



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 12:49 AM GMT

PDB ID : 2BV3  
Title : CRYSTAL STRUCTURE OF A MUTANT ELONGATION FACTOR G  
TRAPPED WITH A GTP ANALOGUE  
Authors : Hansson, S.; Singh, R.; Gudkov, A.T.; Liljas, A.; Logan, D.T.  
Deposited on : 2005-06-22  
Resolution : 2.50 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

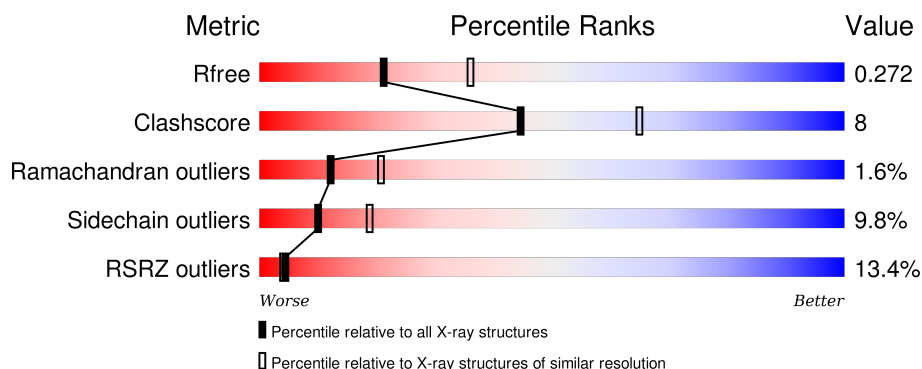
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.50 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))
$R_{free}$	91344	3553 (2.50-2.50)
Clashscore	102246	4242 (2.50-2.50)
Ramachandran outliers	100387	4156 (2.50-2.50)
Sidechain outliers	100360	4158 (2.50-2.50)
RSRZ outliers	91569	3562 (2.50-2.50)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	691	

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 5038 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.

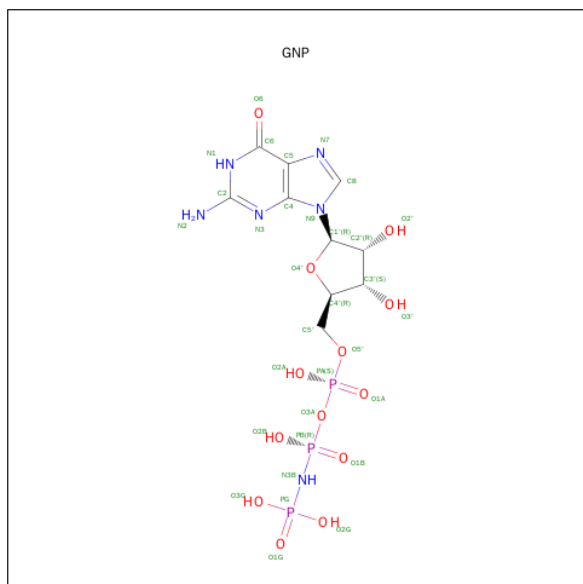
- Molecule 1 is a protein called ELONGATION FACTOR G.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	632	4848	3082	826	922	18	0	0	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	84	ALA	THR	ENGINEERED MUTATION	UNP P13551
A	435	SER	ASP	CONFLICT	UNP P13551
A	439	SER	ARG	CONFLICT	UNP P13551
A	448	SER	GLN	CONFLICT	UNP P13551
A	458	SER	HIS	CONFLICT	UNP P13551

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula:  $C_{10}H_{17}N_6O_{13}P_3$ ).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			32	10	6	13	3		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Mg	0	0
			1	1		

