Full wwPDB X-ray Structure Validation Report (i)

Jun 7, 2023 – 06:10 PM JST

PDB ID	:	8IAV
Title	:	Crystal structure of Streptococcus pneumoniae pyruvate kinase in complex with fructose 1,6-bisphosphate
Authors	:	Nakashima, R.; Taguchi, A.
Deposited on	:	2023-02-09
Resolution	:	2.59 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.

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1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.59 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
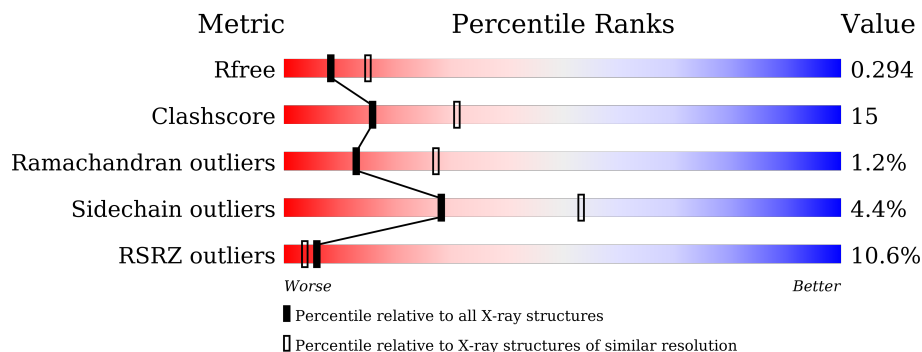
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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

Mol	Chain	Length	Quality of chain
1	A	521	6% / 64% / 21% / · / 13%
1	B	521	8% / 61% / 22% / · / 15%
1	C	521	12% / 53% / 32% / · / 12%
1	D	521	12% / 62% / 25% / · / 12%

2   Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 13962 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	451	Total	C	N	O	S	0	0	0
			3443	2153	592	681	17			
1	B	445	Total	C	N	O	S	0	0	0
			3396	2117	590	672	17			
1	C	460	Total	C	N	O	S	0	0	0
			3508	2188	609	694	17			
1	D	460	Total	C	N	O	S	0	0	0
			3517	2195	609	696	17			

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP Q8DQ84
A	-18	GLY	-	expression tag	UNP Q8DQ84
A	-17	SER	-	expression tag	UNP Q8DQ84
A	-16	SER	-	expression tag	UNP Q8DQ84
A	-15	HIS	-	expression tag	UNP Q8DQ84
A	-14	HIS	-	expression tag	UNP Q8DQ84
A	-13	HIS	-	expression tag	UNP Q8DQ84
A	-12	HIS	-	expression tag	UNP Q8DQ84
A	-11	HIS	-	expression tag	UNP Q8DQ84
A	-10	HIS	-	expression tag	UNP Q8DQ84
A	-9	SER	-	expression tag	UNP Q8DQ84
A	-8	SER	-	expression tag	UNP Q8DQ84
A	-7	GLY	-	expression tag	UNP Q8DQ84
A	-6	LEU	-	expression tag	UNP Q8DQ84
A	-5	VAL	-	expression tag	UNP Q8DQ84
A	-4	PRO	-	expression tag	UNP Q8DQ84
A	-3	ARG	-	expression tag	UNP Q8DQ84
A	-2	GLY	-	expression tag	UNP Q8DQ84
A	-1	SER	-	expression tag	UNP Q8DQ84
A	0	HIS	-	expression tag	UNP Q8DQ84
B	-19	MET	-	initiating methionine	UNP Q8DQ84

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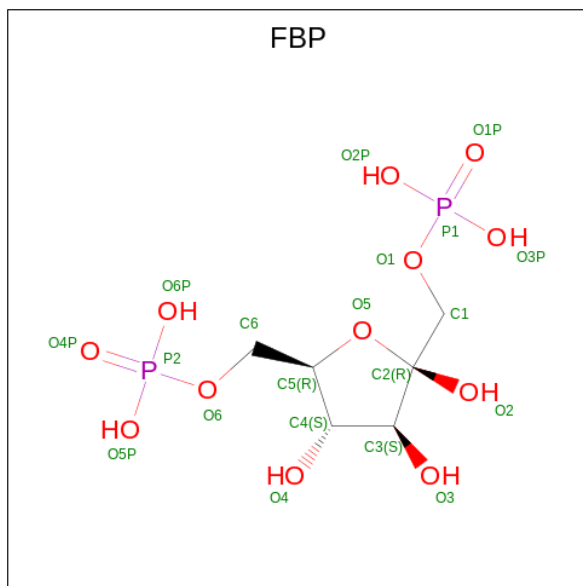
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Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	GLY	-	expression tag	UNP Q8DQ84
B	-17	SER	-	expression tag	UNP Q8DQ84
B	-16	SER	-	expression tag	UNP Q8DQ84
B	-15	HIS	-	expression tag	UNP Q8DQ84
B	-14	HIS	-	expression tag	UNP Q8DQ84
B	-13	HIS	-	expression tag	UNP Q8DQ84
B	-12	HIS	-	expression tag	UNP Q8DQ84
B	-11	HIS	-	expression tag	UNP Q8DQ84
B	-10	HIS	-	expression tag	UNP Q8DQ84
B	-9	SER	-	expression tag	UNP Q8DQ84
B	-8	SER	-	expression tag	UNP Q8DQ84
B	-7	GLY	-	expression tag	UNP Q8DQ84
B	-6	LEU	-	expression tag	UNP Q8DQ84
B	-5	VAL	-	expression tag	UNP Q8DQ84
B	-4	PRO	-	expression tag	UNP Q8DQ84
B	-3	ARG	-	expression tag	UNP Q8DQ84
B	-2	GLY	-	expression tag	UNP Q8DQ84
B	-1	SER	-	expression tag	UNP Q8DQ84
B	0	HIS	-	expression tag	UNP Q8DQ84
C	-19	MET	-	initiating methionine	UNP Q8DQ84
C	-18	GLY	-	expression tag	UNP Q8DQ84
C	-17	SER	-	expression tag	UNP Q8DQ84
C	-16	SER	-	expression tag	UNP Q8DQ84
C	-15	HIS	-	expression tag	UNP Q8DQ84
C	-14	HIS	-	expression tag	UNP Q8DQ84
C	-13	HIS	-	expression tag	UNP Q8DQ84
C	-12	HIS	-	expression tag	UNP Q8DQ84
C	-11	HIS	-	expression tag	UNP Q8DQ84
C	-10	HIS	-	expression tag	UNP Q8DQ84
C	-9	SER	-	expression tag	UNP Q8DQ84
C	-8	SER	-	expression tag	UNP Q8DQ84
C	-7	GLY	-	expression tag	UNP Q8DQ84
C	-6	LEU	-	expression tag	UNP Q8DQ84
C	-5	VAL	-	expression tag	UNP Q8DQ84
C	-4	PRO	-	expression tag	UNP Q8DQ84
C	-3	ARG	-	expression tag	UNP Q8DQ84
C	-2	GLY	-	expression tag	UNP Q8DQ84
C	-1	SER	-	expression tag	UNP Q8DQ84
C	0	HIS	-	expression tag	UNP Q8DQ84
D	-19	MET	-	initiating methionine	UNP Q8DQ84
D	-18	GLY	-	expression tag	UNP Q8DQ84
D	-17	SER	-	expression tag	UNP Q8DQ84

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-16	SER	-	expression tag	UNP Q8DQ84
D	-15	HIS	-	expression tag	UNP Q8DQ84
D	-14	HIS	-	expression tag	UNP Q8DQ84
D	-13	HIS	-	expression tag	UNP Q8DQ84
D	-12	HIS	-	expression tag	UNP Q8DQ84
D	-11	HIS	-	expression tag	UNP Q8DQ84
D	-10	HIS	-	expression tag	UNP Q8DQ84
D	-9	SER	-	expression tag	UNP Q8DQ84
D	-8	SER	-	expression tag	UNP Q8DQ84
D	-7	GLY	-	expression tag	UNP Q8DQ84
D	-6	LEU	-	expression tag	UNP Q8DQ84
D	-5	VAL	-	expression tag	UNP Q8DQ84
D	-4	PRO	-	expression tag	UNP Q8DQ84
D	-3	ARG	-	expression tag	UNP Q8DQ84
D	-2	GLY	-	expression tag	UNP Q8DQ84
D	-1	SER	-	expression tag	UNP Q8DQ84
D	0	HIS	-	expression tag	UNP Q8DQ84

- Molecule 2 is 1,6-di-O-phosphono-beta-D-fructofuranose (three-letter code: FBP) (formula: $C_6H_{14}O_{12}P_2$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total 20	C 6	O 12	P 2	0	0
2	B	1	Total 20	C 6	O 12	P 2	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	C	1	Total 20	C 6	O 12	P 2	0	0
2	D	1	Total 20	C 6	O 12	P 2	0	0

• Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	3	Total 3	O 3	0	0
3	B	5	Total 5	O 5	0	0
3	C	3	Total 3	O 3	0	0
3	D	7	Total 7	O 7	0	0

3 Residue-property plots ⓘ

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

• Molecule 1: Pyruvate kinase

Chain A:

• Molecule 1: Pyruvate kinase

Chain B:

R317 R320 S321 E322 E342 N345 M356 A357 Q364 Y370 S375 R380 E385 V386 M387 I400 L406 T407 K408 L415 K418 Y419 L426 A427 L428 E432 M439 P446 T449 S453 S454 T455 D456 D457 M458 F459 E460 I461 R464 K465

V479 R491 T492 N493 R496 I497 R498 R501

• Molecule 1: Pyruvate kinase

Chain C:

12%

53% 32% 12%

MET GLY SER SER HIS HIS HIS HIS HIS SER SER GLY LEU VAL PRO ARG GLY SER HIS M1 V5 K6 I7 T10 L11 G12 V15 E16 I17 ARG GLY LYS LYS PHE GLY GLU ASP GLY TYR TRP GLY GLU K32 A37 S38 N41 I42 L45 I46 E47 A48

T52 F53 R54 F57 D61 H62 Q65 G66 E67 R68 M69 A70 T71 V72 K73 L74 A75 E76 K77 I78 K82 V83 L86 E93 I94 R95 T96 GLU LEU PHE GLU GLY ALA LYS GLU TYR SER TYR K109 T110 G111 E112 K113 I114 R115 V116 A117 T118 I122 LYS SER THR

ARG GLU VAL ILE A130 L131 N132 V133 A136 L137 D138 I139 Y140 D141 D142 V143 E144 V145 G146 R147 L150 V151 D152 D153 G154 K155 L156 G157 L158 R159 V160 K163 D164 D165 A166 T167 R168 E169 F170 E171 V172 E173 V174 E175 N176 ASP GLY ILE ALA LYS GLN LYS G185 V186 P189

