



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 02:42 PM UTC

PDB ID : 1CGJ / pdb_00001cgj
Title : THREE-DIMENSIONAL STRUCTURE OF THE COMPLEXES BETWEEN BOVINE CHYMOTRYPSINOGEN*A AND TWO RECOMBINANT VARIANTS OF HUMAN PANCREATIC SECRETORY TRYPSIN INHIBITOR (KAZAL-TYPE)
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Deposited on : 1991-10-08
Resolution : 2.30 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	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

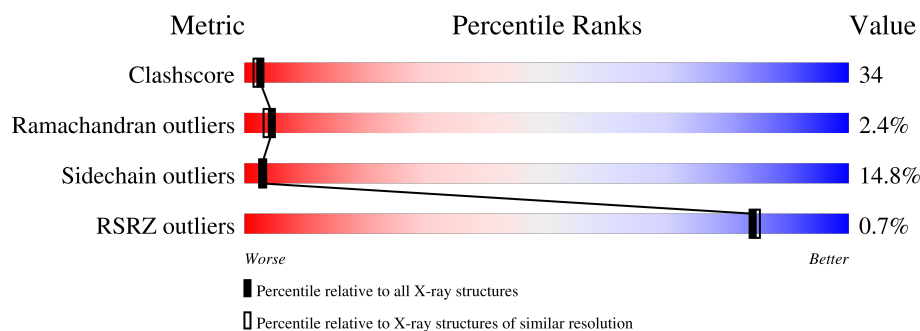
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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))
Clashscore	190562	6919 (2.30-2.30)
Ramachandran outliers	187476	6854 (2.30-2.30)
Sidechain outliers	187428	6854 (2.30-2.30)
RSRZ outliers	180081	6325 (2.30-2.30)

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	E	245	
2	I	56	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 2291 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 ALPHA-CHYMOTRYPSINOGEN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	245	Total	C	N	O	S	16	0	0
			1799	1127	307	353	12			

- Molecule 2 is a protein called PANCREATIC SECRETORY TRYPSIN INHIBITOR (KAZAL TYPE) VARIANT 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	I	56	Total	C	N	O	S	24	0	0
			436	264	77	89	6			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	18	LEU	LYS	conflict	UNP P00995
I	19	GLU	ILE	conflict	UNP P00995
I	21	ARG	ASP	conflict	UNP P00995
I	29	ASP	ASN	conflict	UNP P00995

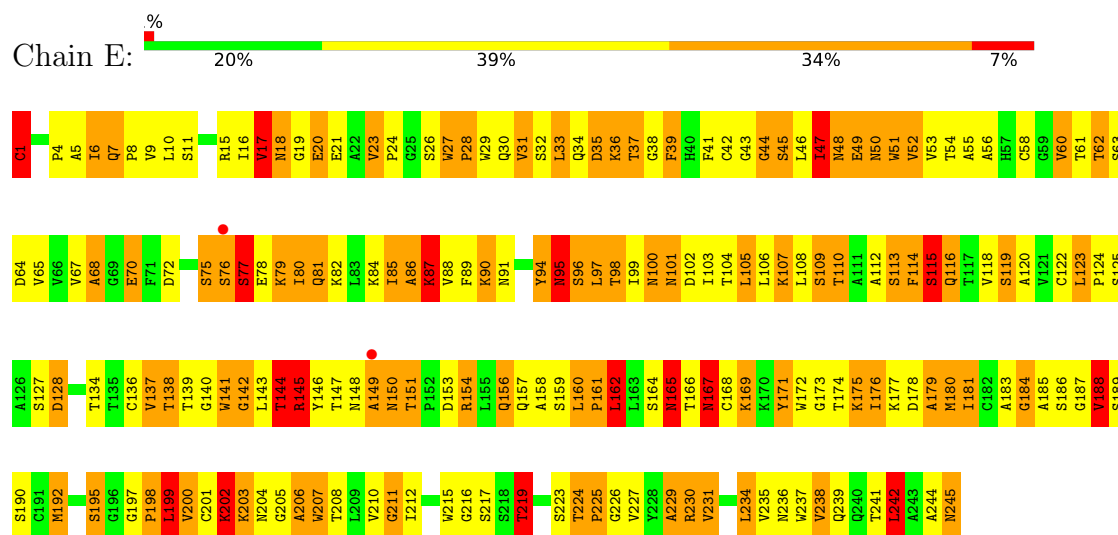
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	E	51	Total	O	0	0
			51	51		
3	I	5	Total	O	0	0
			5	5		

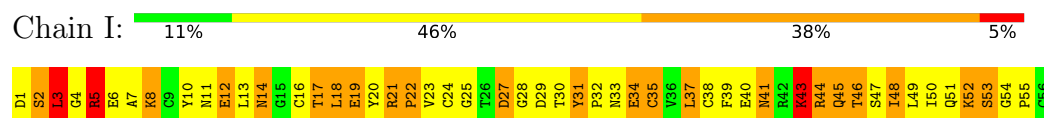
3 Residue-property plots

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: ALPHA-CHYMOTRYPSINOGEN



• Molecule 2: PANCREATIC SECRETORY TRYPSIN INHIBITOR (KAZAL TYPE) VARIANT 4



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	84.40Å 84.40Å 86.70Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	8.00 – 2.30 8.00 – 2.30	Depositor EDS
% Data completeness (in resolution range)	(Not available) (8.00-2.30) 71.6 (8.00-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	12.48 (at 2.30Å)	Xtriage
Refinement program	PROLSQ	Depositor
R, R_{free}	0.195 , (Not available) 0.194 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	20.1	Xtriage
Anisotropy	0.183	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.25 , 31.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	0.041 for -h,l,k 0.020 for -l,-k,-h	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	2291	wwPDB-VP
Average B, all atoms (Å ²)	14.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.01% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	E	1.48	11/1835 (0.6%)	3.27	295/2502 (11.8%)
2	I	1.69	5/442 (1.1%)	3.37	91/594 (15.3%)
All	All	1.53	16/2277 (0.7%)	3.29	386/3096 (12.5%)

