



Full wwPDB X-ray Structure Validation Report ⓘ

May 29, 2020 – 06:43 am BST

PDB ID : 1J0A
Title : Crystal Structure Analysis of the ACC deaminase homologue
Authors : Fujino, A.; Ose, T.; Honma, M.; Yao, M.; Tanaka, I.
Deposited on : 2002-11-12
Resolution : 2.50 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
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) : 2.11

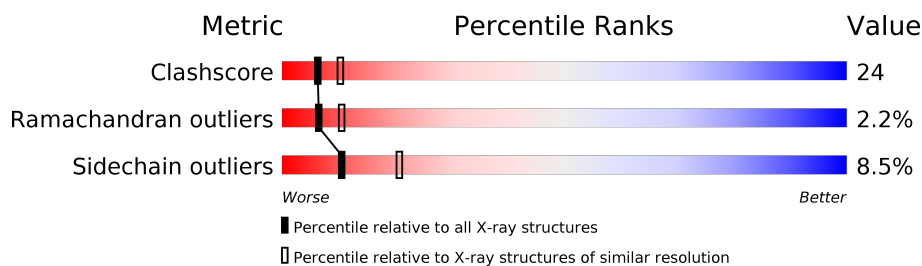
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	325	
1	B	325	
1	C	325	

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 7612 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 1-aminocyclopropane-1-carboxylate deaminase.

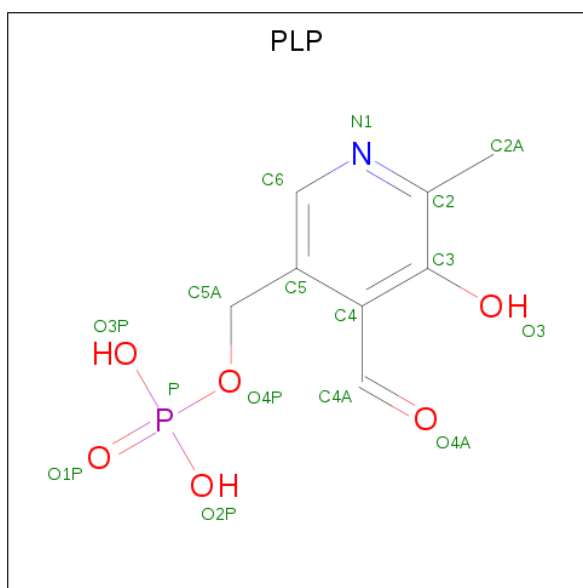
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	325	Total	C	N	O	S	0	0	0
			2484	1604	415	461	4			
1	B	325	Total	C	N	O	S	0	1	0
			2485	1605	415	461	4			
1	C	325	Total	C	N	O	S	0	1	0
			2485	1605	415	461	4			

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



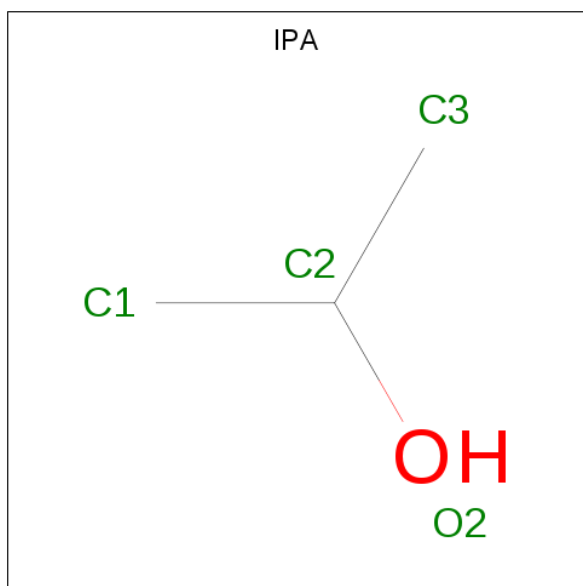
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	C	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is PYRIDOXAL-5'-PHOSPHATE (three-letter code: PLP) (formula: $C_8H_{10}NO_6P$).



