Full wwPDB X-ray Structure Validation Report (i)

Dec 20, 2022 – 10:10 PM JST

PDB ID	:	7CNR
Title	:	Crystal structure of Thermococcus kodakaraensis aconitase X (apo-form)
Authors	:	Murase, Y.; Watanabe, Y.; Watanabe, S.
Deposited on	:	2020-08-03
Resolution	:	3.39 Å(reported)

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

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

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

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

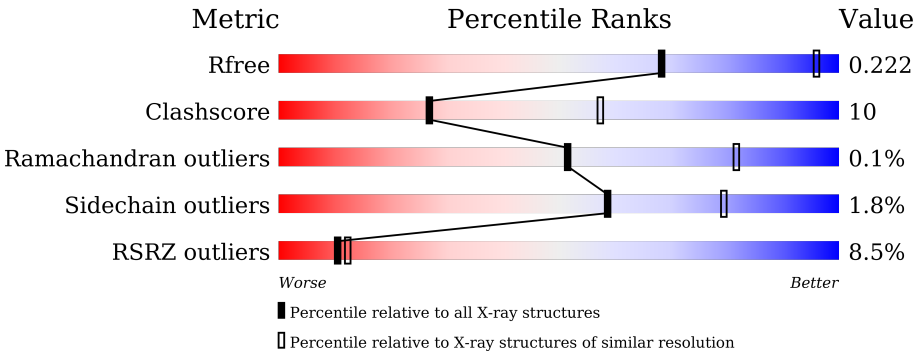
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.3
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.39 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	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

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	386	2% 77% 22%
1	C	386	3% 78% 22%
1	E	386	5% 75% 24%
1	G	386	7% 75% 25%
2	B	134	6% 63% 34%
2	D	134	25% 72% 25%

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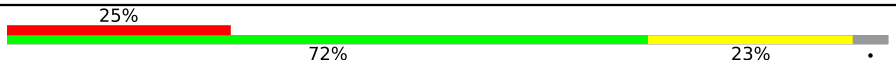
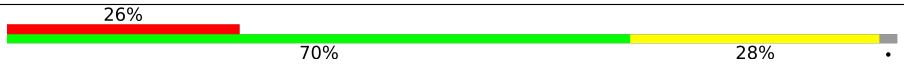
Mol	Chain	Length	Quality of chain
2	F	134	
2	H	134	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 15743 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 DUF521 domain-containing protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	386	Total	C	N	O	S	0	0	0
			2985	1912	488	574	11			
1	C	386	Total	C	N	O	S	0	0	0
			2985	1912	488	574	11			
1	E	386	Total	C	N	O	S	0	0	0
			2985	1912	488	574	11			
1	G	386	Total	C	N	O	S	0	0	0
			2985	1912	488	574	11			

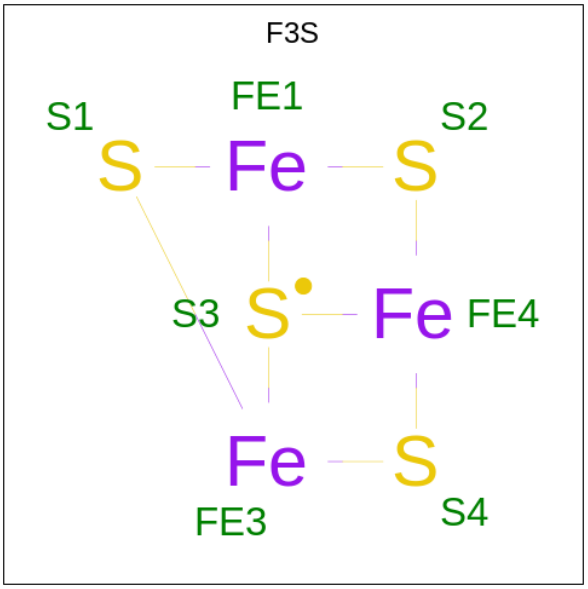
- Molecule 2 is a protein called UPF0107 protein TK1248.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	131	Total	C	N	O	S	0	0	0
			953	603	163	185	2			
2	D	129	Total	C	N	O	S	0	0	0
			936	593	158	183	2			
2	F	128	Total	C	N	O	S	0	0	0
			933	590	159	182	2			
2	H	131	Total	C	N	O	S	0	0	0
			953	603	163	185	2			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	0	GLY	-	expression tag	UNP Q5JGJ7
B	1	PRO	-	expression tag	UNP Q5JGJ7
D	0	GLY	-	expression tag	UNP Q5JGJ7
D	1	PRO	-	expression tag	UNP Q5JGJ7
F	0	GLY	-	expression tag	UNP Q5JGJ7
F	1	PRO	-	expression tag	UNP Q5JGJ7
H	0	GLY	-	expression tag	UNP Q5JGJ7
H	1	PRO	-	expression tag	UNP Q5JGJ7

- Molecule 3 is FE3-S4 CLUSTER (three-letter code: F3S) (formula: Fe_3S_4) (labeled as "Ligand of Interest" by depositor).



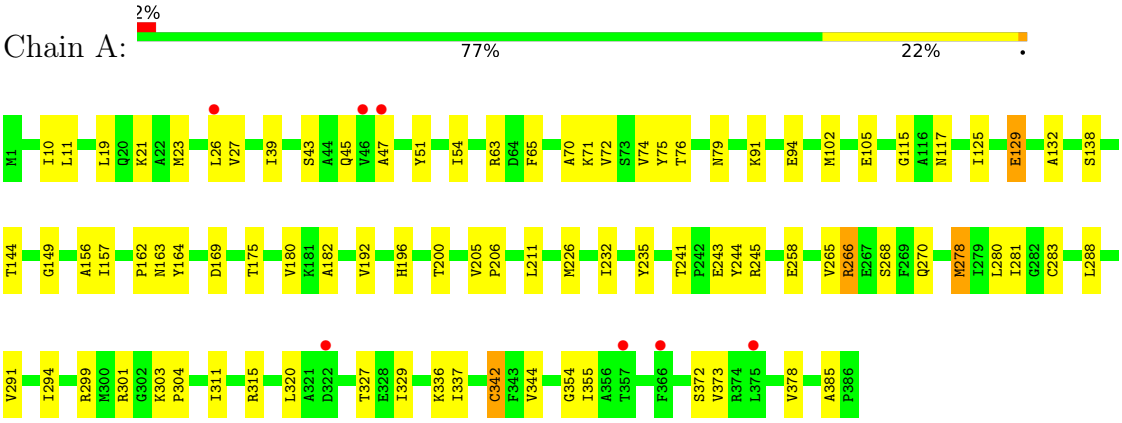
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Fe S 7 3 4	0	0
3	C	1	Total Fe S 7 3 4	0	0
3	E	1	Total Fe S 7 3 4	0	0
3	G	1	Total Fe S 7 3 4	0	0

3 Residue-property plots (i)

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

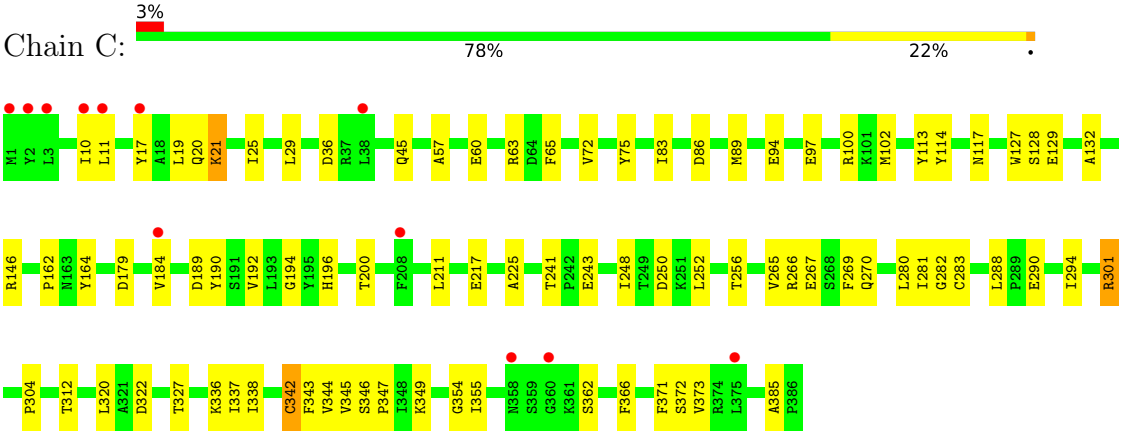
• Molecule 1: DUF521 domain-containing protein

Chain A:



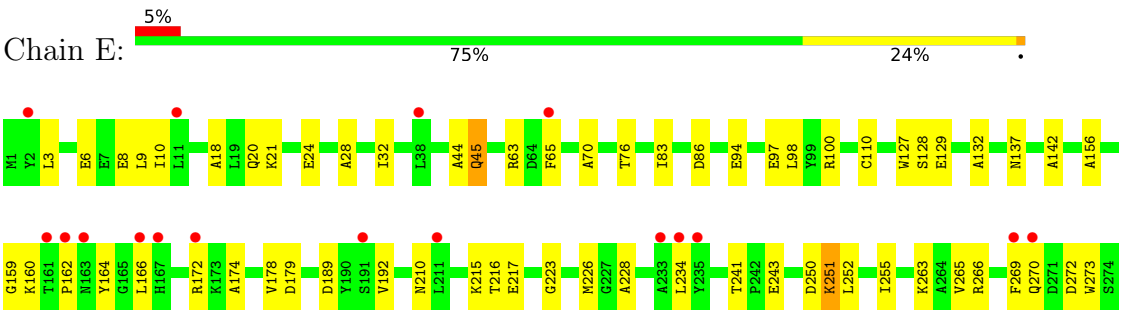
• Molecule 1: DUF521 domain-containing protein

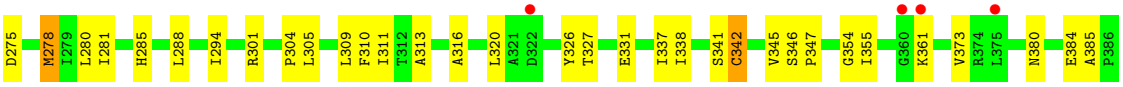
Chain C:



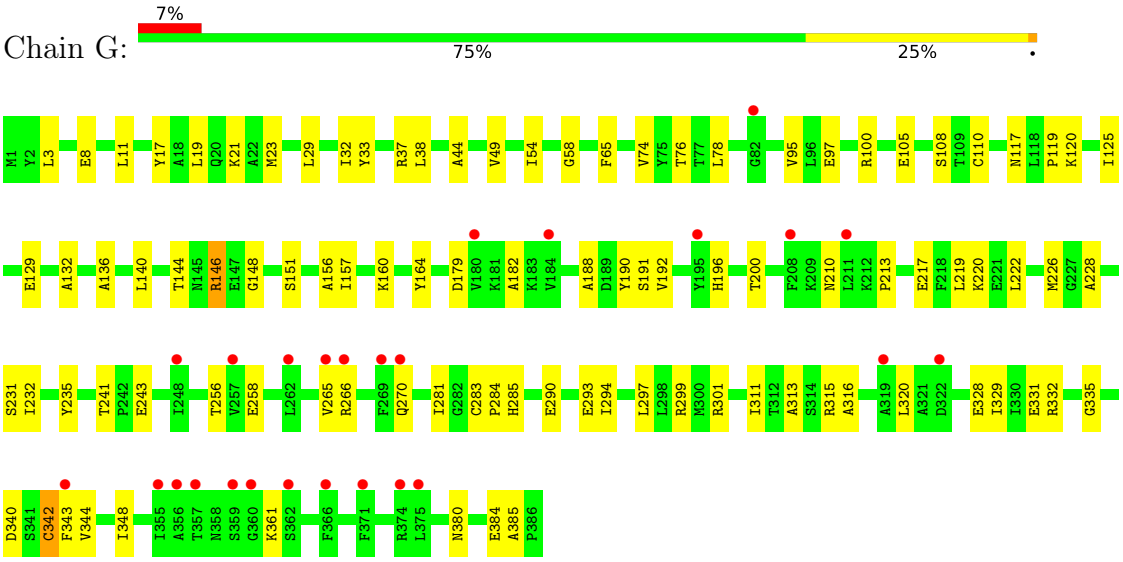
• Molecule 1: DUF521 domain-containing protein

Chain E:

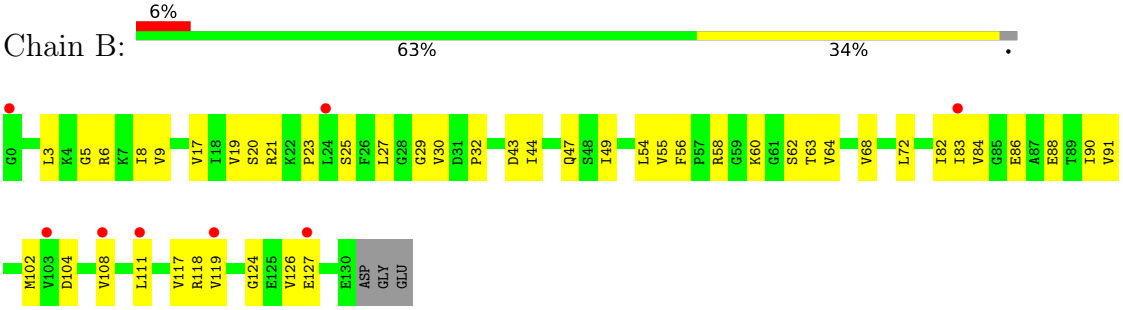




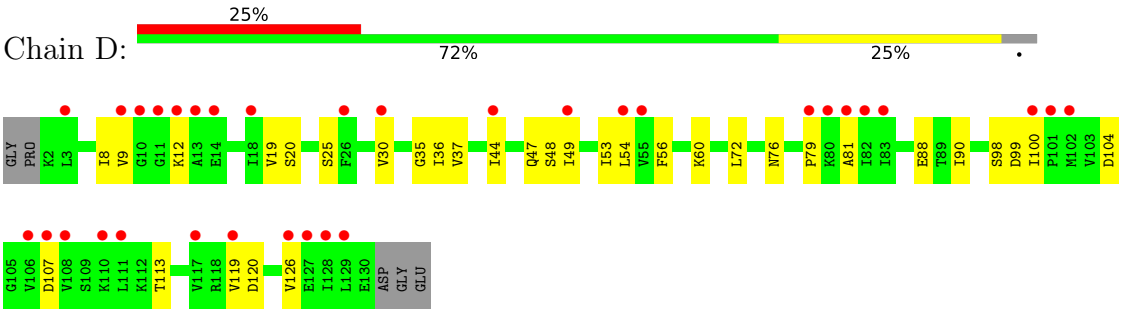
• Molecule 1: DUF521 domain-containing protein



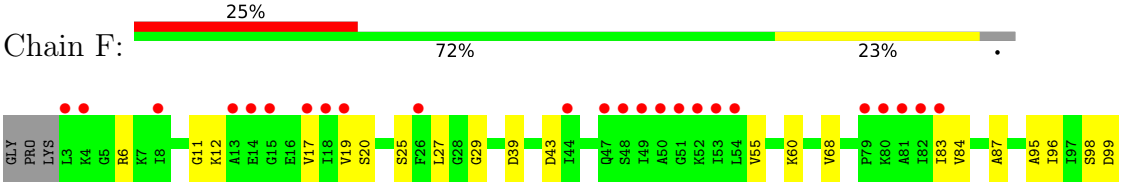
• Molecule 2: UPF0107 protein TK1248

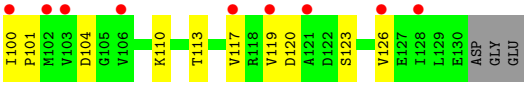


• Molecule 2: UPF0107 protein TK1248

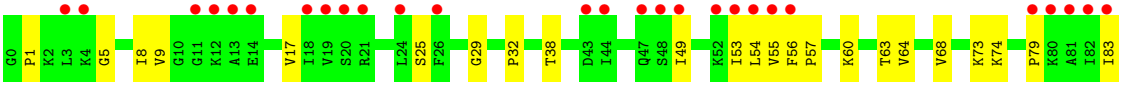


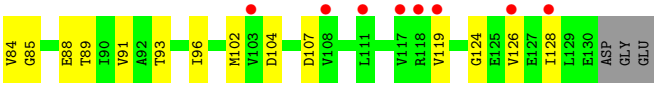
• Molecule 2: UPF0107 protein TK1248





• Molecule 2: UPF0107 protein TK1248





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	141.72Å 141.72Å 278.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	23.29 – 3.39 49.31 – 3.39	Depositor EDS
% Data completeness (in resolution range)	99.7 (23.29-3.39) 99.8 (49.31-3.39)	Depositor EDS
R_{merge}	0.19	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.97 (at 3.40Å)	Xtriage
Refinement program	PHENIX 1.14_3260	Depositor
R, R_{free}	0.182 , 0.225 0.181 , 0.222	Depositor DCC
R_{free} test set	2009 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	101.0	Xtriage
Anisotropy	0.273	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 34.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.27$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	15743	wwPDB-VP
Average B, all atoms (Å^2)	94.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.43% 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: F3S

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	0.28	0/3045	0.47	0/4119
1	C	0.28	0/3045	0.47	0/4119
1	E	0.28	0/3045	0.46	0/4119
1	G	0.27	0/3045	0.46	0/4119
2	B	0.31	0/962	0.51	0/1294
2	D	0.26	0/944	0.46	0/1270
2	F	0.25	0/941	0.47	0/1266
2	H	0.26	0/962	0.48	0/1294
All	All	0.28	0/15989	0.47	0/21600

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	2985	0	2990	61	0
1	C	2985	0	2990	58	0
1	E	2985	0	2989	62	0
1	G	2985	0	2990	67	0
2	B	953	0	1017	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	936	0	993	18	0
2	F	933	0	991	20	0
2	H	953	0	1017	23	0
3	A	7	0	0	0	0
3	C	7	0	0	0	0
3	E	7	0	0	0	0
3	G	7	0	0	1	0
All	All	15743	0	15977	324	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 10.

