



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 5, 2017 – 08:33 AM EDT

PDB ID : 5XGN
Title : Crystal structure of EGFR 696-1022 T790M/C797S in complex with Go6976
Authors : Kong, L.L.; Yun, C.H.
Deposited on : unknown
Resolution : 3.00 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

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20030345
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20030345

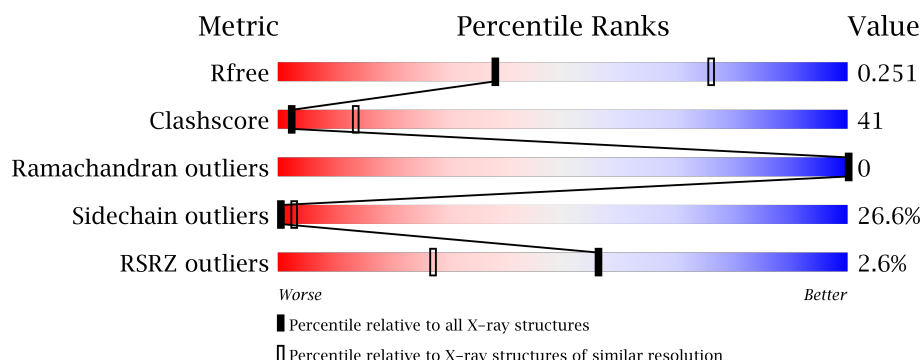
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 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}	100719	1692 (3.00-3.00)
Clashscore	112137	2037 (3.00-3.00)
Ramachandran outliers	110173	1973 (3.00-3.00)
Sidechain outliers	110143	1976 (3.00-3.00)
RSRZ outliers	101464	1716 (3.00-3.00)

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. 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	331	<div> <div>2%</div> <div>36% 43% 13% 9%</div> </div>
1	B	331	<div> <div>3%</div> <div>42% 39% 11% 7%</div> </div>

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 4819 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.

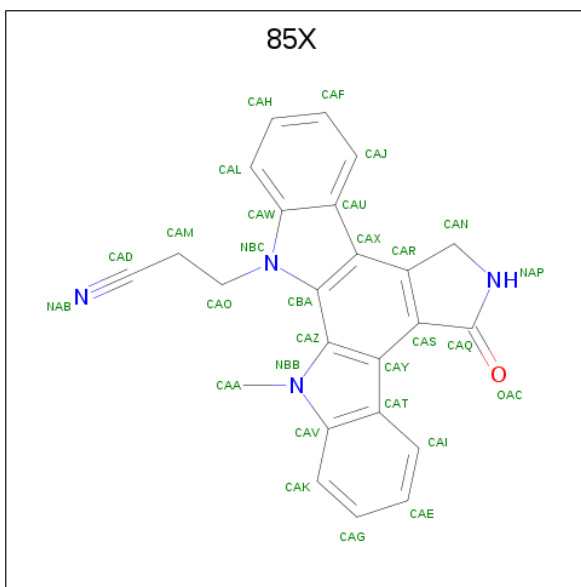
- Molecule 1 is a protein called Epidermal growth factor receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	302	Total	C	N	O	S	0	0	0
			2344	1509	394	425	16			
1	B	308	Total	C	N	O	S	0	0	0
			2389	1532	400	440	17			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	692	GLY	-	expression tag	UNP P00533
A	693	ALA	-	expression tag	UNP P00533
A	694	MET	-	expression tag	UNP P00533
A	695	GLY	-	expression tag	UNP P00533
A	790	MET	THR	engineered mutation	UNP P00533
A	797	SER	CYS	engineered mutation	UNP P00533
B	692	GLY	-	expression tag	UNP P00533
B	693	ALA	-	expression tag	UNP P00533
B	694	MET	-	expression tag	UNP P00533
B	695	GLY	-	expression tag	UNP P00533
B	790	MET	THR	engineered mutation	UNP P00533
B	797	SER	CYS	engineered mutation	UNP P00533

- Molecule 2 is 12-(2-Cyanoethyl)-6,7,12,13-tetrahydro-13-methyl-5-oxo-5H-indolo[2,3-a]pyrrolo[3,4-c]carbazole (three-letter code: 85X) (formula: C₂₄H₁₈N₄O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			29	24	4	1		

- Molecule 3 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	2	Total	Cl	0	0
			2	2		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	24	Total	O	0	0
			24	24		
4	B	31	Total	O	0	0
			31	31		

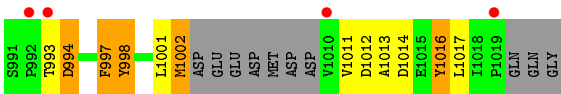
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are 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.

Chain A:

Amino Acid	Percentage
GLY	2%
ALA	
MET	
GLY	
E697	
A698	
A702	
L703	
L704	
L705	
L706	
L707	
K708	
E709	
T710	
E711	
F712	
K713	
K714	
L715	
K716	
V717	
L718	
F723	
G724	
T725	
V726	
T727	
K728	
G729	
L730	
F733	
E734	
F735	
E736	
K739	
L740	
F741	
V742	
L744	
K745	
E746	
R748	
E749	
E750	
T751	
S752	
F753	
K754	
A755	
N756	
K756	
F756	
T759	
L760	
D761	
E762	
A763	
V764	
V765	
K766	
D767	
S768	
V769	
D770	
N771	
F772	
K773	
V774	
C775	
R776	
L777	
L778	
G781	
L782	
V783	
S784	
V785	
V786	
K787	
L788	
V789	
M790	
K791	
L792	
K793	
M794	
F795	
G796	
S797	
L798	
E804	
H805	
K806	
D807	
K808	
K809	
G810	
S811	
Q812	
L813	
L814	
L815	
K823	
N826	
Y827	
L828	
E829	
E830	
H831	
H832	
H835	
K836	
D837	
L838	
A839	
D840	
R841	
H842	
V843	
L844	
E845	
S846	
T847	
K848	
H849	
H850	
V851	
R852	
L853	
T854	
G857	
L858	
A859	
K860	
L861	
L862	
H863	
A864	
Y869	
H870	
A871	
E872	
K873	
K874	
R875	
V876	
P877	
L878	
E881	
E884	
S885	
H888	
R889	
L890	
Y891	
T892	
H893	
K894	
Y897	
A898	
E899	
K900	
V904	
M905	
K913	
P914	
Y915	
D916	
G917	
I918	
P919	
E922	
R923	
S924	
S925	
I926	
E928	
K929	
ASN	
G930	
E931	
R932	
I933	
P934	
K935	
P936	
P937	
I938	
C939	
T940	
I941	
D942	
V943	
Y944	
M947	
V948	
E949	
M952	
I953	
D954	
A955	
R958	
K960	
P961	
E963	
L964	
I965	
I966	
K970	
M971	
A972	
R973	
R974	
GLN	
GLY	