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

- Molecule 4 is ISOPROPYL ALCOHOL (three-letter code: IPA) (formula: C_3H_8O).



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

- Molecule 5 is water.

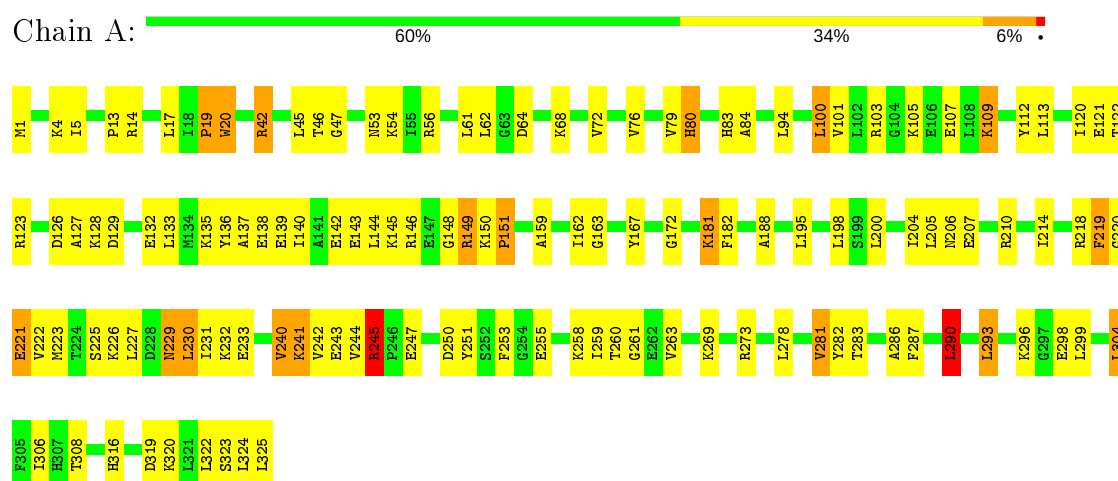
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	37	Total	O	0	0
			37	37		
5	B	28	Total	O	0	0
			28	28		
5	C	29	Total	O	0	0
			29	29		

3 Residue-property plots

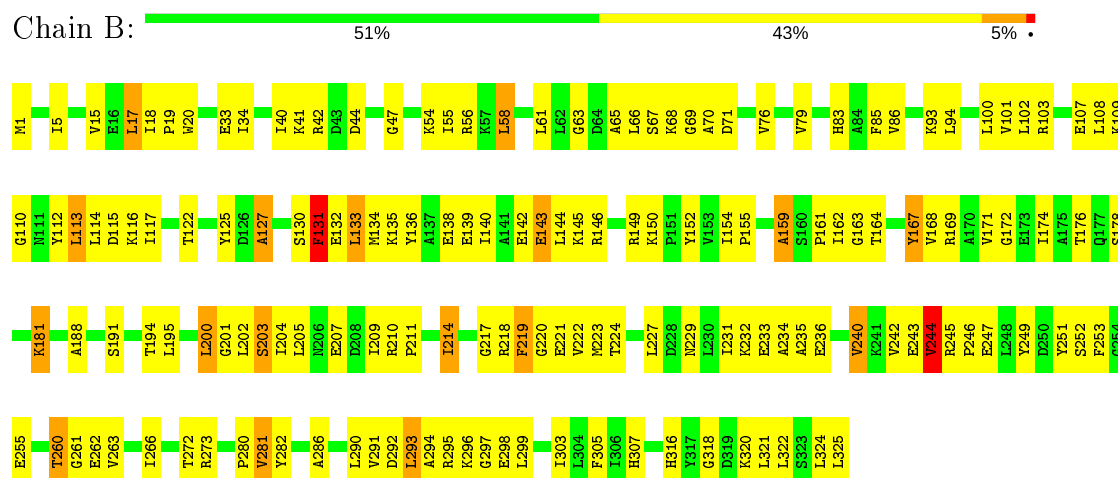
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according 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: 1-aminocyclopropane-1-carboxylate deaminase



