



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 08:31 PM EDT

PDB ID : 1EXV
Title : HUMAN LIVER GLYCOGEN PHOSPHORYLASE A COMPLEXED WITH
GLCNAC AND CP-403,700
Authors : Rath, V.L.; Ammirati, M.; Danley, D.E.; Ekstrom, J.L.; Hynes, T.R.; Olson,
T.V.; Hoover, D.J.
Deposited on : 2000-05-04
Resolution : 2.40 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)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

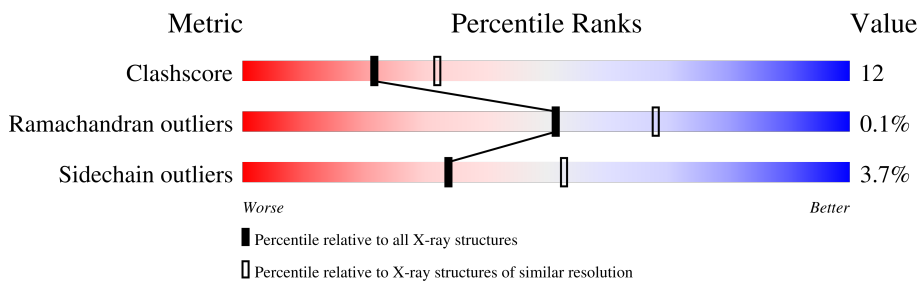
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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 $\leq 5\%$.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	847	
1	B	847	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	MPD	A	1901	X	-	-	-
5	MPD	B	1902	X	-	-	-

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 13223 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.

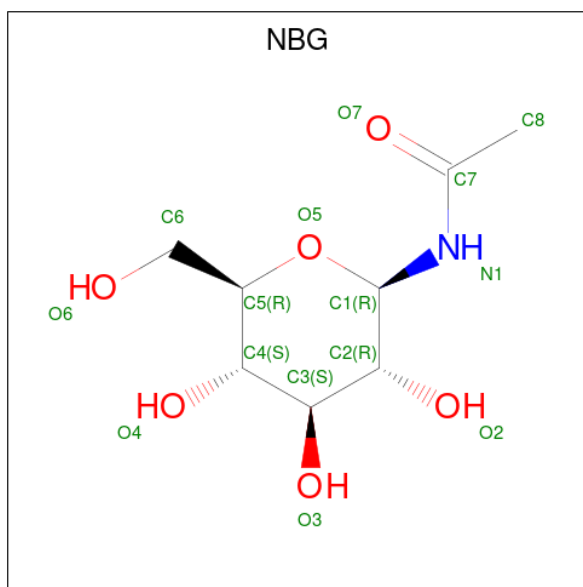
- Molecule 1 is a protein called LIVER GLYCOGEN PHOSPHORYLASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	786	6377	4098	1083	1167	29	0	0	0
1	B	786	6377	4098	1083	1167	29	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	569	ARG	SER	SEE REMARK 999	UNP P06737
B	569	ARG	SER	SEE REMARK 999	UNP P06737

- Molecule 2 is N-acetyl-beta-D-glucopyranosylamine (three-letter code: NBG) (formula: $C_8H_{15}NO_6$).



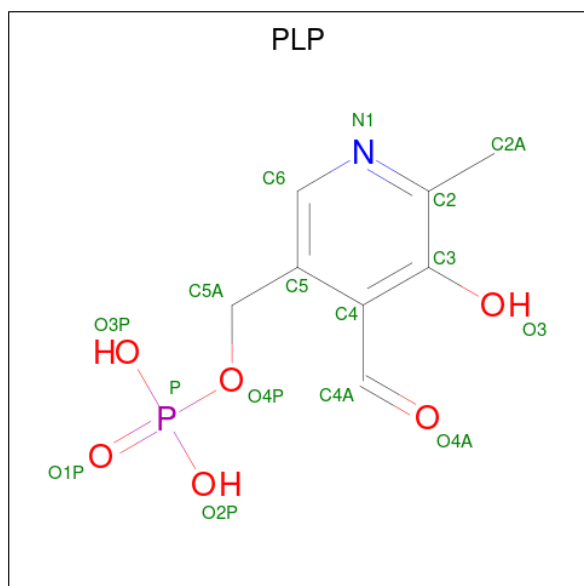
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	A	1	15	8	1	6	0	0

Continued on next page...

Continued from previous page...

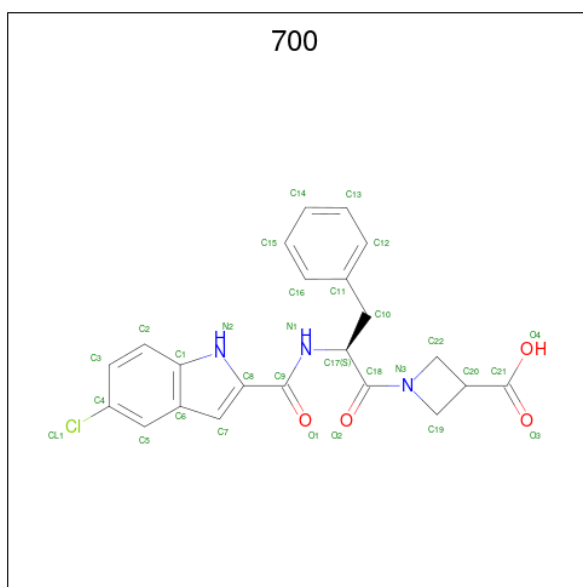
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	B	1	15	8	1	6	0	0

- Molecule 3 is PYRIDOXAL-5'-PHOSPHATE (three-letter code: PLP) (formula: C₈H₁₀NO₆P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
3	A	1	15	8	1	5	1	0	0
3	B	1	15	8	1	5	1	0	0

- Molecule 4 is [5-CHLORO-1H-INDOL-2-CARBONYL-PHENYLALANINYL]-AZETIDINE-3-CARBOXYLIC ACID (three-letter code: 700) (formula: C₂₂H₂₀ClN₃O₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	Cl	N			O
4	A	1	30	22	1	3	4	0	0
4	B	1	30	22	1	3	4	0	0

- Molecule 5 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula: C₆H₁₄O₂).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	C O		
5	A	1	8	6 2	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	B	1	Total	C	O	0	0
			8	6	2		

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	174	Total	O	0	0
			174	174		
6	B	159	Total	O	0	0
			159	159		

