



# Full wwPDB X-ray Structure Validation Report ⓘ

Nov 5, 2023 – 01:35 AM EDT

PDB ID : 3GB3  
Title : X-ray structure of genetically encoded photosensitizer KillerRed in native form  
Authors : Pletnev, S.; Pletneva, N.V.; Pletnev, V.Z.  
Deposited on : 2009-02-18  
Resolution : 1.75 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

<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>.

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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 : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
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) : 2.36

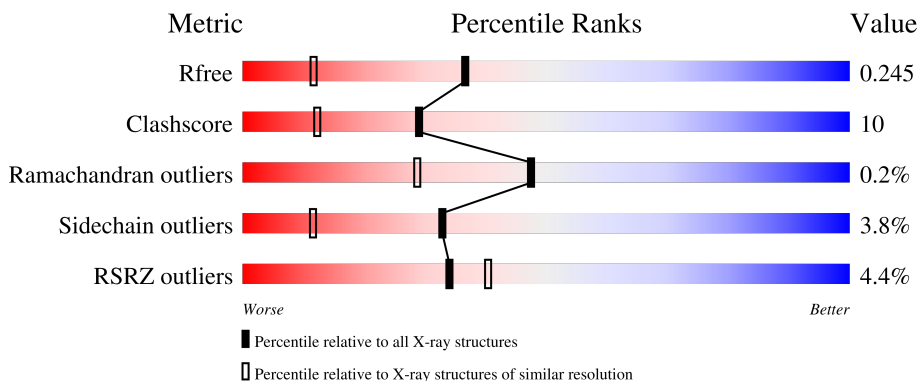
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

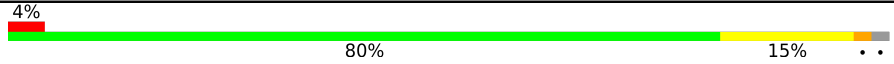
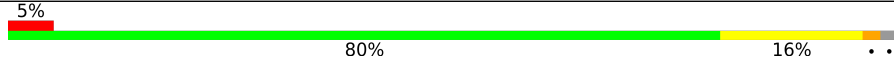
The reported resolution of this entry is 1.75 Å.

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	2340 (1.76-1.76)
Clashscore	141614	2466 (1.76-1.76)
Ramachandran outliers	138981	2437 (1.76-1.76)
Sidechain outliers	138945	2437 (1.76-1.76)
RSRZ outliers	127900	2298 (1.76-1.76)

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  $\geq 3$ , 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	235	 4% 80% 15% ..
1	B	235	 5% 80% 16% ..

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 3916 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 KillerRed.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	230	Total 1831	C 1157	N 314	O 345	S 15	0	5	0
1	B	230	Total 1835	C 1162	N 314	O 343	S 16	0	6	0

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	O	S		
2	A	1	Total 5	O 4	S 1	0	0
2	A	1	Total 5	O 4	S 1	0	0
2	B	1	Total 5	O 4	S 1	0	0
2	B	1	Total 5	O 4	S 1	0	0

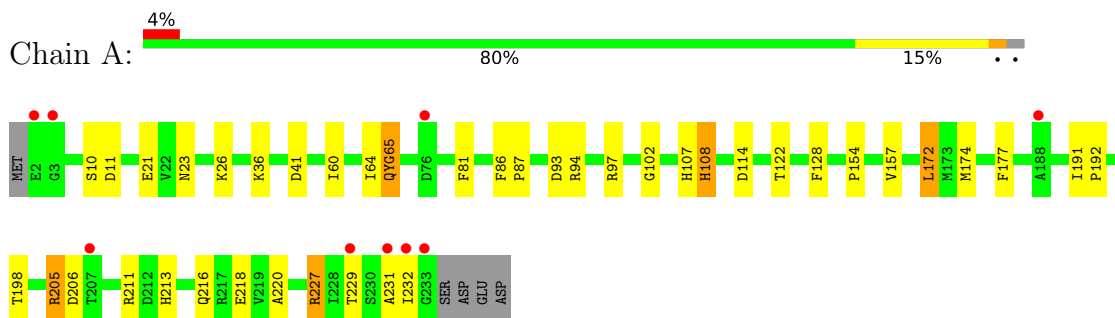
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	121	Total 121	O 121	0	0
3	B	109	Total 109	O 109	0	0

