



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 14, 2023 – 12:58 AM JST

PDB ID : 5YP3
Title : Crystal structure of dipeptidyl peptidase IV (DPP IV) with Ile-Pro from *Pseudomonas mexicana*
Authors : Roppongi, S.; Suzuki, Y.; Tateoka, C.; Fuimoto, M.; Morisawa, S.; Iizuka, I.; Nakamura, A.; Honma, N.; Shida, Y.; Ogasawara, W.; Tanaka, N.; Sakamoto, Y.; Nonaka, T.
Deposited on : 2017-11-01
Resolution : 2.44 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)
Xtriage (Phenix) : 1.13
EDS : 2.36
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Rfmac : 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

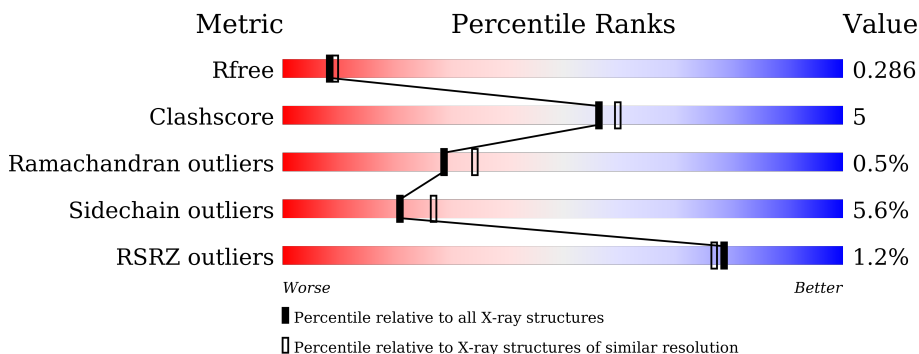
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.44 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	1564 (2.46-2.42)
Clashscore	141614	1631 (2.46-2.42)
Ramachandran outliers	138981	1617 (2.46-2.42)
Sidechain outliers	138945	1617 (2.46-2.42)
RSRZ outliers	127900	1547 (2.46-2.42)

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	745	 78% 17% . .
1	B	745	 82% 14% . .
1	C	745	 86% 10% . .
1	D	745	 81% 14% . .

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 23158 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.

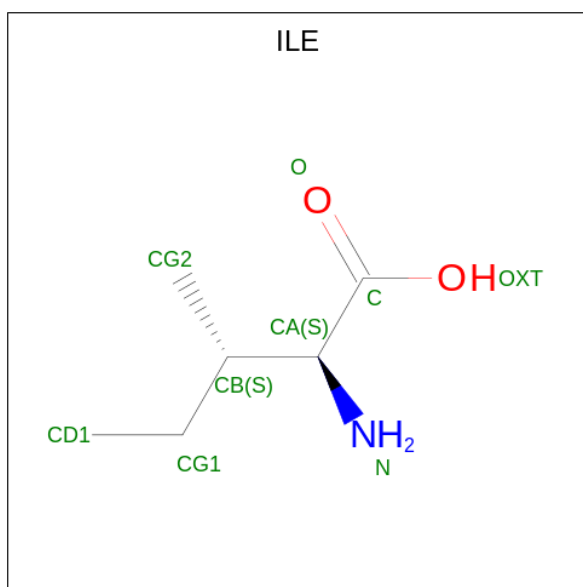
- Molecule 1 is a protein called Dipeptidyl aminopeptidase 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	724	5660	3580	994	1076	10	0	0	0
1	B	724	5660	3580	994	1076	10	0	0	0
1	C	724	5660	3580	994	1076	10	0	0	0
1	D	724	5660	3580	994	1076	10	0	0	0

There are 4 discrepancies between the modelled and reference sequences:

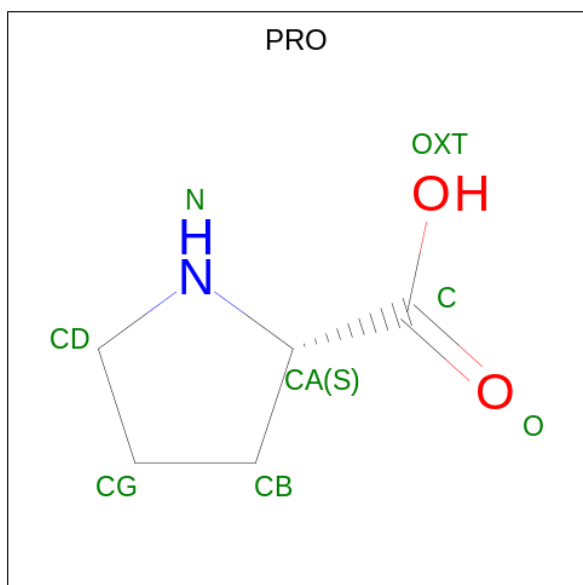
Chain	Residue	Modelled	Actual	Comment	Reference
A	12	ILE	MET	see sequence details	UNP Q6F3I7
B	12	ILE	MET	see sequence details	UNP Q6F3I7
C	12	ILE	MET	see sequence details	UNP Q6F3I7
D	12	ILE	MET	see sequence details	UNP Q6F3I7

- Molecule 2 is ISOLEUCINE (three-letter code: ILE) (formula: C₆H₁₃NO₂).



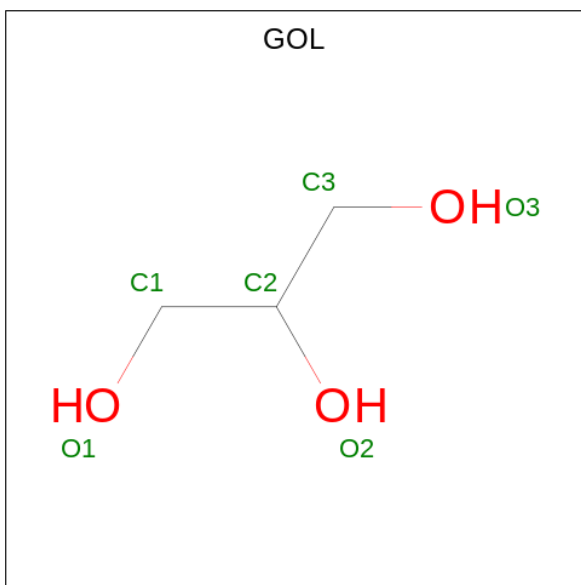
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	N	O			
2	A	1	Total	8	6	1	1	0	0
2	B	1	Total	8	6	1	1	0	0
2	C	1	Total	8	6	1	1	0	0
2	D	1	Total	8	6	1	1	0	0