N190 T191 K192 I193 P196 A197 L198 A199 E200 R201 D202 N203 D204 D205 I206 L210 F216 I217 F221 A225 K226 D227 V228 N229 E230 V231 R232 A233 E236 H242 L245 E250 N251 Q252 Q253 G254 I261 R272 M283 V284 P285 V286 Y287 Q288 K289 M290 I291 I292

K293 K294 V295 V301 V302 A305 T306 N307 M308 L309 E310 T311 M312 T313 P316 R317 R320 S321 E322 V323 S324 D325 V326 F327 N328 A329 V330 I331 D332 A336 T337 M338 L339 S340 G341 E342 S343 A344 N345 L350 E351 S352 T355 M356 A357 K361 N362 A363 R372 R380

N381 S382 K383 T384 E385 V386 S389 A390 V391 T395 S396 S397 L402 L406 T407 K408 T409 G410 H411 T412 L415 P421 I425 L426 A427 L428 T429 F430 D431 E432 L433 R436 G437 L438 M439 L440 N441 V444 I445 P446 M447 L448 T449 D450 S454 T455 D456 D457 M458 F459

E460 I461 A462 E463 R464 G470 L471 V472 I478 V479 I480 V481 A482 G483 V484 P485 V486 R491 T492 N493 T494 M495 R496 I497 R498 T499 V500 R501

• Molecule 1: Pyruvate kinase

Chain D:

12%

62% 25% 12%

MET GLY SER SER HIS HIS HIS HIS HIS SER SER GLY LEU VAL PRO ARG GLY SER HIS M1 V5 V8 A9 T10 L11 V15 E16 I17 K21 LYS PHE GLY GLU ASP GLY TYR TRP GLY GLU LYS LEU D34 V35 E36 A37 S38 A39 K40 N41 I42 A43 K44 L45 I46

F53 F57 S58 H59 E64 Q65 R68 M69 A70 T71 V72 K73 L74 V83 L87 K90 I94 ARG THR GLU LEU PHE GLU GLY GLU ALA LYS GLU Y106 S107 Y108 K109 E112 K113 I114 R115 V116 A117 THR LYS GLN GLY ILE LYS SER THR ARG GLU VAL ILE ALA LEU

ASN VAL ALA GLY A136 L137 D138 I139 Y140 D141 D142 V143 E144 V145 V149 L150 V151 D152 D153 G154 K155 L156 G157 L158 R159 V160 V161 A162 K163 A166 E169 F170 E171 V172 E173 V174 D177 G178 I179 I180 A181 K182 Q183 K184 G185 V186 K192 I193 P194 F195 P196 A197 L198 A199 E200

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	217.03Å 86.79Å 129.86Å 90.00° 103.22° 90.00°	Depositor
Resolution (Å)	47.69 – 2.59 47.69 – 2.59	Depositor EDS
% Data completeness (in resolution range)	99.2 (47.69-2.59) 99.2 (47.69-2.59)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.87 (at 2.58Å)	Xtriage
Refinement program	REFMAC 5	Depositor
R, R_{free}	0.234 , 0.298 0.233 , 0.294	Depositor DCC
R_{free} test set	3621 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	83.7	Xtriage
Anisotropy	0.376	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 68.3	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	13962	wwPDB-VP
Average B, all atoms (Å^2)	107.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.48% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: FBP

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	0.62	0/3482	0.70	0/4699
1	B	0.64	0/3429	0.75	0/4618
1	C	0.62	0/3542	0.68	0/4776
1	D	0.62	0/3554	0.70	1/4791 (0.0%)
All	All	0.63	0/14007	0.71	1/18884 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	D	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	496	ARG	NE-CZ-NH1	-5.22	117.69	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	179	ILE	Peptide

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	3443	0	3472	90	0
1	B	3396	0	3443	88	0
1	C	3508	0	3566	158	0
1	D	3517	0	3565	99	0
2	A	20	0	10	1	0
2	B	20	0	10	0	0
2	C	20	0	10	2	0
2	D	20	0	10	1	0
3	A	3	0	0	0	0
3	B	5	0	0	0	0
3	C	3	0	0	0	0
3	D	7	0	0	0	0
All	All	13962	0	14086	410	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 15.