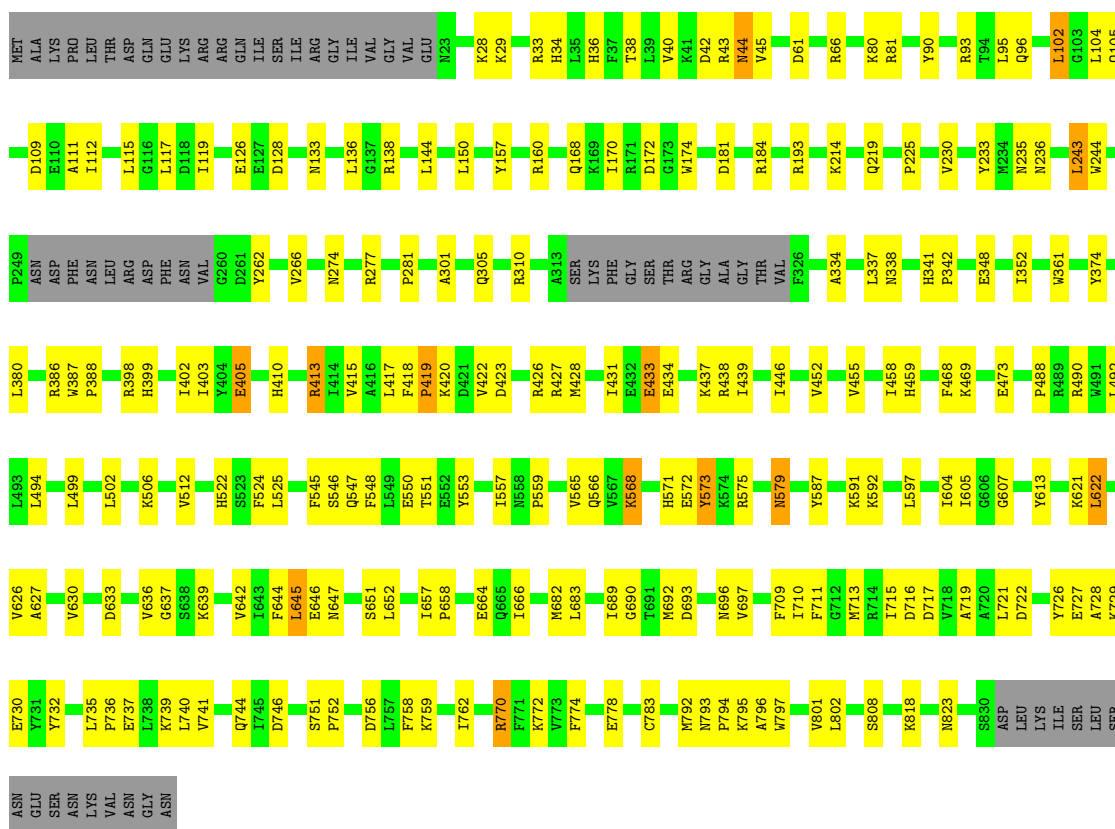
3 Residue-property plots

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. 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. 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.

Note EDS was not executed.

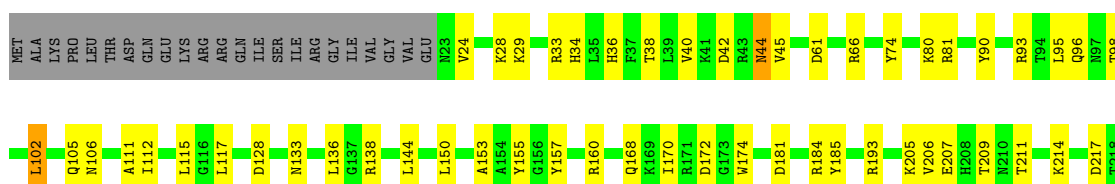
- Molecule 1: LIVER GLYCOGEN PHOSPHORYLASE

Chain A: 



- Molecule 1: LIVER GLYCOGEN PHOSPHORYLASE

Chain B: 



Q219	GLY	THR	P225	V230	Y233	M234	N235	N236	L243	W244	R247	A248	P249	ASN	ASP	PHE	ASN	ASN	LEU	ARG	ASP	PHE	ASN	VAL	G260	D261	Y262	V266	N274	R277	P281	R292	E296	V300	A301	Q305	R310	A313	SER	LYS	PHE	GLY	SER	THR	ARG	GLY	ALA	
GLY	THR	VAL	F326	A334	L337	N338	H341	P342	A345	L346	W361	Y374	L380	P361	L384	R385	R386	R398	H399	L400	E401	I402	I403	Y404	E405	H410	R413	I414	V415	A416	L417	F418	P419	K420	D421	V422	D423	R426	R427	M428	I431	E432	E433	E434	K437			
R438	I439	I446	V447	G448	S449	H450	A451	V452	V455	I458	H459	F468	K469	E473	P488	R489	R490	W491	L492	L493	L494	L499	L502	K506	V512	S516	T519	R520	V415	L521	H522	S523	F524	L525	D528	R532	F545	S546	Q547	F548	E550	T551	F553					
I557	M558	P559	V565	Q566	V567	K568	H571	E572	Y573	K574	R575	N579	Y587	K591	K592	L597	I604	I605	Y613	K617	K621	L622	V626	A627	V630	D633	V636	G637	S638	K639	V642	I643	F644	L645	E646	N647	S651	L652	I657	P658								
B664	Q665	I666	M682	L683	I689	G690	T691	M692	D693	M696	V697	E698	E702	L708	F709	I710	F711	G712	M713	E714	I715	D716	D717	V718	A719	D722	Y726	E727	A728	K729	E730	Y731	Y732	L735	P736	E737	L738	K739	L740	V741	Q744	I745	D746	S751	P752	D756	L757	F758
K759	I762	R770	F774	E778	C783	M792	N793	P794	K795	A796	W797	V801	L802	S808	K818	S850	ASP	LEU	LYS	ILE	SER	LEU	SER	ASN	ASN	GLU	SER	ASN	LYS	VAL	ASN	GLY	ASN															

4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 31	Depositor
Cell constants a, b, c, α , β , γ	124.63Å 124.63Å 124.06Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	99.00 – 2.40	Depositor
% Data completeness (in resolution range)	99.8 (99.00-2.40)	Depositor
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS 0.5	Depositor
R, R_{free}	0.236 , 0.280	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	13223	wwPDB-VP
Average B, all atoms (Å ²)	38.0	wwPDB-VP

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: PLP, MPD, 700, NBG

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	0.36	0/6520	0.58	0/8818
1	B	0.35	0/6520	0.58	0/8818
All	All	0.36	0/13040	0.58	0/17636

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 [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	6377	0	6372	149	0
1	B	6377	0	6372	159	0
2	A	15	0	15	0	0
2	B	15	0	15	0	0
3	A	15	0	7	0	0
3	B	15	0	7	0	0
4	A	30	0	18	0	0
4	B	30	0	18	0	0
5	A	8	0	14	1	0
5	B	8	0	14	0	0
6	A	174	0	0	7	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	B	159	0	0	12	0
All	All	13223	0	12852	306	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 12.