- Molecule 3 is PROLINE (three-letter code: PRO) (formula: C₅H₉NO₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			7	5	1	1		
3	B	1	Total	C	N	O	0	0
			7	5	1	1		
3	C	1	Total	C	N	O	0	0
			7	5	1	1		
3	D	1	Total	C	N	O	0	0
			7	5	1	1		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	D	1	Total	C	O	0	0
			6	3	3		

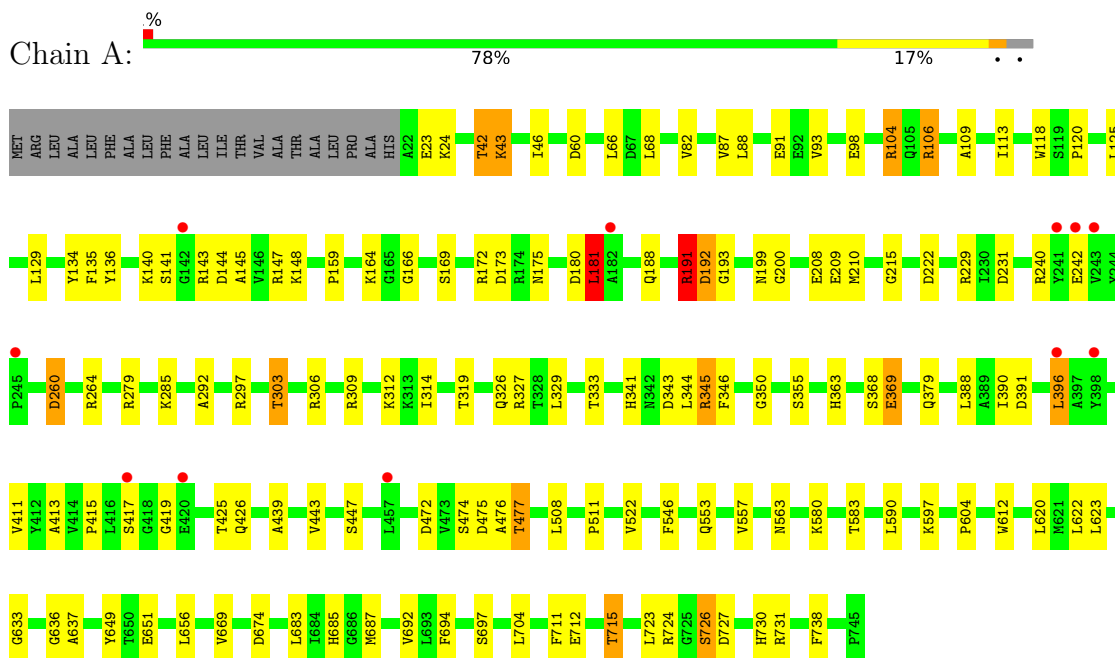
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	143	Total	O	0	0
			143	143		
5	B	93	Total	O	0	0
			93	93		
5	C	99	Total	O	0	0
			99	99		
5	D	117	Total	O	0	0
			117	117		

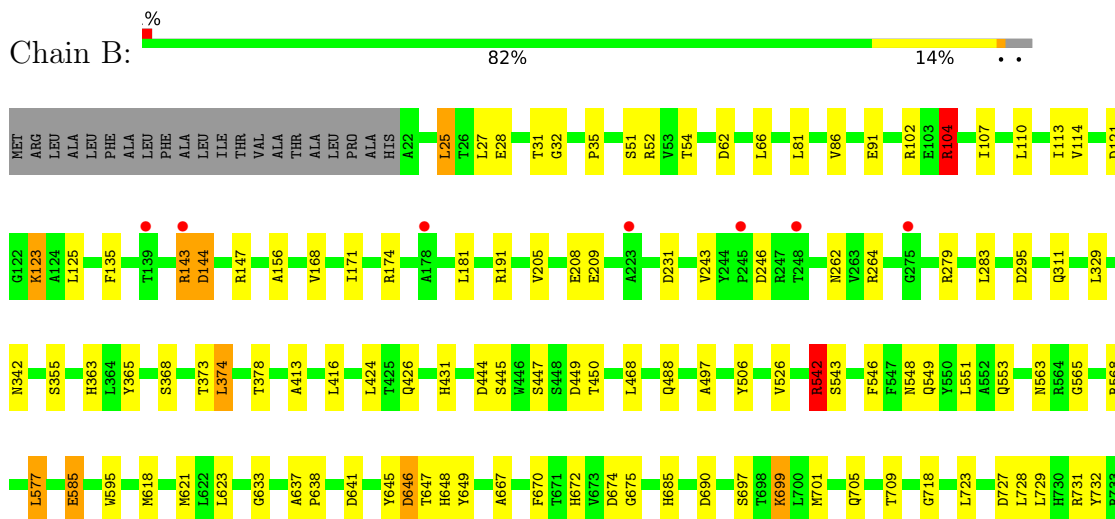
3 Residue-property plots [i](#)

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: Dipeptidyl aminopeptidase 4



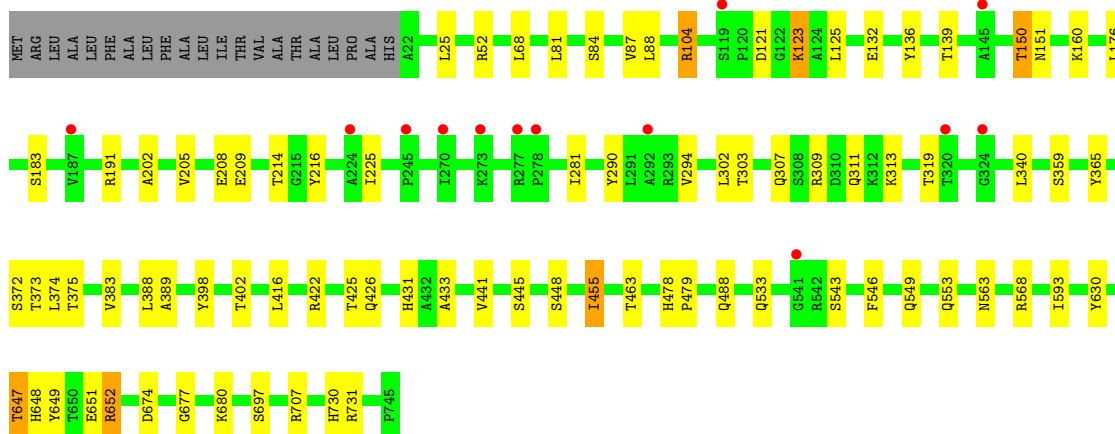
- Molecule 1: Dipeptidyl aminopeptidase 4



