

wwPDB X-ray Structure Validation Summary Report (i)

Aug 29, 2020 – 03:13 PM BST

PDB ID	:	4QYK
Title	:	Crystal structure of a canine parvovirus variant
Authors	:	Lukk, T.; Organtini, L.J.; Hafenstein, S.U.
Deposited on	:	2014-07-24
$\operatorname{Resolution}$:	3.50 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 following versions of software and data (see references (1)) were used in the production of this report:

MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.13
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)	:	2.13

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 3.50 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	$egin{array}{c} { m Whole \ archive} \ (\#{ m Entries}) \end{array}$	${igstyle { Similar resolution} \ (\#Entries, resolution range(Å)) }$		
R_{free}	130704	1659 (3.60-3.40)		
Ramachandran outliers	138981	1005 (3.58-3.42)		
Sidechain outliers	138945	1006 (3.58-3.42)		
RSRZ outliers	127900	1559 (3.60-3.40)		

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 >=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	А	584	90%	• 6%
1	В	584	90%	• • 6%
1	С	584	% 	• 6%
1	D	584	% 	• • 6%
1	Е	584	90%	• • 6%
1	F	584	% 89%	• 6%
1	G	584	% 	• • 6%



Continued from previous page...

Mol	Chain	Length	Quality of chain			
1	Ц	584	%			
	11	004	89% %	•	6%	6
1	Ι	584	90%	•	6	5%
1	т	584	%			20/
	J	004	90% %	•		.%
1	К	584	90%	•	• 6	i%
1	L	584	89%	•.	69	/0
	24	50.4	%			_
	M	584	90%	•	• 6	%
1	Ν	584	89%	•	• 6	ì%
1		59.4	%			
	0	004	89% %	•	6%	6
1	Р	584	90%	•	6%	%
1	0	584	% • 80%	-	. 6	30/6
	~	001	% *			
1	R	584	90%	•	·	6%
1	S	584	²⁰ 89%	•	• 6	5%
1	T	E0.4	%		_	
	1	384	90%	•	6	.%
1	U	584	89%	•	• 6	5%
1	V	584	%			
	v	004	90% %	•		
1	W	584	90%	•	• 6	;%
1	X	584	% • 80%		• 6	30%
-		001	%			
1	Y	584	90%	•	• 6	;%
1	Z	584	% • 89%	•	6%	6
			%		_	
	a	584	90%	•	6	%
1	b	584	90%	•	6	3%
-1		50.4	%			
	С	584	89%	•	6%	6
1	d	584	89%	•	• 6	5%



2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 130590 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.

Mol	Chain	Residues		At	oms			ZeroOcc	AltConf	Trace
1	А	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	Е	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	J	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	Ν	548	Total 4352	С 2767	N 740	O 830	S 15	0	0	0
1	Q	548	Total 4352	С 2767	N 740	O 830	S 15	0	0	0
1	В	548	Total 4352	С 2767	N 740	O 830	S 15	0	0	0
1	С	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	D	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	F	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	G	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	Н	548	Total 4352	C 2767	N 740	O 830	S 15	0	0	0
1	Ι	548	Total 4352	C 2767	N 740	O 830	${ m S}$ 15	0	0	0
1	К	548	Total 4352	C 2767	N 740	O 830	$\frac{S}{15}$	0	0	0
1	L	548	$\begin{array}{c} \text{Total} \\ 4352 \end{array}$	$\begin{array}{c} \mathrm{C} \\ 2767 \end{array}$	N 740	O 830	S 15	0	0	0
1	М	548	Total 4352	С 2767	N 740	O 830	S 15	0	0	0
1	Ο	548	Total 4352	С 2767	N 740	O 830	S 15	0	0	0

• Molecule 1 is a protein called Capsid protein VP1.



Mol	Chain	Residues		At	oms			ZeroOcc	AltConf	Trace
1	р	548	Total	С	Ν	Ο	S	0	0	0
1	L	040	4352	2767	740	830	15	0	0	0
1	B	548	Total	\mathbf{C}	Ν	Ο	\mathbf{S}	0	0	0
	10	010	4352	2767	740	830	15	0	0	
1	S	548	Total	С	N	0	S	0	0	0
			4352	2767	740	830	15	_		
1	Т	548	Total	C	N	0	S	0	0	0
			4352	2767	740	830	15			
1	U	548	Total	C	N	0	S	0	0	0
			4352	2767	740	830	15			
1	V	548	Total	C	N	O 000	S 1 F	0	0	0
			4352	2767	740	830	15			
1	W	548	Total	C	N	0	S 15	0	0	0
			4352	2767	740 N	830	15			
1	Х	548	Total 4259	0767	N 740	0	১ 1 চ	0	0	0
			430Z	2707	(40 N	830	10 C			
1	Y	548	10ta1 4259	0767	IN 740	0 020	ろ 15	0	0	0
			4002 Total	2707 C	140 N	000	10 C			
1	Z	548	10tai 4250	0767	1N 740	020	い 15	0	0	0
			4352 Total	2101 C	140 N	030	10 S			
1	a	548	10tai 4359	2767	1N 740	830	5 15	0	0	0
			4352 Total	2101 C	140 N	030	10 S			
1	b	548	10tai 4359	2767	740	830	15	0	0	0
			Total	<u>2101</u> C	N	000	$\frac{15}{S}$			
1	с	548	4352	2767	740	830	15	0	0	0
			Total	<u> </u>	N	0	<u>S</u>			
1	d	548	4352	2767	740	830	15	0	0	0

Continued from previous page...