All (306) 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:A:96:GLN:HE21	1:A:105:GLN:HE22	1.11	0.98
1:B:96:GLN:HE21	1:B:105:GLN:HE22	1.09	0.98
1:A:168:GLN:HE21	1:A:647:ASN:H	1.21	0.87
1:B:168:GLN:HE21	1:B:647:ASN:H	1.22	0.87
1:B:81:ARG:NH1	1:B:310:ARG:HD3	1.94	0.81
1:A:81:ARG:NH1	1:A:310:ARG:HD3	1.94	0.81
1:B:33:ARG:HD2	6:B:2232:HOH:O	1.80	0.79
1:B:455:VAL:H	1:B:459:HIS:HD2	1.31	0.78
1:A:692:MET:HG3	1:A:697:VAL:HG22	1.67	0.75
1:A:96:GLN:NE2	1:A:105:GLN:HE22	1.84	0.75
1:B:96:GLN:NE2	1:B:105:GLN:HE22	1.82	0.74
1:A:547:GLN:O	1:A:551:THR:HG23	1.89	0.73
1:A:455:VAL:H	1:A:459:HIS:HD2	1.34	0.73
1:B:692:MET:HG3	1:B:697:VAL:HG22	1.69	0.73
1:B:96:GLN:HE21	1:B:105:GLN:NE2	1.86	0.72
1:B:759:LYS:HB3	1:B:759:LYS:NZ	2.05	0.72
1:A:759:LYS:NZ	1:A:759:LYS:HB3	2.06	0.71
1:B:274:ASN:HD22	1:B:277:ARG:HH11	1.40	0.70
1:B:547:GLN:O	1:B:551:THR:HG23	1.91	0.70
1:A:274:ASN:HD22	1:A:277:ARG:HH11	1.39	0.68
1:A:792:MET:O	1:A:794:PRO:HD3	1.94	0.68
1:B:792:MET:O	1:B:794:PRO:HD3	1.93	0.67
1:B:274:ASN:ND2	1:B:277:ARG:HH11	1.93	0.67
1:A:96:GLN:HE21	1:A:105:GLN:NE2	1.91	0.67
1:B:44:ASN:HD22	1:B:45:VAL:N	1.93	0.66
1:A:274:ASN:ND2	1:A:277:ARG:HH11	1.93	0.66
1:B:506:LYS:HD2	1:B:524:PHE:CE2	2.31	0.66
1:A:506:LYS:HD2	1:A:524:PHE:CE2	2.31	0.65
1:B:66:ARG:HD3	1:B:236:ASN:HA	1.79	0.65
1:A:44:ASN:HD22	1:A:45:VAL:N	1.94	0.64
1:B:170:ILE:HG12	1:B:646:GLU:HG2	1.77	0.64
1:A:170:ILE:HG12	1:A:646:GLU:HG2	1.78	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:433:GLU:HG3	1:A:437:LYS:HE3	1.80	0.63
1:A:66:ARG:HD3	1:A:236:ASN:HA	1.80	0.63
1:B:433:GLU:HG3	1:B:437:LYS:HE3	1.80	0.63
1:A:413:ARG:HA	1:A:413:ARG:HE	1.64	0.62
1:A:571:HIS:HD2	1:A:573:TYR:H	1.49	0.61
1:A:42:ASP:HB2	1:A:44:ASN:HD21	1.66	0.60
1:B:96:GLN:HB2	6:B:2289:HOH:O	2.00	0.60
1:B:727:GLU:HG2	1:B:729:LYS:HG2	1.83	0.60
1:A:732:TYR:CZ	1:A:739:LYS:HG3	2.36	0.60
1:B:571:HIS:HD2	1:B:573:TYR:H	1.48	0.60
1:B:630:VAL:O	1:B:636:VAL:HG21	2.02	0.60
1:B:413:ARG:HE	1:B:413:ARG:HA	1.65	0.60
1:A:34:HIS:HD2	1:A:38:THR:OG1	1.84	0.59
1:B:211:THR:OG1	1:B:214:LYS:HE2	2.02	0.59
1:B:546:SER:O	1:B:550:GLU:HG2	2.02	0.59
1:B:732:TYR:CZ	1:B:739:LYS:HG3	2.37	0.59
1:B:34:HIS:HD2	1:B:38:THR:OG1	1.85	0.59
1:B:42:ASP:HB2	1:B:44:ASN:HD21	1.68	0.59
1:A:727:GLU:HG2	1:A:729:LYS:HG2	1.83	0.59
1:B:657:ILE:HB	1:B:658:PRO:HD3	1.85	0.58
1:A:657:ILE:HB	1:A:658:PRO:HD3	1.85	0.58
1:B:28:LYS:HD2	1:B:115:LEU:HG	1.85	0.58
1:A:380:LEU:HD12	1:A:380:LEU:H	1.69	0.58
1:A:732:TYR:CE1	1:A:739:LYS:HA	2.39	0.58
1:A:546:SER:O	1:A:550:GLU:HG2	2.04	0.57
1:B:605:ILE:O	1:B:644:PHE:HA	2.04	0.57
1:A:29:LYS:HE2	1:A:33:ARG:HH21	1.70	0.57
1:A:630:VAL:O	1:A:636:VAL:HG21	2.04	0.57
1:A:28:LYS:HD2	1:A:115:LEU:HG	1.85	0.57
1:B:380:LEU:HD12	1:B:380:LEU:H	1.70	0.57
1:B:45:VAL:HG12	1:B:45:VAL:O	2.05	0.56
1:B:732:TYR:CE1	1:B:739:LYS:HA	2.40	0.56
1:A:386:ARG:HA	1:A:439:ILE:O	2.05	0.56
1:B:386:ARG:HA	1:B:439:ILE:O	2.04	0.56
1:A:93:ARG:O	1:A:490:ARG:NH2	2.38	0.56
1:B:207:GLU:HG2	1:B:209:THR:HG23	1.86	0.56
1:A:770:ARG:HG2	6:A:2155:HOH:O	2.05	0.56
1:B:29:LYS:HE2	1:B:33:ARG:HH21	1.71	0.56
1:A:633:ASP:O	1:A:636:VAL:HG22	2.06	0.56
1:A:525:LEU:HD23	1:A:802:LEU:HD23	1.87	0.55
1:B:713:MET:HB3	1:B:717:ASP:HB2	1.87	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:361:TRP:CH2	1:B:405:GLU:HB3	2.42	0.55
1:B:633:ASP:O	1:B:636:VAL:HG22	2.05	0.55
1:B:93:ARG:O	1:B:490:ARG:NH2	2.39	0.55
1:B:597:LEU:O	1:B:597:LEU:HD12	2.07	0.55
1:A:45:VAL:HG12	1:A:45:VAL:O	2.06	0.55
1:A:597:LEU:HD12	1:A:597:LEU:O	2.07	0.55
1:A:571:HIS:CD2	1:A:573:TYR:H	2.24	0.55
1:A:605:ILE:O	1:A:644:PHE:HA	2.08	0.54
1:A:488:PRO:O	1:A:492:LEU:HB3	2.06	0.54
1:A:689:ILE:HG23	1:A:689:ILE:O	2.08	0.54
1:B:494:LEU:C	1:B:494:LEU:HD23	2.28	0.54
1:A:42:ASP:HB2	1:A:44:ASN:ND2	2.22	0.54
1:B:579:ASN:C	1:B:579:ASN:HD22	2.10	0.54
1:B:301:ALA:O	1:B:305:GLN:HG3	2.08	0.54
1:B:247:ARG:HD2	6:B:2116:HOH:O	2.07	0.53
1:A:713:MET:HB3	1:A:717:ASP:HB2	1.90	0.53
1:B:44:ASN:ND2	1:B:45:VAL:HG23	2.23	0.53
1:B:160:ARG:HB2	1:B:243:LEU:HB3	1.90	0.53
1:A:386:ARG:HH21	1:A:438:ARG:HD2	1.73	0.53
1:B:571:HIS:CD2	1:B:573:TYR:H	2.24	0.53
1:A:579:ASN:C	1:A:579:ASN:HD22	2.10	0.53
1:B:488:PRO:O	1:B:492:LEU:HB3	2.08	0.53
1:A:361:TRP:CH2	1:A:405:GLU:HB3	2.44	0.53
1:A:490:ARG:NH1	6:A:2231:HOH:O	2.41	0.53
1:B:235:ASN:O	1:B:236:ASN:HB2	2.08	0.53
1:B:386:ARG:HH21	1:B:438:ARG:HD2	1.73	0.53
1:A:301:ALA:O	1:A:305:GLN:HG3	2.10	0.52
1:A:557:ILE:O	1:A:559:PRO:HD3	2.09	0.52
1:A:565:VAL:HG22	1:A:604:ILE:HB	1.91	0.52
1:B:410:HIS:HE1	1:B:428:MET:O	1.92	0.52