Chain B:

Amino Acid	Count
D916	1
G917	1
E922	1
I923	1
S924	1
S925	1
T926	1
Q849	1
R850	1
K851	1
K852	1
I853	1
T854	1
D855	1
F856	1
E857	1
L858	1
L861	1
L861	1
LEU	1
GLY	1
ALA	1
GLU	1
E866	1
H870	1
A871	1
E872	1
A873	1
V876	1
P877	1
D878	1
R878	1
H881	1
A882	1
L883	1
E884	1
S885	1
H888	1
R889	1
T890	1
Y891	1
T892	1
H893	1
Q894	1
V897	1
K970	1
M971	1
R977	1
Y978	1
L979	1
W980	1
I981	1
D984	1
E985	1
R986	1
L987	1
H987	1
H987	1
LEU	1
D987	1



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	49.43 Å 90.51 Å 164.22 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	36.69 – 3.00 36.69 – 3.00	Depositor EDS
% Data completeness (in resolution range)	96.7 (36.69-3.00) 97.2 (36.69-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.20 (at 3.00 Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155)	Depositor
R, R_{free}	0.221 , 0.251 0.224 , 0.251	Depositor DCC
R_{free} test set	772 reflections (5.43%)	DCC
Wilson B-factor (Å ²)	79.2	Xtriage
Anisotropy	0.959	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 66.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	4819	wwPDB-VP
Average B, all atoms (Å ²)	81.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.43% 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

Bond lengths and bond angles in the following residue types are not validated in this section: 85X, CL

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	0.48	0/2396	0.67	0/3250
1	B	0.48	0/2437	0.63	0/3303
All	All	0.48	0/4833	0.65	0/6553

There are no bond length outliers.

There are no bond angle outliers.

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	A	2344	0	2316	229	0
1	B	2389	0	2340	166	0
2	A	29	0	0	6	0
3	B	2	0	0	0	0
4	A	24	0	0	6	0
4	B	31	0	0	5	0
All	All	4819	0	4656	388	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 41.

All (388) close contacts within the same asymmetric unit are listed below, sorted by their clash

magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:935:GLN:HA	1:B:944:TYR:CE2	1.54	1.42
1:B:935:GLN:CA	1:B:944:TYR:HE2	1.48	1.24
1:A:1017:LEU:HD12	1:A:1018:ILE:N	1.55	1.20
1:A:1017:LEU:C	1:A:1017:LEU:HD12	1.63	1.18
1:A:846:LYS:HG3	1:A:847:THR:HG22	1.25	1.16
1:A:749:GLU:HB3	1:A:751:THR:HG23	1.23	1.14
1:A:740:ILE:HA	1:A:1013:ALA:CB	1.81	1.09
1:B:707:LEU:HD12	1:B:789:ILE:HD12	1.25	1.08
1:A:740:ILE:HA	1:A:1013:ALA:HB3	1.11	1.07
1:A:869:TYR:CE2	1:A:871:ALA:HB2	1.91	1.06
1:A:918:ILE:HG23	1:A:919:PRO:HD2	1.08	1.04
1:A:869:TYR:OH	1:A:871:ALA:HB2	1.58	1.03
1:A:869:TYR:CZ	1:A:871:ALA:HB2	1.95	1.02
1:B:808:ASN:HD22	1:B:987:MET:HB3	1.22	1.02
1:A:918:ILE:CG2	1:A:919:PRO:HD2	1.89	1.01
1:A:760:LEU:HD13	1:B:945:MET:HE2	1.39	1.00
1:B:808:ASN:ND2	1:B:987:MET:HB3	1.77	0.99
1:A:760:LEU:HD13	1:B:945:MET:CE	1.93	0.98
1:A:846:LYS:HG3	1:A:847:THR:CG2	1.91	0.98
1:A:935:GLN:HA	1:A:944:TYR:CE1	1.98	0.98
1:A:749:GLU:HB3	1:A:751:THR:CG2	1.94	0.97
1:A:747:LEU:HD23	1:A:747:LEU:H	1.29	0.96
1:B:808:ASN:HD21	1:B:987:MET:C	1.69	0.95
1:A:869:TYR:C	1:A:869:TYR:CD2	2.39	0.95
1:A:869:TYR:HD2	1:A:869:TYR:C	1.69	0.95
1:A:747:LEU:HD23	1:A:747:LEU:N	1.80	0.95
1:A:870:HIS:HD1	1:A:870:HIS:C	1.70	0.94
1:B:704:LEU:HD21	1:B:780:ILE:HD13	1.50	0.94
1:B:935:GLN:CA	1:B:944:TYR:CE2	2.34	0.93
1:A:723:PHE:HD2	4:A:1204:HOH:O	1.48	0.93
1:B:950:CYS:O	1:B:958:ARG:HD3	1.69	0.92
1:B:831:ARG:HB2	1:B:833:LEU:HD13	1.49	0.92
1:B:855:ASP:HB2	1:B:858:LEU:HD11	1.52	0.91
1:A:755:ALA:O	1:A:759:ILE:HG12	1.69	0.90
1:B:950:CYS:HA	1:B:958:ARG:HG2	1.52	0.90
1:A:771:ASN:HB2	1:A:827:TYR:HD2	1.37	0.89
1:A:918:ILE:HG23	1:A:919:PRO:CD	2.00	0.89
1:B:935:GLN:HA	1:B:944:TYR:HE2	0.77	0.89
1:B:707:LEU:HD12	1:B:789:ILE:CD1	2.03	0.89
1:B:809:ILE:O	1:B:987:MET:SD	2.31	0.88
1:A:918:ILE:HG22	1:A:919:PRO:O	1.74	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:777:LEU:HD12	1:B:789:ILE:O	1.74	0.87
1:A:740:ILE:HG12	1:A:1013:ALA:HB1	1.55	0.87
1:B:997:PHE:C	1:B:997:PHE:CD1	2.47	0.87
1:B:998:TYR:CD1	1:B:998:TYR:C	2.48	0.87
1:A:1017:LEU:CD1	1:A:1017:LEU:C	2.38	0.86
1:B:766:MET:HB2	1:B:777:LEU:HD22	1.57	0.86
1:A:1017:LEU:HD12	1:A:1018:ILE:CA	2.07	0.84
1:A:878:ILE:HD12	1:A:881:MET:SD	2.17	0.83
1:B:980:VAL:O	1:B:980:VAL:HG12	1.77	0.83
1:A:832:ARG:NH1	1:A:864:ALA:HA	1.94	0.83
2:A:1101:85X:CAO	2:A:1101:85X:CAA	2.56	0.83
1:B:766:MET:HE1	1:B:856:PHE:HA	1.61	0.82
2:A:1101:85X:CAM	2:A:1101:85X:CAL	2.55	0.81
1:A:935:GLN:HA	1:A:944:TYR:CD1	2.14	0.81
1:A:860:LYS:HG2	1:A:869:TYR:CE1	2.15	0.80
1:B:997:PHE:C	1:B:997:PHE:HD1	1.84	0.79
1:A:1017:LEU:CD1	1:A:1018:ILE:N	2.43	0.79
1:B:998:TYR:CD1	1:B:998:TYR:O	2.36	0.78
1:B:908:MET:O	1:B:938:ILE:CD1	2.32	0.78
1:A:847:THR:OG1	1:A:849:GLN:HG2	1.82	0.77
1:B:943:VAL:HG23	1:B:971:MET:HE1	1.64	0.77
1:A:771:ASN:HB2	1:A:827:TYR:CD2	2.19	0.77
1:A:869:TYR:CE2	1:A:871:ALA:CB	2.68	0.77
1:B:998:TYR:HD1	1:B:998:TYR:C	1.88	0.76
1:B:707:LEU:CD1	1:B:789:ILE:HD12	2.10	0.76
1:A:936:PRO:HD2	1:A:944:TYR:HD1	1.51	0.76
1:A:869:TYR:HE2	1:A:871:ALA:HB2	1.49	0.76
1:B:935:GLN:HA	1:B:944:TYR:CD2	2.21	0.76
1:A:740:ILE:CG1	1:A:1013:ALA:HB1	2.15	0.75
1:B:981:ILE:O	1:B:984:ASP:HB2	1.86	0.75
1:A:740:ILE:CA	1:A:1013:ALA:CB	2.64	0.75
1:A:773:HIS:HA	1:A:852:LYS:HG3	1.67	0.74
1:B:986:ARG:O	1:B:987:MET:HG2	1.88	0.74
1:A:723:PHE:HZ	2:A:1101:85X:NAB	1.85	0.74
1:A:870:HIS:ND1	1:A:870:HIS:C	2.31	0.74
1:A:869:TYR:HE2	1:A:871:ALA:CB	2.00	0.73
1:A:740:ILE:CA	1:A:1013:ALA:HB3	2.06	0.73
1:A:938:ILE:HG12	1:A:981:ILE:HG23	1.72	0.72
1:A:919:PRO:HG2	1:A:922:GLU:HG2	1.72	0.72
1:A:739:LYS:O	1:A:1013:ALA:CB	2.38	0.72
1:B:980:VAL:O	1:B:980:VAL:CG1	2.38	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:892:THR:CG2	4:A:1203:HOH:O	2.38	0.72
1:A:869:TYR:OH	1:A:871:ALA:CB	2.37	0.71
1:B:808:ASN:ND2	1:B:987:MET:CB	2.52	0.71
1:A:739:LYS:O	1:A:1013:ALA:HB2	1.90	0.70
1:A:936:PRO:HG2	1:A:939:CYS:HB2	1.71	0.70
1:A:846:LYS:CG	1:A:847:THR:CG2	2.69	0.70
1:B:712:PHE:CD2	1:B:789:ILE:HD11	2.26	0.69
1:A:846:LYS:CG	1:A:847:THR:HG22	2.13	0.69
1:A:829:GLU:HG3	1:A:893:HIS:HD1	1.56	0.69
1:A:1014:ASP:O	1:A:1017:LEU:HG	1.93	0.69
1:A:723:PHE:CD2	4:A:1204:HOH:O	2.32	0.69
1:A:869:TYR:CD2	1:A:870:HIS:N	2.61	0.68
1:B:908:MET:O	1:B:938:ILE:HD11	1.93	0.68
1:A:718:LEU:HB2	1:A:726:VAL:HG13	1.75	0.68
1:A:931:GLU:O	1:A:932:ARG:HG2	1.94	0.68
1:B:808:ASN:HD21	1:B:987:MET:CA	2.08	0.67
1:A:846:LYS:HG3	1:A:847:THR:N	2.09	0.66
1:A:884:GLU:HG3	4:A:1203:HOH:O	1.94	0.66
1:B:908:MET:HG3	1:B:939:CYS:SG	2.36	0.66
1:B:778:LEU:HD21	1:B:791:GLN:HB3	1.78	0.66
1:A:747:LEU:CD1	1:A:759:ILE:HG13	2.26	0.66
1:A:812:GLN:HG2	1:A:975:PRO:HG2	1.78	0.65
1:A:860:LYS:HG2	1:A:869:TYR:HE1	1.59	0.65
1:B:932:ARG:HH22	1:B:953:ILE:HG13	1.61	0.65
1:A:1015:GLU:O	1:A:1019:PRO:CD	2.45	0.65
1:A:829:GLU:HG3	1:A:893:HIS:ND1	2.12	0.65
1:A:832:ARG:HH11	1:A:864:ALA:HA	1.58	0.65
1:A:1017:LEU:HD12	1:A:1018:ILE:HA	1.76	0.65
1:B:908:MET:O	1:B:938:ILE:HD13	1.95	0.64
1:A:1015:GLU:HG2	1:A:1016:TYR:N	2.11	0.64
1:A:918:ILE:CG2	1:A:919:PRO:CD	2.67	0.64
1:A:935:GLN:HA	1:A:944:TYR:HE1	1.58	0.64
1:B:776:ARG:O	1:B:791:GLN:HG2	1.97	0.64
1:B:855:ASP:HB2	1:B:858:LEU:CD1	2.27	0.64
1:A:760:LEU:CD1	1:B:945:MET:CE	2.72	0.64
1:A:715:ILE:HD11	1:A:728:LYS:HG2	1.80	0.63
1:A:772:PRO:O	1:A:850:HIS:NE2	2.30	0.63
1:A:812:GLN:NE2	1:A:972:ALA:O	2.32	0.63
1:A:749:GLU:CB	1:A:751:THR:CG2	2.74	0.62
1:B:960:LYS:HA	1:B:960:LYS:HE2	1.81	0.62
1:A:747:LEU:CD2	1:A:747:LEU:N	2.54	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:807:ASP:OD2	1:A:807:ASP:N	2.32	0.62
1:A:869:TYR:HD2	1:A:869:TYR:O	1.81	0.61
1:B:704:LEU:HD22	1:B:706:ILE:HD13	1.82	0.61
1:A:940:THR:OG1	1:A:941:ILE:N	2.32	0.61
1:B:998:TYR:OH	1:B:1002:MET:CE	2.49	0.61
1:A:935:GLN:CA	1:A:944:TYR:CE1	2.81	0.61
1:B:950:CYS:O	1:B:958:ARG:CD	2.47	0.61