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	I	8	LYS	CD-CE	-18.70	0.96	1.52
1	E	162	LEU	CB-CG	15.15	1.83	1.53
1	E	150	ASN	CA-CB	-9.25	1.37	1.53
1	E	36	LYS	CA-CB	-9.15	1.38	1.53
2	I	18	LEU	CB-CG	8.86	1.71	1.53
1	E	203	LYS	CG-CD	7.64	1.75	1.52
2	I	18	LEU	CA-CB	5.76	1.61	1.53
2	I	3	LEU	C-N	-5.68	1.25	1.33
1	E	216	GLY	N-CA	5.64	1.51	1.45
1	E	199	LEU	CA-C	5.63	1.60	1.53
1	E	18	ASN	CG-OD1	5.54	1.34	1.23
1	E	226	GLY	CA-C	5.43	1.56	1.52
1	E	227	VAL	C-N	-5.42	1.25	1.33
2	I	30	THR	CA-C	5.20	1.59	1.52
1	E	176	ILE	CA-CB	5.11	1.59	1.53
1	E	110	THR	CA-CB	5.09	1.60	1.53

All (386) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	204	ASN	CA-CB-CG	22.42	135.02	112.60
1	E	77	SER	CA-C-N	17.54	152.29	122.82
1	E	77	SER	C-N-CA	17.54	152.29	122.82
2	I	14	ASN	OD1-CG-ND2	-15.68	106.92	122.60
1	E	167	ASN	OD1-CG-ND2	12.73	135.33	122.60
1	E	48	ASN	CA-CB-CG	-12.70	99.90	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	37	LEU	O-C-N	12.41	135.27	122.12
1	E	236	ASN	CB-CA-C	12.16	131.53	110.85
1	E	6	ILE	CA-C-O	12.14	133.82	120.59
1	E	17	VAL	CA-C-N	11.72	143.93	121.54
1	E	17	VAL	C-N-CA	11.72	143.93	121.54
1	E	212	ILE	CA-C-O	-11.71	106.97	120.67
1	E	146	TYR	CA-C-O	11.70	133.30	120.20
1	E	153	ASP	CA-CB-CG	11.42	124.02	112.60
2	I	37	LEU	CA-C-O	-11.15	108.73	120.55
1	E	36	LYS	N-CA-CB	11.15	126.81	110.20
1	E	48	ASN	OD1-CG-ND2	11.06	133.66	122.60
1	E	183	ALA	CA-C-N	10.75	131.00	121.86
1	E	183	ALA	C-N-CA	10.75	131.00	121.86
1	E	30	GLN	OE1-CD-NE2	-10.48	112.12	122.60
1	E	35	ASP	CB-CA-C	-10.40	91.16	112.99
2	I	41	ASN	OD1-CG-ND2	10.35	132.95	122.60
1	E	49	GLU	N-CA-C	-10.32	100.69	113.28
1	E	76	SER	N-CA-C	-10.26	99.87	112.38
1	E	36	LYS	N-CA-C	-10.11	99.25	111.69
1	E	149	ALA	CA-C-O	9.96	134.75	120.51
1	E	23	VAL	N-CA-C	-9.95	99.20	108.95
1	E	206	ALA	O-C-N	9.93	134.52	123.10
1	E	20	GLU	CB-CG-CD	9.90	129.43	112.60
1	E	217	SER	O-C-N	9.89	135.21	122.95
1	E	60	VAL	O-C-N	9.87	133.43	122.67
1	E	7	GLN	O-C-N	9.60	129.47	121.31
1	E	68	ALA	CA-C-N	9.53	139.67	120.80
1	E	68	ALA	C-N-CA	9.53	139.67	120.80
1	E	219	THR	OG1-CB-CG2	9.53	128.35	109.30
1	E	190	SER	N-CA-C	-9.50	97.10	110.50
2	I	30	THR	O-C-N	-9.38	112.28	123.16
1	E	115	SER	O-C-N	9.22	137.41	122.11
1	E	219	THR	N-CA-CB	-9.14	96.09	111.27
1	E	32	SER	CA-C-O	-9.07	110.50	120.38
1	E	238	VAL	CA-C-N	9.05	132.76	120.54
1	E	238	VAL	C-N-CA	9.05	132.76	120.54
1	E	39	PHE	CB-CA-C	9.01	125.11	110.16
1	E	145	ARG	NE-CZ-NH2	-8.92	111.17	119.20
1	E	48	ASN	CB-CG-ND2	-8.92	103.02	116.40
1	E	27	TRP	CA-C-N	8.90	128.64	119.56
1	E	27	TRP	C-N-CA	8.90	128.64	119.56
1	E	190	SER	CA-C-O	-8.84	111.93	121.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	201	CYS	CA-C-O	8.83	129.75	120.30
1	E	159	SER	CA-CB-OG	8.73	128.56	111.10
1	E	160	LEU	O-C-N	8.73	127.96	121.85
1	E	85	ILE	CA-C-O	-8.70	110.80	120.72
2	I	33	ASN	CA-CB-CG	8.70	121.30	112.60
1	E	18	ASN	OD1-CG-ND2	8.57	131.17	122.60
1	E	41	PHE	CA-C-O	8.55	128.53	118.69
2	I	10	TYR	N-CA-C	-8.44	93.06	107.99
1	E	35	ASP	O-C-N	8.43	132.24	121.79
1	E	97	LEU	CA-C-N	8.39	136.44	121.92
1	E	97	LEU	C-N-CA	8.39	136.44	121.92
1	E	183	ALA	CA-C-O	8.39	130.33	120.43
1	E	55	ALA	CA-C-O	-8.33	111.37	121.36
1	E	149	ALA	CA-C-N	8.29	137.37	121.54
1	E	149	ALA	C-N-CA	8.29	137.37	121.54
1	E	200	VAL	CA-C-O	8.29	129.44	120.57
1	E	189	SER	O-C-N	-8.24	113.21	123.27
1	E	48	ASN	CB-CA-C	-8.22	93.72	113.19
1	E	100	ASN	CA-CB-CG	-8.21	104.39	112.60
2	I	51	GLN	CA-C-O	8.19	129.14	120.70
1	E	109	SER	CA-C-O	8.14	129.93	120.00
1	E	219	THR	CA-C-N	8.13	133.66	122.19
1	E	219	THR	C-N-CA	8.13	133.66	122.19
1	E	35	ASP	CA-C-O	-8.10	112.83	121.98
1	E	167	ASN	CB-CA-C	8.06	124.52	110.01
1	E	174	THR	CA-C-O	-8.00	108.65	119.05
1	E	116	GLN	OE1-CD-NE2	7.99	130.59	122.60
2	I	19	GLU	CA-C-O	-7.93	112.36	121.72
1	E	227	VAL	CA-C-N	7.91	135.01	122.59
1	E	227	VAL	C-N-CA	7.91	135.01	122.59
2	I	35	CYS	CB-CA-C	7.82	123.77	110.79
1	E	157	GLN	CA-C-N	7.68	134.60	122.62
1	E	157	GLN	C-N-CA	7.68	134.60	122.62
1	E	187	GLY	CA-C-O	7.67	127.48	118.97
1	E	34	GLN	CA-C-N	7.65	133.83	121.74
1	E	34	GLN	C-N-CA	7.65	133.83	121.74
1	E	188	VAL	N-CA-CB	-7.65	98.82	111.36
2	I	21	ARG	NE-CZ-NH1	7.63	129.13	121.50
1	E	142	GLY	N-CA-C	-7.61	102.31	112.82
2	I	34	GLU	CA-C-O	7.61	128.48	120.42
2	I	48	ILE	O-C-N	7.60	130.95	122.67