All (324) 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:336:LYS:HZ3	1:G:331:GLU:HB3	1.37	0.87
1:A:138:SER:O	1:A:241:THR:HG23	1.80	0.81
1:G:21:LYS:NZ	2:H:96:ILE:O	2.15	0.79
1:A:65:PHE:HE2	1:A:157:ILE:HD13	1.48	0.78
1:A:63:ARG:NH2	1:A:94:GLU:OE1	2.17	0.78
1:C:336:LYS:NZ	1:G:331:GLU:HB3	1.99	0.77
1:A:76:THR:HG21	1:A:156:ALA:HB1	1.66	0.77
1:E:97:GLU:OE2	1:E:100:ARG:NH2	2.19	0.76
1:A:299:ARG:HD2	1:A:329:ILE:HD13	1.68	0.75
1:A:65:PHE:HE2	1:A:157:ILE:CD1	2.00	0.75
1:A:288:LEU:HD22	1:A:320:LEU:HD23	1.69	0.73
1:G:241:THR:HG22	1:G:243:GLU:H	1.55	0.72
1:E:45:GLN:O	1:E:128:SER:OG	2.08	0.72
1:G:301:ARG:NH2	1:G:385:ALA:O	2.24	0.71
1:G:179:ASP:OD1	1:G:210:ASN:ND2	2.24	0.70
1:G:129:GLU:HG3	1:G:132:ALA:H	1.57	0.70
2:B:3:LEU:HB2	2:B:126:VAL:HB	1.72	0.69
2:B:19:VAL:HG22	2:B:55:VAL:HB	1.73	0.69
2:F:12:LYS:NZ	2:F:120:ASP:OD1	2.25	0.68
1:G:220:LYS:NZ	1:G:290:GLU:OE2	2.26	0.68
1:E:129:GLU:HG3	1:E:132:ALA:H	1.58	0.68
1:G:192:VAL:HG21	1:G:266:ARG:HD2	1.75	0.68
1:E:179:ASP:OD1	1:E:210:ASN:ND2	2.27	0.67
1:E:288:LEU:HD22	1:E:320:LEU:HD23	1.75	0.67
1:A:192:VAL:HG22	1:A:265:VAL:HB	1.77	0.67
1:C:327:THR:HG22	1:C:337:ILE:HD12	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:8:ILE:HG22	2:B:9:VAL:HG23	1.77	0.67
1:A:327:THR:HG22	1:A:337:ILE:HD12	1.76	0.67
1:E:76:THR:HG21	1:E:156:ALA:HB1	1.78	0.66
2:B:55:VAL:HG22	2:B:83:ILE:HB	1.76	0.66
1:E:301:ARG:NH2	1:E:385:ALA:O	2.29	0.66
1:C:288:LEU:HD22	1:C:320:LEU:HD23	1.77	0.66
1:A:301:ARG:NH2	1:A:385:ALA:O	2.28	0.66
2:F:25:SER:HB2	2:F:60:LYS:HG3	1.76	0.66
2:H:32:PRO:HG3	2:H:68:VAL:HG13	1.78	0.66
1:G:54:ILE:HB	1:G:58:GLY:HA3	1.77	0.65
2:B:32:PRO:HG3	2:B:68:VAL:HG13	1.79	0.64
1:A:75:TYR:HE2	1:A:117:ASN:HB2	1.63	0.64
2:D:8:ILE:HG22	2:D:9:VAL:HG23	1.80	0.64
1:C:129:GLU:HG3	1:C:132:ALA:H	1.62	0.64
2:B:30:VAL:HG11	2:B:72:LEU:HD11	1.79	0.64
1:G:328:GLU:OE2	1:G:332:ARG:NH1	2.31	0.64
1:C:267:GLU:HA	1:C:270:GLN:HG3	1.81	0.61
1:C:83:ILE:HD11	1:C:338:ILE:HG21	1.81	0.61
2:D:19:VAL:H	2:D:113:THR:HG22	1.65	0.61
1:C:189:ASP:OD1	1:C:266:ARG:NH2	2.34	0.61
1:A:336:LYS:NZ	1:E:331:GLU:O	2.34	0.60
1:C:97:GLU:OE1	1:C:100:ARG:NH2	2.34	0.60
1:A:11:LEU:HD13	1:A:23:MET:HG3	1.84	0.59
2:D:44:ILE:HB	2:D:47:GLN:HB2	1.85	0.59
1:G:54:ILE:HA	2:H:64:VAL:HG11	1.84	0.59
1:G:228:ALA:HB2	1:G:361:LYS:HG3	1.84	0.59
1:A:45:GLN:NE2	1:A:79:ASN:OD1	2.36	0.59
2:D:119:VAL:HG12	2:D:126:VAL:HG22	1.84	0.59
1:E:45:GLN:HB3	1:E:127:TRP:HA	1.84	0.58
2:B:21:ARG:N	2:B:43:ASP:OD2	2.36	0.58
1:E:223:GLY:HA2	1:E:226:MET:HE2	1.86	0.58
1:E:316:ALA:HB2	1:G:320:LEU:HD11	1.84	0.58
1:C:342:CYS:SG	1:C:345:VAL:HB	2.43	0.58
1:C:21:LYS:O	1:C:25:ILE:HG13	2.04	0.58
2:F:29:GLY:O	2:F:39:ASP:N	2.37	0.58
1:G:76:THR:HG21	1:G:156:ALA:HB1	1.84	0.58
1:C:11:LEU:O	1:C:20:GLN:NE2	2.38	0.57
1:G:281:ILE:HG21	1:G:294:ILE:HD11	1.86	0.57
2:D:98:SER:HB2	2:D:100:ILE:HG13	1.87	0.57
1:G:125:ILE:HG13	1:G:144:THR:HB	1.87	0.57
1:C:301:ARG:NH2	1:C:385:ALA:O	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:189:ASP:OD1	1:E:266:ARG:NH2	2.34	0.57
1:A:51:TYR:CZ	1:A:91:LYS:HG2	2.40	0.57
2:D:12:LYS:NZ	2:D:120:ASP:OD1	2.34	0.56
1:C:72:VAL:HG22	1:C:102:MET:O	2.06	0.56
1:E:83:ILE:HD11	1:E:338:ILE:HG21	1.88	0.56
1:E:327:THR:HG22	1:E:337:ILE:HD12	1.88	0.55
1:C:192:VAL:CG2	1:C:265:VAL:HB	2.36	0.55
1:G:343:PHE:HD2	1:G:348:ILE:HD13	1.71	0.55
1:C:179:ASP:HB3	1:C:256:THR:HG22	1.87	0.55
1:C:282:GLY:O	1:C:312:THR:OG1	2.25	0.55
2:H:25:SER:HB2	2:H:60:LYS:HG3	1.88	0.55
1:G:380:ASN:O	1:G:384:GLU:HG3	2.07	0.55
2:H:88:GLU:HG2	2:H:89:THR:H	1.72	0.55
1:E:21:LYS:NZ	2:F:96:ILE:O	2.38	0.54
2:B:21:ARG:NH2	2:B:111:LEU:O	2.38	0.54
2:B:49:ILE:HG21	2:B:54:LEU:HD22	1.89	0.54
1:E:250:ASP:OD1	1:E:250:ASP:N	2.39	0.54
1:G:33:TYR:HD2	1:G:164:TYR:CZ	2.25	0.54
2:D:37:VAL:HG21	2:D:44:ILE:HG13	1.88	0.54
1:G:316:ALA:O	1:G:320:LEU:HD12	2.06	0.54
1:G:188:ALA:HA	1:G:191:SER:HB2	1.88	0.54
2:H:84:VAL:O	2:H:104:ASP:HA	2.08	0.54
1:A:125:ILE:HG13	1:A:144:THR:HB	1.90	0.54
1:A:65:PHE:CE2	1:A:157:ILE:HD13	2.37	0.53
2:H:49:ILE:HG23	2:H:54:LEU:HD13	1.89	0.53
1:E:294:ILE:HG21	1:E:311:ILE:HD11	1.89	0.53
1:G:179:ASP:HB3	1:G:256:THR:HG22	1.91	0.53
1:E:251:LYS:HD3	1:E:251:LYS:H	1.74	0.53
1:E:166:LEU:HD22	1:E:234:LEU:HD12	1.91	0.52
1:G:97:GLU:OE2	1:G:100:ARG:NH2	2.40	0.52
1:G:293:GLU:O	1:G:297:LEU:HD13	2.09	0.52
2:B:21:ARG:NH1	2:B:108:VAL:O	2.41	0.52
2:H:89:THR:O	2:H:93:THR:HG22	2.10	0.52
2:F:6:ARG:NH2	2:F:104:ASP:OD2	2.38	0.52
1:E:269:PHE:O	1:E:270:GLN:NE2	2.37	0.52
2:H:29:GLY:O	2:H:38:THR:N	2.41	0.51
2:B:118:ARG:HG2	2:B:127:GLU:HB3	1.92	0.51
2:D:36:ILE:HA	2:D:48:SER:HA	1.93	0.51
1:G:226:MET:HE3	1:G:232:ILE:HG21	1.91	0.51
2:B:88:GLU:OE2	2:B:91:VAL:N	2.35	0.51
1:A:294:ILE:HG21	1:A:311:ILE:HD11	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:248:ILE:HG23	1:C:252:LEU:HD22	1.92	0.51
2:F:27:LEU:HA	2:F:68:VAL:HG21	1.92	0.51
1:C:196:HIS:O	1:C:200:THR:HG23	2.10	0.51
1:A:206:PRO:HG2	1:A:235:TYR:HB3	1.93	0.51
2:B:119:VAL:HG12	2:B:126:VAL:HG22	1.93	0.51
1:A:299:ARG:NE	1:E:86:ASP:OD2	2.42	0.50
1:A:162:PRO:HB2	1:A:164:TYR:HD1	1.75	0.50
1:E:28:ALA:O	1:E:32:ILE:HG12	2.11	0.50
1:E:241:THR:HG22	1:E:243:GLU:H	1.77	0.50
1:G:136:ALA:HA	1:G:140:LEU:HD12	1.93	0.50
2:D:25:SER:HB2	2:D:60:LYS:HG3	1.92	0.50
2:D:88:GLU:OE1	2:D:90:ILE:HB	2.12	0.50
1:A:311:ILE:HB	1:A:337:ILE:HG12	1.93	0.50
1:G:294:ILE:HG21	1:G:311:ILE:HD11	1.93	0.50
1:G:315:ARG:HB2	1:G:340:ASP:OD2	2.12	0.50
1:A:175:THR:HB	1:A:205:VAL:H	1.77	0.50
2:B:82:ILE:HG22	2:B:84:VAL:HG23	1.92	0.50
1:A:244:TYR:OH	1:A:245:ARG:NH1	2.45	0.50
2:H:55:VAL:HG22	2:H:83:ILE:HB	1.94	0.50
1:C:63:ARG:HH22	1:C:94:GLU:CD	2.15	0.50
1:C:86:ASP:OD2	1:G:299:ARG:HG2	2.12	0.49
1:A:43:SER:H	1:A:125:ILE:HG22	1.77	0.49
2:F:95:ALA:O	2:F:99:ASP:N	2.46	0.49
2:F:17:VAL:HG21	2:F:117:VAL:HG21	1.95	0.49
1:A:192:VAL:CG2	1:A:265:VAL:HB	2.42	0.49
2:B:5:GLY:N	2:B:124:GLY:O	2.33	0.49
1:A:180:VAL:HG21	1:A:211:LEU:HD13	1.95	0.49
2:D:30:VAL:HG11	2:D:72:LEU:HD11	1.94	0.48
1:E:137:ASN:HB3	1:E:234:LEU:HG	1.94	0.48
2:B:91:VAL:HG12	2:B:102:MET:CE	2.43	0.48
1:C:45:GLN:O	1:C:128:SER:OG	2.21	0.48
1:G:222:LEU:HD13	1:G:226:MET:HE2	1.95	0.48
2:H:1:PRO:HG2	2:H:128:ILE:HD12	1.94	0.48
2:B:117:VAL:HG23	2:B:127:GLU:O	2.13	0.48
2:H:91:VAL:HG12	2:H:102:MET:HE2	1.95	0.48
1:E:380:ASN:O	1:E:384:GLU:HG3	2.14	0.48
2:F:11:GLY:HA3	2:F:101:PRO:HG3	1.96	0.48
1:A:162:PRO:HB2	1:A:164:TYR:CD1	2.49	0.48
1:E:272:ASP:OD1	1:E:273:TRP:N	2.46	0.48
1:E:275:ASP:O	1:E:354:GLY:HA3	2.14	0.48
1:G:129:GLU:OE1	1:G:361:LYS:NZ	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:269:PHE:HD1	1:C:373:VAL:HG21	1.78	0.48
1:G:11:LEU:HD13	1:G:23:MET:HG3	1.95	0.47
2:H:56:PHE:HB2	2:H:57:PRO:HD2	1.95	0.47
2:H:83:ILE:HD11	2:H:119:VAL:HG11	1.96	0.47
1:E:309:LEU:HD23	1:E:310:PHE:N	2.29	0.47
1:A:226:MET:HB3	1:A:232:ILE:HG13	1.95	0.47
1:C:281:ILE:HG21	1:C:294:ILE:HD11	1.95	0.47
1:A:196:HIS:O	1:A:200:THR:HG23	2.14	0.47
1:E:301:ARG:NH1	1:E:304:PRO:O	2.48	0.47
2:D:49:ILE:HG22	2:D:79:PRO:HB3	1.96	0.47
1:E:142:ALA:O	1:E:172:ARG:NH1	2.48	0.47
2:F:119:VAL:HG12	2:F:126:VAL:HG22	1.96	0.47
1:E:280:LEU:O	1:E:281:ILE:HD13	2.15	0.47
1:G:192:VAL:CG2	1:G:265:VAL:HB	2.44	0.47
1:C:344:VAL:HG23	1:C:345:VAL:HG23	1.97	0.47
2:B:17:VAL:CG1	2:B:19:VAL:HG23	2.45	0.46
2:F:20:SER:OG	2:F:43:ASP:OD1	2.20	0.46