1:B:525:LEU:HD23	1:B:802:LEU:HD23	1.90	0.52
1:A:235:ASN:O	1:A:236:ASN:HB2	2.10	0.52
1:A:455:VAL:H	1:A:459:HIS:CD2	2.23	0.52
1:A:545:PHE:O	1:A:548:PHE:HB3	2.10	0.52
1:A:423:ASP:O	1:A:427:ARG:HB2	2.09	0.52
1:A:494:LEU:HD23	1:A:494:LEU:C	2.30	0.52
1:A:34:HIS:HE1	1:A:61:ASP:OD2	1.93	0.52
1:B:575:ARG:HD2	1:B:666:ILE:O	2.09	0.51
1:B:106:ASN:HB3	6:B:2162:HOH:O	2.08	0.51
1:B:708:LEU:HG	6:B:2114:HOH:O	2.09	0.51
1:A:693:ASP:O	1:A:696:ASN:HB2	2.11	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:689:ILE:O	1:B:689:ILE:HG23	2.11	0.51
1:B:42:ASP:HB2	1:B:44:ASN:ND2	2.25	0.51
1:A:490:ARG:NH1	6:A:2139:HOH:O	2.44	0.51
1:B:80:LYS:HE2	1:B:334:ALA:HB2	1.93	0.51
1:B:181:ASP:OD2	1:B:184:ARG:HB2	2.11	0.51
1:B:565:VAL:HG22	1:B:604:ILE:HB	1.93	0.51
1:B:587:TYR:O	1:B:591:LYS:HG2	2.11	0.51
1:B:423:ASP:O	1:B:427:ARG:HB2	2.11	0.50
1:A:410:HIS:HE1	1:A:428:MET:O	1.95	0.50
1:A:737:GLU:O	1:A:741:VAL:HG23	2.11	0.50
1:A:795:LYS:HB2	6:A:2180:HOH:O	2.10	0.50
1:B:262:TYR:O	1:B:266:VAL:HG23	2.11	0.50
1:B:693:ASP:O	1:B:696:ASN:HB2	2.11	0.50
1:B:759:LYS:HB3	1:B:759:LYS:HZ2	1.75	0.50
1:B:34:HIS:HE1	1:B:61:ASP:OD2	1.94	0.50
1:B:341:HIS:HB2	1:B:342:PRO:HD3	1.93	0.50
1:B:557:ILE:O	1:B:559:PRO:HD3	2.11	0.50
1:A:160:ARG:HB2	1:A:243:LEU:HB3	1.93	0.49
1:A:44:ASN:ND2	1:A:45:VAL:HG23	2.26	0.49
1:B:455:VAL:H	1:B:459:HIS:CD2	2.21	0.49
1:B:545:PHE:O	1:B:548:PHE:HB3	2.12	0.49
1:A:102:LEU:O	1:A:104:LEU:HD13	2.12	0.49
1:A:469:LYS:HG2	1:A:473:GLU:OE2	2.11	0.49
1:A:587:TYR:O	1:A:591:LYS:HG2	2.13	0.49
1:B:174:TRP:CE2	1:B:621:LYS:HG3	2.48	0.49
1:B:24:VAL:HB	6:B:2301:HOH:O	2.13	0.49
1:A:80:LYS:HE2	1:A:334:ALA:HB2	1.94	0.49
1:B:732:TYR:CE1	1:B:739:LYS:HG3	2.48	0.49
1:A:174:TRP:CE2	1:A:621:LYS:HG3	2.48	0.49
1:A:422:VAL:HG23	1:A:423:ASP:N	2.27	0.49
1:B:422:VAL:HG23	1:B:423:ASP:N	2.28	0.49
1:A:446:ILE:HD11	1:A:468:PHE:CD2	2.48	0.48
1:A:823:ASN:ND2	6:A:2241:HOH:O	2.46	0.48
1:A:181:ASP:OD2	1:A:184:ARG:HB2	2.13	0.48
1:B:66:ARG:CD	1:B:236:ASN:HA	2.43	0.48
1:A:566:GLN:HB2	1:A:664:GLU:HG3	1.96	0.48
1:B:566:GLN:HB2	1:B:664:GLU:HG3	1.94	0.48
1:B:735:LEU:HD22	1:B:778:GLU:HG3	1.96	0.48
1:A:133:ASN:OD1	1:A:281:PRO:HA	2.14	0.48
1:A:341:HIS:HB2	1:A:342:PRO:HD3	1.95	0.48
1:A:715:ILE:HG23	1:A:716:ASP:N	2.28	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:133:ASN:OD1	1:B:281:PRO:HA	2.13	0.48
1:A:399:HIS:O	1:A:403:ILE:HG13	2.14	0.48
1:B:728:ALA:HB1	1:B:774:PHE:CD1	2.49	0.48
1:B:737:GLU:O	1:B:741:VAL:HG23	2.13	0.48
1:A:262:TYR:O	1:A:266:VAL:HG23	2.13	0.48
1:A:732:TYR:CE1	1:A:739:LYS:HG3	2.48	0.48
1:B:446:ILE:HD11	1:B:468:PHE:CD2	2.49	0.48
1:B:729:LYS:HG3	1:B:730:GLU:N	2.29	0.48
1:A:735:LEU:HD22	1:A:778:GLU:HG3	1.96	0.48
1:B:185:TYR:HA	6:B:2144:HOH:O	2.14	0.48
1:A:66:ARG:CD	1:A:236:ASN:HA	2.42	0.48
1:A:398:ARG:O	1:A:402:ILE:HG13	2.14	0.47
1:B:170:ILE:CG1	1:B:646:GLU:HG2	2.44	0.47
1:B:740:LEU:O	1:B:744:GLN:HG3	2.14	0.47
1:A:759:LYS:HB3	1:A:759:LYS:HZ3	1.78	0.47
1:B:617:LYS:HD3	6:B:2224:HOH:O	2.14	0.47
1:A:729:LYS:HG3	1:A:730:GLU:N	2.29	0.47
1:A:575:ARG:HD2	1:A:666:ILE:O	2.13	0.47
1:B:206:VAL:HG11	1:B:401:GLU:OE2	2.14	0.47
1:B:346:ILE:HD13	1:B:448:GLY:HA3	1.97	0.47
1:B:418:PHE:N	1:B:419:PRO:HD3	2.30	0.47
1:B:469:LYS:HG2	1:B:473:GLU:OE2	2.14	0.47
1:B:636:VAL:O	1:B:639:LYS:HB2	2.15	0.47
1:B:29:LYS:HE2	1:B:33:ARG:NH2	2.29	0.47
1:B:710:ILE:HG22	1:B:711:PHE:N	2.30	0.47
1:A:29:LYS:HE2	1:A:33:ARG:NH2	2.29	0.46
1:B:157:TYR:HD2	1:B:244:TRP:HE1	1.64	0.46
1:B:168:GLN:NE2	1:B:647:ASN:H	2.03	0.46
1:A:28:LYS:HG2	1:A:111:ALA:HB1	1.96	0.46
1:A:636:VAL:O	1:A:639:LYS:HB2	2.15	0.46
1:B:29:LYS:HE2	1:B:29:LYS:HB3	1.70	0.46
1:B:193:ARG:HB2	1:B:225:PRO:HG2	1.97	0.46
1:B:746:ASP:HB2	1:B:762:ILE:HG13	1.96	0.46
1:A:728:ALA:HB1	1:A:774:PHE:CD1	2.51	0.46
1:B:431:ILE:HG22	1:B:433:GLU:OE1	2.14	0.46
1:A:746:ASP:HB2	1:A:762:ILE:HG13	1.97	0.46
1:A:522:HIS:O	1:A:525:LEU:HG	2.16	0.46
1:A:709:PHE:HB3	1:A:783:CYS:SG	2.55	0.46
1:B:715:ILE:HG23	1:B:716:ASP:N	2.31	0.46
1:A:193:ARG:HB2	1:A:225:PRO:HG2	1.96	0.46
1:B:28:LYS:HG2	1:B:111:ALA:HB1	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:126:GLU:HB3	6:A:2147:HOH:O	2.16	0.46
1:B:627:ALA:HA	1:B:642:VAL:HB	1.98	0.46
1:A:418:PHE:N	1:A:419:PRO:HD3	2.30	0.45
1:A:29:LYS:HE2	1:A:29:LYS:HB3	1.74	0.45
1:A:690:GLY:O	1:A:710:ILE:HA	2.16	0.45
1:A:181:ASP:OD2	1:A:184:ARG:NE	2.49	0.45
1:B:399:HIS:O	1:B:403:ILE:HG13	2.16	0.45
1:A:168:GLN:NE2	6:A:2007:HOH:O	2.49	0.45
1:A:721:LEU:HD23	1:A:772:LYS:HD3	1.98	0.45
1:B:434:GLU:CD	1:B:434:GLU:H	2.21	0.45