1	E	174	THR	O-C-N	7.50	132.81	122.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	118	VAL	CA-C-O	-7.41	113.63	120.22
1	E	184	GLY	O-C-N	7.40	127.89	123.08
1	E	225	PRO	CA-C-N	7.40	129.54	122.36
1	E	225	PRO	C-N-CA	7.40	129.54	122.36
2	I	35	CYS	N-CA-C	-7.40	103.22	111.28
1	E	168	CYS	N-CA-C	-7.39	103.22	112.90
1	E	7	GLN	OE1-CD-NE2	7.39	129.99	122.60
1	E	17	VAL	CA-C-O	7.39	130.01	120.78
1	E	199	LEU	N-CA-CB	7.38	122.87	110.69
1	E	82	LYS	O-C-N	7.36	131.61	122.63
2	I	10	TYR	N-CA-CB	7.31	122.61	110.47
1	E	205	GLY	CA-C-N	-7.30	110.23	122.64
1	E	205	GLY	C-N-CA	-7.30	110.23	122.64
2	I	45	GLN	CA-C-O	-7.28	113.14	121.65
1	E	156	GLN	OE1-CD-NE2	7.27	129.87	122.60
2	I	5	ARG	CA-C-N	7.26	132.43	122.19
2	I	5	ARG	C-N-CA	7.26	132.43	122.19
1	E	204	ASN	OD1-CG-ND2	-7.26	115.34	122.60
1	E	230	ARG	CA-C-N	7.23	130.37	120.46
1	E	230	ARG	C-N-CA	7.23	130.37	120.46
2	I	51	GLN	OE1-CD-NE2	7.22	129.82	122.60
1	E	178	ASP	CA-CB-CG	7.21	119.81	112.60
1	E	94	TYR	CA-C-O	7.21	129.13	120.92
1	E	1	CYS	CA-CB-SG	7.19	130.94	114.40
1	E	189	SER	CA-C-N	7.17	132.20	120.94
1	E	189	SER	C-N-CA	7.17	132.20	120.94
1	E	165	ASN	OD1-CG-ND2	7.14	129.74	122.60
1	E	17	VAL	N-CA-CB	7.11	122.96	111.23
1	E	244	ALA	O-C-N	7.10	131.08	122.35
1	E	114	PHE	O-C-N	7.07	131.72	122.95
2	I	49	LEU	O-C-N	7.07	132.79	122.97
1	E	21	GLU	CB-CG-CD	-7.05	100.61	112.60
1	E	236	ASN	CA-CB-CG	-7.05	105.55	112.60
1	E	27	TRP	CA-C-O	-7.04	113.54	121.28
1	E	178	ASP	CB-CA-C	7.02	124.71	110.38
1	E	1	CYS	CA-C-N	7.02	135.18	121.41
1	E	1	CYS	C-N-CA	7.02	135.18	121.41
1	E	146	TYR	N-CA-CB	-7.00	99.09	110.14
1	E	68	ALA	CA-C-O	6.98	129.73	121.36
1	E	154	ARG	N-CA-C	6.96	121.66	109.96
2	I	39	PHE	CA-CB-CG	-6.96	106.84	113.80
2	I	17	THR	N-CA-C	-6.94	98.30	109.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	157	GLN	CA-C-O	6.94	129.07	120.54
1	E	219	THR	CA-CB-OG1	-6.93	99.20	109.60
1	E	38	GLY	CA-C-N	-6.86	113.33	123.00
1	E	38	GLY	C-N-CA	-6.86	113.33	123.00
1	E	28	PRO	N-CA-C	6.85	122.75	113.84
1	E	77	SER	CA-C-O	6.83	130.28	120.51
1	E	186	SER	CA-C-O	-6.83	111.53	119.59
1	E	217	SER	CA-C-O	-6.83	113.14	120.92
1	E	151	THR	N-CA-CB	6.83	119.77	110.14
1	E	181	ILE	CA-C-O	6.82	127.86	120.43
1	E	176	ILE	CA-C-O	6.82	129.28	120.69
1	E	35	ASP	CA-CB-CG	6.81	119.41	112.60
1	E	42	CYS	CA-CB-SG	6.81	130.07	114.40
2	I	11	ASN	CA-CB-CG	6.81	119.41	112.60
1	E	6	ILE	N-CA-CB	6.80	119.16	111.21
1	E	144	THR	N-CA-CB	-6.79	99.84	110.44
2	I	3	LEU	N-CA-CB	-6.76	99.07	110.49
1	E	98	THR	N-CA-C	6.74	121.79	113.50
2	I	29	ASP	CA-CB-CG	6.73	119.33	112.60
1	E	189	SER	N-CA-C	6.72	120.46	109.24
1	E	144	THR	CA-C-O	6.71	127.12	119.27
2	I	43	LYS	N-CA-CB	-6.71	100.25	110.12
1	E	157	GLN	CB-CG-CD	6.70	123.99	112.60
1	E	107	LYS	CA-C-O	6.70	127.53	120.36
1	E	179	ALA	CA-C-N	6.69	133.32	122.81
1	E	179	ALA	C-N-CA	6.69	133.32	122.81
1	E	186	SER	N-CA-C	6.67	121.49	112.88
1	E	26	SER	CA-CB-OG	6.67	124.44	111.10
1	E	207	TRP	CA-C-O	-6.66	113.02	120.54
1	E	141	TRP	CA-C-N	6.65	129.02	120.64
1	E	141	TRP	C-N-CA	6.65	129.02	120.64
1	E	202	LYS	CB-CA-C	6.63	120.65	109.84
1	E	202	LYS	CA-C-O	6.62	128.24	120.69
1	E	100	ASN	CB-CG-ND2	6.61	126.32	116.40
1	E	198	PRO	N-CA-C	6.61	124.17	112.01
1	E	65	VAL	N-CA-C	6.61	118.11	108.53
1	E	188	VAL	O-C-N	6.59	130.74	123.09
1	E	219	THR	CA-C-O	6.58	126.51	119.34
2	I	47	SER	CA-CB-OG	-6.58	97.95	111.10
2	I	44	ARG	CA-C-O	6.58	126.96	119.27
1	E	34	GLN	CB-CG-CD	6.56	123.76	112.60
1	E	171	TYR	N-CA-CB	6.56	120.45	110.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	44	GLY	O-C-N	6.55	131.13	123.66
1	E	110	THR	CA-C-O	-6.55	113.45	120.46
1	E	136	CYS	N-CA-CB	-6.55	100.98	110.87
1	E	123	LEU	N-CA-C	-6.55	101.88	110.39
2	I	14	ASN	CB-CA-C	6.52	122.62	111.46
1	E	5	ALA	N-CA-C	-6.51	103.45	111.33
2	I	30	THR	CA-C-O	6.51	128.41	120.92
1	E	84	LYS	O-C-N	6.49	130.36	123.03
2	I	8	LYS	CB-CA-C	-6.47	99.19	109.80
2	I	17	THR	CB-CA-C	6.47	120.20	109.53
1	E	20	GLU	CA-CB-CG	6.46	127.02	114.10
1	E	168	CYS	CA-CB-SG	6.46	129.25	114.40
1	E	225	PRO	CA-C-O	6.45	129.72	121.86
1	E	140	GLY	N-CA-C	6.45	120.42	110.88
2	I	18	LEU	N-CA-C	6.43	119.84	112.57
1	E	150	ASN	CA-CB-CG	-6.43	106.17	112.60
1	E	78	GLU	CB-CG-CD	6.39	123.46	112.60
1	E	231	VAL	CA-C-O	-6.38	114.32	120.95
1	E	18	ASN	CB-CG-OD1	-6.37	108.07	120.80
