4
1	D	48	PHE	2.4
1	A	372	ILE	2.4
1	A	9	THR	2.4
1	B	50	ILE	2.4
1	C	230	ILE	2.4
1	A	5	VAL	2.4
1	A	139	MET	2.4
1	C	89	PHE	2.3
1	A	21	ILE	2.3
1	C	119	LEU	2.3
1	D	376	LYS	2.3
1	B	53	ILE	2.3
1	C	370	ASP	2.3
1	A	343	GLY	2.3
1	A	274	ASN	2.3
1	C	369	VAL	2.3
1	D	372	ILE	2.3
1	D	343	GLY	2.3
1	D	49	ALA	2.2
1	D	47	VAL	2.2
1	A	116	PHE	2.2
1	B	247	ILE	2.2
1	C	130	ASP	2.2
1	D	359	SER	2.2
1	C	405	PHE	2.2
1	C	270	LYS	2.2
1	A	380	ILE	2.2
1	A	344	TRP	2.2
1	A	19	ALA	2.2
1	C	233	VAL	2.2
1	D	116	PHE	2.2
1	D	57	ASP	2.2
1	A	272	ILE	2.1
1	D	339	GLY	2.1
1	D	374	GLY	2.1
1	A	48	PHE	2.1
1	A	68	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	136	ALA	2.1
1	D	264	PHE	2.1
1	A	329	GLY	2.1
1	D	288	LEU	2.1
1	C	383	THR	2.1
1	A	81	LEU	2.1
1	C	65	LEU	2.1
1	A	149	ALA	2.1
1	B	370	ASP	2.0
1	A	121	ILE	2.0
1	A	282	ASN	2.0
1	A	340	LEU	2.0
1	D	289	ASN	2.0
1	B	200	ASP	2.0
1	A	281	GLY	2.0
1	C	353	GLY	2.0
1	D	131	ASP	2.0
1	A	158	LEU	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 oligosaccharides in this entry.

6.4 Ligands (i)

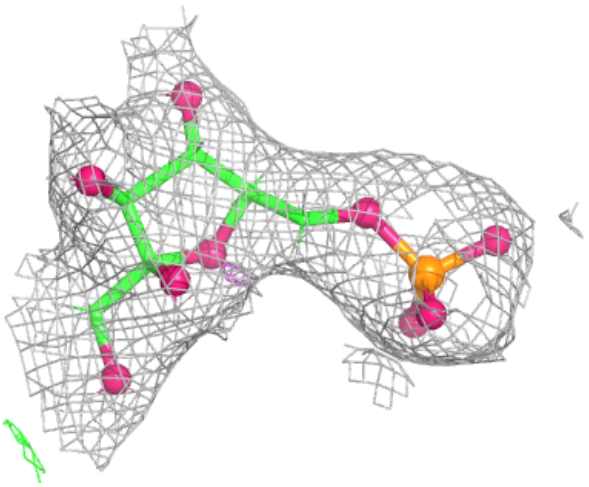
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

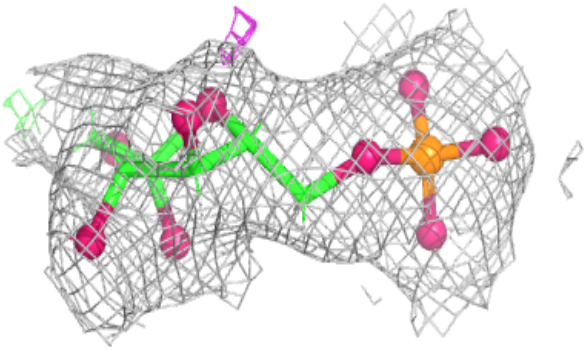
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	F6P	A	501	16/16	0.89	0.08	53,65,76,80	0
2	F6P	C	501	16/16	0.91	0.09	43,55,66,77	0
2	F6P	D	501	16/16	0.91	0.08	41,60,77,78	0
2	F6P	B	501	16/16	0.94	0.07	37,51,57,63	0

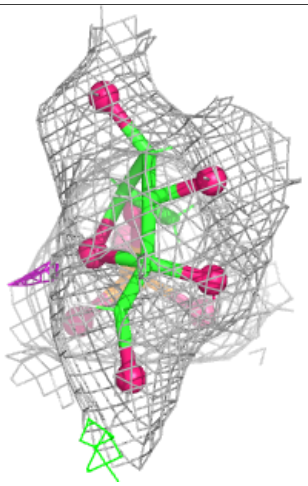
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around F6P A 501:

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

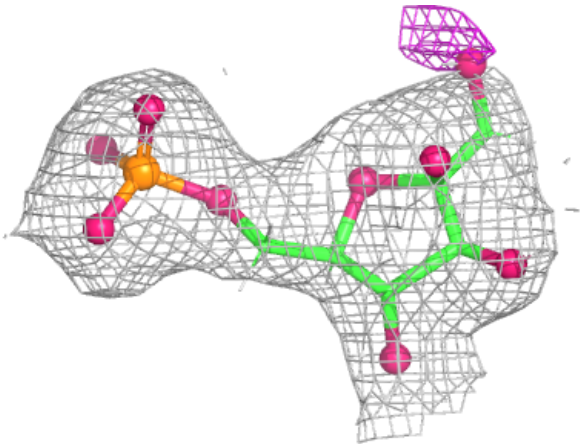


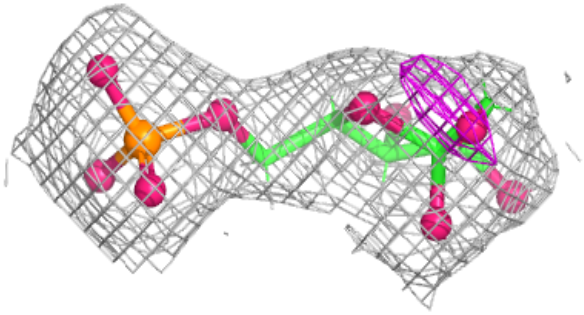


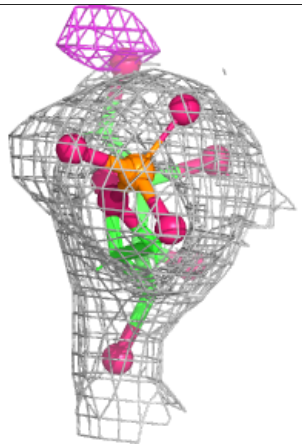


Electron density around F6P C 501:

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

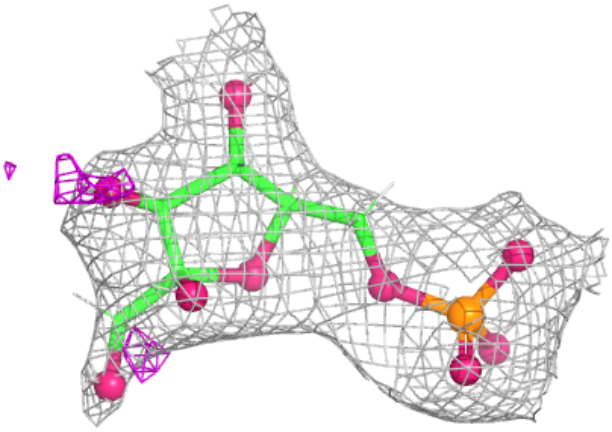


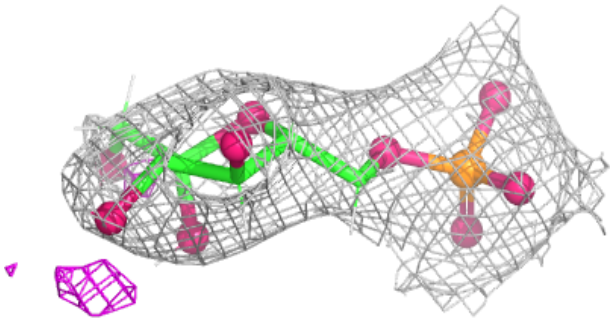


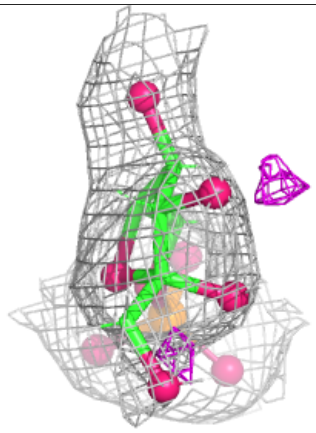


Electron density around F6P D 501:

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

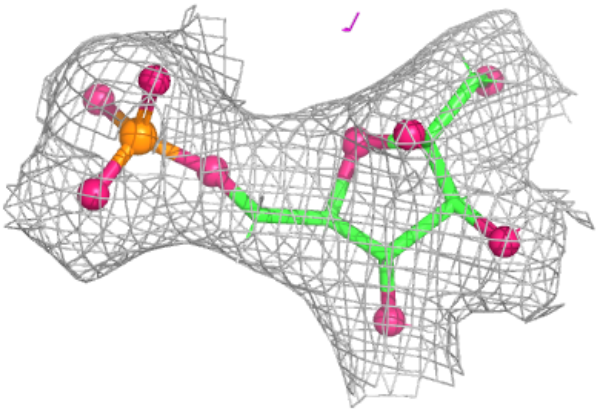


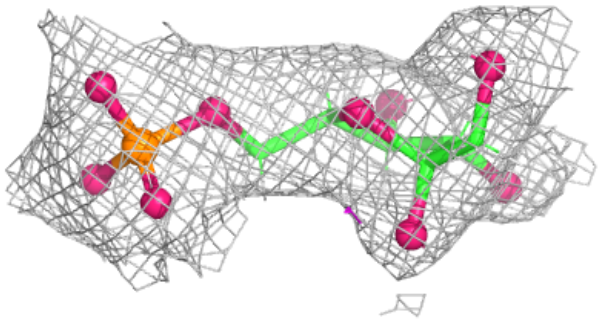


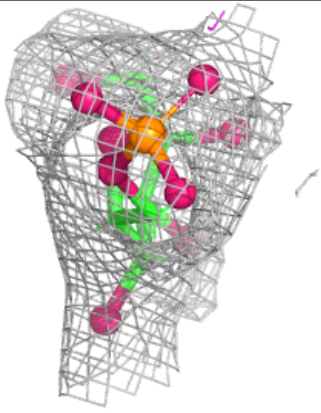


Electron density around F6P B 501:

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







6.5 Other polymers (i)

There are no such residues in this entry.