All (410) 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:C:459:PHE:CE2	1:C:496:ARG:NH2	2.28	1.00
1:C:115:ARG:HH12	1:C:169:GLU:CD	1.67	0.96
1:D:412:THR:HG23	2:D:601:FBP:O1P	1.70	0.92
1:C:42:ILE:HG21	1:C:72:VAL:HG12	1.51	0.91
1:B:386:VAL:HG11	1:D:398:MET:HG3	1.50	0.91
1:C:460:GLU:OE1	1:C:464:ARG:CZ	2.21	0.89
1:A:160:VAL:HA	1:A:172:VAL:HG12	1.57	0.86
1:C:459:PHE:CD2	1:C:496:ARG:CZ	2.58	0.86
1:D:412:THR:HG21	1:D:492:THR:OG1	1.76	0.85
1:B:21:LYS:HE2	1:B:25:GLU:HB3	1.57	0.84
1:C:459:PHE:HE2	1:C:496:ARG:NH2	1.73	0.83
1:A:200:GLU:OE1	1:A:200:GLU:N	2.12	0.82
1:C:454:SER:HA	1:C:486:VAL:HG13	1.62	0.82
1:A:372:ARG:HH21	1:A:372:ARG:HG3	1.46	0.80
1:C:459:PHE:CE2	1:C:496:ARG:CZ	2.65	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:152:ASP:OD1	1:D:184:LYS:HG2	1.81	0.80
1:D:42:ILE:HD11	1:D:72:VAL:HA	1.64	0.77
1:C:198:LEU:HD13	1:C:230:GLU:HB3	1.67	0.77
1:C:115:ARG:NH1	1:C:169:GLU:HG3	2.00	0.76
1:C:150:LEU:HB3	1:C:154:GLY:HA2	1.67	0.76
1:D:348:TYR:HB3	1:D:351:GLU:HB2	1.68	0.76
1:A:372:ARG:NH1	1:B:370:TYR:O	2.20	0.75
1:B:313:THR:HG22	1:B:342:GLU:HA	1.70	0.74
1:C:408:LYS:HD2	1:C:430:PHE:HD2	1.52	0.73
1:D:181:ALA:HB3	1:D:184:LYS:HD3	1.69	0.72
1:B:317:ARG:HG2	1:B:317:ARG:HH11	1.53	0.72
1:A:484:VAL:HG22	1:A:494:THR:HG21	1.71	0.71
1:D:162:ALA:HB3	1:D:171:GLU:HB3	1.72	0.71
1:C:439:MET:HG3	1:C:446:PRO:HG2	1.72	0.70
1:B:385:GLU:HG3	1:B:415:LEU:HD22	1.72	0.70
1:A:275:MET:O	1:A:279:VAL:HG22	1.90	0.70
1:C:115:ARG:NH1	1:C:169:GLU:CD	2.43	0.69
1:C:76:GLU:HG2	1:C:82:LYS:HA	1.74	0.69
1:C:206:ILE:O	1:C:210:LEU:HG	1.93	0.69
1:C:412:THR:HG21	1:C:492:THR:HG21	1.74	0.68
1:C:7:ILE:HD13	1:C:356:MET:HG2	1.74	0.68
1:C:115:ARG:NH1	1:C:169:GLU:CG	2.57	0.68
1:D:39:ALA:CB	1:D:74:LEU:HD12	2.23	0.68
1:D:94:ILE:HG22	1:D:186:VAL:HB	1.74	0.68
1:D:35:VAL:HG13	1:D:36:GLU:N	2.09	0.67
1:C:167:THR:HB	1:C:169:GLU:OE2	1.95	0.67
1:D:474:SER:HA	1:D:500:VAL:HG23	1.78	0.66
1:D:35:VAL:HG13	1:D:36:GLU:H	1.60	0.66
1:C:5:VAL:HG21	1:C:330:VAL:HG13	1.78	0.66
1:B:57:PHE:HA	1:B:65:GLN:HE22	1.60	0.66
1:B:380:ARG:HB3	1:B:386:VAL:HG12	1.79	0.65
1:C:118:THR:CG2	1:C:168:ARG:O	2.45	0.65
1:C:308:MET:HE1	1:C:338:MET:H	1.62	0.65
1:D:39:ALA:HB3	1:D:74:LEU:HD12	1.78	0.64
1:B:199:ALA:HB3	1:B:202:ASP:OD2	1.97	0.64
1:C:167:THR:O	1:C:168:ARG:HB2	1.97	0.64
1:D:42:ILE:HD13	1:D:72:VAL:HG12	1.78	0.64
1:A:368:ASN:OD1	1:A:422:ASN:ND2	2.31	0.64
1:C:118:THR:HG23	1:C:168:ARG:O	1.98	0.63
1:C:478:ILE:HD12	1:C:480:ILE:HD11	1.78	0.63
1:D:5:VAL:HG21	1:D:330:VAL:HG22	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:146:GLY:H	1:A:160:VAL:HG13	1.64	0.63
1:C:140:TYR:HD2	1:C:168:ARG:O	1.82	0.62
1:C:46:ILE:HD11	1:C:53:PHE:CE2	2.34	0.62
1:A:372:ARG:HG3	1:A:372:ARG:NH2	2.15	0.62
1:C:340:SER:N	1:C:342:GLU:OE2	2.32	0.62
1:C:115:ARG:NH1	1:C:169:GLU:OE1	2.24	0.61
1:B:57:PHE:HA	1:B:65:GLN:NE2	2.15	0.61
1:C:167:THR:HG21	1:C:169:GLU:OE1	2.01	0.61
1:B:65:GLN:O	1:B:69:MET:HG3	2.00	0.61
1:B:142:ASP:OD2	1:B:194:PRO:HD3	2.01	0.61
1:C:46:ILE:HD12	1:C:83:VAL:HG11	1.82	0.61
1:C:351:GLU:O	1:C:355:THR:HG23	2.00	0.61
1:C:408:LYS:HD2	1:C:430:PHE:CD2	2.34	0.61
1:B:56:ASN:HA	1:B:88:ASP:HB3	1.83	0.61
1:D:109:LYS:HA	1:D:177:ASP:OD1	2.00	0.61
1:D:499:THR:O	1:D:501:ARG:NH1	2.34	0.61
1:B:10:THR:OG1	1:B:54:ARG:NH1	2.34	0.60
1:D:410:GLY:O	1:D:414:ARG:HG3	2.01	0.60
1:A:6:LYS:O	1:A:336:ALA:HA	2.01	0.60
1:C:164:ASP:HB3	1:C:167:THR:OG1	2.01	0.60
1:A:406:LEU:HD22	1:A:458:MET:HB3	1.82	0.60
1:A:386:VAL:HG23	1:C:397:SER:HB2	1.82	0.60
1:A:460:GLU:OE1	1:A:460:GLU:HA	2.01	0.60
1:A:354:THR:O	1:A:358:THR:HG23	2.01	0.60
1:A:398:MET:CG	1:C:386:VAL:HG11	2.32	0.60
1:D:449:THR:HB	1:D:465:LYS:HE2	1.83	0.60
1:A:206:ILE:HD13	1:A:231:VAL:HG13	1.85	0.59
1:A:439:MET:HG3	1:A:446:PRO:HG2	1.84	0.59
1:A:458:MET:CE	1:A:484:VAL:HG12	2.32	0.59
1:B:284:VAL:HG22	1:B:285:PRO:HD3	1.84	0.59
1:A:147:ARG:O	1:A:160:VAL:HG12	2.02	0.59
1:B:16:GLU:OE1	1:B:68:ARG:NH1	2.37	0.58
1:B:426:LEU:HG	1:B:428:LEU:CD2	2.34	0.58
1:A:383:LYS:O	1:A:386:VAL:HG12	2.03	0.58
1:B:275:MET:O	1:B:279:VAL:HG22	2.03	0.58
1:C:411:HIS:CE1	1:C:415:LEU:HD21	2.39	0.58
1:B:317:ARG:HH11	1:B:317:ARG:CG	2.16	0.57
1:B:406:LEU:HD22	1:B:458:MET:HB3	1.86	0.57
1:D:149:VAL:CG1	1:D:158:LEU:HB2	2.34	0.57
1:D:463:GLU:OE2	1:D:498:ARG:NH2	2.38	0.57
1:C:232:ARG:O	1:C:236:GLU:HG2	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:320:ARG:HD3	1:D:276:GLY:HA3	1.86	0.57
1:C:206:ILE:HD13	1:C:231:VAL:HG13	1.87	0.57
1:B:114:ILE:HG23	1:B:172:VAL:CG2	2.35	0.57
1:C:460:GLU:OE1	1:C:464:ARG:NH1	2.37	0.57
1:A:155:LYS:HG2	1:B:316:PRO:HG2	1.85	0.57
1:C:383:LYS:HA	1:C:386:VAL:HG22	1.87	0.57
1:D:489:ALA:O	1:D:490:VAL:HB	2.03	0.57
1:C:242:HIS:CE1	1:C:433:LEU:HG	2.40	0.57
1:C:140:TYR:CD2	1:C:168:ARG:O	2.57	0.56
1:C:448:LEU:HD12	1:C:449:THR:N	2.20	0.56
1:C:459:PHE:CD2	1:C:496:ARG:NH1	2.73	0.56
1:B:93:GLU:O	1:B:94:ILE:HG13	2.05	0.56
1:A:417:SER:HB2	1:A:442:TRP:O	2.06	0.56
1:B:114:ILE:HG23	1:B:172:VAL:HG23	1.87	0.56
1:B:460:GLU:HG2	1:B:498:ARG:HH12	1.71	0.56
1:A:146:GLY:N	1:A:160:VAL:HG13	2.21	0.56
1:B:68:ARG:O	1:B:71:THR:N	2.38	0.56
1:A:270:ILE:HG22	1:A:272:ARG:HG3	1.88	0.55
1:C:272:ARG:O	1:D:320:ARG:NE	2.39	0.55
1:B:89:THR:O	1:B:220:SER:OG	2.23	0.55
1:C:15:VAL:O	1:C:41:ASN:ND2	2.39	0.55
1:A:149:VAL:HG22	1:A:188:ILE:HG12	1.87	0.55
1:B:380:ARG:CB	1:B:386:VAL:HG12	2.37	0.55
1:A:398:MET:HG3	1:C:386:VAL:HG11	1.90	0.54
1:D:402:LEU:HB3	1:D:478:ILE:HG22	1.89	0.54
1:C:109:LYS:O	1:C:112:GLU:HG3	2.07	0.54
1:A:496:ARG:HG3	1:C:494:THR:HG22	1.89	0.54
1:C:17:ILE:HG13	1:C:37:ALA:HB1	1.89	0.54
1:D:150:LEU:HB3	1:D:154:GLY:HA2	1.90	0.54
1:A:225:ALA:HB2	1:A:260:GLU:HG3	1.89	0.54
1:C:118:THR:HG21	1:C:140:TYR:HD2	1.73	0.54
1:A:383:LYS:HB2	1:A:491:ARG:HD3	1.90	0.54
1:B:150:LEU:HB3	1:B:154:GLY:HA2	1.90	0.54
1:A:270:ILE:HD11	1:A:291:ILE:HB	1.89	0.53
1:C:226:LYS:HD3	1:C:229:ASN:HD22	1.71	0.53
1:B:92:PRO:HB3	1:B:195:PHE:CG	2.44	0.53
1:C:156:LEU:HD12	1:C:157:GLY:H	1.74	0.53
1:C:458:MET:CE	1:C:483:GLY:O	2.57	0.53
1:A:217:ILE:HD12	1:A:243:VAL:HG11	1.91	0.53
1:C:225:ALA:O	1:C:228:VAL:HG22	2.09	0.53
1:D:68:ARG:HA	1:D:71:THR:CG2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:199:ALA:HB1	1:A:200:GLU:OE1	2.08	0.53
1:A:310:GLU:O	1:A:313:THR:HG22	2.09	0.53
1:C:242:HIS:ND1	1:C:433:LEU:HG	2.24	0.53
1:A:156:LEU:HD11	1:A:174:VAL:HG13	1.90	0.52
1:B:456:ASP:HB3	1:B:461:ILE:HD11	1.91	0.52
1:C:76:GLU:OE2	1:C:436:ARG:NH2	2.42	0.52
1:D:9:ALA:O	1:D:53:PHE:HA	2.09	0.52
1:B:250:GLU:HG2	1:B:271:ALA:HB3	1.92	0.52
1:B:108:TYR:HB3	1:B:174:VAL:HG21	1.90	0.52
1:B:385:GLU:CG	1:B:415:LEU:HD22	2.38	0.52
1:A:159:ARG:HB2	1:A:175:GLU:OE1	2.09	0.52
1:D:68:ARG:HA	1:D:71:THR:HG22	1.91	0.52
1:D:384:THR:HG22	1:D:415:LEU:HD23	1.91	0.52
1:A:273:GLY:CA	1:A:306:THR:HG21	2.40	0.52
1:C:380:ARG:NH2	1:C:389:SER:OG	2.43	0.52
1:D:456:ASP:N	1:D:456:ASP:OD1	2.42	0.52
1:B:449:THR:HB	1:B:465:LYS:HE2	1.92	0.51
1:D:308:MET:HB3	1:D:326:VAL:HG12	1.92	0.51
1:A:460:GLU:OE1	1:A:498:ARG:NH1	2.44	0.51
1:C:481:VAL:HG12	1:C:492:THR:CG2	2.41	0.51
1:C:305:ALA:HA	1:C:338:MET:HB3	1.92	0.51
1:B:284:VAL:CG2	1:B:285:PRO:HD3	2.40	0.51
1:A:320:ARG:NH1	1:B:276:GLY:HA3	2.25	0.51
1:B:109:LYS:HZ2	1:B:177:ASP:HB3	1.74	0.51
1:D:158:LEU:HA	1:D:173:GLU:O	2.10	0.51
1:B:67:GLU:O	1:B:70:ALA:HB3	2.11	0.51
1:C:12:GLY:HA3	1:C:344:ALA:O	2.11	0.51
1:C:406:LEU:HD13	1:C:428:LEU:HB2	1.91	0.51
1:A:266:ASP:O	1:A:300:LYS:HB3	2.11	0.51
1:C:145:VAL:HG23	1:C:160:VAL:HG12	1.93	0.51
1:A:275:MET:HE3	1:A:284:VAL:HG13	1.92	0.50
1:A:275:MET:CE	1:A:284:VAL:HG13	2.41	0.50
1:A:458:MET:HE3	1:A:484:VAL:HG12	1.92	0.50
1:A:196:PRO:HG2	1:A:199:ALA:HA	1.93	0.50
1:B:496:ARG:HG3	1:D:493:ASN:O	2.12	0.50
1:D:415:LEU:O	1:D:418:LYS:HB3	2.11	0.50
1:D:69:MET:O	1:D:72:VAL:HG22	2.11	0.50
1:A:157:GLY:O	1:A:158:LEU:HD13	2.11	0.50
1:B:497:ILE:HG13	1:D:387:MET:CE	2.41	0.50
1:C:292:ILE:HG23	1:C:302:VAL:HG11	1.93	0.50
1:B:198:LEU:HD21	1:B:234:ILE:HD11	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:190:ASN:N	1:C:190:ASN:HD22	2.10	0.50
1:C:288:GLN:O	1:C:292:ILE:HG13	2.12	0.50
1:C:395:THR:HG21	1:C:421:PRO:HB2	1.94	0.50
1:B:285:PRO:O	1:B:289:LYS:HD3	2.12	0.50
1:B:460:GLU:OE2	1:B:464:ARG:HG2	2.11	0.50
1:D:68:ARG:O	1:D:72:VAL:HG13	2.12	0.50
1:B:208:PHE:O	1:B:211:GLU:HB2	2.12	0.50
1:D:339:LEU:HD22	1:D:342:GLU:HB2	1.93	0.50
1:D:375:SER:OG	1:D:392:LYS:NZ	2.45	0.50
1:D:282:GLU:OE2	1:D:282:GLU:N	2.33	0.49
1:A:431:ASP:OD1	1:A:434:THR:HG23	2.11	0.49
1:C:307:ASN:HA	1:C:310:GLU:OE1	2.12	0.49
1:D:435:GLU:HG3	1:D:446:PRO:HB2	1.93	0.49
1:C:46:ILE:CD1	1:C:83:VAL:HG11	2.42	0.49
1:D:327:PHE:CD2	1:D:363:ALA:HB2	2.48	0.49
1:B:92:PRO:HG2	1:B:221:PHE:HB3	1.94	0.49
1:B:91:GLY:HA2	1:B:202:ASP:OD2	2.12	0.49
1:A:45:LEU:CD2	1:A:350:LEU:HA	2.42	0.49
1:A:406:LEU:HD13	1:A:482:ALA:HB2	1.94	0.49
1:B:400:ILE:HG21	1:B:479:VAL:HG23	1.95	0.49
1:A:187:ASN:HB3	1:A:278:GLU:OE1	2.13	0.49
1:B:109:LYS:NZ	1:B:177:ASP:HB3	2.28	0.49
1:B:439:MET:HG3	1:B:446:PRO:HG2	1.95	0.49
1:C:140:TYR:OH	1:C:165:ASP:HA	2.12	0.49
1:C:385:GLU:HG2	1:C:415:LEU:HD12	1.94	0.49
1:B:206:ILE:HD13	1:B:231:VAL:HG13	1.95	0.49
1:A:31:GLU:HA	1:A:31:GLU:OE2	2.11	0.48
1:B:10:THR:HA	1:B:54:ARG:HB3	1.95	0.48