1	E	78	GLU	CA-CB-CG	6.35	126.79	114.10
1	E	23	VAL	N-CA-CB	6.31	115.95	110.08
1	E	81	GLN	CB-CG-CD	6.31	123.32	112.60
2	I	41	ASN	CA-CB-CG	-6.31	106.29	112.60
1	E	115	SER	CB-CA-C	-6.30	99.91	114.41
1	E	166	THR	N-CA-C	6.26	118.62	111.11
1	E	60	VAL	CA-C-O	-6.26	113.91	121.04
1	E	103	ILE	CA-C-N	6.25	132.95	121.94
1	E	103	ILE	C-N-CA	6.25	132.95	121.94
2	I	27	ASP	CA-CB-CG	6.24	118.84	112.60
1	E	106	LEU	CA-C-N	-6.24	114.47	122.77
1	E	106	LEU	C-N-CA	-6.24	114.47	122.77
1	E	197	GLY	CA-C-O	6.23	128.80	122.38
1	E	115	SER	N-CA-CB	6.23	122.01	110.86
2	I	37	LEU	N-CA-C	-6.20	104.52	111.28
1	E	244	ALA	CA-C-O	-6.14	112.47	119.78
2	I	5	ARG	CA-C-O	6.14	129.29	120.51
2	I	54	GLY	O-C-N	6.13	127.90	121.77
1	E	94	TYR	O-C-N	-6.12	115.36	122.95
2	I	38	CYS	CA-CB-SG	6.12	128.47	114.40
2	I	44	ARG	CA-C-N	-6.12	113.84	122.34
2	I	44	ARG	C-N-CA	-6.12	113.84	122.34
1	E	7	GLN	N-CA-C	6.10	118.45	109.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	236	ASN	N-CA-C	-6.10	104.72	111.36
2	I	33	ASN	O-C-N	6.09	129.66	123.26
2	I	45	GLN	N-CA-C	-6.07	103.02	111.52
2	I	7	ALA	CA-C-N	6.06	130.74	122.19
2	I	7	ALA	C-N-CA	6.06	130.74	122.19
1	E	167	ASN	CB-CG-OD1	-6.06	108.68	120.80
1	E	41	PHE	O-C-N	-6.05	115.96	122.19
2	I	33	ASN	CA-C-O	-6.05	114.97	121.38
1	E	26	SER	CA-C-N	6.01	129.47	122.85
1	E	26	SER	C-N-CA	6.01	129.47	122.85
1	E	226	GLY	CA-C-O	-6.01	115.45	120.92
2	I	28	GLY	CA-C-N	-6.00	113.40	122.81
2	I	28	GLY	C-N-CA	-6.00	113.40	122.81
2	I	45	GLN	O-C-N	5.98	129.76	122.58
1	E	188	VAL	CA-C-O	-5.98	114.50	120.90
2	I	6	GLU	CB-CG-CD	5.97	122.74	112.60
1	E	91	ASN	CA-C-N	5.96	128.86	120.28
1	E	91	ASN	C-N-CA	5.96	128.86	120.28
1	E	47	ILE	CA-C-N	5.96	132.16	122.39
1	E	47	ILE	C-N-CA	5.96	132.16	122.39
2	I	5	ARG	NE-CZ-NH1	5.93	127.43	121.50
1	E	5	ALA	CA-C-N	5.92	130.48	122.90
1	E	5	ALA	C-N-CA	5.92	130.48	122.90
2	I	19	GLU	CB-CG-CD	5.92	122.66	112.60
1	E	63	SER	CA-CB-OG	5.92	122.93	111.10
2	I	35	CYS	CA-C-O	-5.91	114.29	120.55
2	I	43	LYS	CA-C-N	5.91	132.06	121.66
2	I	43	LYS	C-N-CA	5.91	132.06	121.66
1	E	62	THR	CA-C-N	5.91	132.88	121.18
1	E	62	THR	C-N-CA	5.91	132.88	121.18
2	I	41	ASN	CB-CG-ND2	-5.89	107.56	116.40
1	E	211	GLY	O-C-N	5.88	128.95	123.54
1	E	61	THR	CA-CB-OG1	5.86	118.39	109.60
1	E	171	TYR	CA-C-O	-5.86	112.69	119.78
1	E	189	SER	CA-C-O	5.86	127.39	120.66
1	E	201	CYS	CB-CA-C	5.84	119.86	110.16
1	E	151	THR	CA-C-O	-5.83	114.29	120.23
2	I	46	THR	N-CA-CB	5.82	119.78	111.05
1	E	18	ASN	CA-C-N	5.80	132.78	121.41
1	E	18	ASN	C-N-CA	5.80	132.78	121.41
1	E	219	THR	N-CA-C	5.80	121.66	113.02
1	E	180	MET	CA-C-N	5.80	131.15	122.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	180	MET	C-N-CA	5.80	131.15	122.75
1	E	51	TRP	CA-C-O	5.79	127.88	121.11
2	I	22	PRO	CB-CA-C	5.78	118.78	111.39
1	E	101	ASN	CA-C-N	5.77	130.75	122.21
1	E	101	ASN	C-N-CA	5.77	130.75	122.21
1	E	166	THR	CA-CB-OG1	-5.76	100.96	109.60
2	I	33	ASN	CB-CA-C	5.75	122.45	111.17
1	E	204	ASN	N-CA-CB	5.75	120.81	112.13
2	I	29	ASP	O-C-N	5.74	130.65	123.19
1	E	242	LEU	CA-C-N	5.74	130.43	120.68
1	E	242	LEU	C-N-CA	5.74	130.43	120.68
2	I	41	ASN	CA-C-N	5.74	128.43	120.63
2	I	41	ASN	C-N-CA	5.74	128.43	120.63
1	E	145	ARG	CA-C-N	5.73	128.74	120.38
1	E	145	ARG	C-N-CA	5.73	128.74	120.38
1	E	171	TYR	CB-CA-C	-5.72	100.12	109.56
2	I	16	CYS	CA-C-N	5.71	130.54	122.09
2	I	16	CYS	C-N-CA	5.71	130.54	122.09
1	E	79	LYS	N-CA-CB	-5.71	103.57	110.53
1	E	223	SER	N-CA-C	-5.69	105.54	112.88
2	I	21	ARG	O-C-N	5.67	125.82	121.23
1	E	98	THR	CA-CB-OG1	-5.67	101.10	109.60
1	E	85	ILE	O-C-N	5.65	128.90	123.14
1	E	96	SER	N-CA-C	5.65	119.43	112.54
1	E	157	GLN	O-C-N	-5.64	116.81	123.41
1	E	24	PRO	CA-C-O	-5.63	115.18	121.32
1	E	48	ASN	O-C-N	5.63	131.45	122.61
1	E	242	LEU	CA-C-O	5.62	126.44	119.97
1	E	230	ARG	CA-C-O	-5.62	114.57	120.58
2	I	31	TYR	CA-C-O	5.62	125.42	119.69
2	I	29	ASP	CA-C-O	-5.60	114.78	121.11
1	E	7	GLN	N-CA-CB	-5.58	101.19	109.90
1	E	161	PRO	CB-CA-C	-5.58	101.44	110.21
1	E	234	LEU	CA-CB-CG	5.57	135.79	116.30
1	E	103	ILE	CA-C-O	5.57	126.88	120.76
1	E	98	THR	N-CA-CB	-5.56	102.36	110.53
1	E	165	ASN	CA-C-O	5.54	126.83	120.90
1	E	150	ASN	O-C-N	5.54	129.96	122.59
2	I	53	SER	CA-CB-OG	-5.54	100.03	111.10
1	E	44	GLY	N-CA-C	-5.53	101.38	110.56
1	E	210	VAL	CA-C-N	-5.52	113.42	121.26
1	E	210	VAL	C-N-CA	-5.52	113.42	121.26