L734
K744
P745

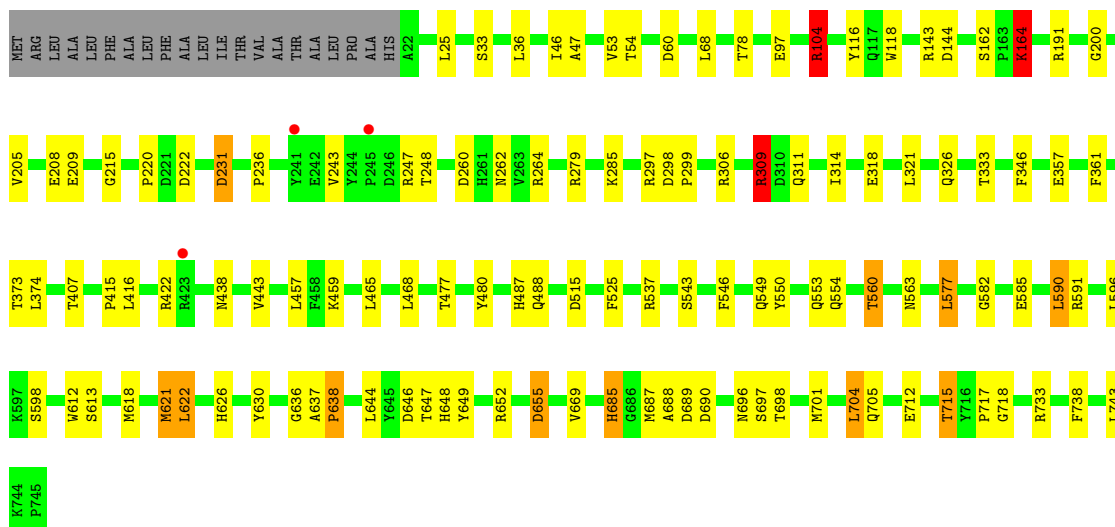
● Molecule 1: Dipeptidyl aminopeptidase 4

Chain C: 86% 10%



● Molecule 1: Dipeptidyl aminopeptidase 4

Chain D: 81% 14%



4 Data and refinement statistics i

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	119.88Å 120.12Å 262.53Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	40.00 – 2.44 60.06 – 2.44	Depositor EDS
% Data completeness (in resolution range)	97.4 (40.00-2.44) 97.4 (60.06-2.44)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.22 (at 2.45Å)	Xtrriage
Refinement program	REFMAC 5.8.0189	Depositor
R, R_{free}	0.238 , 0.286 0.243 , 0.286	Depositor DCC
R_{free} test set	6835 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	39.3	Xtrriage
Anisotropy	0.342	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 41.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.38$, $\langle L^2 \rangle = 0.21$	Xtrriage
Estimated twinning fraction	0.004 for k,h,-l	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	23158	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 39.35 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.2151e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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 [i](#)

5.1 Standard geometry [i](#)

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

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	0.77	0/5799	0.95	10/7887 (0.1%)
1	B	0.70	0/5799	0.90	8/7887 (0.1%)
1	C	0.68	0/5799	0.87	7/7887 (0.1%)
1	D	0.75	0/5799	0.96	13/7887 (0.2%)
All	All	0.72	0/23196	0.92	38/31548 (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	A	0	1
1	B	0	1
1	D	0	2
All	All	0	4

There are no bond length outliers.

All (38) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	104	ARG	NE-CZ-NH2	-14.85	112.87	120.30
1	D	104	ARG	NE-CZ-NH1	10.91	125.76	120.30
1	B	104	ARG	NE-CZ-NH2	9.40	125.00	120.30
1	B	104	ARG	NE-CZ-NH1	-8.78	115.91	120.30
1	D	309	ARG	NE-CZ-NH1	7.36	123.98	120.30
1	A	104	ARG	NE-CZ-NH2	6.97	123.78	120.30
1	A	104	ARG	NE-CZ-NH1	-6.88	116.86	120.30
1	C	104	ARG	NE-CZ-NH2	6.76	123.68	120.30
1	B	568	ARG	NE-CZ-NH2	-6.68	116.96	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	231	ASP	CB-CG-OD1	6.55	124.20	118.30
1	C	731	ARG	NE-CZ-NH1	6.38	123.49	120.30
1	A	106	ARG	NE-CZ-NH1	6.33	123.47	120.30
1	D	591	ARG	NE-CZ-NH1	6.26	123.43	120.30
1	B	641	ASP	CB-CG-OD1	6.05	123.75	118.30
1	D	309	ARG	NE-CZ-NH2	-6.02	117.29	120.30
1	A	260	ASP	CB-CG-OD2	-5.92	112.97	118.30
1	D	577	LEU	CA-CB-CG	5.84	128.74	115.30
1	C	707	ARG	NE-CZ-NH2	-5.71	117.45	120.30
1	A	191	ARG	NE-CZ-NH1	5.68	123.14	120.30
1	A	229	ARG	NE-CZ-NH1	5.67	123.13	120.30
1	A	306	ARG	NE-CZ-NH1	5.59	123.09	120.30
1	D	733	ARG	NE-CZ-NH1	5.55	123.07	120.30
1	D	655	ASP	CB-CG-OD2	-5.54	113.32	118.30
1	C	731	ARG	NE-CZ-NH2	-5.51	117.55	120.30
1	A	343	ASP	CB-CG-OD1	5.47	123.22	118.30
1	A	731	ARG	NE-CZ-NH2	-5.45	117.58	120.30
1	B	542	ARG	NE-CZ-NH2	-5.42	117.59	120.30
1	D	704	LEU	CA-CB-CG	5.36	127.62	115.30
1	C	652	ARG	NE-CZ-NH1	5.30	122.95	120.30
1	D	646	ASP	CB-CA-C	-5.29	99.81	110.40
1	A	147	ARG	NE-CZ-NH1	5.27	122.94	120.30
1	C	104	ARG	NE-CZ-NH1	-5.20	117.70	120.30
1	B	174	ARG	NE-CZ-NH1	5.17	122.88	120.30
1	B	731	ARG	NE-CZ-NH2	-5.13	117.74	120.30
1	D	515	ASP	CB-CG-OD1	5.12	122.91	118.30
1	B	25	LEU	CA-CB-CG	5.08	126.99	115.30
1	D	655	ASP	CB-CG-OD1	5.02	122.82	118.30
1	C	422	ARG	NE-CZ-NH1	5.01	122.81	120.30

