



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 26, 2024 – 10:01 AM EDT

PDB ID : 6ZMK
Title : Crystal structure of human GFAT-1 L405R
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Deposited on : 2020-07-02
Resolution : 2.38 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.37.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

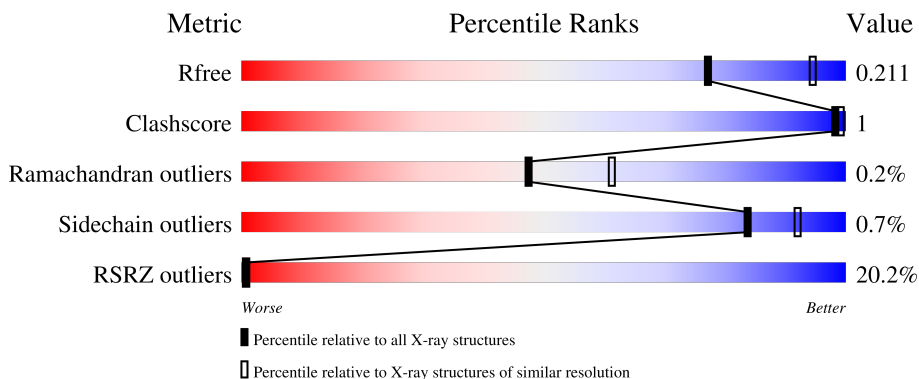
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.38 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	5509 (2.40-2.36)
Clashscore	141614	6082 (2.40-2.36)
Ramachandran outliers	138981	5973 (2.40-2.36)
Sidechain outliers	138945	5975 (2.40-2.36)
RSRZ outliers	127900	5397 (2.40-2.36)

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

Mol	Chain	Length	Quality of chain
1	A	687	 7% 93% 5%
2	B	687	 32% 93% 5%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 20946 atoms, of which 10417 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 Glutamine--fructose-6-phosphate aminotransferase [isomerizing] 1.

Mol	Chain	Residues	Atoms							ZeroOcc	AltConf	Trace
			Total	C	H	N	O	P	S			
1	A	656	10369	3268	5182	906	980	1	32	0	0	0

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	295E	HIS	-	insertion	UNP Q06210
A	295F	HIS	-	insertion	UNP Q06210
A	295G	HIS	-	insertion	UNP Q06210
A	295H	HIS	-	insertion	UNP Q06210
A	295I	HIS	-	insertion	UNP Q06210
A	295J	HIS	-	insertion	UNP Q06210
A	405	ARG	LEU	engineered mutation	UNP Q06210

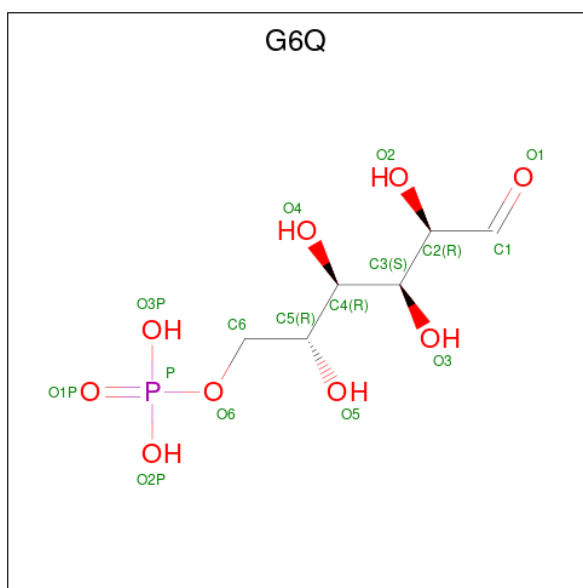
- Molecule 2 is a protein called Glutamine--fructose-6-phosphate aminotransferase [isomerizing] 1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
2	B	656	10388	3273	5201	904	978	32	0	0	0

There are 7 discrepancies between the modelled and reference sequences:

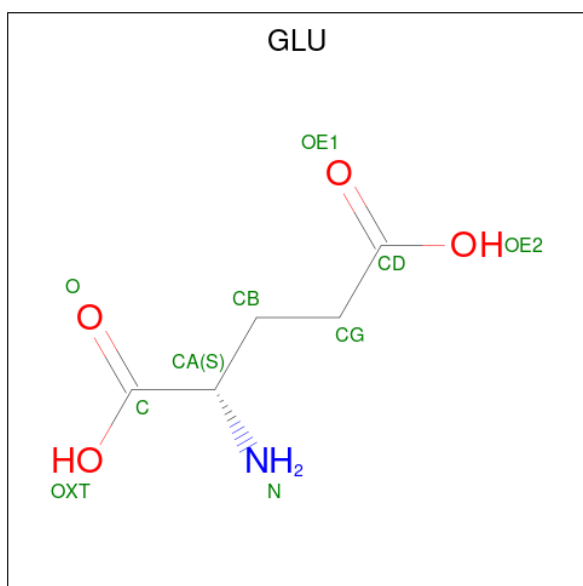
Chain	Residue	Modelled	Actual	Comment	Reference
B	293G	HIS	-	insertion	UNP Q06210
B	293H	HIS	-	insertion	UNP Q06210
B	293I	HIS	-	insertion	UNP Q06210
B	293J	HIS	-	insertion	UNP Q06210
B	293K	HIS	-	insertion	UNP Q06210
B	293L	HIS	-	insertion	UNP Q06210
B	405	ARG	LEU	engineered mutation	UNP Q06210