There are 150 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
А	60	TYR	GLU	CONFLICT	UNP P90456
А	104	GLU	GLN	CONFLICT	UNP P90456
A	426	ASP	ASN	CONFLICT	UNP P90456
А	509	GLN	GLU	CONFLICT	UNP P90456
A	555	VAL	ILE	CONFLICT	UNP P90456
Е	60	TYR	GLU	CONFLICT	UNP P90456
E	104	GLU	GLN	CONFLICT	UNP P90456
Е	426	ASP	ASN	CONFLICT	UNP P90456
Е	509	GLN	GLU	CONFLICT	UNP P90456
Е	555	VAL	ILE	CONFLICT	UNP P90456
J	60	TYR	GLU	CONFLICT	UNP P90456



4Q	ľΚ
----	----

Chain	Residue	Modelled	Actual	Comment	Reference
J	104	GLU	GLN	CONFLICT	UNP P90456
J	426	ASP	ASN	CONFLICT	UNP P90456
J	509	GLN	GLU	CONFLICT	UNP P90456
J	555	VAL	ILE	CONFLICT	UNP P90456
N	60	TYR	GLU	CONFLICT	UNP P90456
N	104	GLU	GLN	CONFLICT	UNP P90456
N	426	ASP	ASN	CONFLICT	UNP P90456
N	509	GLN	GLU	CONFLICT	UNP P90456
N	555	VAL	ILE	CONFLICT	UNP P90456
Q	60	TYR	GLU	CONFLICT	UNP P90456
Q	104	GLU	GLN	CONFLICT	UNP P90456
Q	426	ASP	ASN	CONFLICT	UNP P90456
Q	509	GLN	GLU	CONFLICT	UNP P90456
Q	555	VAL	ILE	CONFLICT	UNP P90456
В	60	TYR	GLU	CONFLICT	UNP P90456
В	104	GLU	GLN	CONFLICT	UNP P90456
В	426	ASP	ASN	CONFLICT	UNP P90456
В	509	GLN	GLU	CONFLICT	UNP P90456
В	555	VAL	ILE	CONFLICT	UNP P90456
С	60	TYR	GLU	CONFLICT	UNP P90456
С	104	GLU	GLN	CONFLICT	UNP P90456
С	426	ASP	ASN	CONFLICT	UNP P90456
С	509	GLN	GLU	CONFLICT	UNP P90456
С	555	VAL	ILE	CONFLICT	UNP P90456
D	60	TYR	GLU	CONFLICT	UNP P90456
D	104	GLU	GLN	CONFLICT	UNP P90456
D	426	ASP	ASN	CONFLICT	UNP P90456
D	509	GLN	GLU	CONFLICT	UNP P90456
D	555	VAL	ILE	CONFLICT	UNP P90456
F	60	TYR	GLU	CONFLICT	UNP P90456
F	104	GLU	GLN	CONFLICT	UNP P90456
F	426	ASP	ASN	CONFLICT	UNP P90456
F	509	GLN	GLU	CONFLICT	UNP P90456
F	555	VAL	ILE	CONFLICT	UNP P90456
G	60	TYR	GLU	CONFLICT	UNP P90456
G	104	GLU	GLN	CONFLICT	UNP P90456
G	426	ASP	ASN	CONFLICT	UNP P90456
G	509	GLN	GLU	CONFLICT	UNP P90456
G	555	VAL	ILE	CONFLICT	UNP P90456
H H	60	TYR	GLU	CONFLICT	UNP P90456
<u> </u>	104	GLU	GLN	CONFLICT	UNP P90456
H	426	ASP	ASN	CONFLICT	UNP P90456



Comment

Reference

Actual

Η	509	GLN	GLU	CONFLICT	UNP P90456
Н	555	VAL	ILE	CONFLICT	UNP P90456
Ι	60	TYR	GLU	CONFLICT	UNP P90456
Ι	104	GLU	GLN	CONFLICT	UNP P90456
Ι	426	ASP	ASN	CONFLICT	UNP P90456
Ι	509	GLN	GLU	CONFLICT	UNP P90456
Ι	555	VAL	ILE	CONFLICT	UNP P90456
Κ	60	TYR	GLU	CONFLICT	UNP P90456
Κ	104	GLU	GLN	CONFLICT	UNP P90456
Κ	426	ASP	ASN	CONFLICT	UNP P90456
Κ	509	GLN	GLU	CONFLICT	UNP P90456
Κ	555	VAL	ILE	CONFLICT	UNP P90456
L	60	TYR	GLU	CONFLICT	UNP P90456
L	104	GLU	GLN	CONFLICT	UNP P90456
L	426	ASP	ASN	CONFLICT	UNP P90456
L	509	GLN	GLU	CONFLICT	UNP P90456
L	555	VAL	ILE	CONFLICT	UNP P90456
М	60	TYR	GLU	CONFLICT	UNP P90456
М	104	GLU	GLN	CONFLICT	UNP P90456
М	426	ASP	ASN	CONFLICT	UNP P90456
М	509	GLN	GLU	CONFLICT	UNP P90456
М	555	VAL	ILE	CONFLICT	UNP P90456
0	60	TYR	GLU	CONFLICT	UNP P90456
Ο	104	GLU	GLN	CONFLICT	UNP P90456
Ο	426	ASP	ASN	CONFLICT	UNP P90456
Ο	509	GLN	GLU	CONFLICT	UNP P90456
Ο	555	VAL	ILE	CONFLICT	UNP P90456
Р	60	TYR	GLU	CONFLICT	UNP P90456
Р	104	GLU	GLN	CONFLICT	UNP P90456
Р	426	ASP	ASN	CONFLICT	UNP P90456
Р	509	GLN	GLU	CONFLICT	UNP P90456
Р	555	VAL	ILE	CONFLICT	UNP P90456
R	60	TYR	GLU	CONFLICT	UNP P90456
R	104	GLU	GLN	CONFLICT	UNP P90456
R	426	ASP	ASN	CONFLICT	UNP P90456
R	509	GLN	GLU	CONFLICT	UNP P90456
R	555	VAL	ILE	CONFLICT	UNP P90456
S	60	TYR	GLU	CONFLICT	UNP P90456
S	104	GLU	GLN	CONFLICT	UNP P90456
S	426	ASP	ASN	CONFLICT	UNP P90456
S	509	GLN	GLU	CONFLICT	UNP P90456
S	555	VAL	ILE	CONFLICT	UNP P90456