1:B:940:THR:HG23	1:B:978:TYR:O	2.00	0.60
1:A:1020:GLN:OE1	1:A:1020:GLN:HA	2.01	0.60
1:A:847:THR:HG23	1:A:850:HIS:HB3	1.83	0.60
1:A:888:HIS:HB2	1:A:890:ILE:HG13	1.82	0.60
1:A:804:GLU:HB3	1:A:805:HIS:ND1	2.17	0.60
1:B:712:PHE:HZ	1:B:787:GLN:HE21	1.49	0.60
1:B:986:ARG:O	1:B:987:MET:CG	2.48	0.60
1:A:852:LYS:NZ	1:A:1015:GLU:OE1	2.33	0.60
1:A:766:MET:HG2	1:A:777:LEU:HB3	1.84	0.60
1:A:733:PRO:HG2	1:A:736:GLU:HB2	1.84	0.59
1:A:876:VAL:CB	1:A:877:PRO:HD2	2.33	0.59
1:B:935:GLN:N	1:B:944:TYR:HE2	2.00	0.59
1:B:935:GLN:CB	1:B:944:TYR:CE2	2.86	0.59
1:B:724:GLY:H	1:B:748:ARG:HB2	1.67	0.58
1:B:826:ASN:ND2	4:B:1201:HOH:O	2.36	0.58
1:A:747:LEU:CD2	1:A:747:LEU:H	1.99	0.58
1:B:861:LEU:HD13	1:B:866:GLU:O	2.04	0.58
1:B:700:ASN:ND2	1:B:768:SER:OG	2.33	0.57
1:B:940:THR:HB	1:B:942:ASP:OD1	2.03	0.57
1:A:747:LEU:HD13	1:A:759:ILE:HG13	1.86	0.57
1:A:940:THR:OG1	1:A:942:ASP:N	2.36	0.57
1:B:998:TYR:HE1	1:B:1002:MET:HG2	1.69	0.57
1:A:1015:GLU:O	1:A:1019:PRO:HD2	2.05	0.57
1:A:781:CYS:HB3	1:A:787:GLN:HB2	1.85	0.57
1:A:1020:GLN:OE1	1:A:1020:GLN:CA	2.52	0.57
2:A:1101:85X:OAC	2:A:1101:85X:CAI	2.53	0.57
1:A:776:ARG:O	1:A:791:GLN:HG2	2.05	0.57
1:B:1012:ASP:OD1	1:B:1014:ASP:N	2.35	0.57
1:A:970:LYS:O	1:A:973:ARG:HG3	2.05	0.56
1:A:703:LEU:O	1:A:703:LEU:HG	2.06	0.56
1:A:718:LEU:HD21	1:A:728:LYS:HB2	1.86	0.56
1:B:997:PHE:CD1	1:B:997:PHE:O	2.58	0.56
1:B:816:ASN:O	1:B:819:VAL:HG23	2.04	0.56
1:B:712:PHE:CZ	1:B:787:GLN:NE2	2.74	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:813:TYR:HE2	4:A:1210:HOH:O	1.88	0.56
1:A:760:LEU:CD1	1:B:945:MET:HE2	2.25	0.56
1:B:714:LYS:NZ	4:B:1203:HOH:O	2.38	0.56
1:A:843:VAL:HG12	1:A:851:VAL:CG1	2.36	0.55
1:A:760:LEU:HD13	1:B:945:MET:HE3	1.86	0.55
1:B:808:ASN:ND2	1:B:987:MET:CA	2.69	0.55
1:A:769:VAL:HG21	1:A:774:VAL:HG11	1.88	0.55
1:B:822:ALA:HB1	1:B:965:ILE:HG12	1.87	0.55
1:A:740:ILE:CG1	1:A:1013:ALA:CB	2.84	0.55
1:A:884:GLU:OE2	1:A:958:ARG:NH1	2.32	0.55
1:A:878:ILE:CD1	1:A:881:MET:SD	2.92	0.55
1:B:905:TRP:O	1:B:909:THR:HG23	2.07	0.55
1:B:829:GLU:OE2	1:B:960:LYS:NZ	2.40	0.54
1:A:892:THR:HG21	4:A:1203:HOH:O	2.05	0.54
1:B:997:PHE:HD1	1:B:998:TYR:N	2.06	0.54
1:A:918:ILE:CG2	1:A:919:PRO:O	2.51	0.54
1:B:716:LYS:HE2	1:B:718:LEU:CD1	2.37	0.54
1:B:808:ASN:ND2	1:B:808:ASN:O	2.41	0.54
1:A:760:LEU:CD1	1:B:945:MET:HE3	2.38	0.54
1:B:794:PRO:O	1:B:998:TYR:HB2	2.08	0.53
1:A:796:GLY:HA2	2:A:1101:85X:CAE	2.38	0.53
1:B:884:GLU:OE2	1:B:958:ARG:NH2	2.37	0.53
1:A:837:ASP:O	1:A:842:ASN:ND2	2.38	0.53
1:A:823:LYS:HA	1:A:965:ILE:HD13	1.91	0.53
1:A:702:ALA:O	1:B:941:ILE:HB	2.09	0.53
1:A:981:ILE:O	1:A:984:ASP:HB2	2.09	0.53
1:B:843:VAL:HG22	1:B:853:ILE:HG22	1.90	0.53
1:A:869:TYR:HE2	1:A:871:ALA:N	2.06	0.52
1:A:944:TYR:CE2	1:A:948:VAL:HG22	2.45	0.52
1:B:967:GLU:O	1:B:971:MET:HG3	2.09	0.52
1:A:777:LEU:HA	1:A:790:MET:HA	1.90	0.52
1:B:908:MET:CA	1:B:938:ILE:HD11	2.39	0.52
1:A:846:LYS:CG	1:A:847:THR:N	2.72	0.52
1:B:798:LEU:HD13	1:B:907:LEU:HD21	1.91	0.51
1:A:876:VAL:CB	1:A:877:PRO:CD	2.87	0.51
1:A:804:GLU:HB3	1:A:805:HIS:CE1	2.45	0.51
1:A:773:HIS:CA	1:A:852:LYS:HG3	2.40	0.51
1:A:936:PRO:HG2	1:A:939:CYS:CB	2.39	0.51
1:B:916:ASP:OD1	1:B:917:GLY:N	2.43	0.51
1:A:1014:ASP:H	1:A:1017:LEU:HD23	1.76	0.50
1:B:835:HIS:NE2	1:B:854:THR:O	2.36	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:771:ASN:HB3	1:A:774:VAL:HG23	1.92	0.50
1:B:998:TYR:OH	1:B:1002:MET:HE1	2.10	0.50
1:B:1016:TYR:HD2	1:B:1016:TYR:C	2.15	0.50
1:A:916:ASP:OD2	1:A:916:ASP:O	2.30	0.50
1:A:710:THR:CG2	1:B:929:LYS:HD3	2.41	0.50
1:A:1013:ALA:HA	1:A:1017:LEU:HD23	1.94	0.50
1:A:893:HIS:H	1:A:893:HIS:CD2	2.30	0.50
1:B:1016:TYR:CD2	1:B:1016:TYR:C	2.84	0.50
1:B:762:GLU:O	1:B:766:MET:HG3	2.12	0.49
1:A:847:THR:O	1:A:850:HIS:O	2.30	0.49
1:B:712:PHE:HZ	1:B:787:GLN:NE2	2.09	0.49
1:B:925:SER:O	1:B:929:LYS:HG3	2.12	0.49
1:B:994:ASP:OD2	1:B:994:ASP:C	2.50	0.49
1:B:1001:LEU:O	1:B:1002:MET:O	2.30	0.49
1:A:984:ASP:OD1	1:A:984:ASP:C	2.50	0.49
1:A:846:LYS:HG2	1:A:850:HIS:HB3	1.95	0.49
1:A:955:ALA:O	1:A:958:ARG:HG3	2.13	0.49
1:B:998:TYR:OH	1:B:1002:MET:HE2	2.11	0.49
1:A:846:LYS:CG	1:A:847:THR:HG23	2.43	0.49
1:B:745:LYS:O	1:B:787:GLN:HA	2.13	0.49
1:B:940:THR:CG2	1:B:978:TYR:O	2.60	0.49
1:A:943:VAL:HG22	1:A:971:MET:SD	2.52	0.49
1:A:846:LYS:NZ	1:A:1015:GLU:OE2	2.42	0.48
1:B:838:LEU:HD12	1:B:839:ALA:H	1.78	0.48
1:B:775:CYS:SG	1:B:844:LEU:HD12	2.53	0.48
1:B:882:ALA:HA	1:B:898:TRP:CD2	2.48	0.48
1:B:943:VAL:CG2	1:B:971:MET:HE1	2.40	0.48
1:A:1015:GLU:O	1:A:1019:PRO:HD3	2.13	0.48
1:A:844:LEU:O	1:A:851:VAL:HG13	2.13	0.48
1:A:715:ILE:HG12	1:A:716:LYS:N	2.28	0.48
1:B:855:ASP:CB	1:B:858:LEU:HD11	2.33	0.48
1:A:870:HIS:O	1:A:870:HIS:ND1	2.34	0.48
1:A:753:PRO:O	1:A:757:LYS:N	2.39	0.48
1:A:905:TRP:CD2	1:A:933:LEU:HD13	2.48	0.48
1:A:708:LYS:O	1:A:711:GLU:HB2	2.14	0.48
1:A:916:ASP:OD2	1:A:916:ASP:C	2.51	0.48
1:B:816:ASN:O	1:B:820:GLN:HG3	2.14	0.48
1:A:791:GLN:HE22	1:A:852:LYS:NZ	2.12	0.47
1:A:932:ARG:HH21	1:A:932:ARG:HG2	1.79	0.47
1:A:860:LYS:CG	1:A:869:TYR:CE1	2.93	0.47
1:B:829:GLU:O	1:B:829:GLU:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:704:LEU:HD23	1:B:705:ARG:N	2.29	0.47
1:A:709:GLU:HA	1:A:712:PHE:CZ	2.48	0.47
1:A:815:LEU:HA	1:A:815:LEU:HD23	1.68	0.47
1:A:839:ALA:O	1:A:843:VAL:HG23	2.14	0.47
1:A:936:PRO:CD	1:A:944:TYR:HD1	2.24	0.47
1:B:707:LEU:CD1	1:B:789:ILE:CD1	2.81	0.47
1:A:767:ALA:HB2	1:A:777:LEU:CD2	2.44	0.47
1:A:984:ASP:OD1	1:A:984:ASP:O	2.32	0.47
1:B:950:CYS:CA	1:B:958:ARG:HG2	2.35	0.47
1:A:724:GLY:HA3	1:A:747:LEU:HA	1.95	0.47
1:A:926:ILE:HA	1:A:929:LYS:HB2	1.96	0.47
1:A:747:LEU:HD11	1:A:759:ILE:HG13	1.94	0.47
1:A:783:THR:OG1	1:A:785:THR:O	2.31	0.47
1:A:739:LYS:C	1:A:1013:ALA:HB2	2.36	0.47
1:B:847:THR:HG23	1:B:850:HIS:HB3	1.95	0.47
1:A:843:VAL:HG12	1:A:851:VAL:HG11	1.95	0.46
1:B:889:ARG:HA	1:B:889:ARG:HD3	1.71	0.46