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	105	LEU	O-C-N	5.52	129.80	123.29
1	E	98	THR	CA-CB-CG2	5.50	119.85	110.50
1	E	180	MET	CA-C-O	5.50	127.32	121.11
1	E	136	CYS	CB-CA-C	5.48	122.28	111.22
2	I	7	ALA	CA-C-O	5.47	126.72	120.54
1	E	102	ASP	N-CA-C	5.47	119.17	110.70
1	E	52	VAL	O-C-N	5.46	128.94	123.10
1	E	137	VAL	O-C-N	5.44	128.74	123.03
2	I	43	LYS	CA-CB-CG	5.43	124.97	114.10
1	E	242	LEU	N-CA-CB	-5.42	101.87	110.28
2	I	44	ARG	CA-CB-CG	5.42	124.95	114.10
1	E	27	TRP	O-C-N	5.42	125.62	121.23
1	E	138	THR	CB-CA-C	5.41	120.06	109.35
1	E	95	ASN	N-CA-CB	5.41	119.19	110.65
1	E	224	THR	CA-C-N	-5.40	114.41	120.14
1	E	224	THR	C-N-CA	-5.40	114.41	120.14
1	E	226	GLY	O-C-N	5.40	129.09	123.48
1	E	65	VAL	N-CA-CB	-5.38	101.25	111.21
1	E	123	LEU	CA-C-O	-5.37	115.10	120.63
1	E	169	LYS	CA-CB-CG	-5.34	103.41	114.10
1	E	208	THR	CA-CB-CG2	5.34	119.58	110.50
1	E	144	THR	CB-CA-C	5.34	120.38	109.55
1	E	190	SER	N-CA-CB	5.33	117.85	110.17
1	E	31	VAL	O-C-N	5.33	128.96	123.04
2	I	14	ASN	CA-C-O	5.33	127.63	121.34
1	E	112	ALA	O-C-N	5.32	129.02	123.06
1	E	90	LYS	N-CA-CB	5.31	118.53	109.87
1	E	79	LYS	N-CA-C	5.30	117.57	109.62
1	E	138	THR	CA-CB-CG2	5.30	119.51	110.50
1	E	50	ASN	N-CA-C	5.30	121.14	114.31
1	E	153	ASP	O-C-N	5.29	129.11	122.23
1	E	164	SER	CA-C-O	-5.27	115.81	121.56
1	E	54	THR	N-CA-C	5.27	116.01	108.74
1	E	208	THR	CA-CB-OG1	-5.26	101.70	109.60
1	E	70	GLU	CG-CD-OE1	-5.26	106.30	118.40
1	E	203	LYS	CA-CB-CG	-5.26	103.58	114.10
1	E	160	LEU	CA-C-O	-5.26	114.54	119.91
1	E	151	THR	N-CA-C	-5.25	103.42	109.93
1	E	178	ASP	CA-C-O	-5.24	113.61	119.79
1	E	86	ALA	O-C-N	5.23	128.53	122.25
2	I	39	PHE	O-C-N	5.23	128.34	122.22
1	E	207	TRP	N-CA-C	-5.23	100.78	109.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	167	ASN	CA-CB-CG	-5.22	107.38	112.60
2	I	31	TYR	CB-CA-C	5.22	116.47	109.42
2	I	23	VAL	CA-C-N	5.22	129.71	122.77
2	I	23	VAL	C-N-CA	5.22	129.71	122.77
1	E	49	GLU	CG-CD-OE2	5.22	130.40	118.40
1	E	31	VAL	CB-CA-C	-5.21	102.62	110.55
1	E	33	LEU	O-C-N	5.21	129.16	123.22
2	I	41	ASN	N-CA-C	5.21	117.70	111.71
2	I	21	ARG	NE-CZ-NH2	-5.18	114.53	119.20
1	E	225	PRO	CB-CA-C	5.18	118.04	110.63
1	E	128	ASP	CA-CB-CG	-5.17	107.43	112.60
1	E	174	THR	N-CA-C	5.17	119.21	113.01
1	E	30	GLN	N-CA-CB	5.16	117.65	109.71
1	E	149	ALA	O-C-N	-5.16	115.73	122.59
2	I	12	GLU	CA-CB-CG	5.15	124.40	114.10
2	I	28	GLY	N-CA-C	-5.15	108.13	115.64
2	I	30	THR	CA-C-N	5.14	132.88	122.70
2	I	30	THR	C-N-CA	5.14	132.88	122.70
1	E	245	ASN	CB-CA-C	5.14	119.86	110.10
1	E	43	GLY	CA-C-O	5.13	129.50	120.57
2	I	40	GLU	CA-C-O	-5.13	115.42	120.70
1	E	154	ARG	CA-C-O	-5.12	115.03	120.92
1	E	176	ILE	N-CA-C	5.12	114.98	108.12
2	I	33	ASN	N-CA-C	-5.12	101.12	108.60
2	I	40	GLU	N-CA-C	-5.12	105.61	111.14
1	E	87	LYS	CA-C-N	5.12	129.77	123.12
1	E	87	LYS	C-N-CA	5.12	129.77	123.12
1	E	75	SER	CA-C-O	5.11	126.42	120.49
1	E	72	ASP	O-C-N	5.10	129.06	122.93
2	I	10	TYR	O-C-N	5.10	129.56	123.13
1	E	200	VAL	CA-CB-CG2	5.09	119.06	110.40
1	E	229	ALA	N-CA-C	-5.09	101.67	109.76
1	E	75	SER	N-CA-CB	5.07	118.14	109.87
1	E	113	SER	O-C-N	5.07	129.60	123.01
2	I	29	ASP	CB-CG-OD1	5.06	130.04	118.40
1	E	204	ASN	CB-CG-OD1	5.05	130.90	120.80
1	E	80	ILE	O-C-N	5.05	127.38	122.69
1	E	195	SER	O-C-N	-5.04	117.07	123.12
1	E	212	ILE	O-C-N	5.02	128.60	123.18
1	E	120	ALA	O-C-N	5.01	129.83	123.11
2	I	11	ASN	CB-CA-C	5.01	120.61	110.38
2	I	24	CYS	CA-C-N	-5.01	114.32	120.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	24	CYS	C-N-CA	-5.01	114.32	120.64
2	I	14	ASN	CB-CG-ND2	5.01	123.91	116.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	1799	0	1777	129	0
2	I	436	0	414	30	7
3	E	51	0	0	3	7
3	I	5	0	0	0	0
All	All	2291	0	2191	147	7