Continued from previous page...ChainResidueModelled



Chain	Residue	Modelled	Actual	Comment	Reference
Т	60	TYR	GLU	CONFLICT	UNP P90456
Т	104	GLU	GLN	CONFLICT	UNP P90456
Т	426	ASP	ASN	CONFLICT	UNP P90456
Т	509	GLN	GLU	CONFLICT	UNP P90456
Т	555	VAL	ILE	CONFLICT	UNP P90456
U	60	TYR	GLU	CONFLICT	UNP P90456
U	104	GLU	GLN	CONFLICT	UNP P90456
U	426	ASP	ASN	CONFLICT	UNP P90456
U	509	GLN	GLU	CONFLICT	UNP P90456
U	555	VAL	ILE	CONFLICT	UNP P90456
V	60	TYR	GLU	CONFLICT	UNP P90456
V	104	GLU	GLN	CONFLICT	UNP P90456
V	426	ASP	ASN	CONFLICT	UNP P90456
V	509	GLN	GLU	CONFLICT	UNP P90456
V	555	VAL	ILE	CONFLICT	UNP P90456
W	60	TYR	GLU	CONFLICT	UNP P90456
W	104	GLU	GLN	CONFLICT	UNP P90456
W	426	ASP	ASN	CONFLICT	UNP P90456
W	509	GLN	GLU	CONFLICT	UNP P90456
W	555	VAL	ILE	CONFLICT	UNP P90456
X	60	TYR	GLU	CONFLICT	UNP P90456
X	104	GLU	GLN	CONFLICT	UNP P90456
X	426	ASP	ASN	CONFLICT	UNP P90456
X	509	GLN	GLU	CONFLICT	UNP P90456
Х	555	VAL	ILE	CONFLICT	UNP P90456
Y	60	TYR	GLU	CONFLICT	UNP P90456
Y	104	GLU	GLN	CONFLICT	UNP P90456
Y	426	ASP	ASN	CONFLICT	UNP P90456
Y	509	GLN	GLU	CONFLICT	UNP P90456
Y	555	VAL	ILE	CONFLICT	UNP P90456
Z	60	TYR	GLU	CONFLICT	UNP P90456
Z	104	GLU	GLN	CONFLICT	UNP P90456
Z	426	ASP	ASN	CONFLICT	UNP P90456
Z	509	GLN	GLU	CONFLICT	UNP P90456
Z	555	VAL	ILE	CONFLICT	UNP P90456
a	60	TYR	GLU	CONFLICT	UNP P90456
a	104	GLU	GLN	CONFLICT	UNP P90456
a	426	ASP	ASN	CONFLICT	UNP P90456
a	509	GLN	GLU	CONFLICT	UNP P90456
a	555	VAL	ILE	CONFLICT	UNP P90456
b	60	TYR	GLU	CONFLICT	UNP P90456
b	104	GLU	GLN	CONFLICT	UNP P90456



Chain	Residue	Modelled	Actual	$\mathbf{Comment}$	Reference
b	426	ASP	ASN	CONFLICT	UNP P90456
b	509	GLN	GLU	CONFLICT	UNP P90456
b	555	VAL	ILE	CONFLICT	UNP P90456
с	60	TYR	GLU	CONFLICT	UNP P90456
с	104	GLU	GLN	CONFLICT	UNP P90456
с	426	ASP	ASN	CONFLICT	UNP P90456
с	509	GLN	GLU	CONFLICT	UNP P90456
с	555	VAL	ILE	CONFLICT	UNP P90456
d	60	TYR	GLU	CONFLICT	UNP P90456
d	104	GLU	GLN	CONFLICT	UNP P90456
d	426	ASP	ASN	CONFLICT	UNP P90456
d	509	GLN	GLU	CONFLICT	UNP P90456
d	555	VAL	ILE	CONFLICT	UNP P90456

• Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	Р	1	Total Mg 1 1	0	0
2	К	1	Total Mg 1 1	0	0
2	В	1	Total Mg 1 1	0	0
2	с	1	Total Mg 1 1	0	0
2	W	1	Total Mg 1 1	0	0
2	Ν	1	Total Mg 1 1	0	0
2	Х	1	Total Mg 1 1	0	0
2	S	1	Total Mg 1 1	0	0
2	J	2	Total Mg 2 2	0	0
2	Е	2	Total Mg 2 2	0	0
2	А	1	TotalMg11	0	0
2	R	1	TotalMg11	0	0
2	М	1	Total Mg 1 1	0	0



Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	D	1	Total Mg 1 1	0	0
2	Ι	1	Total Mg 1 1	0	0
2	Ζ	1	Total Mg 1 1	0	0
2	L	1	Total Mg 1 1	0	0
2	G	1	Total Mg 1 1	0	0
2	Q	1	Total Mg 1 1	0	0
2	d	2	Total Mg 2 2	0	0
2	Н	2	Total Mg 2 2	0	0
2	С	1	Total Mg 1 1	0	0
2	Т	1	Total Mg 1 1	0	0
2	О	1	Total Mg 1 1	0	0
2	Y	2	$\begin{array}{cc} \text{Total} & \text{Mg} \\ 2 & 2 \end{array}$	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: Capsid protein VP1