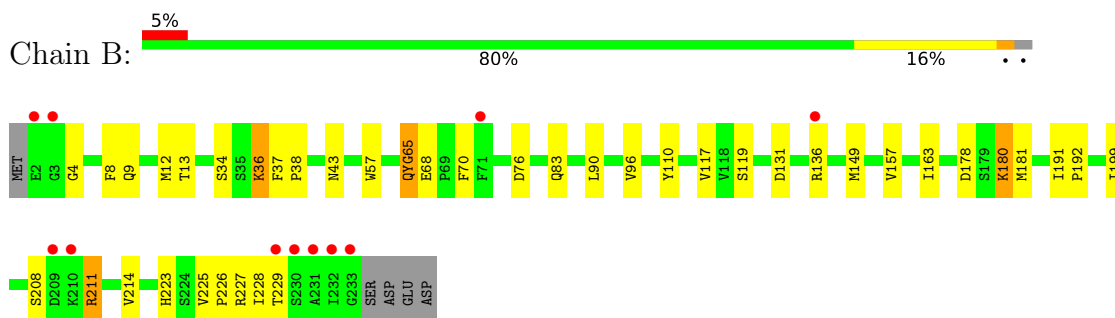
### 3 Residue-property plots

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: KillerRed



- Molecule 1: KillerRed



## 4 Data and refinement statistics i

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	72.02Å 73.68Å 78.66Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.48 – 1.75 20.48 – 1.75	Depositor EDS
% Data completeness (in resolution range)	92.8 (20.48-1.75) 92.8 (20.48-1.75)	Depositor EDS
$R_{merge}$	0.04	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.72 (at 1.75Å)	Xtrriage
Refinement program	REFMAC	Depositor
R, $R_{free}$	0.186 , 0.244 0.187 , 0.245	Depositor DCC
$R_{free}$ test set	1648 reflections (4.14%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	31.5	Xtrriage
Anisotropy	0.091	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 55.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.023 for k,h,-l	Xtrriage
$F_o, F_c$ correlation	0.97	EDS
Total number of atoms	3916	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	35.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.99% 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, 0.333 respectively for untwinned datasets, and 0.375, 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: CRQ, SO4

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	0.82	0/1870	0.84	2/2533 (0.1%)
1	B	0.78	1/1877 (0.1%)	0.78	0/2543
All	All	0.80	1/3747 (0.0%)	0.81	2/5076 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	225	VAL	CB-CG1	-5.08	1.42	1.52