1:D:109:LYS:NZ	1:D:177:ASP:OD2	2.26	0.48
1:D:252:GLN:HG3	1:D:256:ASP:OD2	2.13	0.48
1:B:162:ALA:O	1:B:171:GLU:N	2.46	0.48
1:C:372:ARG:NH1	1:D:370:TYR:O	2.45	0.48
1:A:320:ARG:NH1	1:B:272:ARG:O	2.46	0.48
1:D:17:ILE:H	1:D:38:SER:HB3	1.78	0.48
1:A:316:PRO:HB3	1:A:348:TYR:CZ	2.48	0.48
1:B:196:PRO:HG2	1:B:199:ALA:HB2	1.95	0.48
1:C:310:GLU:O	1:C:313:THR:HG23	2.14	0.48
1:D:35:VAL:CG1	1:D:36:GLU:N	2.76	0.48
1:D:454:SER:HA	1:D:486:VAL:HG13	1.95	0.48
1:A:52:THR:HB	1:A:440:LEU:HD21	1.95	0.48
1:A:145:VAL:HG23	1:A:160:VAL:HG22	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:13:PRO:HB2	1:A:23:PHE:CD1	2.48	0.48
1:B:387:MET:HE3	1:D:497:ILE:HG13	1.95	0.48
1:B:493:ASN:N	1:B:493:ASN:OD1	2.45	0.48
1:D:158:LEU:HD13	1:D:174:VAL:HA	1.95	0.48
1:D:206:ILE:HD11	1:D:234:ILE:HG21	1.96	0.48
1:A:383:LYS:HA	1:A:386:VAL:HG12	1.95	0.48
1:B:272:ARG:NH1	1:B:288:GLN:OE1	2.47	0.48
1:C:198:LEU:HG	1:C:198:LEU:O	2.14	0.48
1:C:320:ARG:HD2	1:D:272:ARG:HB3	1.95	0.48
1:C:62:HIS:NE2	1:C:204:ASP:OD1	2.46	0.48
1:C:233:ALA:HA	1:C:236:GLU:OE2	2.15	0.47
1:D:156:LEU:HD23	1:D:158:LEU:HD21	1.96	0.47
1:C:433:LEU:HD12	1:C:433:LEU:HA	1.64	0.47
1:D:35:VAL:CG1	1:D:36:GLU:H	2.27	0.47
1:A:69:MET:O	1:A:73:LYS:HG3	2.14	0.47
1:A:309:LEU:O	1:A:342:GLU:HG2	2.14	0.47
1:C:409:THR:N	2:C:601:FBP:O1P	2.44	0.47
1:B:88:ASP:OD1	1:B:248:LYS:NZ	2.46	0.47
1:C:458:MET:HE1	1:C:483:GLY:O	2.15	0.47
1:A:272:ARG:HD3	1:A:288:GLN:OE1	2.14	0.47
1:C:272:ARG:NH2	1:C:308:MET:HG2	2.30	0.47
1:C:317:ARG:HH12	1:C:355:THR:HG22	1.80	0.47
1:C:309:LEU:HD12	1:C:339:LEU:HD21	1.97	0.47
1:A:320:ARG:CZ	1:B:276:GLY:HA3	2.45	0.46
1:B:82:LYS:HE2	1:B:432:GLU:OE1	2.16	0.46
1:A:320:ARG:NH1	1:B:273:GLY:O	2.45	0.46
1:C:449:THR:HG22	1:C:450:ASP:H	1.79	0.46
1:C:10:THR:HG22	1:C:344:ALA:HB2	1.98	0.46
1:C:202:ASP:O	1:C:206:ILE:HG13	2.15	0.46
1:D:198:LEU:HD11	1:D:203:ASN:HB2	1.98	0.46
1:A:314:GLU:O	1:A:348:TYR:HE2	1.98	0.46
1:C:317:ARG:NH1	1:C:355:THR:HG22	2.31	0.46
1:B:460:GLU:HG2	1:B:498:ARG:NH1	2.29	0.46
1:C:52:THR:HB	1:C:440:LEU:HD21	1.98	0.46
1:C:164:ASP:O	1:C:166:ALA:N	2.49	0.46
1:D:375:SER:HA	1:D:378:PHE:CE2	2.50	0.46
1:A:94:ILE:HG23	1:A:133:VAL:HG12	1.98	0.46
1:A:249:ILE:CG2	1:A:255:ILE:HG13	2.45	0.46
1:C:15:VAL:HB	1:C:41:ASN:HB3	1.98	0.46
1:C:69:MET:O	1:C:73:LYS:HD2	2.16	0.46
1:D:163:LYS:HA	1:D:163:LYS:HE2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:197:ALA:HA	1:D:227:ASP:OD1	2.16	0.46
1:A:493:ASN:OD1	1:A:494:THR:HG23	2.17	0.45
1:D:459:PHE:CD1	1:D:496:ARG:HD2	2.50	0.45
1:A:67:GLU:O	1:A:70:ALA:HB3	2.16	0.45
1:A:40:LYS:HA	1:A:43:ALA:HB3	1.99	0.45
1:A:404:VAL:HG11	1:A:462:ALA:HB1	1.98	0.45
1:A:145:VAL:HA	1:A:160:VAL:HG13	1.99	0.45
1:A:150:LEU:HB3	1:A:154:GLY:HA2	1.97	0.45
1:C:251:ASN:HD21	1:C:253:GLN:HB2	1.82	0.45
1:B:426:LEU:HG	1:B:428:LEU:HD21	1.98	0.45
1:C:133:VAL:HG11	1:C:137:LEU:HB2	1.97	0.45
1:C:198:LEU:HD22	1:C:230:GLU:OE2	2.17	0.45
1:C:357:ALA:O	1:C:361:LYS:HG3	2.17	0.45
1:D:246:PHE:CD1	1:D:267:GLY:HA3	2.51	0.45
1:D:246:PHE:HD1	1:D:267:GLY:HA3	1.81	0.45
1:B:72:VAL:HG23	1:B:85:PHE:CZ	2.51	0.45
1:B:195:PHE:HB2	1:B:223:ARG:NH2	2.31	0.45
1:C:316:PRO:CG	1:D:155:LYS:HE2	2.47	0.45
1:C:320:ARG:HA	1:C:323:VAL:HG12	1.99	0.45
1:C:459:PHE:HB3	1:C:498:ARG:HH11	1.82	0.45
1:D:284:VAL:HG22	1:D:285:PRO:HD3	1.99	0.45
1:A:200:GLU:H	1:A:200:GLU:CD	2.13	0.45
1:C:463:GLU:OE1	1:C:501:ARG:N	2.34	0.45
1:D:351:GLU:O	1:D:355:THR:OG1	2.23	0.45
1:D:354:THR:O	1:D:358:THR:HG23	2.17	0.45
1:B:11:LEU:HD23	1:B:11:LEU:HA	1.81	0.44
1:D:65:GLN:HA	1:D:68:ARG:HG2	1.99	0.44
1:A:496:ARG:CG	1:C:494:THR:HG22	2.46	0.44
1:D:39:ALA:HB1	1:D:74:LEU:HD12	1.99	0.44
1:D:436:ARG:O	1:D:439:MET:HG3	2.17	0.44
1:C:73:LYS:HA	1:C:76:GLU:OE1	2.18	0.44
1:D:311:THR:HG21	1:D:319:THR:HG23	1.99	0.44
1:B:56:ASN:ND2	1:B:58:SER:H	2.15	0.44
1:B:197:ALA:HA	1:B:227:ASP:OD1	2.17	0.44
1:C:82:LYS:HE2	1:C:82:LYS:HB3	1.80	0.44
1:C:481:VAL:HG12	1:C:492:THR:HG22	2.00	0.44
1:D:149:VAL:HG12	1:D:158:LEU:HB2	1.98	0.44
1:B:58:SER:HA	1:B:90:LYS:HB3	1.98	0.44
1:B:345:ASN:O	1:B:345:ASN:ND2	2.50	0.44
1:C:327:PHE:CD2	1:C:363:ALA:HB2	2.52	0.44
1:C:459:PHE:CD2	1:C:496:ARG:NH2	2.74	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:64:GLU:O	1:D:68:ARG:HG2	2.17	0.44
1:D:330:VAL:O	1:D:367:LEU:HD21	2.18	0.44
1:D:463:GLU:OE2	1:D:498:ARG:HD3	2.17	0.44
1:C:225:ALA:HB3	1:C:226:LYS:HE2	2.00	0.44
1:C:284:VAL:CG2	1:C:285:PRO:HD3	2.47	0.44
1:D:258:LEU:HD23	1:D:294:LYS:HD2	1.99	0.44
1:C:484:VAL:O	1:C:493:ASN:ND2	2.51	0.44
1:D:269:MET:SD	1:D:338:MET:HE1	2.58	0.44
1:D:285:PRO:O	1:D:289:LYS:HG3	2.18	0.44
1:A:484:VAL:HG22	1:A:494:THR:CG2	2.43	0.44
1:B:299:GLY:HA2	1:B:418:LYS:HD2	2.00	0.44
1:B:311:THR:HG23	1:B:322:GLU:OE1	2.18	0.44
1:B:375:SER:HB2	1:B:419:TYR:CD1	2.53	0.44
1:C:391:VAL:O	1:C:395:THR:HG23	2.18	0.44
1:D:301:VAL:HG13	1:D:335:ASP:CB	2.48	0.43
1:A:244:GLN:HA	1:A:266:ASP:OD2	2.18	0.43
1:A:408:LYS:HD2	1:A:408:LYS:O	2.17	0.43
1:B:92:PRO:HB3	1:B:195:PHE:CD2	2.54	0.43
1:B:161:VAL:HG11	1:B:173:GLU:OE1	2.18	0.43
1:C:311:THR:OG1	1:C:322:GLU:OE2	2.36	0.43
1:C:484:VAL:HG22	1:C:494:THR:HG21	2.00	0.43
1:A:378:PHE:O	1:A:380:ARG:NH2	2.51	0.43
1:D:308:MET:HE1	1:D:326:VAL:HA	2.00	0.43
1:B:223:ARG:HB2	1:B:253:GLN:HB3	1.99	0.43
1:C:156:LEU:HD11	1:C:174:VAL:HG13	2.01	0.43
1:C:425:ILE:HB	1:C:444:VAL:HA	2.00	0.43
1:C:484:VAL:HG22	1:C:494:THR:CG2	2.49	0.43
1:D:193:ILE:O	1:D:195:PHE:N	2.47	0.43
1:C:292:ILE:HD12	1:C:332:ASP:HB3	2.00	0.43
1:C:65:GLN:O	1:C:69:MET:HG3	2.18	0.43
1:C:221:PHE:CD2	1:C:250:GLU:OE2	2.72	0.43
1:C:406:LEU:HD21	1:C:462:ALA:HB2	2.01	0.43
1:C:483:GLY:HA2	1:C:493:ASN:HB2	2.00	0.43
1:C:6:LYS:O	1:C:336:ALA:HA	2.19	0.43
1:C:478:ILE:CD1	1:C:480:ILE:HD11	2.45	0.43
1:A:409:THR:OG1	2:A:601:FBP:O3P	2.25	0.43
1:C:11:LEU:HD21	1:C:53:PHE:CE1	2.54	0.43
1:C:152:ASP:O	1:C:155:LYS:HB2	2.19	0.43
1:C:158:LEU:HD13	1:C:172:VAL:HG21	2.01	0.43
1:C:501:ARG:HD3	1:C:501:ARG:HA	1.79	0.43
1:A:339:LEU:HD23	1:A:342:GLU:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:147:ARG:HD3	1:B:147:ARG:HA	1.84	0.42
1:A:383:LYS:HB2	1:A:491:ARG:CD	2.48	0.42
1:D:16:GLU:OE2	1:D:68:ARG:NH2	2.52	0.42
1:A:22:LYS:HD2	1:A:22:LYS:N	2.34	0.42
1:C:309:LEU:O	1:C:342:GLU:HG2	2.19	0.42
1:C:272:ARG:HB2	1:C:306:THR:HB	2.00	0.42
1:A:65:GLN:O	1:A:69:MET:HG3	2.20	0.42
1:A:398:MET:HG2	1:C:386:VAL:HG11	2.01	0.42
1:C:45:LEU:CD2	1:C:350:LEU:HA	2.50	0.42
1:D:65:GLN:OE1	1:D:68:ARG:HD2	2.19	0.42
1:C:441:ASN:HB2	1:C:444:VAL:HG11	2.01	0.42
1:D:311:THR:HG1	1:D:322:GLU:CD	2.22	0.42
1:B:158:LEU:HD13	1:B:172:VAL:HG21	2.01	0.42
1:C:118:THR:HG21	1:C:140:TYR:CD2	2.54	0.42
1:C:284:VAL:HG21	1:D:320:ARG:HG2	2.01	0.42
1:D:179:ILE:HD12	1:D:179:ILE:N	2.34	0.42
1:D:316:PRO:HB3	1:D:348:TYR:CZ	2.55	0.42
1:B:83:VAL:HA	1:B:439:MET:SD	2.59	0.42
1:C:308:MET:HE1	1:C:338:MET:N	2.30	0.42
1:C:458:MET:HE3	1:C:484:VAL:HG12	2.02	0.42
1:C:499:THR:O	1:C:501:ARG:NH1	2.53	0.42
1:D:46:ILE:HG12	1:D:83:VAL:HG11	2.01	0.42
1:C:200:GLU:HA	1:C:203:ASN:HB2	2.02	0.41
1:C:290:MET:SD	1:C:294:LYS:HD2	2.60	0.41
1:D:160:VAL:HA	1:D:172:VAL:HG12	2.02	0.41
1:C:42:ILE:HG23	1:C:53:PHE:CZ	2.55	0.41
1:A:196:PRO:C	1:A:198:LEU:N	2.72	0.41
1:A:463:GLU:O	1:A:467:VAL:HG23	2.19	0.41
1:C:459:PHE:HD2	1:C:496:ARG:NH1	2.17	0.41
1:C:72:VAL:O	1:C:75:ALA:HB3	2.20	0.41
1:D:375:SER:HB2	1:D:419:TYR:CD1	2.55	0.41
1:B:258:LEU:HG	1:B:262:ILE:HD12	2.02	0.41
1:C:54:ARG:HA	1:C:86:LEU:O	2.19	0.41
1:C:167:THR:CB	1:C:169:GLU:CD	2.89	0.41
1:A:481:VAL:HG13	1:A:492:THR:CG2	2.51	0.41
1:B:14:ALA:HB2	1:B:345:ASN:HA	2.01	0.41
1:B:497:ILE:HG13	1:D:387:MET:HE2	2.02	0.41
1:C:93:GLU:OE2	1:C:95:ARG:HD2	2.21	0.41
1:C:440:LEU:HD23	1:C:440:LEU:HA	1.82	0.41
1:D:199:ALA:HB3	1:D:202:ASP:OD2	2.20	0.41
1:A:44:LYS:HA	1:A:44:LYS:HE2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:494:THR:HG22	1:C:496:ARG:HG3	2.01	0.41
1:B:54:ARG:NE	1:B:88:ASP:OD2	2.44	0.41
1:C:16:GLU:HG2	1:C:38:SER:HB3	2.03	0.41
1:C:67:GLU:O	1:C:71:THR:OG1	2.38	0.41
1:D:58:SER:CB	1:D:90:LYS:HG3	2.50	0.41
1:D:58:SER:OG	1:D:90:LYS:HG3	2.21	0.41
1:B:149:VAL:HB	1:B:158:LEU:HB2	2.03	0.40
1:B:232:ARG:HG3	1:B:232:ARG:HH11	1.86	0.40
1:B:497:ILE:HG13	1:D:387:MET:HE1	2.02	0.40
1:C:74:LEU:O	1:C:78:ILE:HG22	2.20	0.40
1:C:283:MET:HE2	1:C:286:VAL:HG21	2.03	0.40
1:A:6:LYS:HD2	1:A:51:ASN:ND2	2.35	0.40
1:B:150:LEU:HD23	1:B:157:GLY:HA2	2.03	0.40
1:C:221:PHE:HD2	1:C:250:GLU:OE2	2.05	0.40
1:D:284:VAL:N	1:D:285:PRO:CD	2.84	0.40
1:A:158:LEU:HB3	1:A:172:VAL:HG21	2.04	0.40
1:A:200:GLU:N	1:A:200:GLU:CD	2.72	0.40
1:C:74:LEU:HD13	1:C:74:LEU:HA	1.94	0.40
1:C:291:ILE:O	1:C:295:VAL:HG23	2.22	0.40
1:D:150:LEU:O	1:D:186:VAL:HA	2.21	0.40
1:C:356:MET:HE3	1:C:356:MET:HB2	1.88	0.40
1:D:198:LEU:CD1	1:D:203:ASN:HB2	2.52	0.40
1:D:275:MET:O	1:D:279:VAL:HG22	2.21	0.40
1:A:481:VAL:CG1	1:A:492:THR:HG21	2.52	0.40
1:C:382:SER:HB2	2:C:601:FBP:P2	2.62	0.40
1:C:432:GLU:HG3	1:C:448:LEU:CD2	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	443/521 (85%)	419 (95%)	20 (4%)	4 (1%)	17	35
1	B	433/521 (83%)	412 (95%)	17 (4%)	4 (1%)	17	35
1	C	450/521 (86%)	400 (89%)	42 (9%)	8 (2%)	8	16
1	D	452/521 (87%)	410 (91%)	36 (8%)	6 (1%)	12	24
All	All	1778/2084 (85%)	1641 (92%)	115 (6%)	22 (1%)	13	27