1:G:38:LEU:HB3	1:G:160:LYS:HB3	1.96	0.46
1:C:280:LEU:O	1:C:281:ILE:HD13	2.14	0.46
2:D:20:SER:O	2:D:56:PHE:HA	2.15	0.46
1:G:220:LYS:HG2	1:G:284:PRO:HG2	1.98	0.46
1:A:26:LEU:HD22	1:A:162:PRO:HD3	1.98	0.46
1:G:19:LEU:HD23	1:G:157:ILE:HG22	1.97	0.46
1:G:54:ILE:HD11	1:G:95:VAL:HG21	1.96	0.46
1:A:278:MET:CE	1:A:280:LEU:HB2	2.46	0.46
2:D:49:ILE:HG23	2:D:54:LEU:HD13	1.98	0.46
1:E:162:PRO:HB2	1:E:164:TYR:HD1	1.81	0.46
2:B:91:VAL:HG12	2:B:102:MET:HE1	1.97	0.46
1:A:281:ILE:O	1:A:311:ILE:HA	2.15	0.46
1:C:17:TYR:CE1	1:C:21:LYS:HD3	2.50	0.46
1:C:189:ASP:HA	1:C:192:VAL:HG12	1.97	0.46
1:E:63:ARG:NH2	1:E:94:GLU:OE1	2.46	0.46
2:F:98:SER:HB2	2:F:100:ILE:HG13	1.98	0.46
1:A:291:VAL:HG22	1:A:311:ILE:HG21	1.98	0.46
2:B:44:ILE:CG2	2:B:47:GLN:HB2	2.46	0.46
1:E:110:CYS:HB2	1:E:129:GLU:HG2	1.98	0.46
1:E:342:CYS:SG	1:E:345:VAL:HG23	2.56	0.46
1:G:342:CYS:SG	1:G:344:VAL:HG22	2.56	0.46
1:E:166:LEU:O	1:E:172:ARG:NH2	2.49	0.45
1:G:284:PRO:HA	3:G:401:F3S:S1	2.56	0.45
1:A:65:PHE:CD2	1:A:70:ALA:CB	3.00	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:53:ILE:HD12	2:D:81:ALA:HB3	1.97	0.45
1:E:355:ILE:O	1:E:373:VAL:HA	2.16	0.45
1:G:32:ILE:HG22	1:G:33:TYR:CD1	2.52	0.45
1:G:331:GLU:HA	1:G:335:GLY:O	2.16	0.45
1:A:23:MET:O	1:A:27:VAL:HG13	2.16	0.45
1:E:278:MET:CE	1:E:280:LEU:HB2	2.47	0.45
1:A:280:LEU:O	1:A:281:ILE:HD13	2.16	0.45
1:E:94:GLU:O	1:E:98:LEU:HG	2.16	0.45
1:E:305:LEU:HD21	1:E:309:LEU:HD12	1.98	0.45
2:B:84:VAL:O	2:B:104:ASP:HA	2.17	0.45
1:C:217:GLU:HG2	1:C:290:GLU:HG3	1.99	0.45
1:G:110:CYS:HB2	1:G:129:GLU:HG2	1.98	0.45
2:B:27:LEU:HD23	2:B:62:SER:HB3	1.98	0.44
1:E:285:HIS:HB3	1:E:313:ALA:HA	1.99	0.44
1:G:29:LEU:HD11	1:G:151:SER:HB3	1.99	0.44
1:A:301:ARG:HD3	1:A:303:LYS:O	2.17	0.44
1:C:322:ASP:OD1	1:C:327:THR:HG21	2.17	0.44
1:E:83:ILE:O	1:E:347:PRO:HD2	2.17	0.44
1:E:215:LYS:HB3	1:E:217:GLU:OE1	2.16	0.44
1:E:216:THR:HG23	1:G:120:LYS:HD3	1.99	0.44
1:A:39:ILE:HG23	1:A:163:ASN:HB2	2.00	0.44
1:C:89:MET:HG3	1:G:332:ARG:CZ	2.47	0.44
1:A:241:THR:HG22	1:A:243:GLU:H	1.83	0.44
1:G:17:TYR:HE1	1:G:21:LYS:HE3	1.82	0.44
2:B:25:SER:O	2:B:29:GLY:HA3	2.17	0.44
1:C:192:VAL:HG23	1:C:265:VAL:HB	2.00	0.44
1:E:178:VAL:HG22	1:E:255:ILE:HD11	2.00	0.44
1:A:129:GLU:OE1	1:A:132:ALA:N	2.46	0.44
1:C:36:ASP:OD1	1:C:36:ASP:N	2.51	0.44
1:C:83:ILE:O	1:C:346:SER:HB3	2.18	0.44
1:E:18:ALA:HB1	1:E:70:ALA:HA	1.99	0.44
1:E:162:PRO:HB2	1:E:164:TYR:CD1	2.52	0.43
1:A:281:ILE:HD12	1:A:378:VAL:HG12	2.00	0.43
1:A:354:GLY:HA2	1:A:372:SER:O	2.18	0.43
1:C:45:GLN:HB3	1:C:127:TRP:HA	1.99	0.43
1:G:146:ARG:NH2	1:G:231:SER:HA	2.33	0.43
1:G:266:ARG:O	1:G:270:GLN:HG2	2.18	0.43
2:H:73:LYS:HA	2:H:73:LYS:HD2	1.87	0.43
2:B:102:MET:HE3	2:B:102:MET:HB2	1.48	0.43
1:C:184:VAL:HG12	1:C:190:TYR:CE1	2.53	0.43
2:F:6:ARG:HH21	2:F:104:ASP:CG	2.20	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:84:VAL:HG12	2:H:85:GLY:N	2.34	0.43
1:C:21:LYS:NZ	2:D:99:ASP:OD1	2.52	0.43
1:C:25:ILE:O	1:C:29:LEU:HD22	2.19	0.43
1:C:250:ASP:OD1	1:C:250:ASP:N	2.52	0.43
2:F:55:VAL:HG22	2:F:83:ILE:HB	2.00	0.43
1:E:159:GLY:O	1:E:160:LYS:HG3	2.19	0.43
2:H:49:ILE:HG22	2:H:79:PRO:HB3	2.01	0.43
1:A:21:LYS:HA	1:A:21:LYS:HD2	1.89	0.43
1:A:74:VAL:O	1:A:76:THR:HG23	2.19	0.43
2:B:17:VAL:HG23	2:B:117:VAL:CG1	2.49	0.43
1:C:57:ALA:O	1:C:60:GLU:HB3	2.18	0.43
1:C:269:PHE:HD1	1:C:373:VAL:CG2	2.31	0.43
1:G:182:ALA:HB2	1:G:258:GLU:C	2.39	0.43
1:A:54:ILE:HA	2:B:64:VAL:HG11	1.99	0.43
1:G:21:LYS:HD2	1:G:21:LYS:HA	1.77	0.43
1:E:3:LEU:HB2	1:E:8:GLU:HG3	2.01	0.43
1:E:6:GLU:HA	1:E:9:LEU:HD12	2.01	0.43
1:E:338:ILE:HG22	1:E:341:SER:HB2	2.01	0.43
1:G:11:LEU:HB2	1:G:23:MET:HG2	2.01	0.43
1:G:33:TYR:CD2	1:G:164:TYR:CZ	3.05	0.43
2:H:5:GLY:N	2:H:124:GLY:O	2.50	0.43
1:A:72:VAL:HG22	1:A:102:MET:O	2.18	0.42
2:B:23:PRO:HB2	2:B:60:LYS:HD3	2.00	0.42
1:E:174:ALA:O	1:E:252:LEU:HD21	2.18	0.42
1:E:326:TYR:OH	1:G:105:GLU:OE1	2.27	0.42
1:G:196:HIS:O	1:G:200:THR:HG23	2.19	0.42
1:G:299:ARG:HD2	1:G:329:ILE:HD13	2.01	0.42
1:A:75:TYR:CE1	1:A:105:GLU:HG3	2.54	0.42
1:C:75:TYR:HE1	1:C:117:ASN:HB2	1.84	0.42
2:F:43:ASP:OD1	2:F:43:ASP:N	2.45	0.42
1:C:194:GLY:HA3	1:C:225:ALA:HB3	2.01	0.42
2:F:120:ASP:OD2	2:F:123:SER:OG	2.27	0.42
2:H:8:ILE:HG22	2:H:9:VAL:HG23	2.01	0.42
1:A:65:PHE:CD2	1:A:70:ALA:HB2	2.54	0.42
1:A:182:ALA:HB2	1:A:258:GLU:C	2.40	0.42
1:A:355:ILE:O	1:A:373:VAL:HA	2.20	0.42
1:C:354:GLY:HA2	1:C:372:SER:O	2.19	0.42
2:F:19:VAL:HB	2:F:113:THR:HG23	2.01	0.42
1:G:190:TYR:CZ	1:G:213:PRO:HB3	2.55	0.42
1:A:301:ARG:HH11	1:A:303:LYS:HG3	1.85	0.42
1:G:219:LEU:HB3	1:G:235:TYR:OH	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:301:ARG:NH1	1:A:304:PRO:O	2.52	0.42
1:A:301:ARG:NH1	1:A:303:LYS:HG3	2.35	0.42
1:G:49:VAL:HG22	1:G:78:LEU:HD22	2.02	0.42
2:B:6:ARG:HB3	2:B:104:ASP:OD1	2.19	0.42
1:G:285:HIS:HB3	1:G:313:ALA:HA	2.01	0.42
1:A:47:ALA:HB3	1:A:149:GLY:HA2	2.02	0.42
1:C:10:ILE:HG23	1:C:19:LEU:HB3	2.01	0.42
1:C:241:THR:HG22	1:C:243:GLU:H	1.84	0.42
1:G:108:SER:HB2	1:G:340:ASP:HB3	2.01	0.42
1:A:10:ILE:HG23	1:A:19:LEU:HB3	2.02	0.41
1:E:6:GLU:O	1:E:10:ILE:HG13	2.20	0.41
2:B:63:THR:HA	2:B:90:ILE:HG12	2.03	0.41
2:D:35:GLY:HA2	2:D:72:LEU:HD21	2.02	0.41
1:C:211:LEU:HD12	1:C:211:LEU:HA	1.89	0.41
1:E:44:ALA:HB3	1:E:76:THR:HG22	2.02	0.41
2:B:84:VAL:HG12	2:B:86:GLU:H	1.85	0.41
1:C:83:ILE:O	1:C:347:PRO:HD2	2.20	0.41
2:H:119:VAL:HG12	2:H:126:VAL:HG22	2.02	0.41
1:C:301:ARG:NH1	1:C:304:PRO:O	2.53	0.41
1:C:355:ILE:HG21	1:C:366:PHE:CD2	2.56	0.41
1:E:228:ALA:HB2	1:E:361:LYS:HG3	2.02	0.41
2:H:91:VAL:HG12	2:H:102:MET:CE	2.50	0.41
1:C:349:LYS:HA	1:C:371:PHE:CZ	2.56	0.41
1:E:263:LYS:HB2	1:E:263:LYS:HE2	1.77	0.41
2:F:84:VAL:O	2:F:104:ASP:HA	2.21	0.41
1:C:162:PRO:HB2	1:C:164:TYR:CD1	2.56	0.41
1:E:20:GLN:O	1:E:24:GLU:HG3	2.20	0.41
1:A:281:ILE:HG21	1:A:294:ILE:HD11	2.01	0.41
2:B:17:VAL:HG23	2:B:117:VAL:HG12	2.02	0.41
1:C:267:GLU:HA	1:C:270:GLN:CG	2.48	0.41
1:C:280:LEU:HD11	1:C:343:PHE:HB2	2.03	0.41
1:C:336:LYS:HE2	1:C:336:LYS:HB3	1.83	0.41
1:E:192:VAL:HG22	1:E:265:VAL:HB	2.03	0.41
1:G:74:VAL:O	1:G:76:THR:HG23	2.21	0.41
2:F:110:LYS:HA	2:F:110:LYS:HD3	1.83	0.41
1:A:266:ARG:O	1:A:270:GLN:NE2	2.49	0.40
2:B:54:LEU:HG	2:B:56:PHE:CD2	2.56	0.40
2:H:17:VAL:HA	2:H:53:ILE:HB	2.02	0.40
1:C:283:CYS:SG	1:C:362:SER:OG	2.63	0.40
2:D:44:ILE:H	2:D:44:ILE:HG12	1.71	0.40
1:G:44:ALA:HB3	1:G:76:THR:HG22	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:115:GLY:HA2	1:C:114:TYR:HB3	2.02	0.40
1:G:3:LEU:HB2	1:G:8:GLU:HG3	2.03	0.40
1:G:117:ASN:O	1:G:119:PRO:HD3	2.21	0.40
1:G:217:GLU:OE1	1:G:217:GLU:N	2.45	0.40
1:A:11:LEU:HD12	1:A:11:LEU:HA	1.94	0.40
1:C:265:VAL:O	1:C:269:PHE:HD2	2.04	0.40
1:E:83:ILE:O	1:E:346:SER:HB3	2.22	0.40
1:A:342:CYS:SG	1:A:344:VAL:HG22	2.61	0.40
1:E:32:ILE:HD12	2:F:87:ALA:O	2.22	0.40
1:E:137:ASN:HA	1:E:142:ALA:O	2.21	0.40
1:G:148:GLY:HA3	2:H:63:THR:HG21	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	384/386 (100%)	369 (96%)	15 (4%)	0	100	100
1	C	384/386 (100%)	364 (95%)	20 (5%)	0	100	100
1	E	384/386 (100%)	361 (94%)	23 (6%)	0	100	100
1	G	384/386 (100%)	365 (95%)	19 (5%)	0	100	100
2	B	129/134 (96%)	124 (96%)	5 (4%)	0	100	100
2	D	127/134 (95%)	123 (97%)	3 (2%)	1 (1%)	19	51
2	F	126/134 (94%)	123 (98%)	3 (2%)	0	100	100
2	H	129/134 (96%)	124 (96%)	4 (3%)	1 (1%)	19	51
All	All	2047/2080 (98%)	1953 (95%)	92 (4%)	2 (0%)	51	82