1:B:181:ASP:OD2	1:B:184:ARG:NE	2.49	0.45
1:B:415:VAL:C	1:B:417:LEU:H	2.20	0.45
1:A:431:ILE:HG22	1:A:433:GLU:OE1	2.17	0.44
1:B:709:PHE:HB3	1:B:783:CYS:SG	2.57	0.44
1:A:281:PRO:HG3	1:B:262:TYR:CE2	2.52	0.44
1:B:133:ASN:HB2	6:B:2025:HOH:O	2.16	0.44
1:B:150:LEU:HD21	1:B:818:LYS:HG3	1.99	0.44
1:B:682:MET:HG2	1:B:808:SER:HB3	1.99	0.44
1:A:136:LEU:HD11	1:A:338:ASN:ND2	2.32	0.44
1:A:168:GLN:NE2	1:A:647:ASN:H	2.02	0.44
1:A:170:ILE:CG1	1:A:646:GLU:HG2	2.47	0.44
1:A:740:LEU:O	1:A:744:GLN:HG3	2.17	0.44
1:B:98:THR:O	1:B:102:LEU:HB2	2.18	0.44
1:B:797:TRP:O	1:B:801:VAL:HG23	2.17	0.44
1:A:157:TYR:HD2	1:A:244:TRP:HE1	1.64	0.44
1:A:719:ALA:O	1:A:722:ASP:HB2	2.17	0.44
1:B:690:GLY:O	1:B:710:ILE:HA	2.18	0.44
1:A:415:VAL:C	1:A:417:LEU:H	2.21	0.44
1:A:627:ALA:HA	1:A:642:VAL:HB	2.00	0.44
1:A:571:HIS:CD2	1:A:572:GLU:N	2.86	0.44
1:A:735:LEU:HA	1:A:736:PRO:HD2	1.85	0.44
1:A:759:LYS:HB3	1:A:759:LYS:HZ2	1.79	0.44
1:B:233:TYR:CE2	1:B:512:VAL:HG11	2.53	0.44
1:B:398:ARG:O	1:B:402:ILE:HG13	2.18	0.44
1:B:522:HIS:O	1:B:525:LEU:HG	2.17	0.44
1:B:553:TYR:CD1	1:B:553:TYR:N	2.86	0.44
1:B:136:LEU:HD11	1:B:338:ASN:ND2	2.33	0.43
1:A:193:ARG:NH1	5:A:1901:MPD:HM2	2.33	0.43
1:B:528:ASP:O	1:B:532:ARG:HD3	2.19	0.43
1:A:128:ASP:OD2	1:A:651:SER:HB3	2.18	0.43
1:A:710:ILE:HG22	1:A:711:PHE:N	2.33	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:622:LEU:HA	1:B:758:PHE:CZ	2.53	0.43
1:A:387:TRP:HA	1:A:388:PRO:HD3	1.89	0.43
1:A:553:TYR:CD1	1:A:553:TYR:N	2.86	0.43
1:B:44:ASN:HD22	1:B:44:ASN:C	2.19	0.43
1:B:450:HIS:HE1	6:B:2193:HOH:O	2.00	0.43
1:B:719:ALA:O	1:B:722:ASP:HB2	2.18	0.43
1:B:36:HIS:O	1:B:40:VAL:HA	2.19	0.43
1:B:128:ASP:OD2	1:B:651:SER:HB3	2.19	0.43
1:B:571:HIS:CD2	1:B:572:GLU:N	2.86	0.43
1:B:726:TYR:OH	1:B:774:PHE:HB2	2.19	0.43
1:A:622:LEU:HA	1:A:758:PHE:CZ	2.54	0.43
1:B:735:LEU:HA	1:B:736:PRO:HD2	1.86	0.43
1:A:636:VAL:HG23	1:A:637:GLY:N	2.33	0.42
1:A:434:GLU:H	1:A:434:GLU:CD	2.22	0.42
1:B:138:ARG:HA	1:B:138:ARG:HD2	1.90	0.42
1:A:568:LYS:O	1:A:607:GLY:HA3	2.19	0.42
1:A:36:HIS:O	1:A:40:VAL:HA	2.19	0.42
1:B:417:LEU:C	1:B:419:PRO:HD3	2.40	0.42
1:A:44:ASN:HD22	1:A:44:ASN:C	2.19	0.42
1:A:138:ARG:HA	1:A:138:ARG:HD2	1.92	0.42
1:A:109:ASP:OD1	1:A:119:ILE:HD13	2.20	0.42
1:A:622:LEU:O	1:A:626:VAL:HG23	2.19	0.42
1:A:682:MET:HG2	1:A:808:SER:HB3	2.01	0.42
1:A:793:ASN:ND2	1:A:796:ALA:HB2	2.35	0.42
1:B:636:VAL:HG23	1:B:637:GLY:N	2.33	0.42
1:B:792:MET:C	1:B:794:PRO:HD3	2.39	0.42
1:A:374:TYR:O	1:A:452:VAL:HA	2.19	0.42
1:B:381:PRO:HA	1:B:384:LEU:HG	2.02	0.42
1:A:797:TRP:O	1:A:801:VAL:HG23	2.20	0.41
1:B:420:LYS:O	1:B:422:VAL:N	2.53	0.41
1:A:417:LEU:C	1:A:419:PRO:HD3	2.41	0.41
1:A:645:LEU:HD23	1:A:645:LEU:HA	1.87	0.41
1:B:205:LYS:HE3	1:B:217:ASP:HB2	2.02	0.41
1:B:374:TYR:O	1:B:452:VAL:HA	2.20	0.41
1:B:711:PHE:HA	6:B:2251:HOH:O	2.19	0.41
1:A:112:ILE:HG23	1:A:117:LEU:HB2	2.02	0.41
1:A:150:LEU:HD21	1:A:818:LYS:HG3	2.02	0.41
1:A:144:LEU:HB3	1:A:230:VAL:HG11	2.02	0.41
1:A:348:GLU:O	1:A:352:ILE:HG13	2.20	0.41
1:A:233:TYR:CE2	1:A:512:VAL:HG11	2.55	0.41
1:B:144:LEU:HB3	1:B:230:VAL:HG11	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:751:SER:N	1:A:752:PRO:HD3	2.36	0.41
1:A:42:ASP:CB	1:A:44:ASN:ND2	2.84	0.41
1:B:74:TYR:CZ	1:B:153:ALA:HA	2.56	0.41
1:B:112:ILE:HG23	1:B:117:LEU:HB2	2.02	0.41
1:A:420:LYS:O	1:A:422:VAL:N	2.54	0.41
1:A:726:TYR:OH	1:A:774:PHE:HB2	2.21	0.41
1:B:292:ARG:O	1:B:296:GLU:HG3	2.21	0.41
1:B:458:ILE:HG23	1:B:459:HIS:N	2.36	0.41
1:B:793:ASN:ND2	1:B:796:ALA:HB2	2.35	0.41
1:A:43:ARG:HD2	1:A:43:ARG:HA	1.92	0.41
1:A:458:ILE:HG23	1:A:459:HIS:N	2.35	0.41
1:B:81:ARG:NH1	1:B:155:TYR:OH	2.54	0.41
1:B:168:GLN:NE2	6:B:2237:HOH:O	2.46	0.41
1:B:566:GLN:HG3	1:B:664:GLU:HB2	2.04	0.40
1:B:571:HIS:HD2	1:B:572:GLU:N	2.19	0.40
1:B:622:LEU:O	1:B:626:VAL:HG23	2.21	0.40
1:A:792:MET:C	1:A:794:PRO:HD3	2.41	0.40
1:B:698:GLU:O	1:B:702:GLU:HG2	2.21	0.40
1:B:751:SER:N	1:B:752:PRO:HD3	2.36	0.40
1:B:300:VAL:HG13	1:B:345:ALA:HA	2.03	0.40
1:B:521:LEU:HB3	1:B:802:LEU:HD11	2.03	0.40
1:A:262:TYR:CE2	1:B:281:PRO:HG3	2.56	0.40
1:A:433:GLU:HA	1:A:437:LYS:HG2	2.04	0.40
1:B:433:GLU:HA	1:B:437:LYS:HG2	2.04	0.40
1:A:571:HIS:HD2	1:A:572:GLU:N	2.18	0.40
1:A:579:ASN:C	1:A:579:ASN:ND2	2.75	0.40
1:B:45:VAL:O	1:B:45:VAL:CG1	2.69	0.40
1:B:516:SER:O	1:B:519:THR:HG23	2.22	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	780/847 (92%)	731 (94%)	48 (6%)	1 (0%)	51	68
1	B	780/847 (92%)	730 (94%)	50 (6%)	0	100	100
All	All	1560/1694 (92%)	1461 (94%)	98 (6%)	1 (0%)	51	68