1:A:715:ILE:HD11	1:A:728:LYS:CG	2.45	0.46
1:A:1016:TYR:O	1:A:1019:PRO:HD2	2.15	0.46
1:A:869:TYR:CE2	1:A:871:ALA:N	2.83	0.46
1:A:1018:ILE:CB	1:A:1019:PRO:HD3	2.45	0.46
1:A:1020:GLN:CD	1:A:1020:GLN:N	2.69	0.46
1:A:746:GLU:OE1	1:A:787:GLN:NE2	2.48	0.46
1:B:815:LEU:O	1:B:819:VAL:HG22	2.15	0.46
1:B:923:ILE:O	1:B:926:ILE:HG12	2.15	0.46
1:B:740:ILE:HG21	1:B:1013:ALA:HB2	1.98	0.46
1:A:894:GLN:OE1	1:A:960:LYS:HD3	2.16	0.46
1:B:761:ASP:O	1:B:765:VAL:HG22	2.16	0.46
1:B:783:THR:HB	1:B:785:THR:O	2.16	0.46
1:B:1012:ASP:OD1	1:B:1013:ALA:N	2.49	0.46
1:B:893:HIS:O	1:B:897:VAL:HG23	2.16	0.46
1:B:922:GLU:O	1:B:926:ILE:HG23	2.15	0.46
1:A:723:PHE:CZ	2:A:1101:85X:NAB	2.74	0.45
1:A:744:ILE:HA	1:A:788:LEU:O	2.16	0.45
1:A:771:ASN:HB3	1:A:774:VAL:CG2	2.46	0.45
1:A:869:TYR:HD2	1:A:870:HIS:N	2.04	0.45
1:B:807:ASP:O	1:B:987:MET:CE	2.65	0.45
1:A:1017:LEU:HD12	1:A:1017:LEU:O	2.11	0.45
1:A:850:HIS:HD2	1:A:851:VAL:N	2.15	0.45
1:A:826:ASN:HB2	1:A:965:ILE:HD11	1.97	0.45
1:B:763:ALA:HB2	1:B:788:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:881:MET:HE2	1:B:885:SER:HB3	1.97	0.45
1:B:977:ARG:HG2	1:B:978:TYR:CD2	2.52	0.45
1:A:749:GLU:CG	1:A:751:THR:CG2	2.94	0.45
1:A:831:ARG:HD2	1:A:831:ARG:HA	1.66	0.45
1:A:914:PRO:O	1:A:915:TYR:C	2.54	0.45
1:A:859:ALA:O	1:A:860:LYS:HD2	2.17	0.45
1:A:730:LEU:HD12	1:A:730:LEU:HA	1.64	0.45
1:A:724:GLY:HA3	1:A:746:GLU:O	2.17	0.45
1:A:898:TRP:CD1	1:A:898:TRP:C	2.90	0.45
1:B:931:GLU:O	1:B:932:ARG:HD2	2.17	0.45
1:B:998:TYR:CE1	1:B:1002:MET:HG2	2.49	0.45
1:B:777:LEU:CD1	1:B:789:ILE:O	2.57	0.44
1:A:765:VAL:O	1:A:769:VAL:HG13	2.16	0.44
1:A:838:LEU:HD23	1:A:900:TYR:HA	1.99	0.44
1:A:871:ALA:O	1:A:889:ARG:HB3	2.17	0.44
1:A:847:THR:HG1	1:A:849:GLN:HG2	1.80	0.44
1:B:827:TYR:CZ	1:B:831:ARG:NH1	2.86	0.44
1:A:1019:PRO:O	1:A:1020:GLN:C	2.56	0.44
1:A:729:GLY:O	1:A:742:VAL:HG22	2.17	0.44
1:B:792:LEU:HA	1:B:792:LEU:HD12	1.82	0.44
1:B:893:HIS:HD2	4:B:1207:HOH:O	2.00	0.44
1:A:708:LYS:HB3	1:B:931:GLU:HB2	2.00	0.44
1:B:932:ARG:NH2	1:B:951:TRP:O	2.43	0.44
1:A:925:SER:HB3	1:A:929:LYS:HE3	1.98	0.44
1:A:1016:TYR:C	1:A:1019:PRO:HD2	2.37	0.44
1:A:706:ILE:O	1:A:707:LEU:HD23	2.18	0.44
1:A:766:MET:HB2	1:A:766:MET:HE2	1.84	0.44
1:A:795:PHE:HB2	1:A:845:VAL:O	2.18	0.44
1:A:739:LYS:O	1:A:1013:ALA:HB3	2.12	0.44
1:A:893:HIS:N	1:A:893:HIS:CD2	2.86	0.44
1:A:913:LYS:H	1:A:913:LYS:HG2	1.49	0.44
1:B:747:LEU:HD11	1:B:759:ILE:HG21	1.99	0.44
1:B:940:THR:CB	1:B:942:ASP:OD1	2.66	0.44
1:B:804:GLU:HB3	1:B:805:HIS:ND1	2.32	0.43
1:A:1018:ILE:N	1:A:1019:PRO:CD	2.81	0.43
1:B:716:LYS:HE2	1:B:718:LEU:HD11	2.00	0.43
1:B:786:VAL:HG23	4:B:1205:HOH:O	2.18	0.43
1:B:807:ASP:O	1:B:987:MET:HE1	2.18	0.43
1:A:793:MET:HG3	1:A:844:LEU:HB2	2.00	0.43
1:A:925:SER:O	1:A:929:LYS:HD3	2.18	0.43
1:B:744:ILE:HA	1:B:788:LEU:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:986:ARG:C	1:B:987:MET:CG	2.86	0.43
1:B:737:LYS:HE3	1:B:737:LYS:HB3	1.62	0.43
1:A:862:LEU:HD23	1:A:869:TYR:HB2	1.99	0.43
1:A:923:ILE:O	1:A:926:ILE:HG12	2.18	0.43
1:A:944:TYR:O	1:A:948:VAL:HG23	2.19	0.43
1:A:981:ILE:O	1:A:984:ASP:CB	2.67	0.43
1:B:697:GLU:HG2	1:B:698:ALA:H	1.84	0.43
1:B:845:VAL:HA	1:B:851:VAL:HG12	1.99	0.43
1:B:894:GLN:OE1	1:B:894:GLN:HA	2.19	0.43
1:A:718:LEU:HB2	1:A:726:VAL:CG1	2.47	0.43
1:B:707:LEU:O	1:B:781:CYS:HB2	2.19	0.43
1:B:752:SER:O	1:B:756:ASN:ND2	2.51	0.43
1:A:746:GLU:HG3	1:A:787:GLN:HG3	2.01	0.42
1:A:940:THR:CG2	1:A:978:TYR:O	2.66	0.42
1:B:984:ASP:O	1:B:984:ASP:OD2	2.37	0.42
1:A:897:VAL:O	1:A:900:TYR:HB3	2.19	0.42
1:B:799:LEU:HB2	1:B:840:ALA:CB	2.48	0.42
1:B:747:LEU:HD12	4:B:1205:HOH:O	2.20	0.42
1:B:942:ASP:N	1:B:942:ASP:OD1	2.45	0.42
1:B:877:PRO:O	1:B:881:MET:HG3	2.19	0.42
1:B:829:GLU:OE1	1:B:960:LYS:NZ	2.53	0.42
1:B:795:PHE:HA	1:B:998:TYR:HB2	2.02	0.42
1:A:872:GLU:H	1:A:872:GLU:HG3	1.45	0.42
1:B:944:TYR:HA	1:B:947:MET:HG3	2.02	0.42
1:A:762:GLU:OE2	1:A:857:GLY:HA2	2.20	0.42
1:B:716:LYS:O	1:B:728:LYS:N	2.49	0.42
1:B:718:LEU:HD12	1:B:718:LEU:HA	1.82	0.42
1:B:835:HIS:HA	1:B:858:LEU:HD23	2.02	0.42
1:B:961:PHE:O	1:B:965:ILE:HG13	2.20	0.42
1:B:970:LYS:HE3	1:B:970:LYS:HB2	1.51	0.42
1:B:711:GLU:O	1:B:732:ILE:HD12	2.20	0.41
1:A:750:ALA:HB2	1:A:785:THR:HA	2.02	0.41
1:A:843:VAL:CG1	1:A:851:VAL:HG11	2.50	0.41
1:B:741:PRO:HG2	1:B:792:LEU:O	2.21	0.41
1:A:869:TYR:CE2	1:A:870:HIS:C	2.94	0.41
1:B:712:PHE:CE1	1:B:787:GLN:NE2	2.88	0.41
1:A:905:TRP:HD1	1:A:947:MET:CE	2.33	0.41
1:B:838:LEU:HD12	1:B:839:ALA:N	2.35	0.41
1:A:964:LEU:HA	1:A:964:LEU:HD12	1.71	0.41
1:A:811:SER:HB2	1:A:981:ILE:HD11	2.03	0.41
1:B:943:VAL:CG2	1:B:971:MET:CE	2.97	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:962:ARG:O	1:A:966:ILE:HG23	2.21	0.41
1:B:820:GLN:NE2	1:B:849:GLN:O	2.39	0.41
1:A:805:HIS:ND1	1:A:805:HIS:N	2.69	0.41
1:A:713:LYS:HE2	1:A:715:ILE:HG22	2.03	0.41
1:A:763:ALA:HB2	1:A:788:LEU:HD21	2.03	0.41
1:A:846:LYS:HB2	1:A:846:LYS:HE3	1.82	0.41
1:B:908:MET:C	1:B:938:ILE:HD11	2.40	0.41
1:B:971:MET:HB3	1:B:971:MET:HE3	1.34	0.41
1:A:708:LYS:HD3	1:B:931:GLU:OE1	2.20	0.40
1:A:726:VAL:HA	1:A:744:ILE:O	2.21	0.40
1:A:697:GLU:CG	1:A:698:ALA:H	2.34	0.40
1:B:828:LEU:O	1:B:831:ARG:O	2.40	0.40
1:B:897:VAL:O	1:B:900:TYR:HB3	2.20	0.40
1:A:793:MET:N	1:A:793:MET:SD	2.95	0.40
1:A:860:LYS:CG	1:A:869:TYR:HE1	2.29	0.40
1:B:905:TRP:CE2	1:B:909:THR:HG21	2.56	0.40
1:A:835:HIS:HE1	1:A:837:ASP:O	2.04	0.40
1:A:1020:GLN:CD	1:A:1020:GLN:H	2.25	0.40
1:A:716:LYS:O	1:A:728:LYS:N	2.49	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	298/331 (90%)	292 (98%)	6 (2%)	0	100	100
1	B	298/331 (90%)	289 (97%)	9 (3%)	0	100	100
All	All	596/662 (90%)	581 (98%)	15 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	245/288 (85%)	176 (72%)	69 (28%)	0	2
1	B	251/288 (87%)	188 (75%)	63 (25%)	0	3
All	All	496/576 (86%)	364 (73%)	132 (27%)	0	3