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	192	ASP	Peptide
1	B	638	PRO	Peptide
1	D	164	LYS	Peptide
1	D	638	PRO	Peptide

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	5660	0	5521	70	0
1	B	5660	0	5521	63	0
1	C	5660	0	5521	35	0
1	D	5660	0	5521	63	0
2	A	8	0	10	1	0
2	B	8	0	10	1	0
2	C	8	0	10	1	0
2	D	8	0	10	0	0
3	A	7	0	7	0	0
3	B	7	0	7	0	0
3	C	7	0	7	0	0
3	D	7	0	7	0	0
4	D	6	0	8	0	0
5	A	143	0	0	3	0
5	B	93	0	0	3	0
5	C	99	0	0	0	0
5	D	117	0	0	1	0
All	All	23158	0	22160	226	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 5.

All (226) 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:D:262:ASN:ND2	1:D:647:THR:HG21	1.59	1.16
1:D:262:ASN:HD21	1:D:647:THR:HG21	0.96	1.11
1:B:262:ASN:HD21	1:B:647:THR:HG21	1.00	1.09
1:B:262:ASN:ND2	1:B:647:THR:HG21	1.75	1.01
1:D:262:ASN:HD21	1:D:647:THR:CG2	1.79	0.96
1:A:140:LYS:O	1:A:145:ALA:HB2	1.84	0.78
1:B:262:ASN:HD21	1:B:647:THR:CG2	1.90	0.72
1:A:98:GLU:OE2	5:A:901:HOH:O	2.09	0.70
1:B:363:HIS:ND1	1:B:378:THR:OG1	2.22	0.70
1:B:637:ALA:HA	1:B:685:HIS:CD2	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:25:LEU:H	1:D:553:GLN:HE22	1.41	0.68
1:C:208:GLU:OE2	2:C:801:ILE:N	2.26	0.68
1:B:205:VAL:HG11	1:B:647:THR:HG22	1.78	0.66
1:A:136:TYR:HA	1:A:145:ALA:O	1.96	0.65
1:A:580:LYS:O	1:A:583:THR:OG1	2.10	0.65
1:C:307:GLN:HE22	1:C:340:LEU:HD21	1.62	0.65
1:D:459:LYS:HG3	1:D:465:LEU:HD11	1.80	0.64
1:C:730:HIS:CD2	1:D:705:GLN:HA	2.33	0.64
1:A:475:ASP:OD1	1:A:477:THR:HB	1.98	0.63
1:D:687:MET:SD	1:D:715:THR:CG2	2.87	0.63
1:B:488:GLN:H	1:B:549:GLN:HE22	1.47	0.62
1:A:231:ASP:HB3	1:A:264:ARG:HB2	1.79	0.62
1:A:175:ASN:HD21	1:A:193:GLY:N	1.98	0.61
1:D:621:MET:CE	1:D:669:VAL:HG22	2.30	0.61
1:D:687:MET:CG	1:D:715:THR:HG23	2.32	0.60
1:B:672:HIS:O	1:B:674:ASP:O	2.20	0.60
1:D:621:MET:HE1	1:D:669:VAL:HG22	1.82	0.60
1:A:210:MET:CE	1:A:292:ALA:HA	2.31	0.60
1:B:243:VAL:HG22	1:B:718:GLY:HA3	1.83	0.60
1:B:104:ARG:NH1	1:B:690:ASP:OD2	2.35	0.59
1:A:396:LEU:HD21	1:A:413:ALA:HB1	1.84	0.59
1:C:25:LEU:H	1:C:553:GLN:HE22	1.52	0.58
1:B:342:ASN:ND2	5:B:902:HOH:O	2.24	0.58
1:B:426:GLN:HB3	1:C:426:GLN:HB3	1.86	0.58
1:B:431:HIS:HD2	1:B:444:ASP:OD2	1.87	0.57
1:D:687:MET:SD	1:D:715:THR:HG22	2.44	0.57
1:D:637:ALA:HA	1:D:685:HIS:CD2	2.39	0.57
1:A:87:VAL:HG23	1:A:129:LEU:CD2	2.35	0.57
1:A:623:LEU:HD11	1:A:633:GLY:HA3	1.86	0.57
1:B:723:LEU:HG	1:B:727:ASP:HB3	1.88	0.56
1:A:46:ILE:HD11	1:A:443:VAL:HG23	1.88	0.56
1:B:674:ASP:OD1	1:B:675:GLY:N	2.36	0.56
1:A:208:GLU:OE2	2:A:801:ILE:N	2.39	0.55
1:D:685:HIS:CD2	1:D:697:SER:OG	2.59	0.55
1:A:309:ARG:NH1	1:A:651:GLU:OE2	2.40	0.55
1:B:51:SER:OG	1:B:52:ARG:NH1	2.40	0.55
1:A:192:ASP:HB3	1:A:199:ASN:HD21	1.72	0.55
1:A:687:MET:SD	1:A:715:THR:CG2	2.95	0.55
1:A:260:ASP:O	1:A:309:ARG:NH2	2.41	0.54
1:D:622:LEU:HG	1:D:630:TYR:CZ	2.43	0.54
1:A:472:ASP:OD2	1:A:474:SER:OG	2.25	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:168:VAL:HG23	1:B:181:LEU:HD11	1.89	0.54
1:A:210:MET:HE1	1:A:292:ALA:HA	1.88	0.53
1:C:593:ILE:HD11	1:C:630:TYR:CE1	2.43	0.53
1:A:106:ARG:NH2	1:A:208:GLU:OE2	2.26	0.53
1:D:297:ARG:HA	1:D:346:PHE:CD2	2.43	0.53
1:D:260:ASP:O	1:D:309:ARG:NH2	2.40	0.53
1:B:311:GLN:NE2	1:B:648:HIS:CE1	2.77	0.53
1:A:209:GLU:CD	1:A:649:TYR:HB2	2.30	0.52
1:C:290:TYR:HB2	1:C:307:GLN:HB3	1.92	0.52
1:D:164:LYS:HG2	1:D:220:PRO:O	2.08	0.52
1:A:66:LEU:HB2	1:A:113:ILE:O	2.09	0.52
1:A:200:GLY:HA2	1:A:215:GLY:O	2.10	0.51
1:D:46:ILE:HD11	1:D:443:VAL:HG23	1.92	0.51
1:B:205:VAL:HG12	1:B:646:ASP:OD1	2.11	0.51
1:C:307:GLN:NE2	1:C:340:LEU:HD21	2.26	0.51
1:B:670:PHE:CZ	1:B:699:LYS:HG3	2.46	0.51
1:A:303:THR:HG21	1:A:346:PHE:CZ	2.46	0.51