- Molecule 3 is GLUCOSE-6-PHOSPHATE (three-letter code: G6Q) (formula: $C_6H_{13}O_9P$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	P		
3	A	1	Total	C	H	O	P	0	0
			29	6	13	9	1		
3	B	1	Total	C	H	O	P	0	0
			29	6	13	9	1		

- Molecule 4 is GLUTAMIC ACID (three-letter code: GLU) (formula: $C_5H_9NO_4$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	N	O		
4	A	1	Total	C	H	N	O	0	0
			18	5	8	1	4		

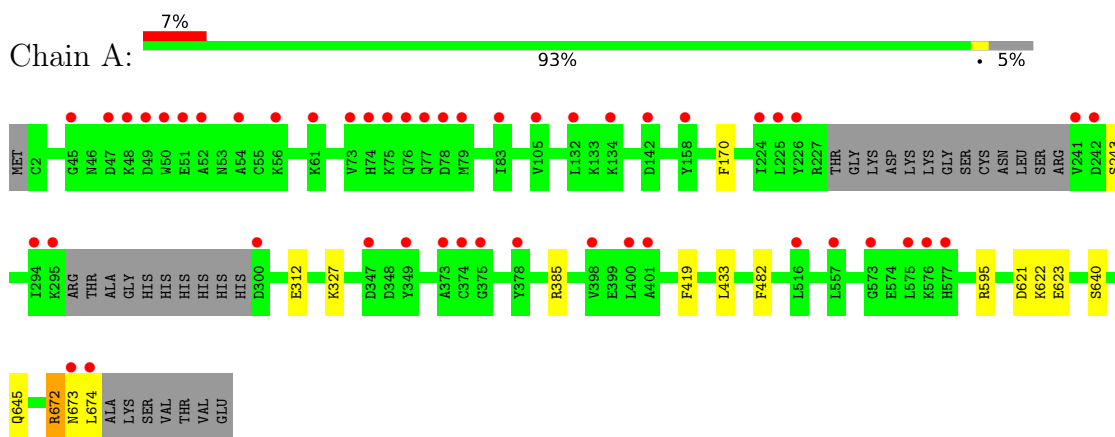
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	77	Total 77	O 77	0	0
5	B	36	Total 36	O 36	0	0

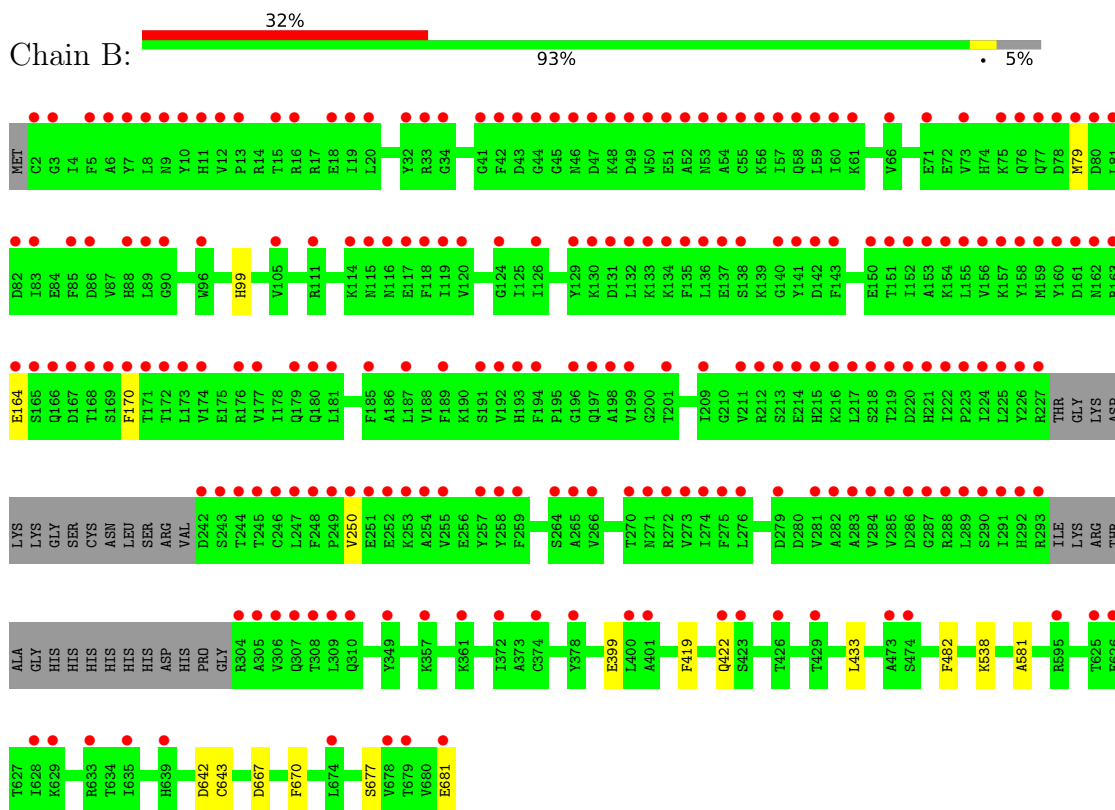
3 Residue-property plots [i](#)