MET ASP ASP ALLA ALLA ALLA ALLA ALLA ALLA A
13 49 13 49 13 49 13 55 15 53 15 55 15 555
• Molecule 1: Capsid protein VP1
Chain Q: 89% · · 6%
MET MET ALA ALA ALA ALA ALA ALA ALA ALA ALA AL
A369 A364 A364 A364 B373 B373 B382 B383 B383 B515 A815 B515 B515 B515 B515 A815 B515 B515 B515 B515 B515 B515 B515 B
• Molecule 1: Capsid protein VP1
Chain B: 90% · · 6%
MET ALLA ALLA ALLA ALLA ALLA ALLA ALLA AL
q370 N492 N492 N492 C494 0558 N575 S576 N582 Y584 Y584
• Molecule 1: Capsid protein VP1
Chain C: 89% • 6%
NET ASP ASP ASP CLV AALA ASP CLV CLV CLV CLV CLV CLV CLV CLV CLV CLV
D367 D367 R382 R382 D513 D514 V556 V556 V556 V573 V584 V584
• Molecule 1: Capsid protein VP1
Chain D: 89% · · 6%
MET ASP ASP ASP ASP ALLA ALLA ALLA ALLA ALL
N271 1287 1287 1345 1345 1345 1345 1345 1345 1345 1345

WORLDWIDE PROTEIN DATA BANK

4	Q	Y	Κ	
Τ.	Y C		тт	

• Molecule 1: Cap	psid protein VP1	
Chain F:	89%	• 6%
MET SER ASP ASP GLV GLV PRO GLV GLV GLV GLY GLY PRO PRO	ALA VAL ASR ASR ASR ASR ASR ASN GIT GIT GIT GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER GIT SER SER SER SER SER SER SER SER SER SER	q159 P160 P160 R209 R209 R209 R260 F260 F349 A359
4364 (370 (370 (3370 (3370 (332) (332) (433) (433) (433) (433) (433) (433)	NE 17 NE 17 NE 18 NE 18	
• Molecule 1: Cap	psid protein VP1	
Chain G:	89%	• • 6%
MET SER ASP GLY GLN PRO GLY GLY GLY GLY FRO	ALA VAL ASR ASR ASR ASR ASR ASN ALA ASN ALA ASN GIT SER GIT SER GIT SER SER GIT SER SER GIT V106 V106	V153 8155 8155 7165 7165 7165 7162 7162 7162 7162 7162 7162 7162
1328 1349 1349 1359 1359 1356 1366 1366	R568 R368 1369 1369 1369 1369 1369 1425 1425 1425 11654 1154 11654 1155 1573 1573 1573 1573 1573 1573 1563 1563 1563 1563 1563 1563 1563 1563 1563 1563 1563 1563 1563 1563	
• Molecule 1: Cap	psid protein VP1	
Chain H:	89%	• 6%
MET SER ASP ASP ALA ALA ALA CLN PRO CLN ASP CLN CLN CLN CLN CLN	ALA VAL ASG ASG ASG ASG ASG ASS ASG ASS ASG ASS ASG ASS ASG ASS ASS	0188 1160 1301 13149 1364 1364 1364 1364 13664 13664
q370 R382 K387 K387 K387 A516 K536 K536 K536	N1553 N1553 N1553 N1553 N1565	
• Molecule 1: Cap	psid protein VP1	
Chain I:	90%	• 6%
MET SER ASP ASP ASP ASP ALA ALA PRO ASP CLN CLN CLN CLN CLN CLN CLN	VAL ASIG ASIG ASIG ASIG ASIG ASIN ASIN ASIN ASIN ASIN ASIN ASIN ASIN	8154 8155 8156 8157 8157 8157 8156 9155 9156 9161 7162 7162 7162 7162 7162 7162 7162 7
Q296 T349 A364 N369 R382 L457	M492 M518 M554 2576 S576 V582 V583	
• Molecule 1: Cap	psid protein VP1	
Chain K:	90%	• • 6%
MET ASER ASER ASER ALA ALA CLA PRO CLY PRO PRO	ALA VAL VAL ASN ASN AC ASN AC ASN CLY CLY CLY CLY CLY CLY CLY CLY CLY CLY	S154 E155 E155 C156 P161 P161 P161 F162 T162 T162 T162 T162 T162 T163 T163 T163 T163 T163 T163 T163 T163



1349 A559 A559 A556 A556 A515 A515 A515 A515 A515 A515	K682 1663 7584	
• Molecule 1: Capsid protein VP1		
Chain L:	89% • 6%	
MET ASP ASP ASP ASP ALA ASP ASP ASP ASP ASP ASP ASP ASP ASP AS	617 617 617 617 617 617 617 637 637 637 637 637 637 7153 8154 8154 8154 8154 8155 7152 7152 7152 7152 7152 7152 7152 7	T349 A359
1364 1366 1366 1366 1366 1388 1388 1493 1493 1493 1493 1694 1683 1673 1583 1583 1583 1583		
• Molecule 1: Capsid protein VP1		
Chain M:	90% •• 6%	
NET NET SER SER SER SER ALM VAL SER ALM ALM ALM ALM ALM ALM ALM ALM ALM ALM	01Y 01Y 01Y 01Y 01Y 01Y 01Y 0150 037 0153 0154 0150 0156 0156 0156 0156 0156 0156 0156	E368 N369 Q370
R382 H516 H543 H543 H543 N554 R558 S576 Y582 Y584		
• Molecule 1: Capsid protein VP1		
Chain O:	89% • 6%	
MET SER SER SER SER SER ALM ALM ALM ALM ALM ALM ALM ALM ALM ALM	CLY CLY CLY CLY CLY CLY CLY CLY CLY CLY	1287 1349
A359 A364 A364 A364 A364 A364 A364 A492 M493 M493 M493 M493 M493 M493 M493 M493	L582 7584 584	
• Molecule 1: Capsid protein VP1		
Chain P:	90% • 6%	
MET SER SER SER SER SER ASP CLN ASP CLN ASP CLN ASP CLN ASR CLN ASR CLN SER SER SER SER SER SER	CLY CLY CLY CLY CLY CLY CLY CLY CLY CLY	A364 (370 R382
N492 A516 S519 K536 1566 1566 X576 S576 K582 K582 K582		
• Molecule 1: Capsid protein VP1		
Chain R:	90% • • 6%	