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	107	ASP
2	H	107	ASP

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	315/315 (100%)	306 (97%)	9 (3%)	42	69
1	C	315/315 (100%)	309 (98%)	6 (2%)	57	78
1	E	315/315 (100%)	310 (98%)	5 (2%)	62	81
1	G	315/315 (100%)	310 (98%)	5 (2%)	62	81
2	B	103/105 (98%)	101 (98%)	2 (2%)	57	78
2	D	101/105 (96%)	99 (98%)	2 (2%)	55	77
2	F	101/105 (96%)	101 (100%)	0	100	100
2	H	103/105 (98%)	102 (99%)	1 (1%)	76	88
All	All	1668/1680 (99%)	1638 (98%)	30 (2%)	59	79

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	71	LYS
1	A	129	GLU
1	A	169	ASP
1	A	266	ARG
1	A	268	SER
1	A	278	MET
1	A	283	CYS
1	A	315	ARG
1	A	342	CYS
2	B	20	SER
2	B	58	ARG
1	C	21	LYS
1	C	65	PHE
1	C	113	TYR

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Mol	Chain	Res	Type
1	C	146	ARG
1	C	301	ARG
1	C	342	CYS
2	D	76	ASN
2	D	104	ASP
1	E	45	GLN
1	E	65	PHE
1	E	251	LYS
1	E	278	MET
1	E	342	CYS
1	G	37	ARG
1	G	65	PHE
1	G	146	ARG
1	G	283	CYS
1	G	342	CYS
2	H	74	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	E	45	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

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	$\#\|Z\| > 2$
3	F3S	G	401	-	0,9,9	-	-	-		
3	F3S	A	401	1	0,9,9	-	-	-		
3	F3S	E	401	-	0,9,9	-	-	-		
3	F3S	C	401	-	0,9,9	-	-	-		

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
3	F3S	G	401	-	-	-	0/3/3/3
3	F3S	A	401	1	-	-	0/3/3/3
3	F3S	E	401	-	-	-	0/3/3/3
3	F3S	C	401	-	-	-	0/3/3/3

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

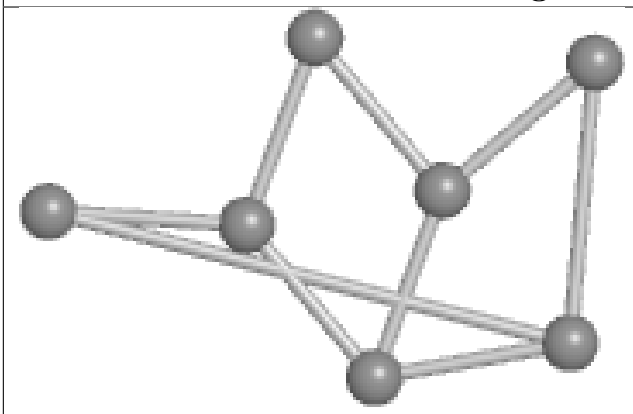
1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	G	401	F3S	1	0

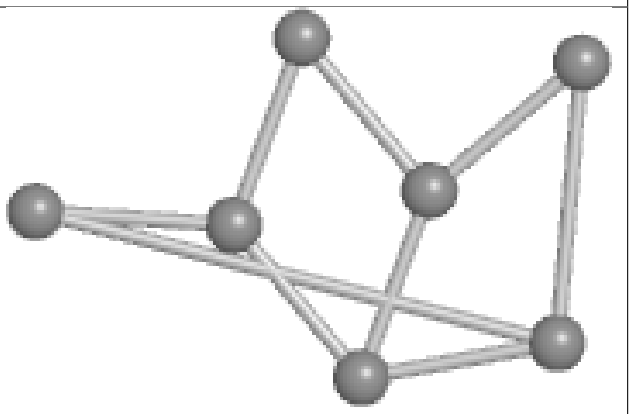
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