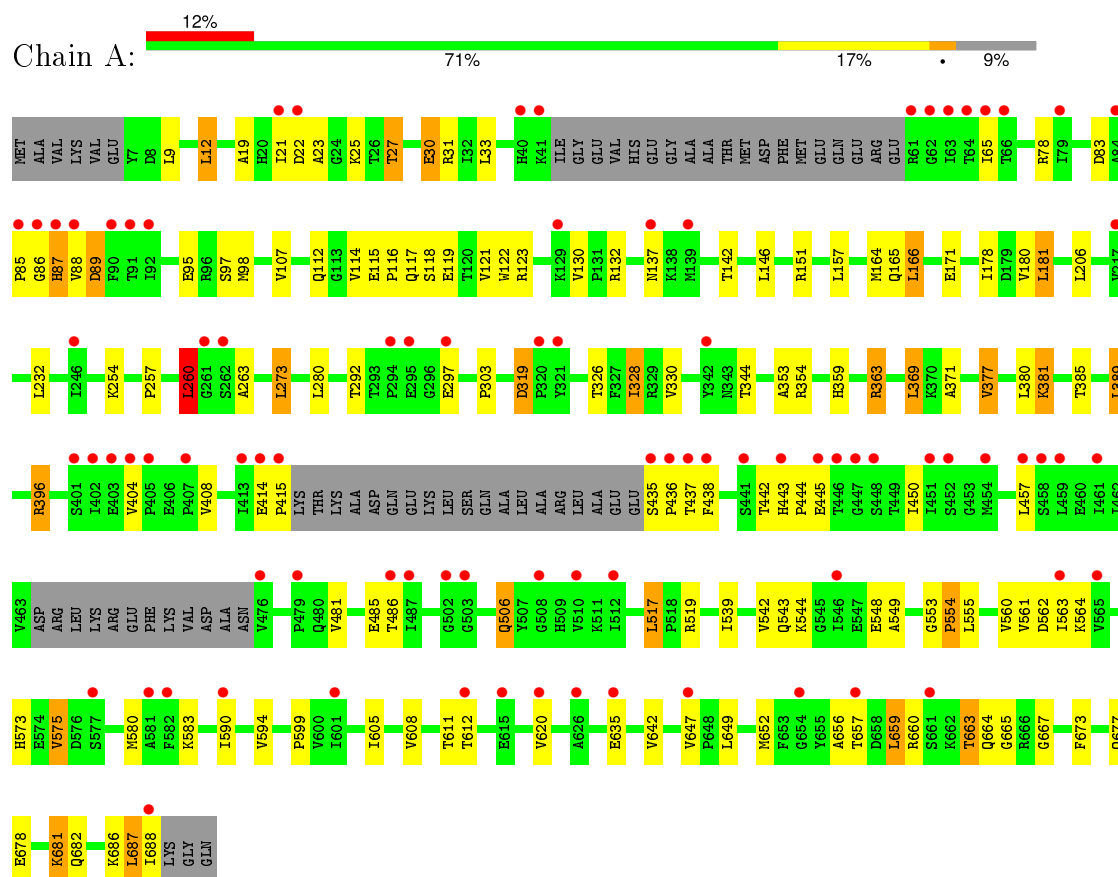
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	157	Total	O	0	0
			157	157		

### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: ELONGATION FACTOR G



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	74.99Å 103.34Å 118.91Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	17.43 – 2.50 17.43 – 2.50	Depositor EDS
% Data completeness (in resolution range)	94.8 (17.43-2.50) 94.7 (17.43-2.50)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.15 (at 2.49Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, $R_{free}$	0.202 , 0.270 0.210 , 0.272	Depositor DCC
$R_{free}$ test set	1571 reflections (5.40%)	DCC
Wilson B-factor (Å <sup>2</sup> )	60.4	Xtriage
Anisotropy	0.430	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 65.3	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	0 of 30656 reflections	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	5038	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.27% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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	0.49	0/4939	0.67	5/6698 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	181	LEU	CA-CB-CG	6.46	130.16	115.30
1	A	260	LEU	CA-CB-CG	6.31	129.82	115.30
1	A	444	PRO	N-CA-CB	6.10	110.62	103.30
1	A	273	LEU	CA-CB-CG	5.42	127.77	115.30
1	A	151	ARG	NE-CZ-NH2	-5.18	117.71	120.30

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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	4848	0	4825	77	0
2	A	32	0	13	3	0
3	A	1	0	0	0	0
4	A	157	0	0	10	0
All	All	5038	0	4838	77	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 8.