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	112	GLU
1	D	166	ALA
1	A	199	ALA
1	B	110	THR
1	B	273	GLY
1	C	110	THR
1	C	165	ASP
1	D	152	ASP
1	D	490	VAL
1	B	152	ASP
1	C	136	ALA
1	C	147	ARG
1	C	345	ASN
1	D	306	THR
1	A	152	ASP
1	A	306	THR
1	B	306	THR
1	C	168	ARG
1	D	35	VAL
1	C	306	THR
1	C	196	PRO
1	A	270	ILE

5.3.2 Protein sidechains ⓘ

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	371/428 (87%)	358 (96%)	13 (4%)	36	62
1	B	367/428 (86%)	347 (95%)	20 (5%)	22	44
1	C	379/428 (89%)	355 (94%)	24 (6%)	18	36
1	D	379/428 (89%)	370 (98%)	9 (2%)	49	74
All	All	1496/1712 (87%)	1430 (96%)	66 (4%)	28	53

All (66) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	26	ASP
1	A	144	GLU
1	A	200	GLU
1	A	221	PHE
1	A	315	LYS
1	A	324	SER
1	A	345	ASN
1	A	347	LYS
1	A	372	ARG
1	A	398	MET
1	A	401	LYS
1	A	417	SER
1	A	473	GLU
1	B	22	LYS
1	B	56	ASN
1	B	58	SER
1	B	68	ARG
1	B	81	LYS
1	B	90	LYS
1	B	152	ASP
1	B	153	ASP
1	B	203	ASN
1	B	221	PHE
1	B	317	ARG
1	B	320	ARG
1	B	345	ASN
1	B	364	GLN
1	B	408	LYS
1	B	453	SER
1	B	455	THR
1	B	460	GLU
1	B	491	ARG
1	B	492	THR

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Mol	Chain	Res	Type
1	C	1	MET
1	C	32	LYS
1	C	61	ASP
1	C	82	LYS
1	C	95	ARG
1	C	137	LEU
1	C	147	ARG
1	C	165	ASP
1	C	168	ARG
1	C	169	GLU
1	C	190	ASN
1	C	192	LYS
1	C	201	ARG
1	C	221	PHE
1	C	302	VAL
1	C	324	SER
1	C	345	ASN
1	C	380	ARG
1	C	408	LYS
1	C	454	SER
1	C	456	ASP
1	C	458	MET
1	C	460	GLU
1	C	491	ARG
1	D	44	LYS
1	D	161	VAL
1	D	221	PHE
1	D	226	LYS
1	D	317	ARG
1	D	408	LYS
1	D	430	PHE
1	D	456	ASP
1	D	457	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	187	ASN
1	A	368	ASN
1	A	422	ASN
1	B	56	ASN
1	B	65	GLN

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Mol	Chain	Res	Type
1	B	307	ASN
1	C	65	GLN
1	C	190	ASN
1	C	229	ASN
1	C	244	GLN
1	D	148	GLN
1	D	240	ASN
1	D	362	ASN
1	D	422	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 monosaccharides 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	FBP	D	601	-	18,20,20	0.67	0	23,32,32	1.26	2 (8%)
2	FBP	A	601	-	18,20,20	0.74	1 (5%)	23,32,32	1.20	3 (13%)
2	FBP	C	601	-	18,20,20	0.76	1 (5%)	23,32,32	1.23	3 (13%)
2	FBP	B	601	-	18,20,20	0.64	0	23,32,32	1.32	5 (21%)

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	FBP	D	601	-	-	7/13/32/32	0/1/1/1
2	FBP	A	601	-	-	9/13/32/32	0/1/1/1
2	FBP	C	601	-	-	8/13/32/32	0/1/1/1
2	FBP	B	601	-	-	7/13/32/32	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	601	FBP	O2-C2	2.11	1.44	1.40
2	C	601	FBP	O2-C2	2.09	1.44	1.40

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	601	FBP	O6P-P2-O6	-3.07	98.55	106.73
2	D	601	FBP	O3-C3-C4	-2.79	103.68	113.32
2	B	601	FBP	P2-O6-C6	2.67	125.64	118.30
2	A	601	FBP	O5P-P2-O6	2.50	113.38	106.73
2	A	601	FBP	O6P-P2-O4P	2.47	120.36	110.68
2	B	601	FBP	O3P-P1-O2P	2.45	117.01	107.64
2	B	601	FBP	O6P-P2-O5P	2.39	116.78	107.64
2	D	601	FBP	O3P-P1-O2P	2.38	116.74	107.64
2	C	601	FBP	P1-O1-C1	2.36	124.79	118.30
2	B	601	FBP	O5P-P2-O6	-2.25	100.76	106.73
2	C	601	FBP	O6P-P2-O5P	2.16	115.88	107.64
2	A	601	FBP	P1-O1-C1	2.14	124.19	118.30
2	B	601	FBP	O5-C5-C6	2.08	114.04	109.45

There are no chirality outliers.