All (132) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	703	LEU
1	A	704	LEU
1	A	708	LYS
1	A	713	LYS
1	A	714	LYS
1	A	715	ILE
1	A	716	LYS
1	A	717	VAL
1	A	725	THR
1	A	745	LYS
1	A	747	LEU
1	A	751	THR
1	A	757	LYS
1	A	760	LEU
1	A	769	VAL
1	A	777	LEU
1	A	778	LEU
1	A	783	THR
1	A	784	SER
1	A	786	VAL
1	A	790	MET
1	A	792	LEU
1	A	798	LEU
1	A	804	GLU
1	A	805	HIS
1	A	807	ASP
1	A	809	ILE

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Mol	Chain	Res	Type
1	A	811	SER
1	A	823	LYS
1	A	841	ARG
1	A	847	THR
1	A	849	GLN
1	A	852	LYS
1	A	853	ILE
1	A	854	THR
1	A	858	LEU
1	A	861	LEU
1	A	869	TYR
1	A	870	HIS
1	A	872	GLU
1	A	878	ILE
1	A	881	MET
1	A	885	SER
1	A	892	THR
1	A	904	VAL
1	A	913	LYS
1	A	923	ILE
1	A	924	SER
1	A	925	SER
1	A	927	LEU
1	A	929	LYS
1	A	932	ARG
1	A	938	ILE
1	A	939	CYS
1	A	940	THR
1	A	941	ILE
1	A	952	MET
1	A	953	ILE
1	A	958	ARG
1	A	964	LEU
1	A	966	ILE
1	A	980	VAL
1	A	981	ILE
1	A	982	GLN
1	A	986	ARG
1	A	987	MET
1	A	1015	GLU
1	A	1017	LEU
1	A	1020	GLN