1:B:104:ARG:HH12	1:B:690:ASP:CG	2.13	0.51
1:A:166:GLY:O	1:A:181:LEU:HB2	2.11	0.51
1:A:712:GLU:HG3	1:A:738:PHE:CE1	2.45	0.51
1:D:612:TRP:CE3	1:D:636:GLY:HA3	2.46	0.50
1:B:585:GLU:HB2	1:B:618:MET:SD	2.49	0.50
1:C:132:GLU:OE1	1:C:150:THR:HG23	2.10	0.50
1:B:728:LEU:HD11	1:B:732:TYR:CZ	2.47	0.50
1:D:309:ARG:NH2	5:D:911:HOH:O	2.44	0.50
1:B:231:ASP:HB3	1:B:264:ARG:HB2	1.94	0.50
1:D:164:LYS:O	1:D:222:ASP:OD2	2.29	0.50
1:A:327:ARG:NH2	1:A:369:GLU:OE2	2.44	0.50
1:D:585:GLU:HG3	1:D:618:MET:SD	2.52	0.50
1:A:723:LEU:HG	1:A:727:ASP:HB3	1.93	0.50
1:D:407:THR:HG21	1:D:537:ARG:HE	1.77	0.50
1:A:388:LEU:CD1	1:A:411:VAL:HG13	2.42	0.49
1:A:175:ASN:HD21	1:A:193:GLY:H	1.60	0.49
1:D:590:LEU:HD21	1:D:626:HIS:CD2	2.48	0.49
1:B:685:HIS:CD2	1:B:697:SER:OG	2.65	0.49
1:D:712:GLU:HG3	1:D:738:PHE:CE1	2.48	0.49
1:B:526:VAL:O	5:B:901:HOH:O	2.20	0.49
1:B:488:GLN:H	1:B:549:GLN:NE2	2.10	0.49
1:A:120:PRO:HA	5:A:960:HOH:O	2.13	0.48
1:D:698:THR:HA	1:D:701:MET:SD	2.52	0.48
1:A:210:MET:HE3	1:A:292:ALA:HA	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:730:HIS:CD2	1:B:705:GLN:HG2	2.47	0.48
1:A:109:ALA:HB2	1:A:724:ARG:HD3	1.96	0.48
1:D:104:ARG:NH2	1:D:690:ASP:OD2	2.44	0.48
1:B:647:THR:HG23	1:B:648:HIS:N	2.29	0.48
1:C:121:ASP:HB3	1:C:123:LYS:HB3	1.96	0.48
1:A:687:MET:SD	1:A:715:THR:HG23	2.53	0.48
1:A:612:TRP:CE3	1:A:636:GLY:HA3	2.49	0.48
1:A:730:HIS:CE1	1:B:709:THR:O	2.67	0.48
1:C:365:TYR:HB3	1:C:374:LEU:HD22	1.96	0.47
1:D:209:GLU:CD	1:D:649:TYR:HB2	2.34	0.47
1:A:415:PRO:HG2	1:A:419:GLY:HA3	1.96	0.47
1:C:533:GLN:OE1	1:C:568:ARG:HD3	2.13	0.47
1:C:68:LEU:HD21	1:C:125:LEU:HD13	1.96	0.47
1:A:327:ARG:HH22	1:A:369:GLU:CD	2.17	0.47
1:B:365:TYR:CD2	1:B:374:LEU:HD23	2.49	0.47
1:A:140:LYS:HG2	1:A:144:ASP:CB	2.44	0.47
1:D:104:ARG:HH22	1:D:690:ASP:CG	2.17	0.47
1:A:341:HIS:CD2	1:A:355:SER:HB2	2.49	0.47
1:A:637:ALA:O	1:A:692:VAL:HG11	2.15	0.47
1:D:279:ARG:CZ	1:D:321:LEU:O	2.62	0.47
1:D:298:ASP:HB2	1:D:299:PRO:CD	2.45	0.47
1:B:621:MET:HE3	1:B:667:ALA:O	2.15	0.47
1:D:644:LEU:HD13	1:D:696:ASN:HA	1.96	0.47
1:B:697:SER:HB3	1:B:701:MET:HE3	1.96	0.46
1:D:47:ALA:HB2	1:D:118:TRP:CZ2	2.50	0.46
1:C:425:THR:HG23	1:C:431:HIS:CD2	2.51	0.46
1:D:200:GLY:HA2	1:D:215:GLY:O	2.16	0.46
1:A:172:ARG:HG2	1:A:173:ASP:OD1	2.15	0.46
1:A:180:ASP:O	1:A:181:LEU:HB2	2.15	0.46
1:C:478:HIS:CG	1:C:479:PRO:HD2	2.51	0.46
1:A:597:LYS:HG2	1:A:604:PRO:HB3	1.97	0.46
1:C:388:LEU:HD13	1:C:433:ALA:HB3	1.97	0.46
1:D:104:ARG:HD2	1:D:208:GLU:HB2	1.97	0.45
1:A:685:HIS:HE1	1:A:692:VAL:O	1.98	0.45
1:C:176:LEU:HD21	1:C:225:ILE:HG21	1.98	0.45
1:D:205:VAL:HG11	1:D:647:THR:HG22	1.98	0.45
1:D:236:PRO:HG2	1:D:260:ASP:OD2	2.16	0.45
1:B:35:PRO:HA	1:B:542:ARG:HH22	1.81	0.45
1:B:355:SER:HA	1:B:363:HIS:O	2.17	0.45
1:B:674:ASP:HB3	5:B:981:HOH:O	2.17	0.45
1:A:68:LEU:HB3	1:A:82:VAL:HG12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:480:TYR:OH	1:D:487:HIS:HD2	2.00	0.45
1:D:231:ASP:HB3	1:D:264:ARG:HB2	1.99	0.45
1:A:683:LEU:HD21	1:A:697:SER:HB2	1.98	0.44
1:A:118:TRP:CE3	1:A:125:LEU:HD11	2.52	0.44
1:B:565:GLY:HA3	1:B:577:LEU:HD23	1.97	0.44
1:D:318:GLU:O	1:D:326:GLN:HA	2.17	0.44
1:A:46:ILE:HD11	1:A:443:VAL:CG2	2.47	0.44
1:B:28:GLU:O	1:B:32:GLY:N	2.48	0.44
1:C:311:GLN:NE2	1:C:648:HIS:CE1	2.85	0.44
1:C:202:ALA:HB2	1:C:214:THR:O	2.17	0.44
1:A:136:TYR:CE1	1:A:145:ALA:HB1	2.53	0.44
1:D:638:PRO:HD2	1:D:685:HIS:CD2	2.52	0.44
1:B:104:ARG:HD2	1:B:208:GLU:HB2	1.99	0.44
1:C:81:LEU:HD22	1:C:136:TYR:OH	2.18	0.44
1:D:590:LEU:HD21	1:D:626:HIS:NE2	2.33	0.44
1:B:107:ILE:HB	1:B:110:LEU:HD22	2.00	0.43
1:A:522:VAL:HA	1:A:557:VAL:O	2.18	0.43