All (31) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	FBP	C1-O1-P1-O2P
2	A	601	FBP	C1-O1-P1-O3P
2	A	601	FBP	O1-C1-C2-O2
2	A	601	FBP	O1-C1-C2-C3
2	A	601	FBP	O1-C1-C2-O5

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Mol	Chain	Res	Type	Atoms
2	A	601	FBP	C6-O6-P2-O4P
2	A	601	FBP	C6-O6-P2-O6P
2	B	601	FBP	C1-O1-P1-O2P
2	B	601	FBP	C1-O1-P1-O3P
2	B	601	FBP	O1-C1-C2-C3
2	B	601	FBP	O1-C1-C2-O5
2	C	601	FBP	C1-O1-P1-O1P
2	C	601	FBP	C1-O1-P1-O2P
2	C	601	FBP	C1-O1-P1-O3P
2	C	601	FBP	O1-C1-C2-C3
2	C	601	FBP	O1-C1-C2-O5
2	D	601	FBP	C1-O1-P1-O2P
2	D	601	FBP	O1-C1-C2-C3
2	D	601	FBP	O1-C1-C2-O5
2	C	601	FBP	O5-C5-C6-O6
2	C	601	FBP	C4-C5-C6-O6
2	A	601	FBP	C1-O1-P1-O1P
2	B	601	FBP	C6-O6-P2-O4P
2	D	601	FBP	C1-O1-P1-O3P
2	B	601	FBP	O1-C1-C2-O2
2	C	601	FBP	O1-C1-C2-O2
2	D	601	FBP	O1-C1-C2-O2
2	D	601	FBP	C1-O1-P1-O1P
2	D	601	FBP	C6-O6-P2-O4P
2	B	601	FBP	C4-C5-C6-O6
2	A	601	FBP	C6-O6-P2-O5P

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	601	FBP	1	0
2	A	601	FBP	1	0
2	C	601	FBP	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 FBP D 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP A 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP C 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP B 601

Bond lengths

Bond angles

Torsions

Rings
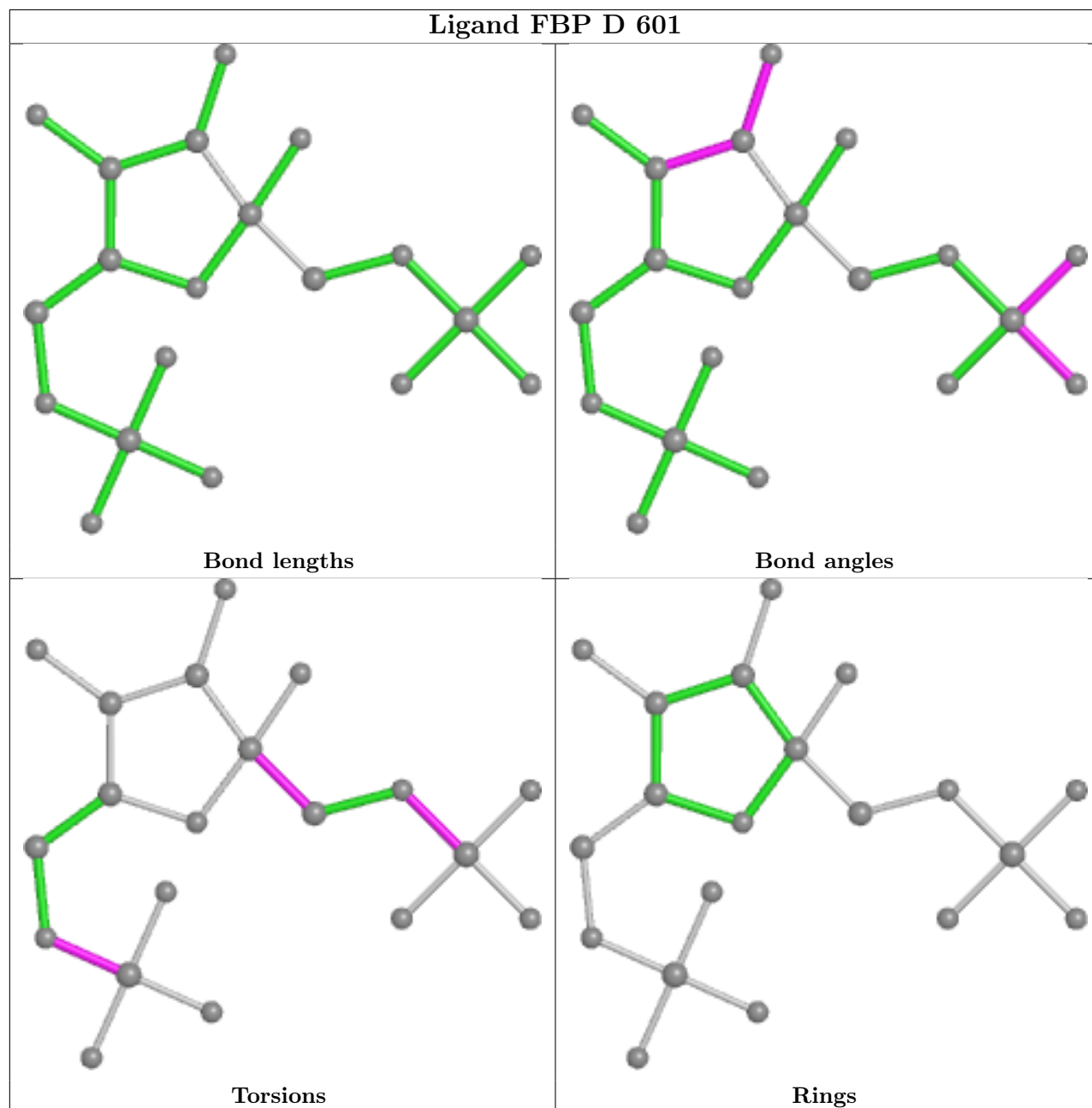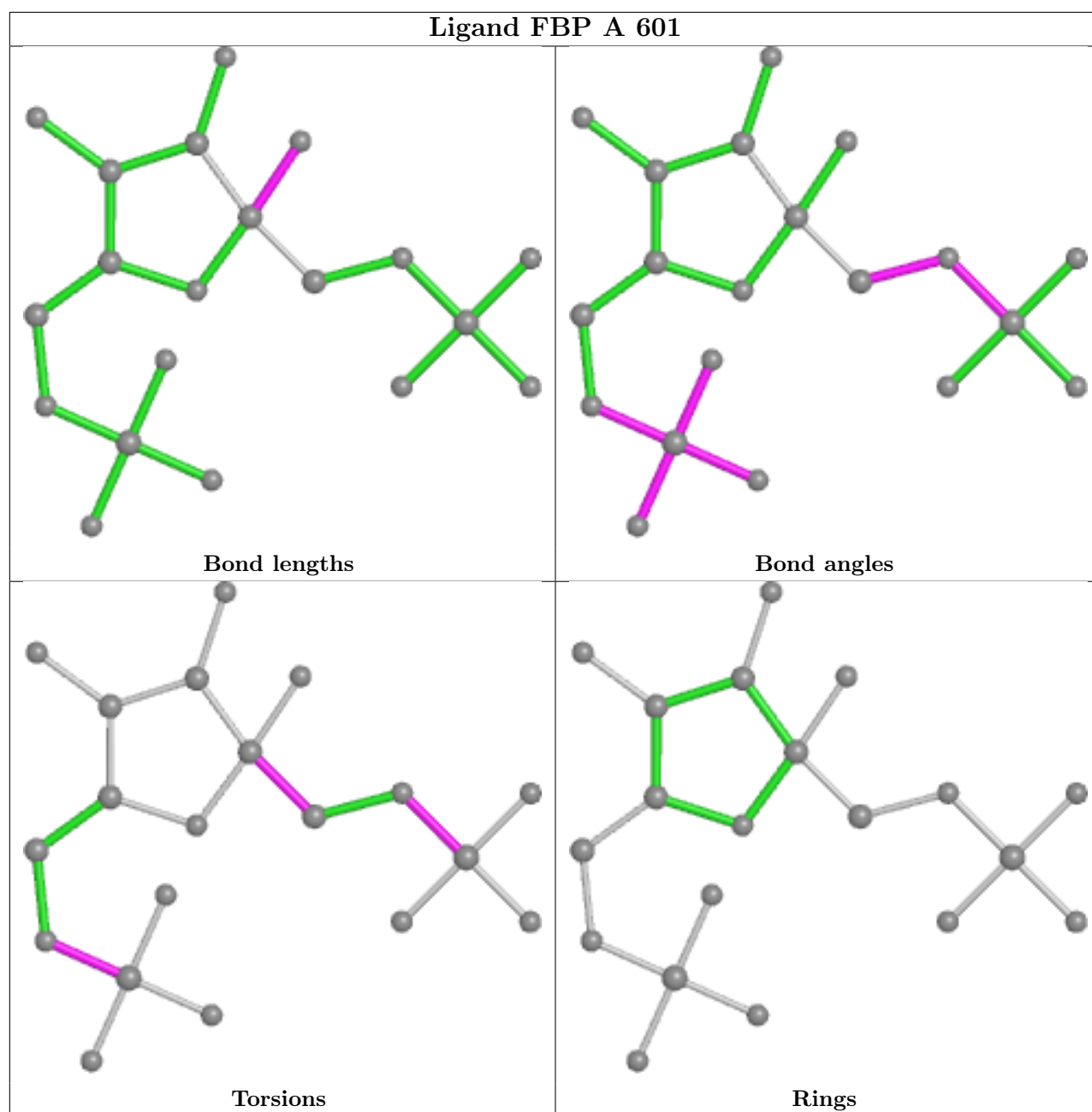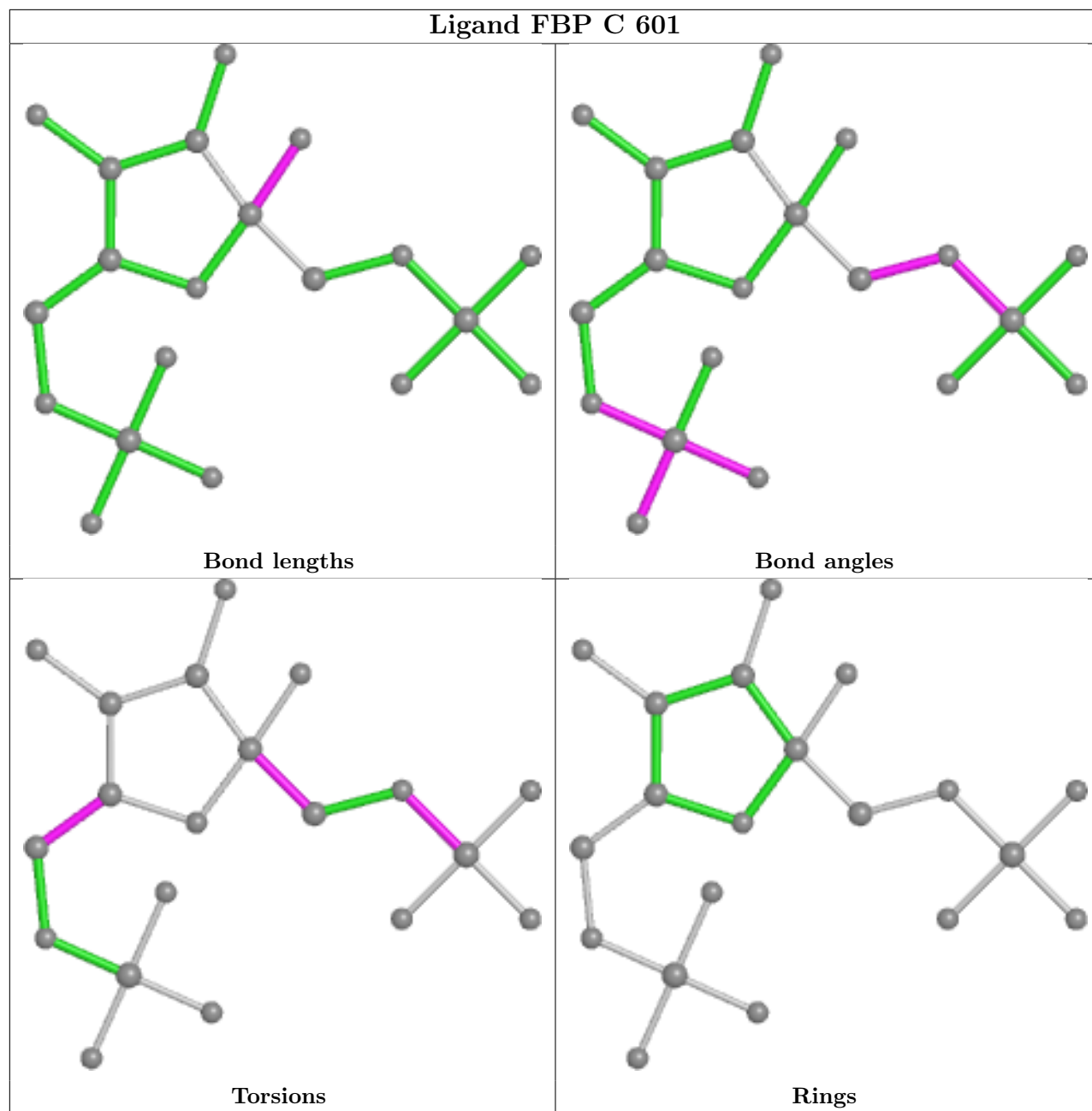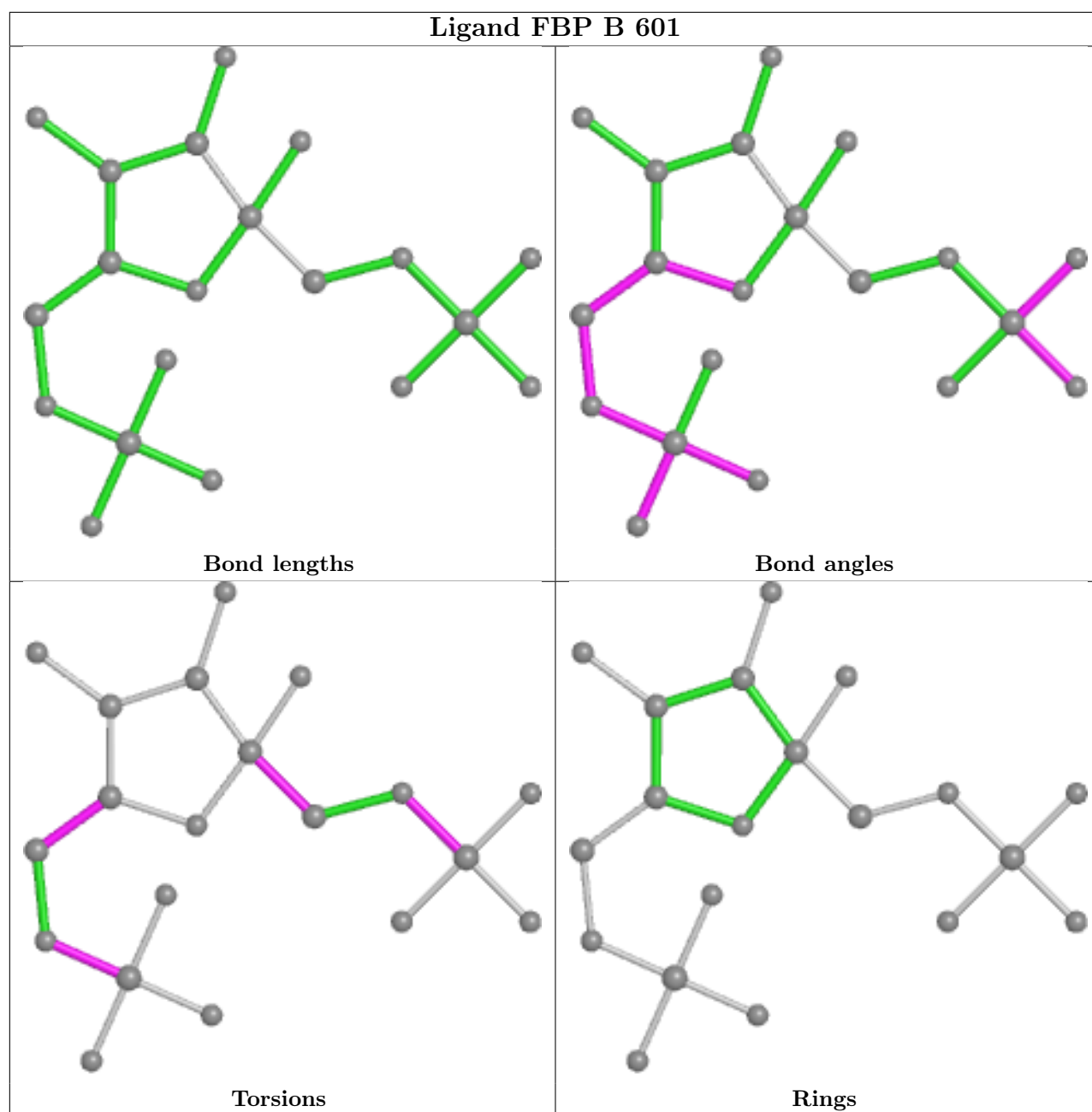
5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å²)	Q<0.9
1	A	451/521 (86%)	0.49	29 (6%)	19	14	62, 93, 145, 186	0
1	B	445/521 (85%)	0.68	41 (9%)	9	6	62, 92, 148, 172	0
1	C	460/521 (88%)	0.77	60 (13%)	3	2	75, 119, 167, 196	0
1	D	460/521 (88%)	0.73	63 (13%)	3	1	64, 102, 155, 210	0
All	All	1816/2084 (87%)	0.67	193 (10%)	6	4	62, 104, 156, 210	0