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: Glutamine--fructose-6-phosphate aminotransferase [isomerizing] 1



- Molecule 2: Glutamine--fructose-6-phosphate aminotransferase [isomerizing] 1



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	152.94Å 152.94Å 166.21Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.31 – 2.38 49.31 – 2.38	Depositor EDS
% Data completeness (in resolution range)	99.9 (49.31-2.38) 96.1 (49.31-2.38)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.38 (at 2.39Å)	Xtrriage
Refinement program	PHENIX dev_2499	Depositor
R, R_{free}	0.193 , 0.211 0.193 , 0.211	Depositor DCC
R_{free} test set	1983 reflections (2.51%)	wwPDB-VP
Wilson B-factor (Å ²)	50.7	Xtrriage
Anisotropy	0.098	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.38 , 49.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	20946	wwPDB-VP
Average B, all atoms (Å ²)	92.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.50% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SEP, G6Q

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	0.24	0/5265	0.43	0/7104
2	B	0.24	0/5275	0.42	0/7119
All	All	0.24	0/10540	0.42	0/14223

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	5187	5182	5181	8	1
2	B	5187	5201	5200	7	1
3	A	16	13	11	0	0
3	B	16	13	11	1	0
4	A	10	8	5	0	0
5	A	77	0	0	1	0
5	B	36	0	0	0	0
All	All	10529	10417	10408	13	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 1.

All (13) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:621:ASP:OD1	1:A:622:LYS:N	2.36	0.59
1:A:640:SER:N	1:A:645:GLN:OE1	2.36	0.58
1:A:672:ARG:O	1:A:674:LEU:N	2.41	0.54
2:B:422:GLN:N	3:B:701:G6Q:O1P	2.38	0.53
1:A:595:ARG:NH2	1:A:623:GLU:O	2.43	0.52
1:A:672:ARG:NH1	2:B:581:ALA:O	2.49	0.46
1:A:385:ARG:NH2	2:B:399:GLU:OE2	2.48	0.46
1:A:419:PHE:CZ	1:A:433:LEU:HA	2.51	0.46
2:B:642:ASP:OD1	2:B:643:CYS:N	2.50	0.45
2:B:667:ASP:OD2	2:B:670:PHE:N	2.50	0.44
1:A:327:LYS:NZ	5:A:808:HOH:O	2.52	0.42
2:B:419:PHE:CZ	2:B:433:LEU:HA	2.55	0.42
2:B:164:GLU:OE1	2:B:164:GLU:N	2.49	0.41

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:312:GLU:OE2	2:B:538:LYS:NZ[4_454]	2.16	0.04

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	649/687 (94%)	634 (98%)	14 (2%)	1 (0%)	47 61
2	B	650/687 (95%)	617 (95%)	31 (5%)	2 (0%)	41 53
All	All	1299/1374 (94%)	1251 (96%)	45 (4%)	3 (0%)	47 61

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	673	ASN
2	B	677	SER
2	B	250	VAL

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	568/600 (95%)	565 (100%)	3 (0%)	88	95
2	B	571/601 (95%)	566 (99%)	5 (1%)	78	89
All	All	1139/1201 (95%)	1131 (99%)	8 (1%)	84	92

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	170	PHE
1	A	482	PHE
1	A	672	ARG
2	B	79	MET
2	B	99	HIS
2	B	170	PHE
2	B	482	PHE
2	B	681	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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
1	SEP	A	243	1	8,9,10	1.55	1 (12%)	8,12,14	1.58	2 (25%)

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
1	SEP	A	243	1	-	0/5/8/10	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	243	SEP	P-O1P	3.39	1.61	1.50

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	243	SEP	OG-CB-CA	2.88	110.95	108.14
1	A	243	SEP	P-OG-CB	-2.82	110.54	118.30

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry

3 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
4	GLU	A	702	-	8,9,9	1.06	1 (12%)	10,11,11	1.27	2 (20%)
3	G6Q	B	701	-	14,15,15	0.45	0	20,21,21	0.59	0
3	G6Q	A	701	-	14,15,15	0.52	0	20,21,21	0.68	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GLU	A	702	-	-	2/9/9/9	-
3	G6Q	B	701	-	-	9/18/20/20	-
3	G6Q	A	701	-	-	5/18/20/20	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	702	GLU	OXT-C	-2.16	1.23	1.30

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	702	GLU	OXT-C-O	-2.70	117.95	124.09
4	A	702	GLU	OXT-C-CA	2.26	121.09	113.38

There are no chirality outliers.