1:A:687:MET:HG2	1:A:694:PHE:CE2	2.53	0.43
1:B:156:ALA:HA	1:B:171:ILE:O	2.18	0.43
1:D:488:GLN:H	1:D:549:GLN:HE22	1.66	0.43
1:A:391:ASP:HB2	1:A:439:ALA:HB3	2.00	0.43
1:B:623:LEU:HD11	1:B:633:GLY:HA3	2.00	0.43
1:D:311:GLN:HE22	1:D:652:ARG:HE	1.64	0.43
1:B:81:LEU:O	1:B:143:ARG:NH2	2.51	0.43
1:D:104:ARG:HA	1:D:104:ARG:HD3	1.73	0.43
1:B:209:GLU:CD	1:B:649:TYR:HB2	2.38	0.43
1:D:53:VAL:HG11	1:D:468:LEU:HD21	2.00	0.43
1:B:102:ARG:NH1	1:B:110:LEU:O	2.52	0.43
1:B:205:VAL:O	1:B:209:GLU:HB2	2.18	0.43
1:C:205:VAL:O	1:C:209:GLU:HB2	2.19	0.43
1:C:455:ILE:HG23	1:C:455:ILE:O	2.18	0.43
1:C:488:GLN:H	1:C:549:GLN:HE22	1.65	0.43
1:D:648:HIS:CE1	1:D:652:ARG:HH21	2.37	0.43
1:B:86:VAL:HG11	1:B:143:ARG:HD2	2.00	0.43
1:B:645:TYR:OH	2:B:801:ILE:N	2.51	0.42
1:A:140:LYS:HG2	1:A:144:ASP:HB3	2.01	0.42
1:C:677:GLY:HA3	1:C:680:LYS:HD2	2.01	0.42
1:A:319:THR:OG1	1:A:326:GLN:NE2	2.47	0.42
1:B:506:TYR:HH	1:B:595:TRP:HZ2	1.66	0.42
1:A:141:SER:HB2	5:A:996:HOH:O	2.17	0.42
1:B:450:THR:HG21	1:C:463:THR:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:478:HIS:CD2	1:C:479:PRO:HD2	2.55	0.42
1:A:511:PRO:HD3	1:A:557:VAL:HG22	2.02	0.42
1:D:688:ALA:O	1:D:689:ASP:C	2.58	0.42
1:B:729:LEU:O	1:B:729:LEU:HD12	2.20	0.42
1:D:550:TYR:O	1:D:554:GLN:HG2	2.19	0.42
1:A:687:MET:HG3	1:A:715:THR:HG23	2.01	0.42
1:B:143:ARG:O	1:B:144:ASP:OD2	2.37	0.42
1:B:413:ALA:HB2	1:B:424:LEU:HD11	2.01	0.42
1:D:457:LEU:HB2	1:D:468:LEU:HD11	2.02	0.42
1:D:438:ASN:OD1	1:D:438:ASN:C	2.59	0.42
1:D:687:MET:SD	1:D:717:PRO:HA	2.60	0.42
1:D:525:PHE:O	1:D:560:THR:HG23	2.19	0.41
1:A:355:SER:HA	1:A:363:HIS:O	2.19	0.41
1:D:298:ASP:HB2	1:D:299:PRO:HD2	2.03	0.41
1:C:309:ARG:NH1	1:C:651:GLU:OE1	2.54	0.41
1:C:311:GLN:HE22	1:C:648:HIS:CE1	2.38	0.41
1:D:97:GLU:OE1	1:D:97:GLU:N	2.44	0.41
1:D:590:LEU:HD13	1:D:590:LEU:N	2.35	0.41
1:B:25:LEU:HB3	1:B:553:GLN:NE2	2.36	0.41
1:D:357:GLU:HA	1:D:361:PHE:O	2.21	0.41
1:B:27:LEU:O	1:B:31:THR:OG1	2.25	0.41
1:C:84:SER:O	1:C:87:VAL:O	2.39	0.41
1:D:685:HIS:HD2	1:D:697:SER:OG	2.02	0.41
1:A:726:SER:O	1:A:727:ASP:C	2.58	0.41
1:B:585:GLU:HB2	1:B:618:MET:CE	2.51	0.41
1:C:294:VAL:CG1	1:C:302:LEU:HD11	2.51	0.41
1:D:582:GLY:H	1:D:585:GLU:CD	2.23	0.41
1:A:297:ARG:NH2	1:A:350:GLY:O	2.54	0.41
1:A:134:TYR:CE1	1:A:148:LYS:HB2	2.56	0.41
1:A:620:LEU:HD13	1:A:669:VAL:HG21	2.02	0.41
1:B:66:LEU:HB2	1:B:113:ILE:O	2.21	0.41
1:C:205:VAL:HG11	1:C:647:THR:HG22	2.03	0.41
1:C:649:TYR:O	1:C:652:ARG:HB2	2.21	0.41
1:D:477:THR:O	1:D:477:THR:HG22	2.20	0.41
1:B:102:ARG:NH1	1:B:114:VAL:HG11	2.36	0.41
1:B:548:ASN:HD22	1:B:548:ASN:HA	1.68	0.41
1:B:585:GLU:HB2	1:B:618:MET:HE1	2.03	0.41
1:A:188:GLN:HE21	1:A:191:ARG:HA	1.86	0.40
1:A:704:LEU:HD13	1:A:711:PHE:CD1	2.55	0.40
1:D:36:LEU:O	1:D:480:TYR:HB2	2.21	0.40
1:D:54:THR:O	1:D:116:TYR:OH	2.39	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:THR:HG23	1:A:43:LYS:HB2	2.03	0.40
1:A:159:PRO:HA	1:A:169:SER:O	2.22	0.40
1:A:312:LYS:O	1:A:333:THR:HA	2.21	0.40
1:A:344:LEU:O	1:A:345:ARG:HD3	2.21	0.40
1:B:121:ASP:CB	1:B:123:LYS:HG3	2.51	0.40
1:B:311:GLN:HE22	1:B:648:HIS:CE1	2.39	0.40
1:C:160:LYS:NZ	1:C:216:TYR:O	2.55	0.40
1:C:383:VAL:N	1:C:402:THR:OG1	2.50	0.40
1:B:449:ASP:N	1:B:449:ASP:OD1	2.54	0.40
1:C:389:ALA:HB3	1:C:398:TYR:HB2	2.03	0.40
1:D:243:VAL:HG22	1:D:718:GLY:HA3	2.04	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	722/745 (97%)	669 (93%)	49 (7%)	4 (1%)	25 29
1	B	722/745 (97%)	661 (92%)	58 (8%)	3 (0%)	34 41
1	C	722/745 (97%)	664 (92%)	55 (8%)	3 (0%)	34 41
1	D	722/745 (97%)	666 (92%)	53 (7%)	3 (0%)	34 41
All	All	2888/2980 (97%)	2660 (92%)	215 (7%)	13 (0%)	29 34