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 34.

All (147) 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:E:162:LEU:CB	1:E:162:LEU:CG	1.83	1.54
1:E:180:MET:O	1:E:230:ARG:NH1	1.92	1.01
1:E:172:TRP:CB	1:E:176:ILE:HD11	1.95	0.96
1:E:165:ASN:O	1:E:169:LYS:HG3	1.65	0.95
1:E:48:ASN:HB3	1:E:50:ASN:H	1.30	0.94
1:E:81:GLN:HE22	1:E:113:SER:H	1.02	0.93
1:E:224:THR:HG22	1:E:225:PRO:HD2	1.50	0.91
1:E:172:TRP:HB2	1:E:176:ILE:HD11	1.52	0.89
1:E:215:TRP:CE3	2:I:13:LEU:HD11	2.11	0.86
1:E:162:LEU:CB	1:E:162:LEU:CD2	2.55	0.84
1:E:87:LYS:HD3	1:E:88:VAL:N	1.94	0.82
1:E:11:SER:OG	1:E:20:GLU:OE1	1.99	0.80
1:E:95:ASN:ND2	1:E:97:LEU:H	1.79	0.80
1:E:76:SER:O	1:E:77:SER:HB2	1.83	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:177:LYS:HG2	1:E:180:MET:HE3	1.65	0.77
1:E:95:ASN:HD22	1:E:97:LEU:H	1.33	0.76
1:E:224:THR:HG22	1:E:225:PRO:CD	2.16	0.75
1:E:98:THR:HG22	1:E:100:ASN:HB2	1.69	0.75
1:E:81:GLN:NE2	1:E:113:SER:H	1.83	0.74
1:E:48:ASN:HB2	1:E:51:TRP:H	1.52	0.74
1:E:4:PRO:HB2	1:E:6:ILE:O	1.87	0.73
1:E:87:LYS:HD3	1:E:88:VAL:H	1.52	0.73
1:E:169:LYS:O	1:E:173:GLY:HA2	1.90	0.72
1:E:215:TRP:CZ3	2:I:13:LEU:HD11	2.26	0.70
1:E:56:ALA:HB1	1:E:90:LYS:HD3	1.72	0.70
1:E:35:ASP:HB3	1:E:37:THR:N	2.08	0.68
2:I:22:PRO:HA	2:I:31:TYR:O	1.93	0.68
2:I:4:GLY:O	2:I:50:ILE:O	2.11	0.68
1:E:35:ASP:HB3	1:E:37:THR:H	1.57	0.68
1:E:215:TRP:CD2	2:I:13:LEU:HD11	2.30	0.67
1:E:125:SER:O	1:E:128:ASP:HB2	1.95	0.66
1:E:175:LYS:O	1:E:177:LYS:HD3	1.96	0.66
1:E:48:ASN:CB	1:E:50:ASN:H	2.08	0.66
1:E:35:ASP:HB2	1:E:39:PHE:H	1.62	0.65
1:E:29:TRP:O	1:E:45:SER:HA	1.97	0.65
2:I:8:LYS:HG3	2:I:34:GLU:OE2	1.96	0.64
1:E:175:LYS:HE3	2:I:14:ASN:HD22	1.63	0.64
1:E:172:TRP:HB3	1:E:176:ILE:HD11	1.78	0.64
1:E:95:ASN:HD22	1:E:95:ASN:C	2.05	0.63
1:E:181:ILE:HG13	1:E:230:ARG:NH2	2.14	0.63
2:I:52:LYS:HG3	2:I:53:SER:O	1.99	0.62
1:E:27:TRP:CD1	1:E:139:THR:HG21	2.35	0.62
1:E:27:TRP:HE3	1:E:29:TRP:CZ2	2.17	0.62
1:E:95:ASN:HD22	1:E:96:SER:N	1.98	0.61
1:E:67:VAL:O	3:E:255:HOH:O	2.16	0.60
2:I:20:TYR:CE2	2:I:22:PRO:HG3	2.36	0.60
1:E:211:GLY:HA2	1:E:229:ALA:O	2.03	0.59
1:E:148:ASN:O	1:E:149:ALA:C	2.45	0.59
1:E:177:LYS:HG2	1:E:180:MET:CE	2.33	0.58
1:E:67:VAL:HG13	1:E:80:ILE:HD12	1.85	0.57
1:E:51:TRP:CZ3	1:E:107:LYS:HB2	2.40	0.57
1:E:58:CYS:O	2:I:21:ARG:NH2	2.37	0.56
1:E:4:PRO:CB	1:E:6:ILE:O	2.53	0.56
1:E:47:ILE:HG21	1:E:123:LEU:HD21	1.87	0.56
1:E:33:LEU:CD1	1:E:60:VAL:HG21	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1:CYS:C	1:E:122:CYS:SG	2.88	0.56
1:E:49:GLU:HA	1:E:114:PHE:CE1	2.40	0.56
2:I:37:LEU:HD12	2:I:37:LEU:O	2.05	0.56
1:E:160:LEU:HD23	1:E:160:LEU:N	2.21	0.55
1:E:75:SER:C	1:E:77:SER:N	2.59	0.55
1:E:50:ASN:O	1:E:108:LEU:HG	2.07	0.54
1:E:200:VAL:HG23	1:E:207:TRP:CE3	2.43	0.54
1:E:215:TRP:HA	2:I:18:LEU:HG	1.89	0.53
1:E:184:GLY:O	1:E:185:ALA:HB3	2.09	0.53
1:E:62:THR:HG22	1:E:85:ILE:HG22	1.92	0.51
2:I:44:ARG:O	2:I:45:GLN:C	2.49	0.51
1:E:158:ALA:HB1	1:E:188:VAL:HG11	1.92	0.51
1:E:142:GLY:HA2	1:E:192:MET:O	2.10	0.51
1:E:162:LEU:CB	1:E:162:LEU:CD1	2.83	0.51
1:E:28:PRO:HB2	1:E:119:SER:N	2.26	0.51
1:E:94:TYR:HB2	1:E:101:ASN:O	2.11	0.51
1:E:81:GLN:HE22	1:E:113:SER:N	1.87	0.50