All (77) 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:611:THR:HG22	1:A:642:VAL:HG22	1.54	0.89
1:A:681:LYS:H	1:A:681:LYS:HD3	1.45	0.81
1:A:608:VAL:HG21	1:A:647:VAL:CG1	2.17	0.74
1:A:165:GLN:NE2	1:A:260:LEU:H	1.85	0.73
1:A:561:VAL:N	4:A:2129:HOH:O	2.19	0.70
1:A:660:ARG:HG2	1:A:665:GLY:HA2	1.74	0.68
1:A:659:LEU:O	1:A:663:THR:HB	1.94	0.68
1:A:377:VAL:HG21	1:A:380:LEU:HD22	1.77	0.67
1:A:328:ILE:HD11	1:A:369:LEU:HD23	1.76	0.66
1:A:344:THR:HG22	1:A:396:ARG:HG3	1.78	0.66
1:A:663:THR:HG21	1:A:667:GLY:H	1.62	0.63
1:A:548:GLU:OE2	1:A:583:LYS:HE2	1.99	0.63
1:A:359:HIS:HD2	4:A:2007:HOH:O	1.82	0.62
1:A:381:LYS:HE2	1:A:381:LYS:HA	1.80	0.62
1:A:377:VAL:CG2	1:A:380:LEU:HD22	2.30	0.62
1:A:506:GLN:HA	1:A:506:GLN:HE21	1.64	0.61
1:A:555:LEU:HD21	1:A:599:PRO:HB2	1.82	0.61
1:A:663:THR:CG2	1:A:667:GLY:H	2.15	0.59
1:A:435:SER:N	1:A:436:PRO:HD2	2.19	0.58
1:A:353:ALA:O	1:A:354:ARG:HG2	2.05	0.57
1:A:612:THR:HG21	1:A:620:VAL:HG11	1.86	0.56
1:A:9:LEU:HD21	1:A:303:PRO:HB2	1.88	0.56
1:A:166:LEU:HD22	1:A:180:VAL:HG11	1.86	0.56
1:A:19:ALA:HB2	1:A:107:VAL:HB	1.87	0.56
1:A:27:THR:HG22	2:A:1689:GNP:O2A	2.06	0.56
1:A:137:ASN:HD21	1:A:263:ALA:H	1.52	0.55
1:A:560:VAL:HG23	4:A:2126:HOH:O	2.06	0.55
1:A:539:ILE:HG22	1:A:543:GLN:HE21	1.71	0.54
1:A:408:VAL:HG21	1:A:673:PHE:CD1	2.44	0.53
1:A:330:VAL:HG12	1:A:371:ALA:HA	1.91	0.53
1:A:142:THR:HA	1:A:171:GLU:HG2	1.91	0.52
1:A:19:ALA:HB1	1:A:23:ALA:HB3	1.91	0.52
1:A:608:VAL:HG21	1:A:647:VAL:HG12	1.89	0.52
1:A:608:VAL:CG2	1:A:647:VAL:HG12	2.40	0.52
1:A:165:GLN:HA	1:A:178:ILE:O	2.10	0.52
1:A:485:GLU:OE2	1:A:553:GLY:HA3	2.10	0.52
1:A:554:PRO:HG3	1:A:594:VAL:HG12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:549:ALA:HB3	1:A:590:ILE:CG2	2.40	0.52
1:A:380:LEU:HD21	1:A:389:LEU:HD21	1.92	0.52
1:A:656:ALA:HB1	1:A:660:ARG:HH21	1.75	0.50
1:A:117:GLN:O	1:A:121:VAL:HG23	2.12	0.50
1:A:165:GLN:HE22	1:A:260:LEU:H	1.55	0.50
1:A:562:ASP:N	4:A:2129:HOH:O	2.31	0.50
1:A:123:ARG:HG2	4:A:2146:HOH:O	2.11	0.50
1:A:605:ILE:HD11	4:A:2145:HOH:O	2.11	0.50
1:A:549:ALA:HB3	1:A:590:ILE:HG21	1.92	0.49
1:A:21:ILE:O	2:A:1689:GNP:N3B	2.46	0.49
1:A:564:LYS:HG2	4:A:2133:HOH:O	2.12	0.47
1:A:326:THR:HB	1:A:377:VAL:HG22	1.97	0.47
1:A:647:VAL:HG21	1:A:652:MET:CE	2.45	0.46
1:A:122:TRP:CD2	1:A:157:LEU:HD13	2.51	0.46
1:A:88:VAL:HG11	1:A:457:LEU:HD12	1.97	0.46
1:A:664:GLN:NE2	4:A:2152:HOH:O	2.49	0.46
1:A:506:GLN:HA	1:A:506:GLN:NE2	2.31	0.45
1:A:115:GLU:H	1:A:118:SER:HB2	1.82	0.45
1:A:25:LYS:NZ	4:A:2006:HOH:O	2.49	0.44
1:A:573:HIS:HE1	1:A:575:VAL:HG13	1.83	0.44
1:A:517:LEU:HD22	1:A:563:ILE:C	2.38	0.43
1:A:687:LEU:O	1:A:688:ILE:HG13	2.18	0.43
1:A:686:LYS:C	1:A:688:ILE:H	2.22	0.43
1:A:31:ARG:HD3	4:A:2070:HOH:O	2.19	0.43
1:A:554:PRO:HG2	1:A:555:LEU:HD22	2.01	0.42
1:A:30:GLU:OE2	1:A:31:ARG:NH1	2.33	0.42
1:A:435:SER:N	1:A:436:PRO:CD	2.82	0.42
1:A:414:GLU:HA	1:A:415:PRO:HD3	1.94	0.42
1:A:122:TRP:CH2	1:A:132:ARG:HD2	2.55	0.42
1:A:486:THR:HG21	1:A:519:ARG:NH1	2.34	0.42
1:A:436:PRO:HG2	1:A:438:PHE:CE2	2.55	0.41
1:A:87:HIS:ND1	1:A:88:VAL:HG13	2.35	0.41
1:A:166:LEU:HD22	1:A:180:VAL:CG1	2.49	0.41
1:A:544:LYS:HD3	1:A:583:LYS:HE3	2.03	0.41
1:A:112:GLN:HG3	1:A:115:GLU:OE2	2.21	0.40
1:A:27:THR:HG21	2:A:1689:GNP:H8	2.01	0.40
1:A:164:MET:HG3	1:A:257:PRO:HB3	2.03	0.40
1:A:116:PRO:O	1:A:119:GLU:HB3	2.21	0.40
1:A:12:LEU:HD12	1:A:78:ARG:HB3	2.02	0.40
1:A:319:ASP:OD2	1:A:363:ARG:NH2	2.55	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	624/691 (90%)	584 (94%)	30 (5%)	10 (2%)	12 21