All (16) torsion outliers are listed below:

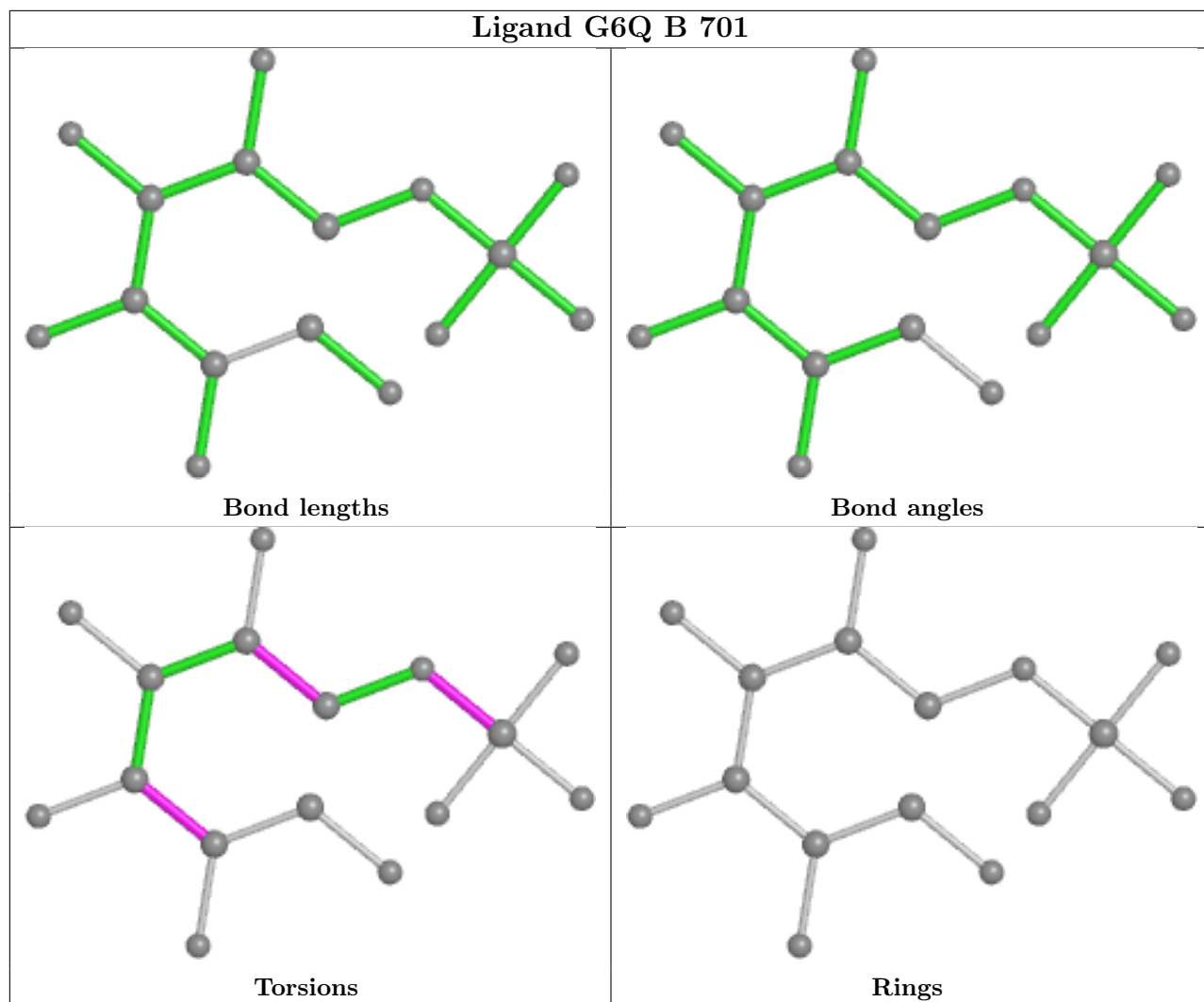
Mol	Chain	Res	Type	Atoms
3	A	701	G6Q	C1-C2-C3-C4
3	A	701	G6Q	C1-C2-C3-O3
3	A	701	G6Q	O2-C2-C3-C4
3	A	701	G6Q	O2-C2-C3-O3
3	B	701	G6Q	C1-C2-C3-C4
3	B	701	G6Q	O2-C2-C3-C4
3	B	701	G6Q	O2-C2-C3-O3
3	B	701	G6Q	C4-C5-C6-O6
3	B	701	G6Q	O5-C5-C6-O6
3	B	701	G6Q	C6-O6-P-O2P
3	B	701	G6Q	C6-O6-P-O3P
3	B	701	G6Q	C1-C2-C3-O3
3	B	701	G6Q	C6-O6-P-O1P
3	A	701	G6Q	C6-O6-P-O1P
4	A	702	GLU	OE1-CD-CG-CB
4	A	702	GLU	OE2-CD-CG-CB