1:E:239:GLN:HA	1:E:239:GLN:OE1	2.11	0.50
2:I:52:LYS:HG2	2:I:52:LYS:O	2.11	0.50
2:I:52:LYS:NZ	2:I:55:PRO:O	2.43	0.50
1:E:215:TRP:CZ3	2:I:13:LEU:CD1	2.94	0.49
1:E:171:TYR:CD2	1:E:225:PRO:HD3	2.47	0.49
1:E:27:TRP:CE3	1:E:29:TRP:CZ2	3.00	0.49
1:E:172:TRP:HB2	1:E:176:ILE:CD1	2.35	0.49
1:E:98:THR:CG2	1:E:100:ASN:HB2	2.42	0.49
1:E:95:ASN:O	1:E:99:ILE:N	2.46	0.48
1:E:9:VAL:HG23	1:E:23:VAL:HG21	1.94	0.48
1:E:31:VAL:HG22	1:E:44:GLY:C	2.38	0.48
1:E:124:PRO:CG	1:E:231:VAL:HG12	2.43	0.48
1:E:144:THR:C	1:E:145:ARG:HG2	2.39	0.48
1:E:224:THR:CG2	1:E:225:PRO:CD	2.90	0.48
1:E:115:SER:HB2	1:E:116:GLN:H	1.27	0.48
1:E:68:ALA:N	1:E:81:GLN:O	2.41	0.48
1:E:224:THR:CG2	1:E:225:PRO:HD2	2.35	0.47
2:I:27:ASP:HB3	2:I:48:ILE:HD12	1.96	0.47
1:E:158:ALA:HB1	1:E:188:VAL:CG1	2.44	0.47
1:E:179:ALA:O	3:E:250:HOH:O	2.20	0.47
1:E:46:LEU:HD23	1:E:52:VAL:HG22	1.97	0.47
1:E:86:ALA:HB2	1:E:109:SER:HB2	1.96	0.47
1:E:64:ASP:O	1:E:85:ILE:HD12	2.15	0.47
1:E:162:LEU:CG	1:E:162:LEU:CA	2.83	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:5:ARG:HG2	2:I:50:ILE:HD12	1.98	0.46
1:E:219:THR:O	1:E:219:THR:HG23	2.15	0.46
1:E:195:SER:OG	2:I:18:LEU:C	2.59	0.46
1:E:161:PRO:O	1:E:161:PRO:HG2	2.16	0.45
1:E:167:ASN:O	1:E:167:ASN:ND2	2.49	0.45
1:E:202:LYS:HA	1:E:206:ALA:O	2.15	0.45
1:E:181:ILE:CG1	1:E:230:ARG:NH2	2.79	0.45
2:I:25:GLY:C	2:I:27:ASP:H	2.24	0.45
1:E:70:GLU:HG3	1:E:80:ILE:HG21	1.97	0.45
1:E:51:TRP:CH2	1:E:107:LYS:HB2	2.51	0.45
1:E:99:ILE:HG13	2:I:13:LEU:CD2	2.47	0.45
1:E:192:MET:HG2	2:I:32:PRO:HB2	1.98	0.44
2:I:34:GLU:O	2:I:35:CYS:C	2.56	0.44
1:E:138:THR:HG22	1:E:160:LEU:CD2	2.48	0.44
1:E:7:GLN:HA	1:E:8:PRO:HD3	1.81	0.43
1:E:144:THR:HG22	1:E:148:ASN:ND2	2.33	0.43
1:E:75:SER:C	1:E:77:SER:H	2.26	0.43
1:E:156:GLN:HB2	3:E:251:HOH:O	2.16	0.43
1:E:99:ILE:HG13	2:I:13:LEU:HD22	2.00	0.43
1:E:37:THR:H	1:E:37:THR:HG23	1.43	0.43
1:E:124:PRO:HG3	1:E:231:VAL:HG12	2.00	0.43
1:E:138:THR:HG22	1:E:160:LEU:HD21	1.99	0.43
1:E:162:LEU:CD2	1:E:162:LEU:HB2	2.47	0.43
2:I:37:LEU:HD11	2:I:48:ILE:HB	2.00	0.43
1:E:51:TRP:CE2	1:E:242:LEU:HD12	2.53	0.43
1:E:144:THR:O	1:E:145:ARG:HG2	2.18	0.43
1:E:94:TYR:HA	1:E:100:ASN:O	2.19	0.42
1:E:137:VAL:HG12	1:E:138:THR:N	2.33	0.42
2:I:4:GLY:O	2:I:5:ARG:HB3	2.18	0.42
1:E:141:TRP:O	1:E:151:THR:HB	2.19	0.42
1:E:162:LEU:HD11	1:E:199:LEU:HD21	2.01	0.42
1:E:203:LYS:N	1:E:206:ALA:O	2.27	0.42
1:E:16:ILE:O	1:E:17:VAL:C	2.61	0.42
1:E:47:ILE:HD12	1:E:123:LEU:HD11	2.02	0.42
1:E:89:PHE:O	1:E:237:TRP:HH2	2.03	0.42
1:E:134:THR:O	1:E:161:PRO:HA	2.19	0.42
1:E:162:LEU:HD12	1:E:162:LEU:HA	2.00	0.42
2:I:41:ASN:OD1	2:I:46:THR:OG1	2.31	0.42
1:E:105:LEU:HD11	1:E:238:VAL:HA	2.01	0.42
1:E:241:THR:O	1:E:245:ASN:HB2	2.20	0.41
1:E:138:THR:HA	1:E:198:PRO:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:235:VAL:O	1:E:239:GLN:HG2	2.21	0.41
1:E:98:THR:HG23	1:E:177:LYS:HE2	2.01	0.41
2:I:43:LYS:HE3	2:I:43:LYS:HB2	1.69	0.41
1:E:15:ARG:HH11	1:E:15:ARG:HD3	1.63	0.41
1:E:169:LYS:O	1:E:173:GLY:CA	2.65	0.41
2:I:17:THR:OG1	2:I:19:GLU:OE1	2.35	0.41
1:E:97:LEU:O	2:I:12:GLU:HB2	2.20	0.41
1:E:162:LEU:HG	1:E:181:ILE:HD11	2.03	0.41
1:E:95:ASN:HD21	1:E:97:LEU:HB2	1.85	0.40
1:E:160:LEU:HD23	1:E:160:LEU:H	1.86	0.40