All (193) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	114	ILE	10.2
1	B	161	VAL	8.2
1	A	131	LEU	8.0
1	D	180	ILE	7.0
1	C	170	PHE	6.8
1	C	143	VAL	6.3
1	A	193	ILE	6.1
1	A	170	PHE	5.6
1	C	131	LEU	5.5
1	B	115	ARG	5.4
1	D	87	LEU	5.3
1	D	139	ILE	5.2
1	A	17	ILE	5.2
1	D	170	PHE	4.9
1	A	194	PRO	4.8
1	C	151	VAL	4.7
1	D	114	ILE	4.6
1	A	139	ILE	4.5
1	C	193	ILE	4.5
1	B	149	VAL	4.5
1	B	198	LEU	4.5

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Mol	Chain	Res	Type	RSRZ
1	C	114	ILE	4.4
1	D	58	SER	4.4
1	D	17	ILE	4.3
1	C	158	LEU	4.3
1	A	23	PHE	4.3
1	C	139	ILE	4.2
1	D	16	GLU	4.2
1	A	161	VAL	4.2
1	D	141	ASP	4.2
1	D	140	TYR	4.1
1	C	471	LEU	4.1
1	B	158	LEU	4.0
1	B	174	VAL	4.0
1	D	57	PHE	3.9
1	C	426	LEU	3.9
1	B	35	VAL	3.9
1	C	172	VAL	3.9
1	D	137	LEU	3.9
1	B	188	ILE	3.8
1	A	195	PHE	3.8
1	D	182	LYS	3.8
1	A	19	GLY	3.8
1	D	94	ILE	3.7
1	D	179	ILE	3.7
1	C	402	LEU	3.7
1	B	173	GLU	3.7
1	B	245	LEU	3.6
1	D	11	LEU	3.6
1	C	228	VAL	3.6
1	D	142	ASP	3.6
1	D	181	ALA	3.5
1	C	186	VAL	3.5
1	D	108	TYR	3.5
1	C	163	LYS	3.5
1	D	106	TYR	3.4
1	D	199	ALA	3.4
1	C	306	THR	3.4
1	A	94	ILE	3.4
1	D	145	VAL	3.4
1	B	113	LYS	3.4
1	D	40	LYS	3.3
1	C	144	GLU	3.3