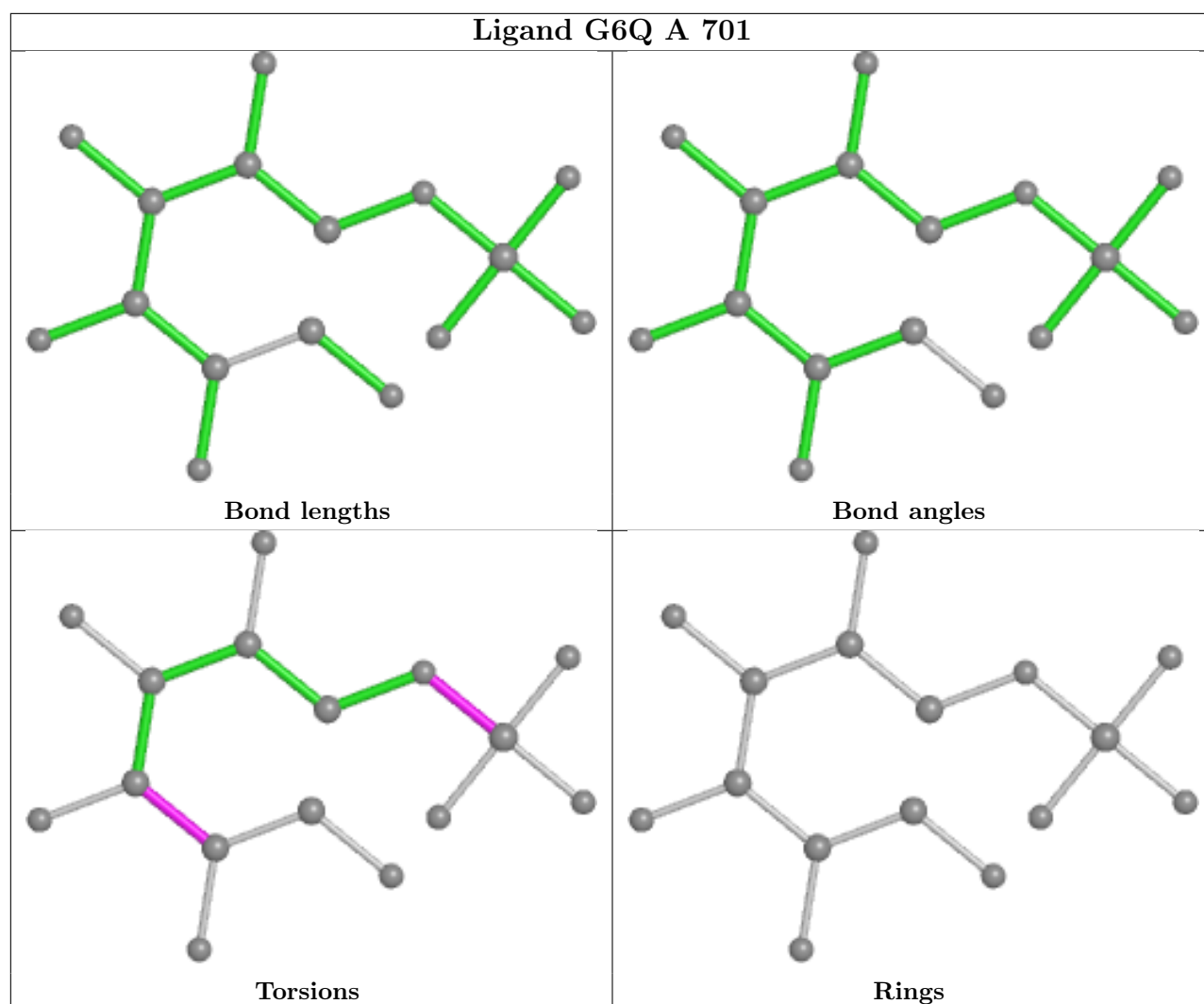
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	701	G6Q	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 than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

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(Å ²)	Q<0.9
1	A	655/687 (95%)	0.70	48 (7%) 15 16	39, 61, 117, 174	0
2	B	656/687 (95%)	2.10	217 (33%) 0 0	43, 81, 181, 251	0
All	All	1311/1374 (95%)	1.40	265 (20%) 1 1	39, 68, 167, 251	0

All (265) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	247	LEU	15.9
2	B	255	VAL	14.2
2	B	54	ALA	13.6
2	B	77	GLN	12.3
2	B	217	LEU	11.8
2	B	79	MET	11.7
2	B	55	CYS	11.6
2	B	155	LEU	11.0
2	B	53	ASN	11.0
2	B	222	ILE	11.0
2	B	254	ALA	10.9
2	B	225	LEU	10.6
2	B	50	TRP	10.0
2	B	41	GLY	10.0
2	B	46	ASN	9.9
2	B	52	ALA	9.7
2	B	78	ASP	9.2
2	B	158	TYR	9.1
2	B	257	TYR	8.8
2	B	224	ILE	8.4
2	B	250	VAL	8.3
2	B	73	VAL	8.3
2	B	291	ILE	8.1
2	B	246	CYS	8.1