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	65	ILE
1	A	443	HIS
1	A	86	GLY
1	A	87	HIS
1	A	445	GLU
1	A	687	LEU
1	A	89	ASP
1	A	554	PRO
1	A	85	PRO
1	A	404	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	511/581 (88%)	461 (90%)	50 (10%)	10 19

All (50) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	LEU

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Mol	Chain	Res	Type
1	A	22	ASP
1	A	27	THR
1	A	30	GLU
1	A	33	LEU
1	A	83	ASP
1	A	89	ASP
1	A	95	GLU
1	A	97	SER
1	A	98	MET
1	A	114	VAL
1	A	130	VAL
1	A	146	LEU
1	A	166	LEU
1	A	181	LEU
1	A	206	LEU
1	A	232	LEU
1	A	254	LYS
1	A	260	LEU
1	A	273	LEU
1	A	280	LEU
1	A	292	THR
1	A	297	GLU
1	A	319	ASP
1	A	328	ILE
1	A	363	ARG
1	A	369	LEU
1	A	377	VAL
1	A	381	LYS
1	A	385	THR
1	A	389	LEU
1	A	396	ARG
1	A	437	THR
1	A	442	THR
1	A	450	ILE
1	A	481	VAL
1	A	506	GLN
1	A	517	LEU
1	A	542	VAL
1	A	575	VAL
1	A	580	MET
1	A	635	GLU
1	A	649	LEU

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Mol	Chain	Res	Type
1	A	657	THR
1	A	659	LEU
1	A	663	THR
1	A	677	GLN
1	A	678	GLU
1	A	681	LYS
1	A	682	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	137	ASN
1	A	154	GLN
1	A	165	GLN
1	A	226	ASN
1	A	306	ASN
1	A	506	GLN
1	A	509	HIS
1	A	543	GLN
1	A	551	GLN
1	A	625	ASN
1	A	682	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 carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

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	GNP	A	1689	3	28,34,34	1.88	6 (21%)	33,54,54	2.41	9 (27%)

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	GNP	A	1689	3	-	1/12/38/38	0/3/3/3