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	419	PRO

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	687/740 (93%)	661 (96%)	26 (4%)	33	51
1	B	687/740 (93%)	662 (96%)	25 (4%)	35	54
All	All	1374/1480 (93%)	1323 (96%)	51 (4%)	34	53

All (51) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	44	ASN
1	A	90	TYR
1	A	95	LEU
1	A	102	LEU
1	A	172	ASP
1	A	214	LYS
1	A	219	GLN
1	A	243	LEU
1	A	337	LEU
1	A	405	GLU
1	A	413	ARG
1	A	426	ARG
1	A	433	GLU
1	A	499	LEU
1	A	502	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	568	LYS
1	A	573	TYR
1	A	579	ASN
1	A	592	LYS
1	A	613	TYR
1	A	622	LEU
1	A	645	LEU
1	A	652	LEU
1	A	683	LEU
1	A	756	ASP
1	A	770	ARG
1	B	44	ASN
1	B	90	TYR
1	B	95	LEU
1	B	102	LEU
1	B	172	ASP
1	B	219	GLN
1	B	243	LEU
1	B	337	LEU
1	B	405	GLU
1	B	413	ARG
1	B	426	ARG
1	B	433	GLU
1	B	499	LEU
1	B	502	LEU
1	B	568	LYS
1	B	573	TYR
1	B	579	ASN
1	B	592	LYS
1	B	613	TYR
1	B	622	LEU
1	B	645	LEU
1	B	652	LEU
1	B	683	LEU
1	B	756	ASP
1	B	770	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (48) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	32	ASN
1	A	34	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	44	ASN
1	A	96	GLN
1	A	97	ASN
1	A	114	GLN
1	A	167	ASN
1	A	168	GLN
1	A	236	ASN
1	A	239	ASN
1	A	270	ASN
1	A	274	ASN
1	A	284	ASN
1	A	305	GLN
1	A	369	GLN
1	A	410	HIS
1	A	459	HIS
1	A	481	ASN
1	A	541	ASN
1	A	566	GLN
1	A	571	HIS
1	A	579	ASN
1	A	823	ASN
1	B	23	ASN
1	B	32	ASN
1	B	34	HIS
1	B	44	ASN
1	B	62	HIS
1	B	96	GLN
1	B	114	GLN
1	B	167	ASN
1	B	168	GLN
1	B	236	ASN
1	B	239	ASN
1	B	270	ASN
1	B	274	ASN
1	B	284	ASN
1	B	305	GLN
1	B	369	GLN
1	B	410	HIS
1	B	450	HIS
1	B	459	HIS
1	B	481	ASN
1	B	541	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	566	GLN
1	B	571	HIS
1	B	579	ASN
1	B	747	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