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Mol	Chain	Res	Type
1	B	706	ILE
1	B	708	LYS
1	B	714	LYS
1	B	715	ILE
1	B	718	LEU
1	B	725	THR
1	B	730	LEU
1	B	732	ILE
1	B	736	GLU
1	B	737	LYS
1	B	746	GLU
1	B	765	VAL
1	B	769	VAL
1	B	780	ILE
1	B	781	CYS
1	B	787	GLN
1	B	791	GLN
1	B	792	LEU
1	B	798	LEU
1	B	804	GLU
1	B	805	HIS
1	B	808	ASN
1	B	811	SER
1	B	819	VAL
1	B	831	ARG
1	B	836	ARG
1	B	838	LEU
1	B	847	THR
1	B	853	ILE
1	B	854	THR
1	B	856	PHE
1	B	870	HIS
1	B	876	VAL
1	B	878	ILE
1	B	884	GLU
1	B	888	HIS
1	B	889	ARG
1	B	890	ILE
1	B	892	THR
1	B	908	MET
1	B	923	ILE
1	B	924	SER

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Mol	Chain	Res	Type
1	B	927	LEU
1	B	929	LYS
1	B	941	ILE
1	B	942	ASP
1	B	946	ILE
1	B	947	MET
1	B	960	LYS
1	B	962	ARG
1	B	964	LEU
1	B	971	MET
1	B	977	ARG
1	B	979	LEU
1	B	985	GLU
1	B	993	THR
1	B	994	ASP
1	B	997	PHE
1	B	998	TYR
1	B	1002	MET
1	B	1011	VAL
1	B	1016	TYR
1	B	1017	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	787	GLN
1	B	808	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 3 ligands modelled in this entry, 2 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	85X	A	1101	-	25,34,34	4.52	14 (56%)	24,52,52	1.86	1 (4%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	85X	A	1101	-	-	2/4/13/13	0/6/6/6