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1689	GNP	PB-O3A	-4.68	1.53	1.59
2	A	1689	GNP	PB-O2B	-3.03	1.48	1.56
2	A	1689	GNP	C8-N7	-2.21	1.30	1.34
2	A	1689	GNP	PB-O1B	2.46	1.48	1.46
2	A	1689	GNP	C6-N1	3.91	1.40	1.33
2	A	1689	GNP	PG-O1G	4.71	1.51	1.46

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1689	GNP	C5-C6-N1	-7.79	112.94	123.59
2	A	1689	GNP	O1G-PG-N3B	-4.11	105.59	111.90
2	A	1689	GNP	O2G-PG-O1G	-3.70	103.66	113.49
2	A	1689	GNP	PA-O3A-PB	-3.59	120.64	132.67
2	A	1689	GNP	N3-C2-N1	-2.65	123.41	127.44
2	A	1689	GNP	C4-C5-N7	2.23	111.53	109.48
2	A	1689	GNP	O3G-PG-O2G	2.47	114.89	107.58
2	A	1689	GNP	O2B-PB-O1B	3.86	118.06	110.00
2	A	1689	GNP	C6-N1-C2	5.82	124.02	115.94

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1689	GNP	O1G-PG-N3B-PB

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1689	GNP	3	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	632/691 (91%)	0.68	85 (13%) 4 4	30, 47, 89, 150	0

All (85) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	447	GLY	14.5
1	A	86	GLY	12.3
1	A	438	PHE	7.3
1	A	64	THR	7.1
1	A	87	HIS	7.0
1	A	435	SER	6.9
1	A	407	PRO	6.3
1	A	41	LYS	6.3
1	A	63	ILE	5.9
1	A	88	VAL	5.7
1	A	446	THR	5.5
1	A	92	ILE	5.5
1	A	404	VAL	5.4
1	A	415	PRO	5.3
1	A	62	GLY	5.2
1	A	476	VAL	5.0
1	A	405	PRO	4.9
1	A	40	HIS	4.9
1	A	61	ARG	4.8
1	A	402	ILE	4.8
1	A	321	TYR	4.4
1	A	582	PHE	4.3
1	A	21	ILE	4.1
1	A	443	HIS	4.0
1	A	458	SER	4.0
1	A	401	SER	3.8
1	A	66	THR	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	445	GLU	3.5
1	A	91	THR	3.5
1	A	85	PRO	3.5
1	A	510	VAL	3.5
1	A	461	ILE	3.4
1	A	487	ILE	3.4
1	A	503	GLY	3.4
1	A	448	SER	3.2
1	A	577	SER	3.2
1	A	457	LEU	3.2
1	A	65	ILE	3.2
1	A	454	MET	3.1
1	A	437	THR	3.0
1	A	295	GLU	3.0
1	A	635	GLU	3.0
1	A	320	PRO	2.9
1	A	436	PRO	2.9
1	A	508	GLY	2.8
1	A	90	PHE	2.7
1	A	441	SER	2.7
1	A	139	MET	2.7
1	A	342	TYR	2.7
1	A	657	THR	2.7
1	A	486	THR	2.6
1	A	661	SER	2.6
1	A	246	ILE	2.5
1	A	414	GLU	2.4
1	A	137	ASN	2.4
1	A	84	ALA	2.4
1	A	612	THR	2.4
1	A	688	ILE	2.4
1	A	615	GLU	2.3
1	A	459	LEU	2.3
1	A	451	ILE	2.3
1	A	563	ILE	2.3
1	A	620	VAL	2.3
1	A	479	PRO	2.3
1	A	546	ILE	2.2
1	A	647	VAL	2.2
1	A	294	PRO	2.2
1	A	403	GLU	2.2
1	A	502	GLY	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	601	ILE	2.2
1	A	590	ILE	2.1
1	A	626	ALA	2.1
1	A	261	GLY	2.1
1	A	452	SER	2.1
1	A	565	VAL	2.1
1	A	581	ALA	2.1
1	A	512	ILE	2.1
1	A	297	GLU	2.1
1	A	217	VAL	2.0
1	A	413	ILE	2.0
1	A	654	GLY	2.0
1	A	262	SER	2.0
1	A	22	ASP	2.0
1	A	79	ILE	2.0
1	A	129	LYS	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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
2	GNP	A	1689	32/32	0.91	0.19	-0.38	41,47,80,88	32
3	MG	A	1690	1/1	0.80	0.21	-	69,69,69,69	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.