WORLDWIDE PROTEIN DATA BANK





11	Ъ	ZT Z
40	γĭ	n

• Molecule 1: Capsid protein VP1		
Chain W:	90%	• • 6%
MET MET ALS ALS ALS ALA CLV CLV CLV ALA ALA ALA ALA ALA ALA ALA ALA ALA A	SER SER GLY GLY GLY GLY GLY GLY GLY GLY GLY GLS F165 F165 F165 F165 F165 F165 F165 F165	6300 1332 1332 1332 1332 1332 1332 1332 1
4370 4370 4387 4387 4387 4387 4433 1553 1553 1553 1553 1553 1553 1553		
• Molecule 1: Capsid protein VP1		
Chain X:	89%	• • 6%
MET SER SER ALA ALA ALA PRO PRO ALA ALA ALA ALA ALA ALA ALA ALA ALA AL	SER SER GLY GLY GLY GLY GLY GLY GLY S154 S154 S154 S154 S155 S154 S155 S155	R191 226 6227 1287 1349 A359
A364 A366 A366 B367 B367 B368 B383 B382 B383 B383 B383 B383 B383 B38	10554 1566 2576 2576 1582 1583 1583	
• Molecule 1: Capsid protein VP1		
Chain Y:	90%	• • 6%
MET SER ALA ALA ALA ALA PRO ALN PRO ALA ALA ALA ALA ALA ALA ALA ALA ALA AL	SER SER GLY GLY GLY GLY GLY GLY GLY GLY GLY GLY	H209 1287 1288 1288 1288 1288 1288 1288 1288
A364 (377) A371 A371 A371 A371 A371 A516 A516 A516 A516 A516 A516 A516 A51	2 88 2 88 2 88	
• Molecule 1: Capsid protein VP1		
Chain Z:	89%	• 6%
		. 070
MET SER SER SER ALA CLIV CLIV CLIV CLIV CLIV CLIV CLIV CLIV	SER SER GLY GLY GLY GLY GLY GLY GLY M56 GLY M56 GLY M56 SL55 S156 S156 S156 S156 S156 S156 S156 S1	0159 0160 7161 7162 8191 8209 H222
C273 T349 A366 6366 6366 6366 A364 A364 P471 D471 D471 D471 056 0549 0549	2576 2576 15882 15882	
• Molecule 1: Capsid protein VP1		
Chain a:	90%	• 6%
MET NET ALA ALA ALA ALA PRO GLY ALA ALA ALA ALA ALA ALA ALA ALA ALA A	SER GLY GLY GLY GLY GLY GLY GLY GLY GLY MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S156 MISS S157 MISS S177 MISS S175 MISS MISS MISS MISS MISS MISS MISS MIS	P160 P161 7165 7165 7165 8191 7225 8226 6227 7228
	PROTEIN DATA BANK	

G300 T349 A364 A364 A364 A364 A364 A364 A364 N517 N517 N517 N554 N554 Y573	S576 K582 L583 Y584	
• Molecule 1: Capsid protein VP	21	
Chain b:	90%	• 6%
MET ASP SER ALA ALA ALA CLA PRO CLA ALA ASP ALA ASC ALA ASC CLU ARA ASC CLU CLU CLU CLU CLU CLU CLU CLU CLU CL	ASN ASN SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY GLY GLY	167 168 188 188 188 188 188 188 188 188 188
1349 1356 1356 1356 1366 1356 1356 1358 1358 1358 1358 1358 1358 1358 1358	7673 18576 18576 1588 1588 1588	
• Molecule 1: Capsid protein VP	21	
Chain c:	89%	• 6%
MET ASP ASP ALA ALA ALA CLN CLN CLN ALA ASN ASC ASN ALA ASC ASN ASS ASS ASS ASS ASS ASS ASS ASS ASS	ASM GLY SER SER GLY GLY GLY GLY GLY GLY GLY GLY SER SER SER SER SER SER SER SER SER SER	720 8154 8154 8154 8156 8156 8156 9165 9165 9165 9165 9165 9165 9165 9
L287 1349 1349 1349 1349 1349 1349 1344 1386 1386 1386 1386 1386 1386 1386 1386	A516 M517 M517 M518 M518 M516 M516 M516 M553 M554 M552 M582 L583 K582 K582	
• Molecule 1: Capsid protein VP	21	
Chain d:	89%	•• 6%
MET ASP ALA ALA ALA ALA CLA PRO CLA ALA ASP ALA ASP ALA ASP CLA ASP CLA ASP CLA SET SET SET SET SET	ASN 617 617 617 617 74 617 817 817 817 817 817 817 817 817 817 8	188 183 183 185 185 185 185 185 185 185 185 185 185
T349 A359 A359 G360 A364 A464 A464 <td>D556 1157 11587 11587 1565 1565 1565 1573 1583 1583 1583 1583</td> <td></td>	D556 1157 11587 11587 1565 1565 1565 1573 1583 1583 1583 1583	



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 42 21 2	Depositor
Cell constants	453.10Å 453.10Å 319.02Å	Depositor
a, b, c, α , β , γ	90.00° 90.00° 90.00°	Depositor
$\mathbf{B}_{\mathrm{ascolution}}(\mathbf{\hat{A}})$	49.99 - 3.50	Depositor
Resolution (A)	49.99 - 3.50	EDS
% Data completeness	99.8 (49.99-3.50)	Depositor
(in resolution range)	96.4(49.99-3.50)	EDS
R_{merge}	0.22	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) > 1$	$4.30 (at 3.48 \text{\AA})$	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
B B.	0.180 , 0.221	Depositor
Π, Π_{free}	0.180 , 0.221	DCC
R_{free} test set	20538 reflections $(5.00%)$	wwPDB-VP
Wilson B-factor (Å ²)	41.7	Xtriage
Anisotropy	0.304	Xtriage
Bulk solvent $k_{sol}(e/A^3), B_{sol}(A^2)$	0.33 , 43.1	EDS
L-test for twinning ²	$ \langle L \rangle = 0.45, \langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	130590	wwPDB-VP
Average B, all atoms $(Å^2)$	23.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 6.53% of the height of the origin peak. No significant pseudotranslation is detected.