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	542	ARG
1	A	222	ASP
1	C	543	SER
1	A	181	LEU

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Mol	Chain	Res	Type
1	A	369	GLU
1	A	476	ALA
1	C	372	SER
1	C	563	ASN
1	D	144	ASP
1	D	543	SER
1	B	497	ALA
1	B	646	ASP
1	D	613	SER

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	587/602 (98%)	546 (93%)	41 (7%)	15	18
1	B	587/602 (98%)	555 (94%)	32 (6%)	21	28
1	C	587/602 (98%)	562 (96%)	25 (4%)	29	38
1	D	587/602 (98%)	552 (94%)	35 (6%)	19	25
All	All	2348/2408 (98%)	2215 (94%)	133 (6%)	21	26

All (133) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	23	GLU
1	A	24	LYS
1	A	42	THR
1	A	43	LYS
1	A	60	ASP
1	A	88	LEU
1	A	91	GLU
1	A	93	VAL
1	A	104	ARG
1	A	135	PHE
1	A	143	ARG
1	A	164	LYS

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Mol	Chain	Res	Type
1	A	181	LEU
1	A	191	ARG
1	A	240	ARG
1	A	242	GLU
1	A	279	ARG
1	A	285	LYS
1	A	303	THR
1	A	314	ILE
1	A	329	LEU
1	A	345	ARG
1	A	368	SER
1	A	379	GLN
1	A	390	ILE
1	A	396	LEU
1	A	417	SER
1	A	425	THR
1	A	426	GLN
1	A	447	SER
1	A	477	THR
1	A	508	LEU
1	A	546	PHE
1	A	553	GLN
1	A	563	ASN
1	A	590	LEU
1	A	622	LEU
1	A	656	LEU
1	A	674	ASP
1	A	715	THR
1	A	726	SER
1	B	54	THR
1	B	62	ASP
1	B	91	GLU
1	B	104	ARG
1	B	123	LYS
1	B	125	LEU
1	B	135	PHE
1	B	143	ARG
1	B	144	ASP
1	B	147	ARG
1	B	191	ARG
1	B	246	ASP
1	B	279	ARG

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Mol	Chain	Res	Type
1	B	283	LEU
1	B	295	ASP
1	B	329	LEU
1	B	368	SER
1	B	373	THR
1	B	374	LEU
1	B	416	LEU
1	B	445	SER
1	B	447	SER
1	B	468	LEU
1	B	543	SER
1	B	546	PHE
1	B	551	LEU
1	B	563	ASN
1	B	577	LEU
1	B	585	GLU
1	B	699	LYS
1	B	734	LEU
1	B	744	LYS
1	C	52	ARG
1	C	88	LEU
1	C	104	ARG
1	C	123	LYS
1	C	139	THR
1	C	150	THR
1	C	151	ASN
1	C	183	SER
1	C	191	ARG
1	C	281	ILE
1	C	303	THR
1	C	313	LYS
1	C	319	THR
1	C	359	SER
1	C	373	THR
1	C	375	THR
1	C	416	LEU
1	C	441	VAL
1	C	445	SER
1	C	448	SER
1	C	455	ILE
1	C	546	PHE
1	C	647	THR

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Mol	Chain	Res	Type
1	C	674	ASP
1	C	697	SER
1	D	33	SER
1	D	60	ASP
1	D	68	LEU
1	D	78	THR
1	D	104	ARG
1	D	143	ARG
1	D	162	SER
1	D	164	LYS
1	D	191	ARG
1	D	247	ARG
1	D	248	THR
1	D	285	LYS
1	D	306	ARG
1	D	309	ARG
1	D	314	ILE
1	D	333	THR
1	D	373	THR
1	D	374	LEU
1	D	415	PRO
1	D	416	LEU
1	D	422	ARG
1	D	546	PHE
1	D	560	THR
1	D	563	ASN
1	D	577	LEU
1	D	590	LEU
1	D	596	LEU
1	D	598	SER
1	D	621	MET
1	D	622	LEU
1	D	655	ASP
1	D	685	HIS
1	D	704	LEU
1	D	715	THR
1	D	743	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	151	ASN