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Mol	Chain	Res	Type	RSRZ
2	B	44	GLY	7.9
2	B	135	PHE	7.9
2	B	245	THR	7.9
2	B	216	LYS	7.8
2	B	47	ASP	7.8
2	B	304	ARG	7.8
2	B	218	SER	7.7
2	B	81	LEU	7.5
2	B	129	TYR	7.4
2	B	49	ASP	7.3
2	B	75	LYS	7.3
2	B	6	ALA	7.3
2	B	281	VAL	7.2
2	B	118	PHE	7.1
2	B	160	TYR	7.1
2	B	45	GLY	6.9
2	B	248	PHE	6.9
2	B	2	CYS	6.8
2	B	221	HIS	6.7
2	B	194	PHE	6.7
2	B	215	HIS	6.7
2	B	141	TYR	6.7
2	B	192	VAL	6.7
2	B	306	VAL	6.6
2	B	42	PHE	6.6
2	B	213	SER	6.5
2	B	168	THR	6.5
2	B	85	PHE	6.5
2	B	51	GLU	6.5
2	B	226	TYR	6.5
2	B	57	ILE	6.4
2	B	153	ALA	6.4
2	B	223	PRO	6.3
1	A	79	MET	6.2
1	A	77	GLN	6.2
2	B	249	PRO	6.1
2	B	220	ASP	6.1
2	B	251	GLU	6.1
2	B	219	THR	6.1
2	B	170	PHE	6.0
2	B	292	HIS	5.9
2	B	76	GLN	5.9

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Mol	Chain	Res	Type	RSRZ
2	B	244	THR	5.9
2	B	176	ARG	5.9
2	B	201	THR	5.9
2	B	56	LYS	5.8
2	B	154	LYS	5.8
2	B	272	ARG	5.8
2	B	274	ILE	5.8
2	B	143	PHE	5.8
2	B	209	ILE	5.8
2	B	289	LEU	5.7
2	B	159	MET	5.7
1	A	241	VAL	5.7
2	B	308	THR	5.7
2	B	258	TYR	5.6
2	B	167	ASP	5.6
2	B	156	VAL	5.5
2	B	174	VAL	5.5
2	B	48	LYS	5.3
2	B	10	TYR	5.3
2	B	80	ASP	5.3
2	B	119	ILE	5.3
2	B	305	ALA	5.3
2	B	173	LEU	5.3
2	B	140	GLY	5.3
2	B	198	ALA	5.2
2	B	293	ARG	5.2
1	A	45	GLY	5.1
2	B	189	PHE	5.0
2	B	134	LYS	5.0
2	B	166	GLN	4.9
2	B	163	ARG	4.9
2	B	120	VAL	4.9
2	B	211	VAL	4.9
1	A	294	ILE	4.8
2	B	290	SER	4.8
2	B	164	GLU	4.8
2	B	157	LYS	4.8
2	B	58	GLN	4.7
2	B	142	ASP	4.7
1	A	48	LYS	4.6
2	B	284	VAL	4.6
2	B	8	LEU	4.6

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Mol	Chain	Res	Type	RSRZ
1	A	49	ASP	4.6
1	A	78	ASP	4.6
2	B	165	SER	4.6
2	B	227	ARG	4.6
2	B	115	ASN	4.5
2	B	15	THR	4.5
2	B	89	LEU	4.4
2	B	20	LEU	4.4
2	B	177	VAL	4.4
2	B	19	ILE	4.4
2	B	181	LEU	4.4
2	B	117	GLU	4.2
2	B	138	SER	4.2
2	B	349	TYR	4.2
2	B	88	HIS	4.1
2	B	273	VAL	4.1
2	B	131	ASP	4.1
2	B	199	VAL	4.1
2	B	197	GLN	4.1
2	B	130	LYS	4.1
2	B	243	SER	4.0
2	B	116	ASN	4.0
1	A	54	ALA	4.0
2	B	282	ALA	4.0
2	B	309	LEU	4.0
2	B	151	THR	4.0
2	B	137	GLU	4.0
1	A	83	ILE	3.9
2	B	271	ASN	3.8
2	B	674	LEU	3.8
2	B	252	GLU	3.8
2	B	287	GLY	3.7
2	B	82	ASP	3.7
2	B	310	GLN	3.7
2	B	285	VAL	3.7
2	B	270	THR	3.7
2	B	265	ALA	3.6
2	B	242	ASP	3.6
2	B	83	ILE	3.6
2	B	169	SER	3.6
2	B	7	TYR	3.6
2	B	259	PHE	3.6

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Mol	Chain	Res	Type	RSRZ
2	B	124	GLY	3.5
1	A	226	TYR	3.5
1	A	50	TRP	3.5
2	B	275	PHE	3.5
2	B	266	VAL	3.5
2	B	307	GLN	3.5
1	A	52	ALA	3.5
2	B	286	ASP	3.5
2	B	136	LEU	3.5
2	B	114	LYS	3.5
2	B	18	GLU	3.4
2	B	152	ILE	3.4
2	B	212	ARG	3.4
2	B	180	GLN	3.4
2	B	214	GLU	3.4
2	B	193	HIS	3.4
1	A	73	VAL	3.3
2	B	96	TRP	3.3
1	A	673	ASN	3.3
1	A	75	LYS	3.3
2	B	43	ASP	3.3
1	A	295	LYS	3.2
2	B	253	LYS	3.2
2	B	111	ARG	3.2
2	B	150	GLU	3.2
2	B	288	ARG	3.1
2	B	171	THR	3.1
2	B	179	GLN	3.1
2	B	378	TYR	3.1
2	B	162	ASN	3.1
2	B	132	LEU	3.1
2	B	426	THR	3.0
2	B	86	ASP	3.0
2	B	161	ASP	3.0
2	B	90	GLY	3.0
2	B	679	THR	3.0
2	B	374	CYS	2.9
1	A	47	ASP	2.9
1	A	56	LYS	2.9
1	A	347	ASP	2.8
2	B	172	THR	2.8
2	B	361	LYS	2.8