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.



¹Intensities estimated from amplitudes.

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: 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).

Mal	Chain	Chain Bond lengths		Bond angles	
		RMSZ	# Z > 5	RMSZ	# Z > 5
1	А	0.66	0/4483	0.70	2/6134~(0.0%)
1	В	0.63	0/4483	0.73	5/6134~(0.1%)
1	С	0.59	0/4483	0.73	4/6134~(0.1%)
1	D	0.58	0/4483	0.73	5/6134~(0.1%)
1	Е	0.62	0/4483	0.73	4/6134~(0.1%)
1	F	0.63	1/4483~(0.0%)	0.84	9/6134~(0.1%)
1	G	0.59	0/4483	0.74	6/6134~(0.1%)
1	Н	0.57	0/4483	0.72	3/6134~(0.0%)
1	Ι	0.64	0/4483	0.71	1/6134~(0.0%)
1	J	0.61	0/4483	0.71	5/6134~(0.1%)
1	Κ	0.67	0/4483	0.74	2/6134~(0.0%)
1	L	0.61	0/4483	0.73	3/6134~(0.0%)
1	М	0.66	0/4483	0.74	5/6134~(0.1%)
1	Ν	0.66	0/4483	0.72	6/6134~(0.1%)
1	0	0.58	0/4483	0.71	3/6134~(0.0%)
1	Р	0.61	0/4483	0.73	4/6134~(0.1%)
1	Q	0.61	0/4483	0.72	5/6134~(0.1%)
1	R	0.63	0/4483	0.73	3/6134~(0.0%)
1	S	0.63	1/4483~(0.0%)	0.76	9/6134~(0.1%)
1	Т	0.65	0/4483	0.72	4/6134~(0.1%)
1	U	0.60	0/4483	0.73	4/6134~(0.1%)
1	V	0.60	0/4483	0.70	1/6134~(0.0%)
1	W	0.55	0/4483	0.72	3/6134~(0.0%)
1	Х	0.61	1/4483~(0.0%)	0.76	7/6134~(0.1%)
1	Y	0.56	0/4483	0.73	5/6134~(0.1%)
1	Ζ	0.60	2/4483~(0.0%)	0.74	4/6134~(0.1%)
1	а	0.55	0/4483	0.75	2/6134~(0.0%)
1	b	0.57	0/4483	0.73	3/6134~(0.0%)
1	с	0.58	0/4483	0.73	4/6134~(0.1%)
1	d	0.60	0/4483	0.76	7/6134~(0.1%)
All	All	0.61	5/134490~(0.0%)	0.73	128/184020~(0.1%)



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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	А	0	1
1	С	0	2
1	D	0	2
1	Е	0	1
1	F	0	1
1	G	0	1
1	Н	0	1
1	Ι	0	1
1	L	0	2
1	М	0	3
1	Ν	0	1
1	Q	0	1
1	R	0	2
1	S	0	2
1	U	0	1
1	W	0	1
1	Х	0	1
1	Y	0	2
1	Ζ	0	1
1	a	0	1
1	b	0	1
1	С	0	2
1	d	0	3
All	All	0	34

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\operatorname{Observed}(\operatorname{\AA})$	$\operatorname{Ideal}(\operatorname{\AA})$
1	Z	222	HIS	CG-CD2	-8.08	1.22	1.35
1	F	426	ASP	CB-CG	-7.62	1.35	1.51
1	S	438	GLY	C-O	-5.81	1.14	1.23
1	Х	426	ASP	CB-CG	-5.05	1.41	1.51
1	Ζ	273	CYS	CB-SG	-5.00	1.73	1.81

The worst 5 of 128 bond angle outliers are listed below:

	Onam	ICS	туре	Atoms	L	Observed(°)	
1	F	426	ASP	CB-CG-OD2	-27.25	93.78	118.30



Mol	Chain	\mathbf{Res}	Type	Atoms	Z	$\mathbf{Observed}(^{o})$	$Ideal(^{o})$
1	а	159	GLN	C-N-CD	-18.61	79.65	120.60
1	Х	159	GLN	C-N-CD	-16.06	85.27	120.60
1	F	426	ASP	CB-CG-OD1	15.33	132.10	118.30
1	С	159	GLN	C-N-CD	-13.92	89.97	120.60

There are no chirality outliers.

5 of 34 planarity outliers are listed below:

Mol	Chain	\mathbf{Res}	Type	Group
1	А	159	GLN	Peptide
1	С	159	GLN	Peptide
1	Е	368	GLU	Peptide
1	Ν	226	SER	Peptide
1	Q	159	GLN	Peptide

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	\mathbf{P}	erc	entiles
1	A	546/584~(94%)	500~(92%)	31~(6%)	15 (3%)		5	33
1	В	546/584~(94%)	496 (91%)	32~(6%)	18 (3%)		4	28
1	С	546/584~(94%)	493~(90%)	39~(7%)	14 (3%)		5	33
1	D	546/584~(94%)	497~(91%)	32~(6%)	17 (3%)		4	30
1	Е	546/584~(94%)	497 (91%)	33 (6%)	16 (3%)		4	31
1	F	546/584~(94%)	496 (91%)	33 (6%)	17 (3%)		4	30
1	G	546/584~(94%)	497 (91%)	32~(6%)	17 (3%)		4	30