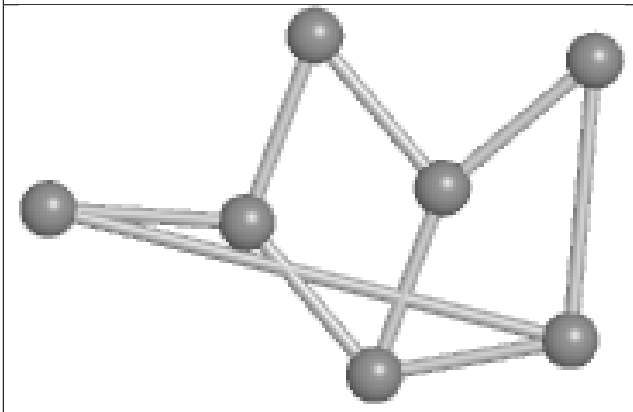
Ligand F3S G 401



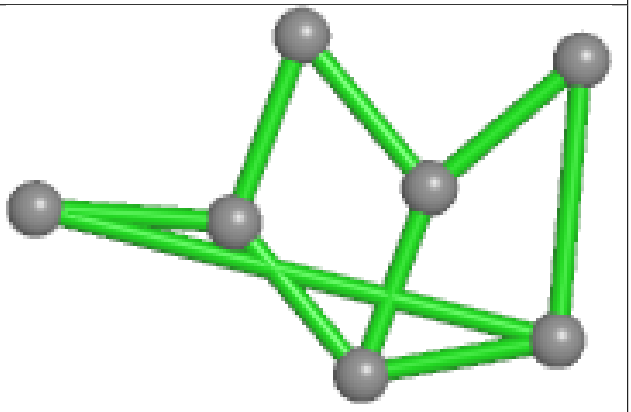
Bond lengths



Bond angles

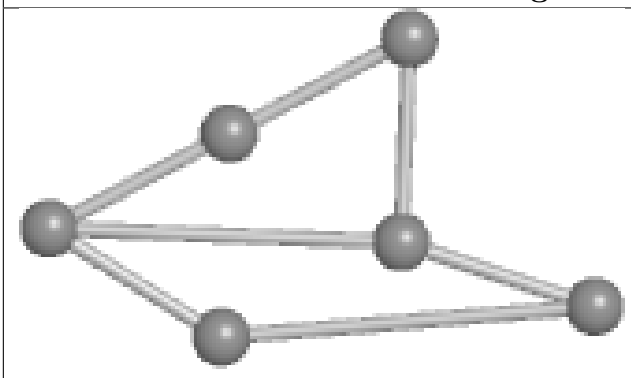


Torsions

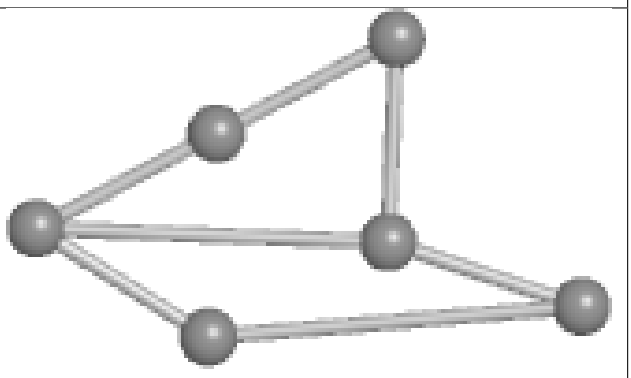


Rings

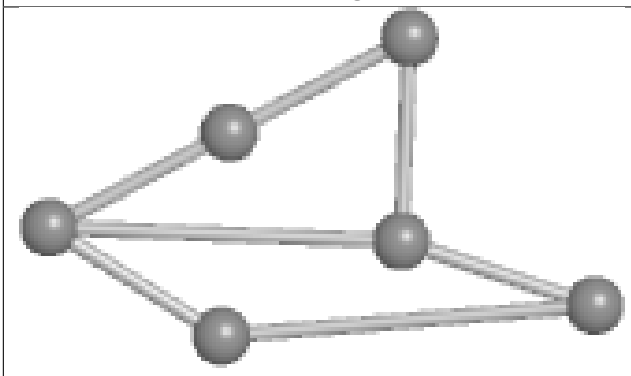
Ligand F3S A 401



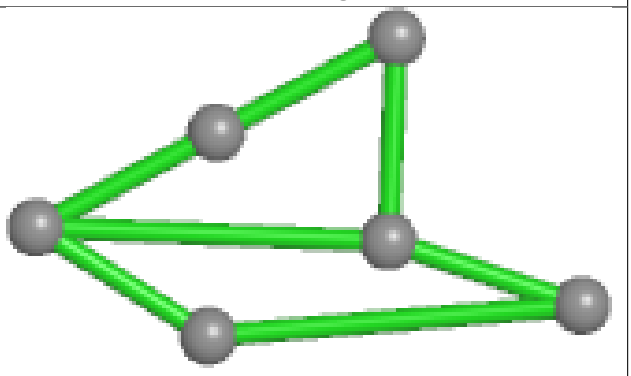
Bond lengths



Bond angles

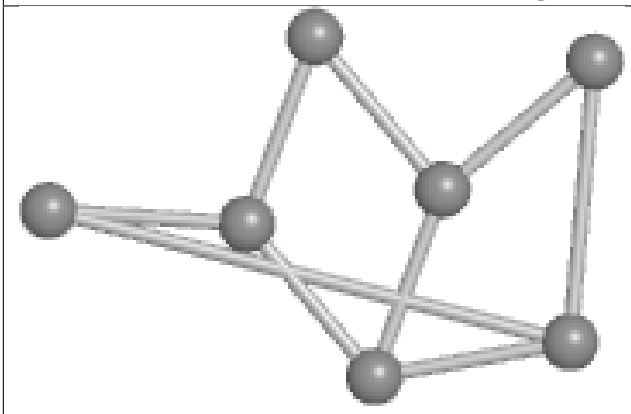


Torsions

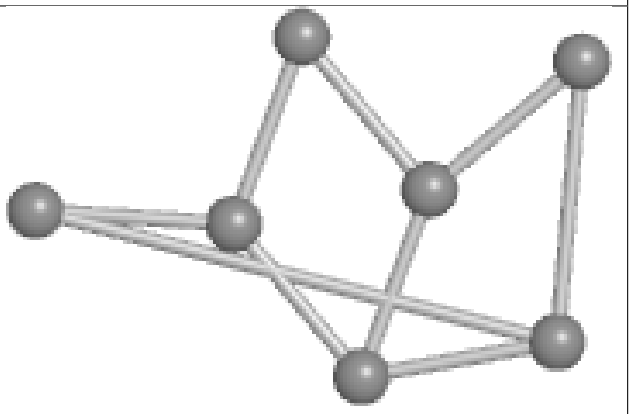


Rings

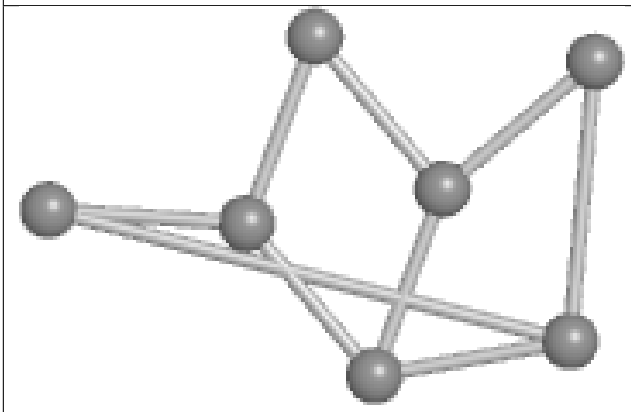
Ligand F3S E 401



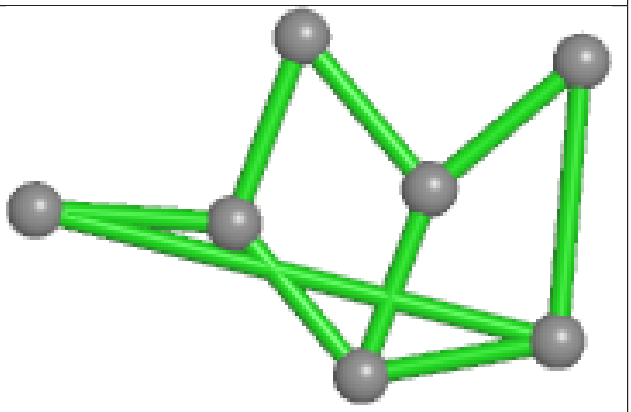
Bond lengths



Bond angles

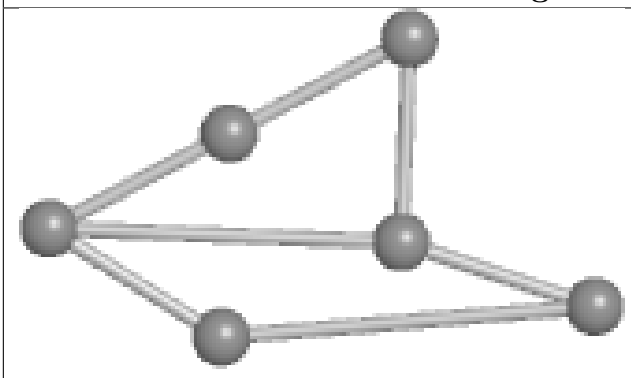


Torsions

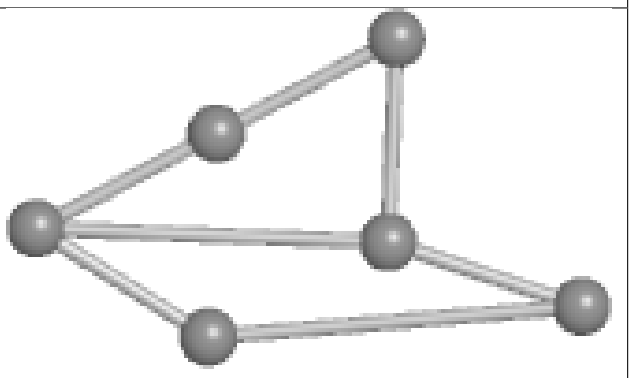


Rings

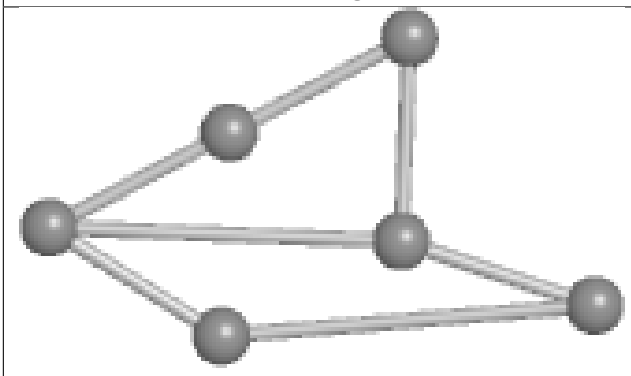
Ligand F3S C 401



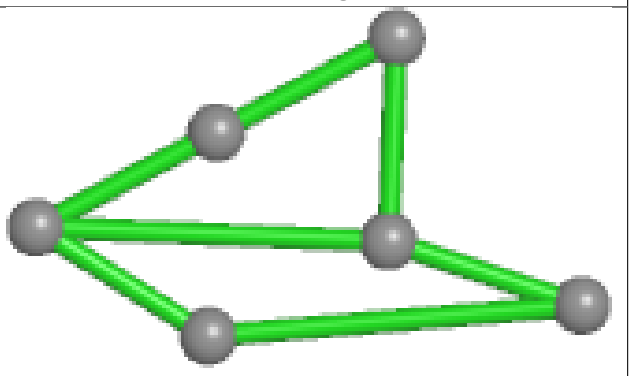
Bond lengths



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	386/386 (100%)	0.14	7 (1%) 68 67	60, 77, 96, 118	0
1	C	386/386 (100%)	0.11	12 (3%) 49 48	62, 81, 105, 140	0
1	E	386/386 (100%)	0.26	21 (5%) 25 26	64, 88, 115, 141	0
1	G	386/386 (100%)	0.35	26 (6%) 17 19	71, 95, 121, 142	0
2	B	131/134 (97%)	0.34	8 (6%) 21 22	64, 92, 126, 165	0
2	D	129/134 (96%)	1.18	33 (25%) 0 0	84, 110, 145, 157	0
2	F	128/134 (95%)	1.06	33 (25%) 0 0	93, 132, 159, 165	0
2	H	131/134 (97%)	1.25	35 (26%) 0 0	93, 125, 154, 185	0
All	All	2063/2080 (99%)	0.40	175 (8%) 10 12	60, 90, 138, 185	0