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	41	ASP	CB-CG-OD1	6.64	124.28	118.30
1	A	94	ARG	NE-CZ-NH1	-5.53	117.54	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	1831	0	1743	36	0
1	B	1835	0	1752	36	0
2	A	10	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	10	0	0	0	0
3	A	121	0	0	5	0
3	B	109	0	0	5	0
All	All	3916	0	3495	69	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 (69) 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:B:65:CRQ:CA3	1:B:68:GLU:N	1.96	1.28
1:B:65:CRQ:C3	1:B:68:GLU:CA	2.08	1.28
1:B:226:PRO:HD2	3:B:278:HOH:O	1.26	1.27
1:B:36:LYS:HD2	1:B:36:LYS:N	1.58	1.13
1:A:227:ARG:HG3	1:A:227:ARG:HH11	1.09	1.11
1:B:65:CRQ:O3	1:B:68:GLU:N	1.82	1.11
1:A:10:SER:HB3	3:A:342:HOH:O	1.50	1.09
1:A:205:ARG:HH11	1:A:205:ARG:HG3	1.17	1.07
1:B:36:LYS:H	1:B:36:LYS:CD	1.62	1.07
1:B:223:HIS:HD2	3:B:314:HOH:O	1.48	0.97
1:B:65:CRQ:C3	1:B:68:GLU:N	0.79	0.94
1:A:206:ASP:H	1:A:213:HIS:HE1	1.15	0.91
1:A:227:ARG:HG3	1:A:227:ARG:NH1	1.87	0.87
1:A:205:ARG:HH11	1:A:205:ARG:CG	1.88	0.87
1:A:205:ARG:HG3	1:A:205:ARG:NH1	1.91	0.85
1:B:36:LYS:HD2	1:B:36:LYS:H	0.75	0.84
1:A:21:GLU:HG3	3:A:265:HOH:O	1.78	0.83
1:A:227:ARG:HH11	1:A:227:ARG:CG	1.92	0.82
1:A:93:ASP:OD1	1:A:107:HIS:HD2	1.66	0.78
1:A:206:ASP:H	1:A:213:HIS:CE1	2.04	0.72
1:A:232:ILE:HA	1:B:43:ASN:HD21	1.59	0.68
1:A:154:PRO:C	1:A:191:ILE:HD11	2.16	0.65
1:B:96:VAL:HG11	1:B:163:ILE:HD11	1.79	0.65
1:B:180:LYS:HD3	3:B:280:HOH:O	1.97	0.65
1:B:199:ILE:HB	3:B:347:HOH:O	1.98	0.64
1:A:232:ILE:HA	1:B:43:ASN:ND2	2.14	0.63
1:A:231:ALA:O	1:B:43:ASN:ND2	2.32	0.63
1:A:23:ASN:HD21	1:A:128:PHE:H	1.48	0.59
1:B:208:SER:HB3	1:B:211:ARG:O	2.02	0.58
1:B:178:ASP:OD1	1:B:180:LYS:HE2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:GLU:HG3	3:A:273:HOH:O	2.04	0.57
1:B:211:ARG:HH21	1:B:211:ARG:HG3	1.71	0.56
1:B:65:CRQ:C3	1:B:68:GLU:HA	2.26	0.55
1:B:157[A]:VAL:HG23	1:B:181:MET:HE2	1.87	0.55
1:A:21:GLU:HB3	1:A:26:LYS:HD3	1.90	0.53
1:B:65:CRQ:HD2	1:B:65:CRQ:N2	2.22	0.53
1:B:4:GLY:HA2	1:B:83:GLN:O	2.10	0.52
1:B:211:ARG:HG3	1:B:211:ARG:NH2	2.25	0.52
1:A:10:SER:CB	3:A:342:HOH:O	2.29	0.50
1:A:65:CRQ:HB12	1:A:216:GLN:NE2	2.28	0.49
1:A:108:HIS:N	1:A:108:HIS:CD2	2.80	0.49
1:B:96:VAL:CG1	1:B:163:ILE:HD11	2.42	0.48
1:A:11:ASP:CG	1:A:36:LYS:HG2	2.35	0.47
1:B:211:ARG:HH21	1:B:211:ARG:CG	2.26	0.47
1:B:57:TRP:CD2	1:B:214:VAL:HG21	2.50	0.46
1:B:131:ASP:HA	1:B:136:ARG:HD2	1.98	0.46
1:A:86:PHE:HB3	1:A:87:PRO:HA	1.98	0.46
1:A:81:PHE:CD2	1:A:157:VAL:HG22	2.51	0.45
1:A:65:CRQ:HB11	1:A:218:GLU:OE2	2.17	0.45
1:A:97:ARG:NH2	2:A:238:SO4:O2	2.35	0.45
1:A:65:CRQ:HD2	1:A:65:CRQ:N2	2.32	0.44
1:A:198:THR:O	1:A:220:ALA:HA	2.18	0.43
1:B:70:PHE:CZ	1:B:117:VAL:HG11	2.53	0.43
1:B:76:ASP:HB3	3:B:337:HOH:O	2.18	0.43
1:A:172:LEU:HD22	1:A:174:MET:HE2	2.01	0.42
1:B:163:ILE:HD13	1:B:163:ILE:HG21	1.81	0.42
1:B:37:PHE:CD1	1:B:38:PRO:HA	2.52	0.42
1:B:110:TYR:CE1	1:B:119[B]:SER:HB2	2.55	0.42
1:A:65:CRQ:HB12	1:A:216:GLN:HE21	1.84	0.42
1:A:102:GLY:HA3	1:A:128:PHE:CD2	2.54	0.42
1:A:211:ARG:O	1:A:213:HIS:HD2	2.03	0.42
1:B:191:ILE:HA	1:B:192:PRO:HD2	1.94	0.41
1:B:149:MET:HE3	1:B:157[B]:VAL:HG11	2.02	0.41
1:A:60:ILE:O	1:A:60:ILE:HG22	2.21	0.41
1:A:64:ILE:O	1:A:65:CRQ:HG11	2.20	0.41
1:B:8:PHE:CD1	1:B:12:MET:SD	3.15	0.40
1:A:192:PRO:HG3	3:A:321:HOH:O	2.21	0.40
1:B:13:THR:HA	1:B:34:SER:HA	2.04	0.40
1:A:93:ASP:OD1	1:A:107:HIS:CD2	2.58	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	230/235 (98%)	218 (95%)	11 (5%)	1 (0%)	34	17
1	B	231/235 (98%)	221 (96%)	10 (4%)	0	100	100
All	All	461/470 (98%)	439 (95%)	21 (5%)	1 (0%)	47	29

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	114	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	202/202 (100%)	194 (96%)	8 (4%)	31	10
1	B	203/202 (100%)	195 (96%)	8 (4%)	32	11
All	All	405/404 (100%)	389 (96%)	16 (4%)	33	10