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Mol	Chain	Res	Type	RSRZ
1	D	107	SER	3.3
1	C	307	ASN	3.3
1	C	301	VAL	3.3
1	A	191	THR	3.2
1	B	108	TYR	3.2
1	D	15	VAL	3.2
1	B	171	GLU	3.1
1	C	115	ARG	3.1
1	C	116	VAL	3.1
1	D	160	VAL	3.1
1	A	1	MET	3.1
1	D	136	ALA	3.1
1	C	74	LEU	3.0
1	B	19	GLY	3.0
1	D	324	SER	3.0
1	D	59	HIS	3.0
1	A	192	LYS	3.0
1	D	156	LEU	2.9
1	D	138	ASP	2.9
1	A	29	TRP	2.9
1	C	352	SER	2.9
1	C	216	PHE	2.9
1	B	356	MET	2.8
1	D	65	GLN	2.8
1	C	261	ILE	2.8
1	D	216	PHE	2.8
1	B	116	VAL	2.8
1	C	425	ILE	2.8
1	C	185	GLY	2.8
1	B	112	GLU	2.7
1	D	143	VAL	2.7
1	B	203	ASN	2.7
1	D	192	LYS	2.7
1	A	143	VAL	2.7
1	B	156	LEU	2.7
1	C	189	PRO	2.7
1	B	145	VAL	2.7
1	C	173	GLU	2.7
1	B	57	PHE	2.7
1	B	148	GLN	2.7
1	C	470	GLY	2.7
1	C	130	ALA	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	87	LEU	2.6
1	D	183	GLN	2.6
1	C	169	GLU	2.6
1	C	308	MET	2.6
1	C	145	VAL	2.6
1	B	235	CYS	2.6
1	D	38	SER	2.6
1	A	21	LYS	2.6
1	C	48	ALA	2.6
1	D	115	ARG	2.6
1	D	169	GLU	2.6
1	C	11	LEU	2.6
1	B	94	ILE	2.6
1	C	478	ILE	2.6
1	C	325	ASP	2.5
1	C	245	LEU	2.5
1	C	75	ALA	2.5
1	C	140	TYR	2.5
1	D	45	LEU	2.5
1	D	326	VAL	2.5
1	D	217	ILE	2.5
1	D	198	LEU	2.5
1	B	175	GLU	2.5
1	C	428	LEU	2.4
1	B	195	PHE	2.4
1	B	206	ILE	2.4
1	C	122	ILE	2.4
1	D	200	GLU	2.4
1	A	176	ASN	2.4
1	C	472	VAL	2.4
1	B	24	GLY	2.4
1	D	325	ASP	2.4
1	D	323	VAL	2.4
1	A	406	LEU	2.4
1	A	149	VAL	2.3
1	C	174	VAL	2.3
1	B	162	ALA	2.3
1	D	163	LYS	2.3
1	C	498	ARG	2.3
1	D	201	ARG	2.3
1	C	17	ILE	2.3
1	C	445	ILE	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	246	PHE	2.3
1	A	326	VAL	2.3
1	B	154	GLY	2.3
1	B	157	GLY	2.3
1	B	193	ILE	2.3
1	B	52	THR	2.3
1	C	94	ILE	2.3
1	D	303	ILE	2.3
1	A	160	VAL	2.2
1	C	142	ASP	2.2
1	C	329	ALA	2.2
1	D	327	PHE	2.2
1	A	158	LEU	2.2
1	B	50	ALA	2.2
1	D	193	ILE	2.2
1	A	33	LEU	2.2
1	B	45	LEU	2.2
1	B	357	ALA	2.2
1	C	254	GLY	2.2
1	D	116	VAL	2.2
1	C	217	ILE	2.2
1	D	149	VAL	2.2
1	C	117	ALA	2.2
1	C	160	VAL	2.1
1	C	438	LEU	2.1
1	D	347	LYS	2.1
1	D	241	GLY	2.1
1	A	188	ILE	2.1
1	C	57	PHE	2.1
1	D	8	VAL	2.1
1	B	155	LYS	2.1
1	A	24	GLY	2.1
1	A	28	TYR	2.1
1	B	7	ILE	2.1
1	C	53	PHE	2.1
1	D	318	ALA	2.1
1	D	172	VAL	2.1
1	B	439	MET	2.0
1	A	186	VAL	2.0
1	D	430	PHE	2.0
1	A	22	LYS	2.0
1	D	158	LEU	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	338	MET	2.0
1	D	304	THR	2.0
1	C	324	SER	2.0
1	D	178	GLY	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	FBP	C	601	20/20	0.96	0.14	94,111,125,135	0
2	FBP	A	601	20/20	0.97	0.14	68,84,91,94	0
2	FBP	B	601	20/20	0.98	0.17	64,76,87,89	0
2	FBP	D	601	20/20	0.98	0.13	66,73,78,83	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 FBP C 601:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
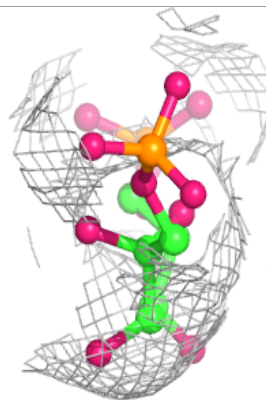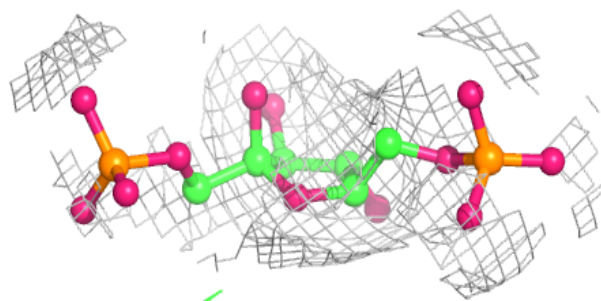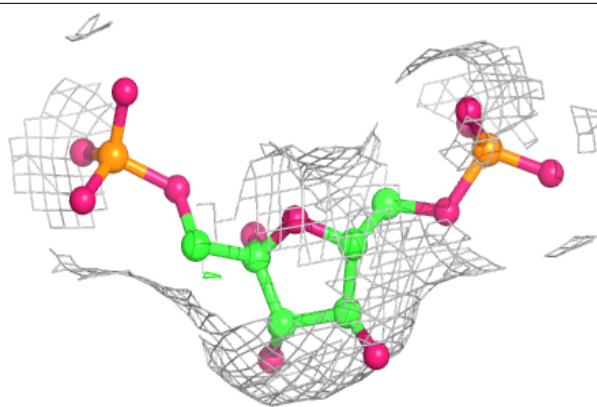
Electron density around FBP A 601:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
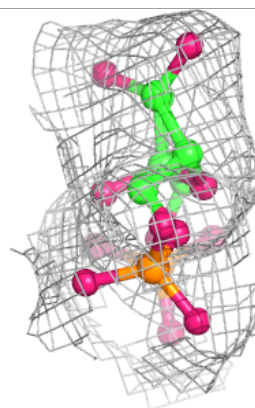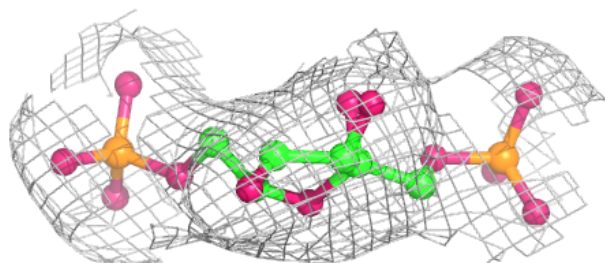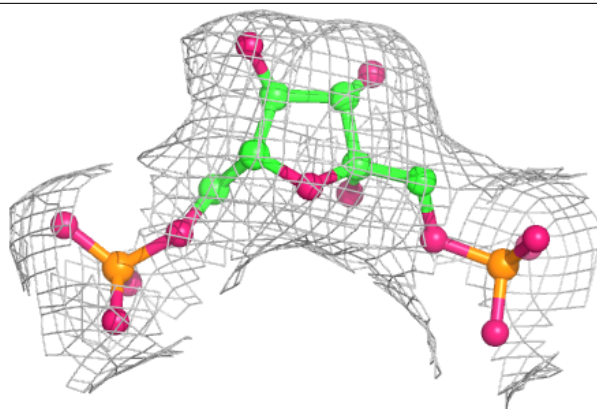$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
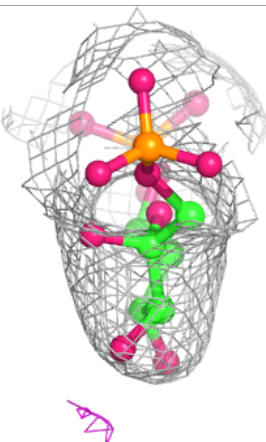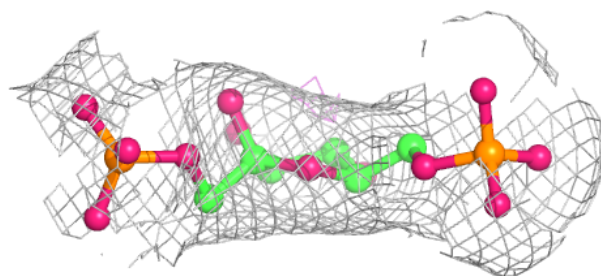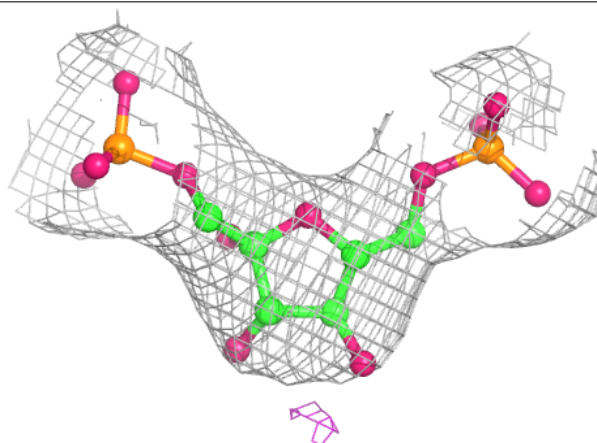
Electron density around FBP B 601:

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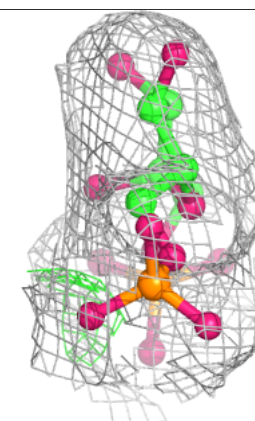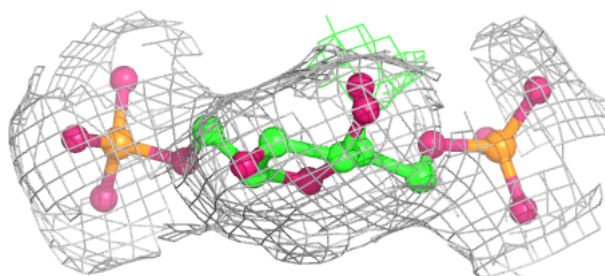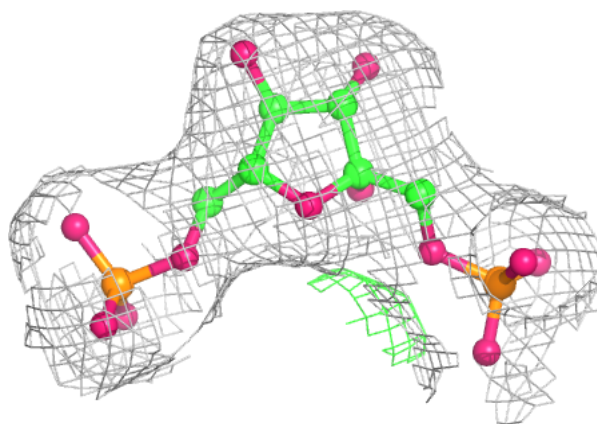mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around FBP 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)

6.5 Other polymers (i)

There are no such residues in this entry.