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Mol	Chain	Res	Type	RSRZ
2	B	401	ALA	2.8
2	B	626	GLU	2.8
2	B	59	LEU	2.8
2	B	276	LEU	2.8
2	B	283	ALA	2.8
2	B	473	ALA	2.8
2	B	191	SER	2.7
2	B	423	SER	2.7
1	A	76	GLN	2.7
1	A	132	LEU	2.7
2	B	357	LYS	2.7
2	B	5	PHE	2.7
2	B	628	ILE	2.7
2	B	105	VAL	2.7
2	B	9	ASN	2.6
2	B	133	LYS	2.6
2	B	71	GLU	2.6
2	B	474	SER	2.6
1	A	577	HIS	2.6
2	B	32	TYR	2.6
1	A	134	LYS	2.6
2	B	12	VAL	2.5
2	B	681	GLU	2.5
2	B	678	VAL	2.5
2	B	60	ILE	2.5
2	B	126	ILE	2.5
1	A	105	VAL	2.5
1	A	374	CYS	2.5
2	B	34	GLY	2.5
2	B	196	GLY	2.5
1	A	573	GLY	2.5
1	A	378	TYR	2.4
1	A	225	LEU	2.4
1	A	349	TYR	2.4
2	B	187	LEU	2.4
1	A	142	ASP	2.4
1	A	674	LEU	2.4
2	B	429	THR	2.4
2	B	400	LEU	2.4
2	B	279	ASP	2.4
2	B	185	PHE	2.4
1	A	51	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	300	ASP	2.3
1	A	74	HIS	2.3
1	A	373	ALA	2.3
1	A	158	TYR	2.3
2	B	66	VAL	2.3
1	A	576	LYS	2.3
2	B	61	LYS	2.2
1	A	398	VAL	2.2
1	A	557	LEU	2.2
2	B	13	PRO	2.2
2	B	635	ILE	2.2
2	B	264	SER	2.2
1	A	242	ASP	2.2
2	B	3	GLY	2.2
1	A	61	LYS	2.2
2	B	629	LYS	2.2
2	B	33	ARG	2.2
2	B	595	ARG	2.2
2	B	633	ARG	2.2
1	A	575	LEU	2.1
2	B	625	THR	2.1
2	B	11	HIS	2.1
1	A	224	ILE	2.1
1	A	375	GLY	2.1
1	A	400	LEU	2.1
2	B	422	GLN	2.1
1	A	516	LEU	2.0
2	B	372	ILE	2.0
1	A	401	ALA	2.0
2	B	16	ARG	2.0
2	B	639	HIS	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q < 0.9
1	SEP	A	243	10/11	0.80	0.25	120,145,160,160	0

6.3 Carbohydrates [i](#)

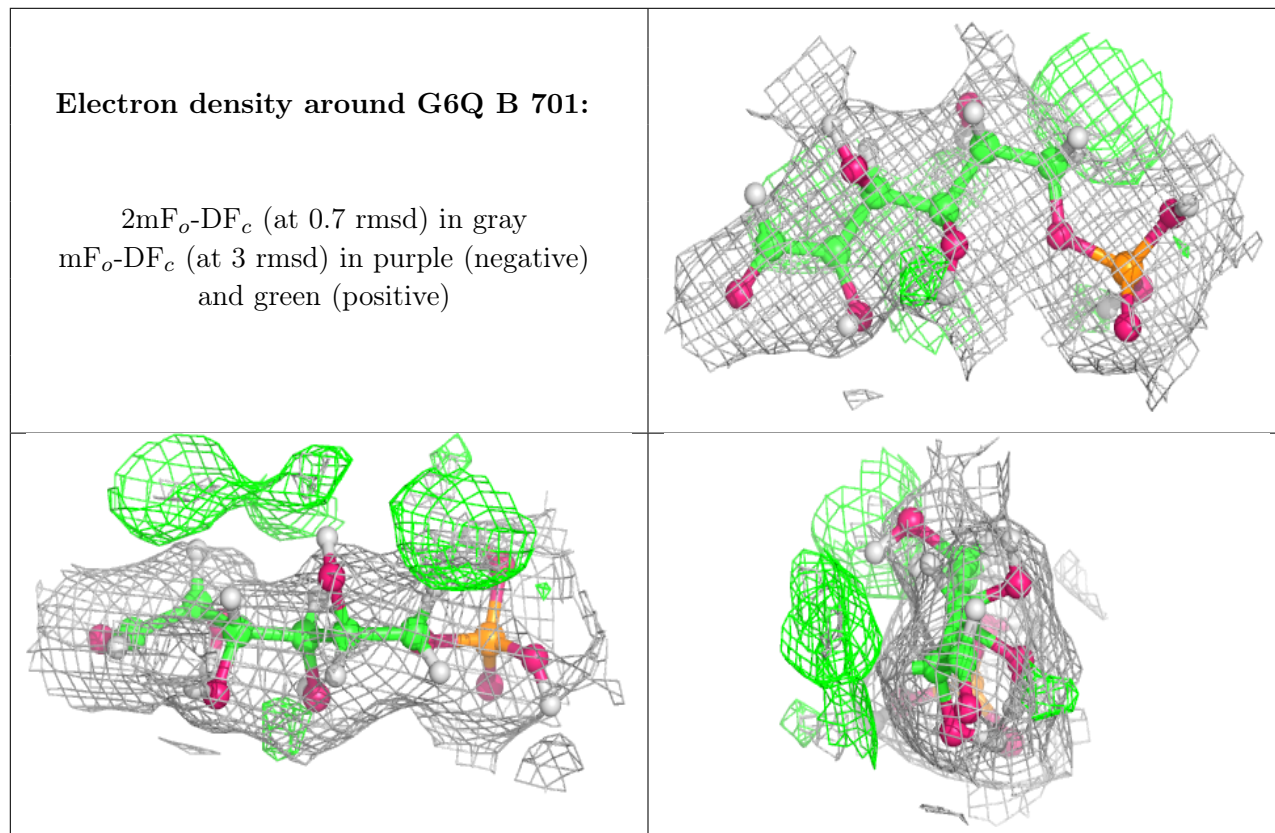
There are no monosaccharides in this entry.