α \cdots 1	e		
Continued	from	previous	page

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Pe	erce	entiles
1	Н	546/584~(94%)	491 (90%)	38~(7%)	17 (3%)		4	30
1	Ι	546/584~(94%)	499~(91%)	34~(6%)	13~(2%)		6	35
1	J	546/584~(94%)	498 (91%)	33~(6%)	15 (3%)		5	33
1	Κ	546/584~(94%)	499 (91%)	31~(6%)	16 (3%)		4	31
1	L	546/584~(94%)	494~(90%)	35~(6%)	17(3%)		4	30
1	М	546/584~(94%)	491 (90%)	40 (7%)	15 (3%)		5	33
1	Ν	546/584~(94%)	497 (91%)	34 (6%)	15 (3%)		5	33
1	Ο	546/584~(94%)	492 (90%)	35~(6%)	19 (4%)		3	27
1	Р	546/584~(94%)	497 (91%)	32~(6%)	17 (3%)		4	30
1	Q	546/584~(94%)	496 (91%)	34~(6%)	16 (3%)		4	31
1	R	546/584~(94%)	490 (90%)	39~(7%)	17 (3%)		4	30
1	S	546/584~(94%)	500~(92%)	32~(6%)	14 (3%)		5	33
1	Т	546/584~(94%)	501~(92%)	30~(6%)	15 (3%)		5	33
1	U	546/584~(94%)	496 (91%)	32~(6%)	18 (3%)		4	28
1	V	546/584~(94%)	492 (90%)	37~(7%)	17 (3%)		4	30
1	W	546/584~(94%)	491 (90%)	40 (7%)	15 (3%)		5	33
1	Х	546/584~(94%)	495~(91%)	34~(6%)	17 (3%)		4	30
1	Y	546/584~(94%)	498 (91%)	30~(6%)	18 (3%)		4	28
1	Z	546/584~(94%)	497 (91%)	31~(6%)	18 (3%)		4	28
1	a	546/584~(94%)	497 (91%)	33~(6%)	16 (3%)		4	31
1	b	546/584~(94%)	489 (90%)	41 (8%)	16 (3%)		4	31
1	с	$\overline{546/584}\ (94\%)$	499 (91%)	31 (6%)	16 (3%)		4	31
1	d	546/584~(94%)	498 (91%)	32~(6%)	16 (3%)		4	31
All	All	16380/17520~(94%)	14873 (91%)	1020~(6%)	487 (3%)		4	30

5 of 487 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	А	153	VAL
1	А	155	GLU
1	А	159	GLN
1	А	160	PRO
1	А	349	THR



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	Perce	ntiles
1	А	476/495~(96%)	468~(98%)	8 (2%)	60	82
1	В	476/495~(96%)	472~(99%)	4 (1%)	81	91
1	С	476/495~(96%)	467~(98%)	9(2%)	57	80
1	D	476/495~(96%)	470 (99%)	6 (1%)	69	86
1	Е	476/495~(96%)	471 (99%)	5 (1%)	73	88
1	F	476/495~(96%)	470 (99%)	6 (1%)	69	86
1	G	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	Н	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	Ι	476/495~(96%)	463 (97%)	13 (3%)	44	73
1	J	476/495~(96%)	471 (99%)	5 (1%)	73	88
1	K	476/495~(96%)	467 (98%)	9 (2%)	57	80
1	L	476/495~(96%)	467 (98%)	9 (2%)	57	80
1	М	476/495~(96%)	470 (99%)	6 (1%)	69	86
1	Ν	476/495~(96%)	470 (99%)	6 (1%)	69	86
1	О	476/495~(96%)	473 (99%)	3 (1%)	86	94
1	Р	476/495~(96%)	472 (99%)	4 (1%)	81	91
1	Q	476/495~(96%)	470 (99%)	6 (1%)	69	86
1	R	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	S	476/495~(96%)	465~(98%)	11 (2%)	50	77
1	Т	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	U	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	V	476/495~(96%)	471 (99%)	5 (1%)	73	88
1	W	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	Х	476/495~(96%)	468 (98%)	8 (2%)	60	82
1	Y	476/495~(96%)	474 (100%)	2(0%)	91	96
1	Ζ	476/495~(96%)	471 (99%)	5 (1%)	73	88



Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	a	476/495~(96%)	471~(99%)	5 (1%)	73 88
1	b	476/495~(96%)	468 (98%)	8 (2%)	60 82
1	с	476/495~(96%)	463~(97%)	13 (3%)	44 73
1	d	476/495~(96%)	465~(98%)	11 (2%)	50 77
All	All	14280/14850~(96%)	14065~(98%)	215 (2%)	65 84

5 of 215 residues with a non-rotameric side chain are listed below:

Mol	Chain	\mathbf{Res}	Type
1	L	490	CYS
1	R	509	GLN
1	с	384	HIS
1	L	573	TYR
1	0	457	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 102 such sidechains are listed below:

Mol	Chain	\mathbf{Res}	Type
1	L	384	HIS
1	Р	558	GLN
1	a	554	ASN
1	L	558	GLN
1	0	557	ASN

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)

Of 30 ligands modelled in this entry, 30 are monoatomic - leaving 0 for Mogul analysis.

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.

No monomer is involved in short contacts.