All (7) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2:SER:OG	3:E:290:HOH:O[6_555]	0.93	1.27
2:I:2:SER:CB	3:E:290:HOH:O[6_555]	0.95	1.25
2:I:2:SER:CA	3:E:289:HOH:O[6_555]	0.97	1.23
2:I:2:SER:N	3:E:289:HOH:O[6_555]	1.17	1.03
2:I:2:SER:C	3:E:289:HOH:O[6_555]	1.43	0.77
2:I:2:SER:O	3:E:289:HOH:O[6_555]	1.88	0.32
2:I:2:SER:CB	3:E:289:HOH:O[6_555]	1.99	0.21

5.3 Torsion angles

5.3.1 Protein backbone

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	E	243/245 (99%)	229 (94%)	9 (4%)	5 (2%)	5	4
2	I	54/56 (96%)	48 (89%)	4 (7%)	2 (4%)	2	1
All	All	297/301 (99%)	277 (93%)	13 (4%)	7 (2%)	4	4

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	17	VAL
1	E	19	GLY
1	E	77	SER
2	I	3	LEU
1	E	150	ASN
1	E	18	ASN
2	I	5	ARG

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	E	200/200 (100%)	168 (84%)	32 (16%)	2	2
2	I	50/50 (100%)	45 (90%)	5 (10%)	7	9
All	All	250/250 (100%)	213 (85%)	37 (15%)	3	3

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	1	CYS
1	E	10	LEU
1	E	36	LYS
1	E	37	THR
1	E	45	SER
1	E	47	ILE
1	E	53	VAL
1	E	77	SER
1	E	79	LYS
1	E	87	LYS
1	E	95	ASN
1	E	104	THR
1	E	110	THR
1	E	115	SER
1	E	119	SER
1	E	127	SER

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Mol	Chain	Res	Type
1	E	143	LEU
1	E	144	THR
1	E	145	ARG
1	E	147	THR
1	E	154	ARG
1	E	162	LEU
1	E	165	ASN
1	E	167	ASN
1	E	175	LYS
1	E	188	VAL
1	E	192	MET
1	E	199	LEU
1	E	202	LYS
1	E	219	THR
1	E	234	LEU
1	E	242	LEU
2	I	1	ASP
2	I	2	SER
2	I	3	LEU
2	I	43	LYS
2	I	52	LYS

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

Mol	Chain	Res	Type
1	E	48	ASN
1	E	81	GLN
1	E	95	ASN
1	E	101	ASN
1	E	165	ASN
1	E	167	ASN
2	I	11	ASN
2	I	14	ASN

5.3.3 RNA ⓘ

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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, 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	E	245/245 (100%)	-0.28	2 (0%) 82 83	2, 11, 31, 48	4 (1%)
2	I	53/56 (94%)	-0.18	0 100 100	2, 8, 43, 50	1 (1%)
All	All	298/301 (99%)	-0.26	2 (0%) 84 85	2, 10, 36, 50	5 (1%)

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	149	ALA	2.2
1	E	76	SER	2.2

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 oligosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.