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Mol	Chain	Res	Type
1	A	175	ASN
1	A	188	GLN
1	A	199	ASN
1	A	326	GLN
1	A	342	ASN
1	A	487	HIS
1	A	549	GLN
1	A	553	GLN
1	A	554	GLN
1	A	685	HIS
1	A	730	HIS
1	B	262	ASN
1	B	311	GLN
1	B	323	ASN
1	B	426	GLN
1	B	431	HIS
1	B	487	HIS
1	B	548	ASN
1	B	549	GLN
1	B	553	GLN
1	B	685	HIS
1	C	45	GLN
1	C	188	GLN
1	C	238	GLN
1	C	307	GLN
1	C	311	GLN
1	C	426	GLN
1	C	431	HIS
1	C	487	HIS
1	C	549	GLN
1	C	553	GLN
1	C	685	HIS
1	D	261	HIS
1	D	262	ASN
1	D	311	GLN
1	D	431	HIS
1	D	487	HIS
1	D	549	GLN
1	D	553	GLN
1	D	685	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](#)

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](#)

9 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	GOL	D	803	-	5,5,5	1.01	0	5,5,5	1.27	0
3	PRO	D	802	1,2	5,7,8	0.54	0	7,8,10	1.34	1 (14%)
3	PRO	C	802	1,2	5,7,8	0.50	0	7,8,10	2.64	3 (42%)
2	ILE	B	801	3	6,7,8	0.66	0	5,8,10	1.75	2 (40%)
3	PRO	A	802	1,2	5,7,8	0.61	0	7,8,10	1.95	2 (28%)
2	ILE	A	801	3	6,7,8	0.66	0	5,8,10	2.10	1 (20%)
2	ILE	D	801	3	6,7,8	0.85	0	5,8,10	2.23	2 (40%)
2	ILE	C	801	3	6,7,8	0.73	0	5,8,10	2.57	2 (40%)
3	PRO	B	802	1,2	5,7,8	0.78	0	7,8,10	1.29	1 (14%)

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	GOL	D	803	-	-	4/4/4/4	-
3	PRO	D	802	1,2	-	0/0/9/11	0/1/1/1
3	PRO	C	802	1,2	-	0/0/9/11	0/1/1/1
2	ILE	B	801	3	-	2/7/8/10	-
3	PRO	A	802	1,2	-	0/0/9/11	0/1/1/1
2	ILE	A	801	3	-	3/7/8/10	-
2	ILE	D	801	3	-	2/7/8/10	-
2	ILE	C	801	3	-	1/7/8/10	-
3	PRO	B	802	1,2	-	0/0/9/11	0/1/1/1

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	801	ILE	O-C-CA	-4.54	112.88	124.78
3	C	802	PRO	CB-CA-C	-4.50	106.51	112.70
2	A	801	ILE	O-C-CA	-4.17	113.84	124.78
3	C	802	PRO	O-C-CA	-4.08	114.08	124.78
3	A	802	PRO	CB-CA-C	-3.85	107.40	112.70
2	C	801	ILE	CB-CA-C	-3.43	107.58	112.83
2	D	801	ILE	CB-CA-C	-3.38	107.67	112.83
2	D	801	ILE	O-C-CA	-3.21	116.38	124.78
3	A	802	PRO	CD-N-CA	2.75	114.48	107.08
2	B	801	ILE	O-C-CA	-2.66	117.81	124.78
3	C	802	PRO	CD-N-CA	2.49	113.77	107.08
2	B	801	ILE	CG1-CB-CA	-2.43	105.08	111.19
3	D	802	PRO	CB-CA-C	-2.37	109.44	112.70
3	B	802	PRO	CD-N-CA	2.24	113.11	107.08

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	801	ILE	O-C-CA-CB
2	A	801	ILE	CG2-CB-CG1-CD1
2	A	801	ILE	CA-CB-CG1-CD1
4	D	803	GOL	O1-C1-C2-C3
4	D	803	GOL	C1-C2-C3-O3
4	D	803	GOL	O2-C2-C3-O3
4	D	803	GOL	O1-C1-C2-O2
2	A	801	ILE	C-CA-CB-CG1

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Mol	Chain	Res	Type	Atoms
2	B	801	ILE	C-CA-CB-CG1
2	C	801	ILE	C-CA-CB-CG1
2	D	801	ILE	C-CA-CB-CG1
2	B	801	ILE	O-C-CA-CB

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	801	ILE	1	0
2	A	801	ILE	1	0
2	C	801	ILE	1	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, 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	724/745 (97%)	-0.01	11 (1%) 73 71	21, 42, 68, 105	0
1	B	724/745 (97%)	0.06	7 (0%) 82 81	24, 45, 68, 106	0
1	C	724/745 (97%)	0.09	13 (1%) 68 64	22, 44, 73, 94	0
1	D	724/745 (97%)	-0.09	3 (0%) 92 92	18, 39, 61, 99	0
All	All	2896/2980 (97%)	0.01	34 (1%) 79 77	18, 42, 68, 106	0

All (34) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	241	TYR	4.4
1	C	245	PRO	4.3
1	A	241	TYR	4.2
1	A	245	PRO	4.2
1	A	142	GLY	3.8
1	C	270	ILE	3.5
1	B	178	ALA	3.5
1	A	417	SER	3.4
1	A	398	TYR	3.0
1	B	245	PRO	3.0
1	D	245	PRO	2.9
1	B	139	THR	2.8
1	C	273	LYS	2.7
1	C	541	GLY	2.6
1	C	119	SER	2.6
1	C	187	VAL	2.6
1	A	396	LEU	2.5
1	C	324	GLY	2.5
1	C	145	ALA	2.4
1	D	423	ARG	2.4
1	A	243	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	420	GLU	2.3
1	C	278	PRO	2.3
1	B	223	ALA	2.3
1	C	292	ALA	2.3
1	C	277	ARG	2.2
1	C	224	ALA	2.2
1	B	248	THR	2.2
1	A	457	LEU	2.2
1	A	182	ALA	2.1
1	B	275	GLY	2.1
1	C	320	THR	2.1
1	A	242	GLU	2.0
1	B	143	ARG	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	GOL	D	803	6/6	0.79	0.27	42,53,57,58	0
3	PRO	A	802	7/8	0.92	0.20	23,24,24,24	0
3	PRO	C	802	7/8	0.93	0.15	27,28,29,29	0
2	ILE	D	801	8/9	0.94	0.18	21,24,25,27	0
3	PRO	B	802	7/8	0.95	0.13	24,25,28,30	0
2	ILE	B	801	8/9	0.95	0.20	23,25,25,27	0
2	ILE	C	801	8/9	0.95	0.15	24,26,26,27	0
2	ILE	A	801	8/9	0.96	0.17	24,24,26,26	0
3	PRO	D	802	7/8	0.97	0.10	24,24,26,26	0

6.5 Other polymers [i](#)

There are no such residues in this entry.