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1101	85X	CAN-CAR	-12.89	1.39	1.50
2	A	1101	85X	CAS-CAY	-7.64	1.32	1.43
2	A	1101	85X	CAY-CAZ	-7.55	1.32	1.42
2	A	1101	85X	CAX-CBA	-7.41	1.32	1.42
2	A	1101	85X	CAR-CAX	-5.28	1.33	1.42
2	A	1101	85X	CAU-CAW	-4.72	1.32	1.41
2	A	1101	85X	CAT-CAV	-4.46	1.33	1.41
2	A	1101	85X	CAJ-CAU	-4.01	1.32	1.41
2	A	1101	85X	CAL-CAW	-4.01	1.32	1.41
2	A	1101	85X	CAK-CAV	-4.00	1.32	1.41
2	A	1101	85X	CAZ-CBA	-4.00	1.32	1.42
2	A	1101	85X	CAI-CAT	-3.95	1.33	1.41
2	A	1101	85X	CAQ-NAP	-3.13	1.32	1.35
2	A	1101	85X	CAS-CAR	-2.82	1.33	1.39

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
2	A	1101	85X	CAN-NAP-CAQ	-7.51	105.68	113.78

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1101	85X	CAM-CAO-NBC-CAW
2	A	1101	85X	CAM-CAO-NBC-CBA

There are no ring outliers.

1 monomer is involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1101	85X	6	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 [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	A	302/331 (91%)	-0.04	5 (1%) 70 42	62, 79, 115, 145	0
1	B	308/331 (93%)	-0.00	11 (3%) 43 18	58, 77, 115, 134	1 (0%)
All	All	610/662 (92%)	-0.02	16 (2%) 56 27	58, 78, 116, 145	1 (0%)

All (16) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	862	LEU	3.6
1	B	730	LEU	3.3
1	B	873	GLY	3.3
1	B	1019	PRO	3.0
1	B	917	GLY	3.0
1	B	871	ALA	2.9
1	A	873	GLY	2.5
1	A	735	GLY	2.5
1	B	872	GLU	2.4
1	B	993	THR	2.3
1	B	854	THR	2.3
1	A	739	LYS	2.2
1	B	987	MET	2.1
1	B	992	PRO	2.1
1	A	874	GLY	2.0
1	B	1010	VAL	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 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	LLDF	B-factors(\AA^2)	Q<0.9
2	85X	A	1101	29/29	0.89	0.21	-0.21	64,75,84,90	0
3	CL	B	1101	1/1	0.86	0.86	-	89,89,89,89	0
3	CL	B	1102	1/1	0.64	0.30	-	80,80,80,80	0

6.5 Other polymers [i](#)

There are no such residues in this entry.