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 (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^{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 >	#RS	SRZ:	>2	$OWAB(Å^2)$	Q<0.9
1	А	548/584~(93%)	-0.68	3~(0%)	91	88	3, 17, 60, 119	0
1	В	548/584~(93%)	-0.67	2 (0%)	92	90	4, 19, 64, 124	0
1	С	548/584~(93%)	-0.65	4 (0%)	87	83	3, 20, 64, 121	0
1	D	548/584~(93%)	-0.61	6 (1%)	80	75	5, 20, 63, 131	0
1	Е	548/584~(93%)	-0.68	4 (0%)	87	83	4, 18, 62, 120	0
1	F	548/584~(93%)	-0.70	3 (0%)	91	88	3, 18, 61, 118	0
1	G	548/584~(93%)	-0.61	8 (1%)	73	68	4, 20, 62, 126	0
1	Н	548/584~(93%)	-0.60	3 (0%)	91	88	4, 19, 62, 118	0
1	Ι	548/584~(93%)	-0.69	4 (0%)	87	83	5, 19, 62, 127	0
1	J	548/584~(93%)	-0.67	6 (1%)	80	75	3, 19, 61, 122	0
1	K	548/584~(93%)	-0.65	8 (1%)	73	68	3, 17, 61, 122	0
1	L	548/584~(93%)	-0.67	1 (0%)	95	93	4, 19, 60, 125	0
1	М	548/584~(93%)	-0.65	6~(1%)	80	75	3, 18, 62, 121	0
1	Ν	548/584~(93%)	-0.68	6~(1%)	80	75	5, 19, 62, 126	0
1	Ο	548/584~(93%)	-0.56	4 (0%)	87	83	3, 20, 64, 123	0
1	Р	548/584~(93%)	-0.66	3~(0%)	91	88	3, 18, 61, 119	0
1	Q	548/584~(93%)	-0.62	8 (1%)	73	68	4, 19, 61, 130	0
1	R	548/584~(93%)	-0.66	6~(1%)	80	75	4, 18, 62, 121	0
1	S	548/584~(93%)	-0.67	3~(0%)	91	88	5, 19, 61, 131	0
1	Т	548/584~(93%)	-0.64	8~(1%)	73	68	4, 18, 64, 120	0
1	U	548/584~(93%)	-0.62	8 (1%)	73	68	$3, 18, \overline{65, 118}$	0
1	V	548/584~(93%)	-0.62	6 (1%)	80	75	$4, 19, 62, \overline{126}$	0
1	W	548/584~(93%)	-0.59	5(0%)	84	79	$4, 21, \overline{66, 121}$	0
1	X	548/584~(93%)	-0.67	4 (0%)	87	83	4, 19, 60, 131	0



Mol	Chain	Analysed	<RSRZ $>$	#RSRZ >2	$OWAB(Å^2)$	Q<0.9
1	Y	548/584~(93%)	-0.58	7 (1%) 77 71	4, 19, 64, 123	0
1	Z	548/584~(93%)	-0.62	3 (0%) 91 88	3, 20, 64, 116	0
1	a	548/584~(93%)	-0.58	7 (1%) 77 71	4, 21, 67, 123	0
1	b	548/584~(93%)	-0.59	7 (1%) 77 71	3, 20, 66, 124	0
1	с	548/584~(93%)	-0.57	7 (1%) 77 71	4, 22, 61, 130	0
1	d	548/584~(93%)	-0.65	7 (1%) 77 71	4, 19, 64, 125	0
All	All	16440/17520~(93%)	-0.64	157 (0%) 82 77	3, 19, 64, 131	0

The worst 5 of 157 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	0	156	SER	4.2
1	Т	156	SER	3.9
1	Q	515	SER	3.7
1	Х	156	SER	3.6
1	K	156	SER	3.6

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	${f B} ext{-factors}({ m \AA}^2)$	Q<0.9
2	MG	М	800	1/1	0.89	0.27	$41,\!41,\!41,\!41$	0
2	MG	N	800	1/1	0.89	0.16	$39,\!39,\!39,\!39$	0
2	MG	d	602	1/1	0.90	0.18	$56,\!56,\!56,\!56$	0
2	MG	0	800	1/1	0.90	0.17	41,41,41,41	0



4	Q	Y	Κ
_	~0	-	

Mol	Type	Chain	Res	Atoms	RSCC	RSR	$B-factors(A^2)$	Q<0.9
2	MG	Т	800	1/1	0.90	0.31	$43,\!43,\!43,\!43$	0
2	MG	Е	601	1/1	0.90	0.16	40,40,40,40	0
2	MG	R	800	1/1	0.91	0.14	37,37,37,37	0
2	MG	W	800	1/1	0.92	0.18	47,47,47,47	0
2	MG	Н	601	1/1	0.92	0.20	$36,\!36,\!36,\!36$	0
2	MG	Q	800	1/1	0.93	0.33	41,41,41,41	0
2	MG	K	800	1/1	0.93	0.36	$39,\!39,\!39,\!39,\!39$	0
2	MG	G	800	1/1	0.93	0.18	44,44,44,44	0
2	MG	Y	602	1/1	0.93	0.25	52,52,52,52	0
2	MG	L	800	1/1	0.94	0.14	41,41,41,41	0
2	MG	Y	601	1/1	0.94	0.29	47,47,47,47	0
2	MG	D	800	1/1	0.94	0.26	43,43,43,43	0
2	MG	С	800	1/1	0.94	0.16	41,41,41,41	0
2	MG	J	602	1/1	0.95	0.16	$38,\!38,\!38,\!38$	0
2	MG	Р	800	1/1	0.95	0.19	39,39,39,39	0
2	MG	А	800	1/1	0.95	0.19	32,32,32,32	0
2	MG	В	800	1/1	0.96	0.24	41,41,41,41	0
2	MG	Н	602	1/1	0.96	0.18	54,54,54,54	0
2	MG	d	601	1/1	0.96	0.09	37,37,37,37	0
2	MG	S	800	1/1	0.96	0.09	$39,\!39,\!39,\!39,\!39$	0
2	MG	J	601	1/1	0.96	0.19	$40,\!40,\!40,\!40$	0
2	MG	с	800	1/1	0.96	0.16	$53,\!53,\!53,\!53$	0
2	MG	Ζ	800	1/1	0.97	0.12	47,47,47,47	0
2	MG	Х	800	1/1	0.97	0.10	43,43,43,43	0
2	MG	Е	602	1/1	0.97	0.10	38,38,38,38	0
2	MG	Ι	800	1/1	0.97	0.23	43,43,43,43	0

6.5 Other polymers (i)

There are no such residues in this entry.