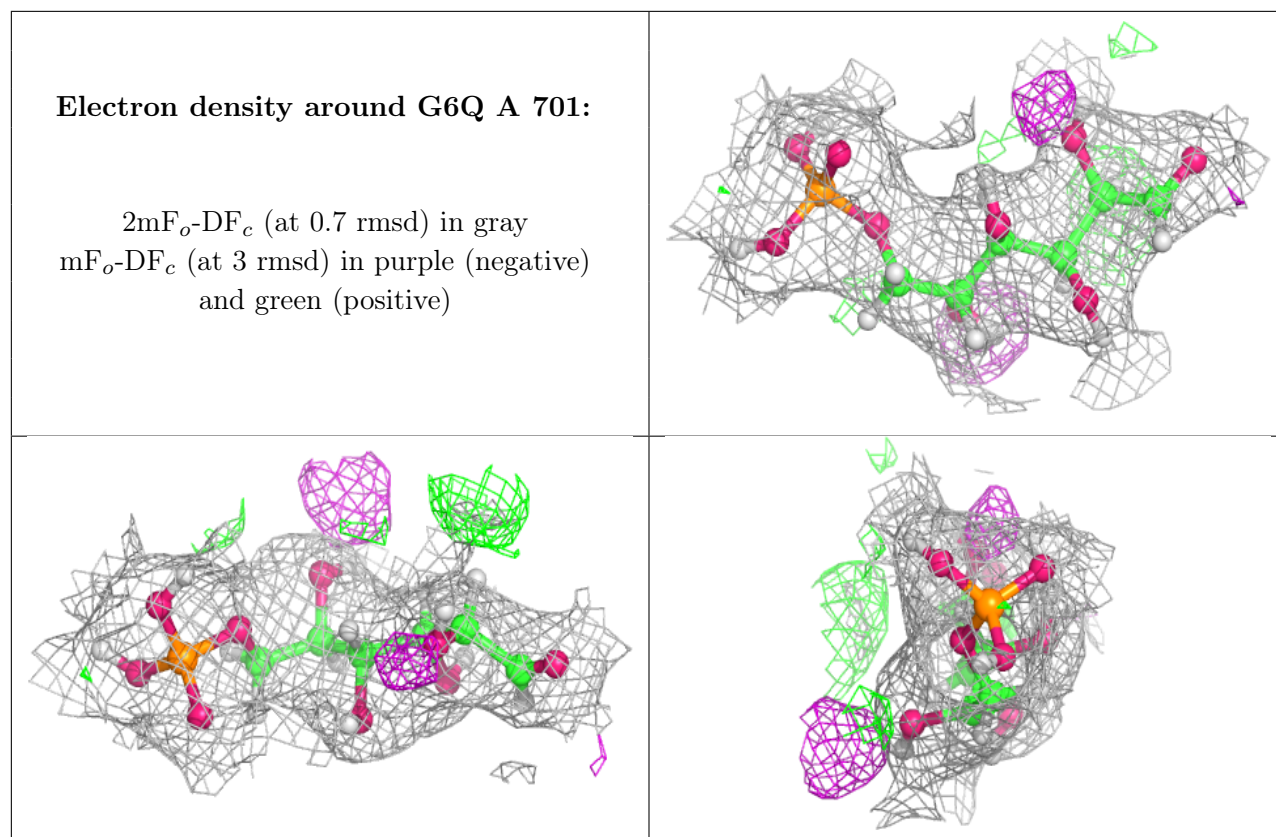
6.4 Ligands [i](#)

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, 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
4	GLU	A	702	10/10	0.94	0.13	70,81,93,94	0
3	G6Q	B	701	16/16	0.97	0.30	48,59,72,80	0
3	G6Q	A	701	16/16	0.98	0.26	39,46,55,56	0

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





6.5 Other polymers [i](#)

There are no such residues in this entry.