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	108	HIS
1	A	122[A]	THR
1	A	122[B]	THR
1	A	172	LEU
1	A	177	PHE

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Mol	Chain	Res	Type
1	A	205	ARG
1	A	227	ARG
1	A	229	THR
1	B	9	GLN
1	B	36	LYS
1	B	90	LEU
1	B	180	LYS
1	B	211	ARG
1	B	227	ARG
1	B	228	ILE
1	B	229	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	23	ASN
1	A	43	ASN
1	A	107	HIS
1	A	213	HIS
1	B	9	GLN
1	B	43	ASN
1	B	124	ASN
1	B	223	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues 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
1	CRQ	B	65	-	24,25,26	2.06	7 (29%)	27,34,36	1.46	2 (7%)
1	CRQ	A	65	-	24,25,26	1.10	1 (4%)	27,34,36	1.11	2 (7%)

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	CRQ	B	65	-	-	0/10/32/33	0/2/2/2
1	CRQ	A	65	-	-	3/10/32/33	0/2/2/2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	65	CRQ	OH-CZ	-6.54	1.21	1.37
1	A	65	CRQ	CA1-N1	-4.40	1.16	1.27
1	B	65	CRQ	CD3-NE1	-3.88	1.20	1.32
1	B	65	CRQ	O2-C2	-3.20	1.16	1.23
1	B	65	CRQ	C1-N2	-2.64	1.27	1.33
1	B	65	CRQ	CA3-N3	-2.36	1.42	1.47
1	B	65	CRQ	OE1-CD3	2.12	1.30	1.24
1	B	65	CRQ	CA2-C2	-2.10	1.46	1.48

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	65	CRQ	O3-C3-CA3	-4.85	111.74	126.39
1	A	65	CRQ	O3-C3-CA3	-3.92	114.55	126.39
1	B	65	CRQ	CA2-C2-N3	-3.09	101.91	103.37
1	A	65	CRQ	CG2-CB2-CA2	-2.56	126.81	129.94

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	65	CRQ	C1-CA1-CB1-CG1
1	A	65	CRQ	C2-CA2-CB2-CG2
1	A	65	CRQ	N2-CA2-CB2-CG2

There are no ring outliers.

2 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	65	CRQ	6	0
1	A	65	CRQ	5	0

## 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	$\# Z  > 2$
2	SO4	A	239	-	4,4,4	0.17	0	6,6,6	0.13	0
2	SO4	B	238	-	4,4,4	0.15	0	6,6,6	0.28	0
2	SO4	A	238	-	4,4,4	0.11	0	6,6,6	0.26	0
2	SO4	B	239	-	4,4,4	0.13	0	6,6,6	0.27	0

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
2	A	238	SO4	1	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	2
1	B	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	65:CRQ	C3	68:GLU	N	1.12
1	B	64:ILE	C	65:CRQ	N1	1.11
1	A	64:ILE	C	65:CRQ	N1	1.08
1	B	65:CRQ	C3	68:GLU	N	0.79

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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	229/235 (97%)	0.24	9 (3%) 39 45	23, 31, 53, 66	0
1	B	229/235 (97%)	0.28	11 (4%) 30 36	22, 35, 54, 70	0
All	All	458/470 (97%)	0.26	20 (4%) 34 40	22, 33, 54, 70	0

All (20) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	232	ILE	7.2
1	B	231	ALA	6.4
1	A	3	GLY	5.1
1	A	231	ALA	4.7
1	A	188	ALA	4.4
1	A	2	GLU	4.1
1	A	76[A]	ASP	3.8
1	A	207	THR	3.5
1	B	230	SER	3.5
1	A	229	THR	3.1
1	B	2	GLU	3.0
1	B	229	THR	3.0
1	B	3	GLY	2.8
1	A	232	ILE	2.6
1	B	210	LYS	2.6
1	A	233	GLY	2.6
1	B	233	GLY	2.6
1	B	71	PHE	2.2
1	B	136	ARG	2.2
1	B	209	ASP	2.1

## 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, 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	B-factors(Å <sup>2</sup> )	Q<0.9
1	CRQ	B	65	24/25	0.90	0.10	30,36,39,42	0
1	CRQ	A	65	24/25	0.93	0.10	27,30,32,35	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, 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	B-factors(Å <sup>2</sup> )	Q<0.9
2	SO4	A	238	5/5	0.87	0.12	82,82,82,82	0
2	SO4	A	239	5/5	0.93	0.16	74,75,75,75	0
2	SO4	B	238	5/5	0.96	0.08	63,64,65,66	0
2	SO4	B	239	5/5	0.97	0.12	68,69,69,69	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.