8 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	700	A	862	-	29,33,33	2.33	7 (24%)	37,47,47	1.74	9 (24%)
4	700	B	1862	-	29,33,33	2.42	14 (48%)	37,47,47	1.64	8 (21%)
5	MPD	B	1902	-	7,7,7	0.74	0	9,10,10	0.72	0
3	PLP	A	860	1	15,15,16	1.49	1 (6%)	20,22,23	1.47	5 (25%)
2	NBG	A	861	-	15,15,15	1.44	3 (20%)	21,21,21	1.20	1 (4%)
5	MPD	A	1901	-	7,7,7	0.50	0	9,10,10	0.75	0
2	NBG	B	1861	-	15,15,15	1.68	3 (20%)	21,21,21	1.36	2 (9%)
3	PLP	B	1860	1	15,15,16	1.81	2 (13%)	20,22,23	1.40	4 (20%)

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	700	A	862	-	-	0/19/32/32	0/4/4/4
4	700	B	1862	-	-	1/19/32/32	0/4/4/4
5	MPD	B	1902	-	1/1/2/2	1/5/5/5	-
3	PLP	A	860	1	-	1/6/6/8	0/1/1/1
2	NBG	A	861	-	-	0/6/26/26	0/1/1/1
3	PLP	B	1860	1	-	2/6/6/8	0/1/1/1
2	NBG	B	1861	-	-	0/6/26/26	0/1/1/1
5	MPD	A	1901	-	1/1/2/2	1/5/5/5	-

All (30) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	862	700	C7-C8	7.15	1.52	1.39
4	B	1862	700	C7-C8	6.96	1.52	1.39
3	B	1860	PLP	C4A-C4	-5.55	1.40	1.51
4	B	1862	700	C17-C18	-5.05	1.43	1.53
4	A	862	700	C17-C18	-4.55	1.44	1.53
3	A	860	PLP	C4A-C4	-4.52	1.42	1.51
2	B	1861	NBG	C2-C1	4.21	1.57	1.52
4	A	862	700	C5-C4	3.68	1.43	1.36
2	A	861	NBG	C2-C1	3.47	1.56	1.52
4	B	1862	700	C3-C4	3.30	1.44	1.38
4	B	1862	700	C5-C4	3.19	1.42	1.36
4	B	1862	700	C2-C3	3.16	1.43	1.36
4	A	862	700	C2-C3	2.91	1.42	1.36
2	B	1861	NBG	C1-N1	2.89	1.46	1.43
4	A	862	700	C7-C6	2.74	1.51	1.41
4	A	862	700	C3-C4	2.49	1.42	1.38
4	B	1862	700	C12-C11	2.45	1.44	1.38
4	A	862	700	C12-C11	2.42	1.44	1.38
4	B	1862	700	C7-C6	2.41	1.50	1.41
2	B	1861	NBG	C4-C5	2.33	1.57	1.53
2	A	861	NBG	C1-N1	2.32	1.46	1.43
2	A	861	NBG	C3-C2	2.31	1.58	1.52
4	B	1862	700	C16-C11	2.22	1.43	1.38
4	B	1862	700	C9-N1	2.20	1.39	1.34
3	B	1860	PLP	C3-C2	-2.20	1.38	1.40
4	B	1862	700	C20-C21	2.15	1.55	1.51
4	B	1862	700	C13-C12	2.13	1.43	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1862	700	C10-C17	2.12	1.59	1.54
4	B	1862	700	O4-C21	-2.11	1.23	1.30
4	B	1862	700	C10-C11	2.08	1.56	1.51

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1861	NBG	C5-O5-C1	4.37	118.44	112.52
4	A	862	700	C8-N2-C1	4.33	113.47	104.45
4	A	862	700	C8-C9-N1	4.31	123.20	115.20
4	B	1862	700	C8-N2-C1	4.11	113.02	104.45
4	B	1862	700	C8-C9-N1	3.96	122.56	115.20
2	A	861	NBG	C5-O5-C1	3.92	117.83	112.52
4	A	862	700	O3-C21-C20	-3.38	114.66	122.93
4	A	862	700	C7-C6-C1	-3.37	103.33	106.27
4	B	1862	700	O3-C21-C20	-3.11	115.31	122.93
3	A	860	PLP	O3P-P-O4P	-3.09	98.51	106.73
4	A	862	700	O4-C21-O3	3.01	130.92	124.09
4	B	1862	700	C7-C6-C1	-3.01	103.65	106.27
4	A	862	700	O1-C9-C8	-2.61	115.39	121.08
3	A	860	PLP	O3P-P-O2P	2.58	117.49	107.64
4	B	1862	700	O4-C21-O3	2.56	129.89	124.09
4	B	1862	700	C3-C2-C1	-2.50	117.69	120.84
4	B	1862	700	O1-C9-C8	-2.40	115.86	121.08
3	A	860	PLP	C6-C5-C4	2.40	120.05	118.16
2	B	1861	NBG	C2-C1-N1	-2.34	108.55	111.30
3	B	1860	PLP	O4P-P-O1P	-2.33	99.92	106.47
4	B	1862	700	C19-C20-C21	2.33	121.50	116.17
3	B	1860	PLP	C6-C5-C4	2.23	119.92	118.16
3	B	1860	PLP	O2P-P-O4P	-2.19	100.91	106.73
4	A	862	700	C3-C2-C1	-2.15	118.13	120.84
4	A	862	700	C19-C20-C21	2.14	121.06	116.17
4	A	862	700	C22-C20-C21	2.12	121.02	116.17
3	B	1860	PLP	C2A-C2-C3	2.06	123.44	120.89
3	A	860	PLP	C2A-C2-C3	2.05	123.42	120.89
3	A	860	PLP	O4P-C5A-C5	-2.03	105.48	109.35

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
5	A	1901	MPD	C4
5	B	1902	MPD	C4

All (6) torsion outliers are listed below:

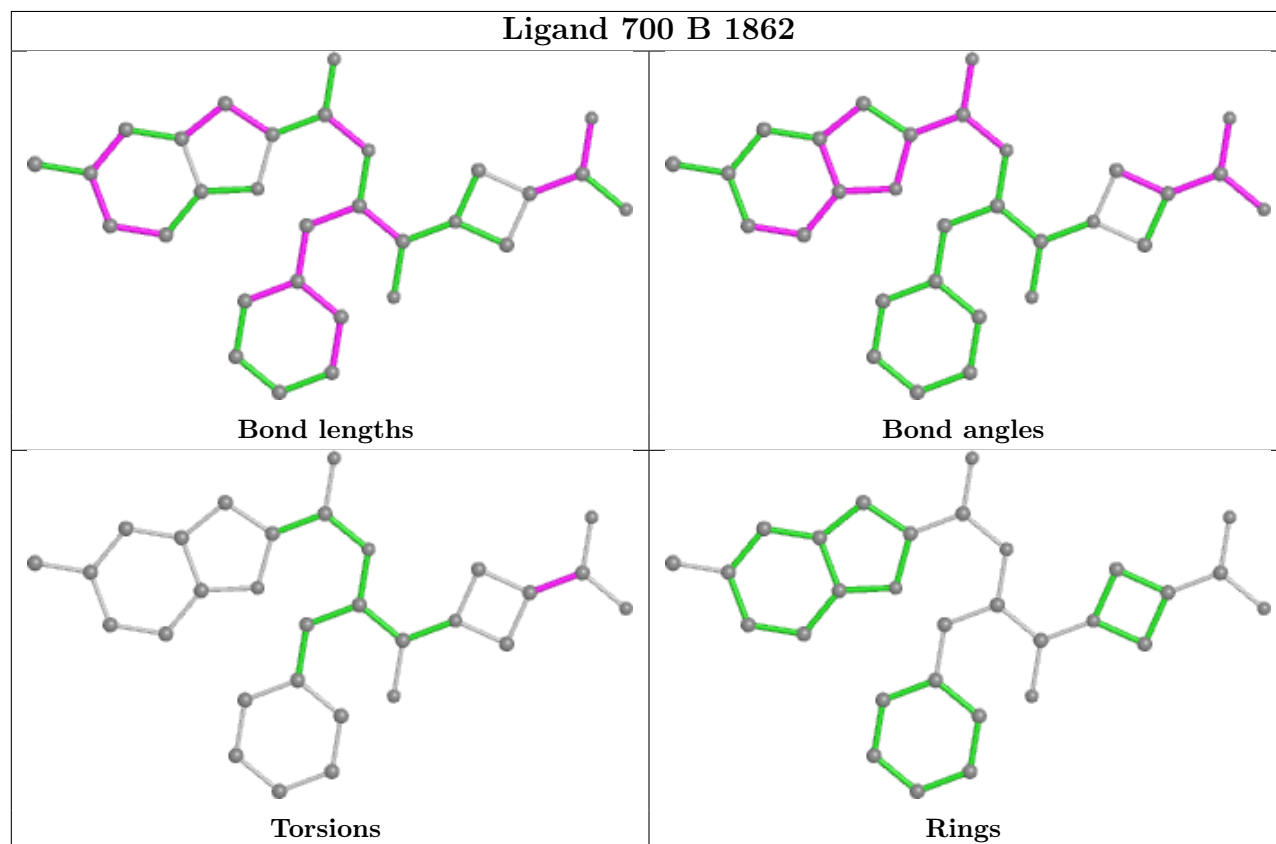
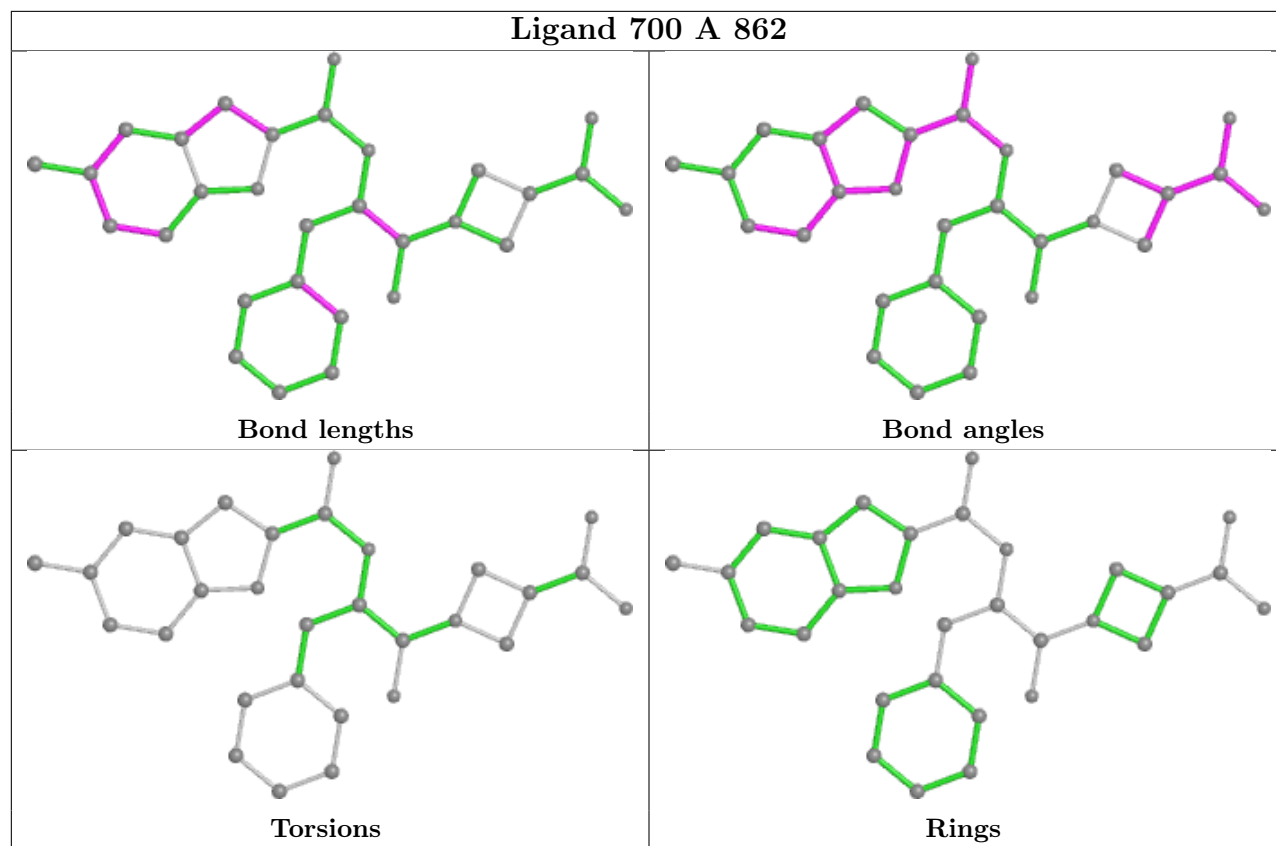
Mol	Chain	Res	Type	Atoms
3	A	860	PLP	C4-C5-C5A-O4P
3	B	1860	PLP	C5A-O4P-P-O1P
5	A	1901	MPD	C2-C3-C4-O4
5	B	1902	MPD	C2-C3-C4-C5
4	B	1862	700	C22-C20-C21-O3
3	B	1860	PLP	C5A-O4P-P-O2P

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1901	MPD	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.