All (175) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	D	54	LEU	6.1
2	D	82	ILE	6.1
2	H	126	VAL	6.0
2	D	128	ILE	5.5
2	D	83	ILE	5.5
2	D	126	VAL	5.4
2	F	14	GLU	5.4
2	H	13	ALA	5.4
2	D	111	LEU	5.4
2	F	53	ILE	5.3
2	H	54	LEU	5.2
2	H	49	ILE	5.2
1	G	375	LEU	5.1
2	H	48	SER	4.8
1	G	356	ALA	4.7
1	E	163	ASN	4.5

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Mol	Chain	Res	Type	RSRZ
2	F	49	ILE	4.5
2	F	128	ILE	4.5
2	H	55	VAL	4.5
2	H	18	ILE	4.4
2	H	119	VAL	4.4
2	H	82	ILE	4.3
2	F	48	SER	4.3
2	D	3	LEU	4.2
2	F	119	VAL	4.1
1	C	17	TYR	4.1
2	H	118	ARG	4.1
2	F	117	VAL	4.0
2	H	79	PRO	4.0
2	F	100	ILE	3.9
1	E	38	LEU	3.9
1	G	355	ILE	3.8
2	D	81	ALA	3.8
2	H	3	LEU	3.7
2	H	26	PHE	3.7
2	B	127	GLU	3.7
2	D	108	VAL	3.6
2	H	52	LYS	3.6
2	H	24	LEU	3.6
2	H	108	VAL	3.5
2	H	111	LEU	3.5
1	G	195	TYR	3.5
1	G	374	ARG	3.5
2	D	110	LYS	3.5
2	F	54	LEU	3.5
2	H	47	GLN	3.4
2	H	117	VAL	3.4
2	F	17	VAL	3.4
2	F	4	LYS	3.3
2	F	52	LYS	3.3
1	E	375	LEU	3.3
2	D	79	PRO	3.3
2	F	106	VAL	3.2
2	F	102	MET	3.2
1	G	343	PHE	3.2
2	F	81	ALA	3.2
2	D	100	ILE	3.2
2	H	21	ARG	3.2

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Mol	Chain	Res	Type	RSRZ
1	G	357	THR	3.2
2	D	119	VAL	3.2
2	H	83	ILE	3.1
2	F	83	ILE	3.1
2	H	12	LYS	3.1
1	E	234	LEU	3.1
2	D	18	ILE	3.0
2	H	44	ILE	3.0
2	D	117	VAL	3.0
2	F	15	GLY	3.0
1	E	161	THR	3.0
1	E	162	PRO	3.0
1	C	1	MET	3.0
2	F	13	ALA	3.0
1	G	366	PHE	3.0
2	B	83	ILE	2.9
2	B	24	LEU	2.9
2	D	102	MET	2.9
1	G	360	GLY	2.9
2	D	14	GLU	2.9
2	H	128	ILE	2.9
1	A	47	ALA	2.9
2	D	10	GLY	2.9
2	H	19	VAL	2.8
1	G	269	PHE	2.8
1	G	180	VAL	2.8
1	E	2	TYR	2.8
2	F	80	LYS	2.8
1	E	167	HIS	2.8
2	F	51	GLY	2.8
1	G	265	VAL	2.7
2	F	126	VAL	2.7
1	G	248	ILE	2.7
2	D	26	PHE	2.7
1	A	375	LEU	2.7
2	F	26	PHE	2.7
2	F	47	GLN	2.7
1	E	360	GLY	2.7
1	G	184	VAL	2.7
1	G	208	PHE	2.7
2	H	81	ALA	2.7
2	D	13	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
2	B	111	LEU	2.6
1	G	266	ARG	2.6
2	H	80	LYS	2.6
2	F	19	VAL	2.6
1	A	26	LEU	2.6
1	C	2	TYR	2.6
2	F	50	ALA	2.6
2	D	106	VAL	2.6
1	G	257	VAL	2.6
2	D	107	ASP	2.6
1	E	269	PHE	2.5
2	H	14	GLU	2.5
2	H	4	LYS	2.5
2	F	18	ILE	2.5
1	G	359	SER	2.5
1	G	270	GLN	2.5
2	F	44	ILE	2.5
1	C	360	GLY	2.5
2	B	119	VAL	2.5
1	E	270	GLN	2.5
1	E	361	LYS	2.4
1	G	371	PHE	2.4
2	H	56	PHE	2.4
2	F	82	ILE	2.4
2	F	8	ILE	2.4
1	C	10	ILE	2.4
2	D	55	VAL	2.4
1	E	172	ARG	2.4
2	H	20	SER	2.4
2	H	53	ILE	2.4
1	E	191	SER	2.3
1	G	262	LEU	2.3
1	A	357	THR	2.3
2	D	12	LYS	2.3
1	G	82	GLY	2.3
1	E	235	TYR	2.3
2	F	103	VAL	2.3
2	F	3	LEU	2.3
2	H	11	GLY	2.3
1	G	211	LEU	2.3
1	A	366	PHE	2.3
1	E	166	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	11	LEU	2.2
1	E	322	ASP	2.2
2	D	9	VAL	2.2
2	F	79	PRO	2.2
1	E	65	PHE	2.2
1	C	358	ASN	2.2
2	D	49	ILE	2.2
2	D	11	GLY	2.2
1	G	322	ASP	2.2
2	D	80	LYS	2.2
1	C	184	VAL	2.1
1	C	375	LEU	2.1
1	G	362	SER	2.1
2	F	121	ALA	2.1
1	E	211	LEU	2.1
2	B	108	VAL	2.1
2	D	30	VAL	2.1
1	E	233	ALA	2.1
2	B	0	GLY	2.1
2	D	129	LEU	2.1
1	A	322	ASP	2.1
1	C	3	LEU	2.1
1	C	208	PHE	2.0
2	D	127	GLU	2.0
2	H	103	VAL	2.0
2	H	43	ASP	2.0
1	A	46	VAL	2.0
1	C	38	LEU	2.0
2	D	44	ILE	2.0
2	D	101	PRO	2.0
2	B	103	VAL	2.0
1	E	11	LEU	2.0
1	G	319	ALA	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

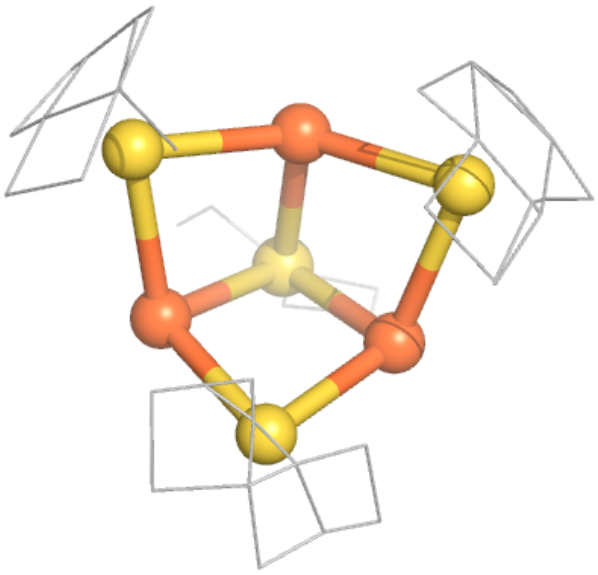
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

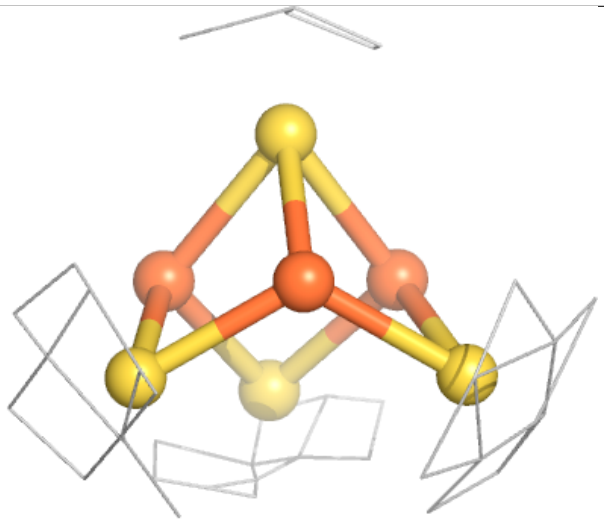
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	F3S	G	401	7/7	0.98	0.18	108,121,137,141	0
3	F3S	C	401	7/7	0.99	0.18	91,107,132,138	0
3	F3S	E	401	7/7	0.99	0.17	89,106,178,198	0
3	F3S	A	401	7/7	0.99	0.16	86,94,106,162	0

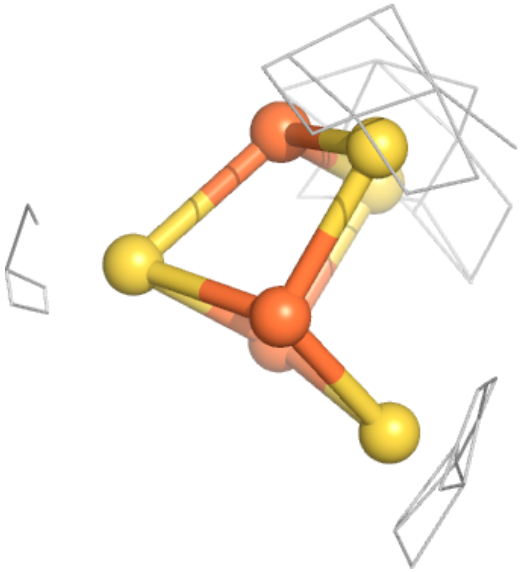
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around F3S G 401:

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

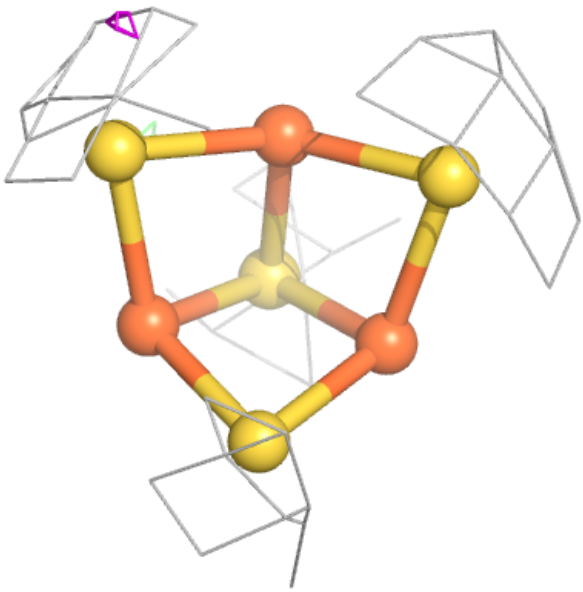


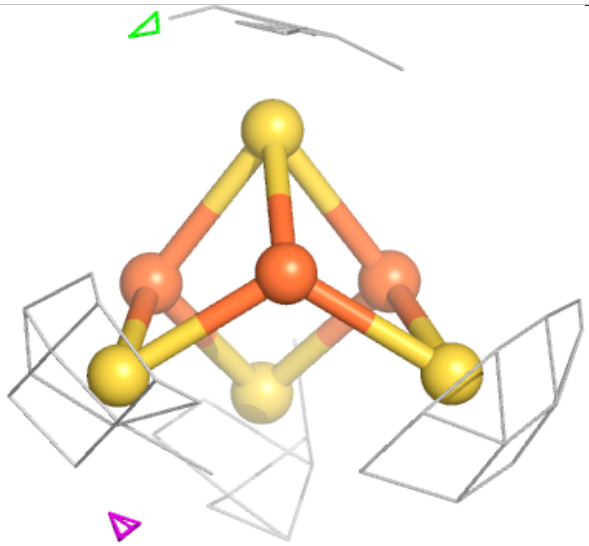


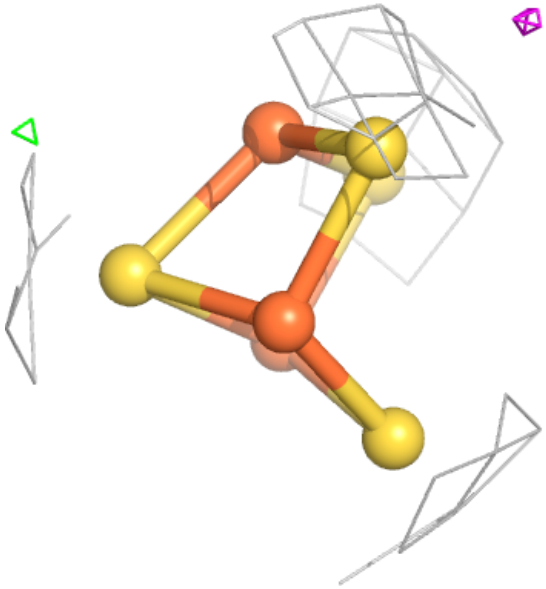


Electron density around F3S C 401:

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

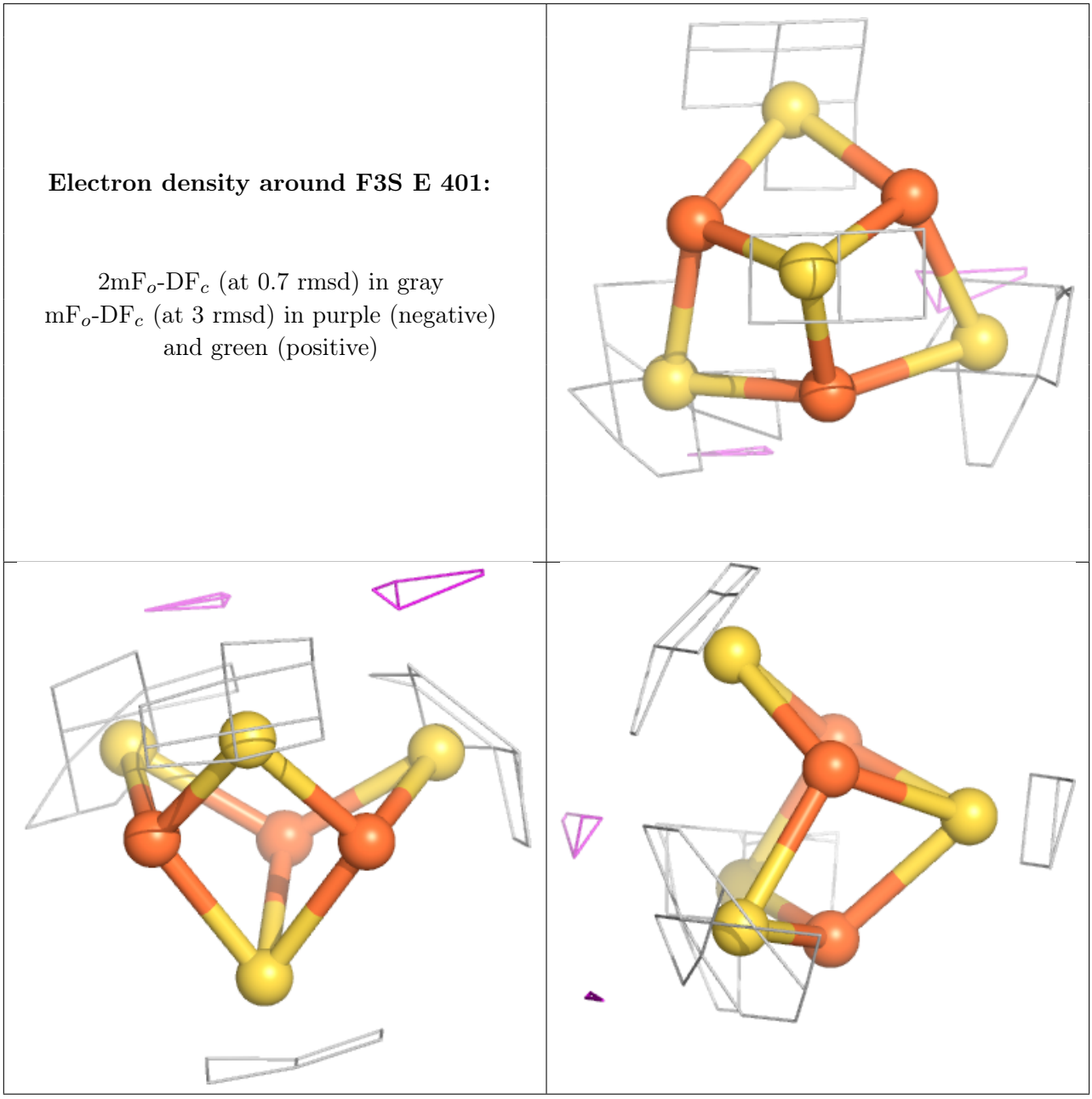






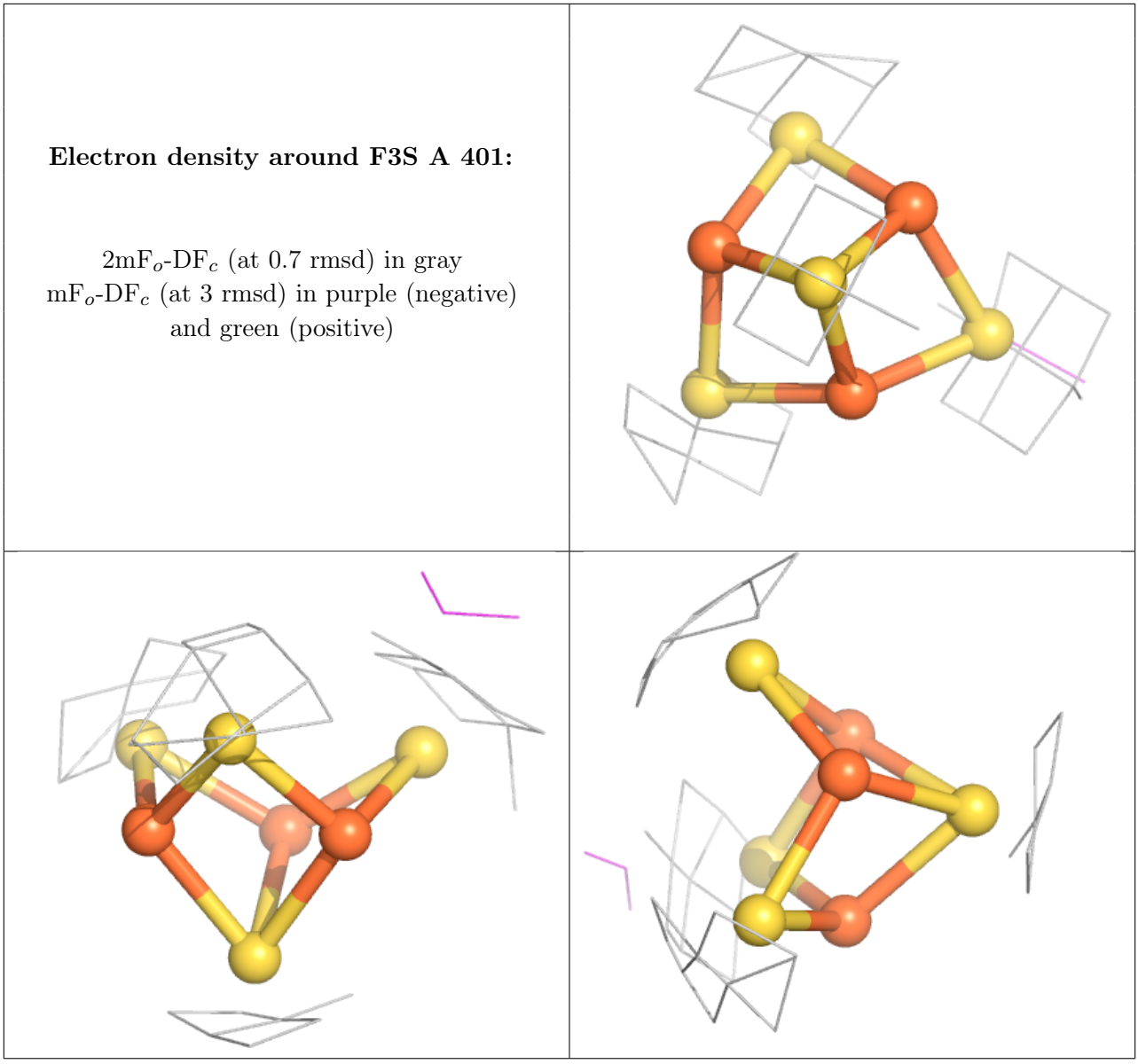
Electron density around F3S E 401:

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



Electron density around F3S A 401:

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



6.5 Other polymers

There are no such residues in this entry.