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M1	H2	P3	K4	I5	R14	V15	E16	L17	I18	P19	K20	Y26	L27	P28	N29	I30	I34	G35	A36	Y39	I40	T46	I55	R56	K57	L58	Y59	L60	L61	I62	G63	G69	A70	D71	V72	V73	I74	V75	V76	V79	V86	K92	L96	D97	V101	L102	R103
G104	K105	L108	K109	Y112	L113	K116	I117	T122	D126	A127	K128	D129	S130	F131	E132	L133	M134	K135	E139	I140	A141	E142	E143	L144	K145	R146	R149	K150	P151	S160	P161	I162	Y167	V171	G172	Q177	S178	E179	V180	F182	T194	L200	G201	I204			
L205	N206	E207	I208	I209	R210	I214	F219	G220	E221	V222	K223	T224	L227	I231	K232	E233	L238	G239	V240	E243	V244	R245	P246	E247	F253	K258	I259	T260	V263	A264	Q265	I266	K269	T272	R273	E274	A286	L280	V291	D292	L293	L304	H307				
I311	S312	H316	Y317	G318	D319	K320	L321	S322	S323	L324	L325																																				

4 Data and refinement statistics

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

Property	Value	Source
Space group	P 3 2 1	Depositor
Cell constants a, b, c, α , β , γ	122.34Å 122.34Å 115.03Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	10.00 – 2.50	Depositor
% Data completeness (in resolution range)	97.2 (10.00-2.50)	Depositor
R_{merge}	0.07	Depositor
R_{sym}	0.07	Depositor
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.201 , 0.270	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	7612	wwPDB-VP
Average B, all atoms (Å ²)	54.0	wwPDB-VP

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: IPA, SO4, PLP

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	0.47	0/2526	0.73	4/3407 (0.1%)
1	B	0.46	0/2534	0.73	1/3418 (0.0%)
1	C	0.49	1/2534 (0.0%)	0.74	2/3418 (0.1%)
All	All	0.47	1/7594 (0.0%)	0.73	7/10243 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	2
1	C	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	132	GLU	C-O	-6.13	1.11	1.23

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	132	GLU	CA-C-N	-6.57	102.75	117.20
1	A	245	ARG	N-CA-C	6.31	128.04	111.00
1	C	290	LEU	CA-CB-CG	5.84	128.74	115.30
1	A	47	GLY	N-CA-C	5.69	127.32	113.10
1	A	42	ARG	NE-CZ-NH2	-5.52	117.54	120.30
1	B	47	GLY	N-CA-C	5.39	126.57	113.10
1	A	290	LEU	CA-CB-CG	5.29	127.47	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	167	TYR	Sidechain
1	B	249	TYR	Sidechain
1	C	167	TYR	Sidechain

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	2484	0	2580	115	1
1	B	2485	0	2578	143	0
1	C	2485	0	2578	119	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0
2	C	5	0	0	0	0
3	A	15	0	7	0	0
3	B	15	0	7	0	0
3	C	15	0	6	0	0
4	A	4	0	8	1	0
5	A	37	0	0	4	0
5	B	28	0	0	2	0
5	C	29	0	0	0	0
All	All	7612	0	7764	370	1

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 24.

All (370) 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:181:LYS:H	1:A:181:LYS:HD3	1.12	1.11
1:C:128:LYS:H	1:C:128:LYS:HD2	1.22	1.02
1:A:181:LYS:HD3	1:A:181:LYS:N	1.82	0.95
1:A:54:LYS:HD2	1:A:83:HIS:HB2	1.47	0.93
1:A:76:VAL:HG12	1:A:101:VAL:HB	1.51	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:121:GLU:HG3	1:A:123:ARG:NH1	1.88	0.88
1:C:76:VAL:HG12	1:C:101:VAL:HB	1.57	0.87
1:C:61:LEU:HA	1:C:162:ILE:HD11	1.58	0.86
1:C:210:ARG:HD2	1:C:247:GLU:OE2	1.75	0.85
1:B:61:LEU:HD23	1:B:162:ILE:HD11	1.58	0.85
1:C:245:ARG:HD2	1:C:245:ARG:H	1.41	0.83
1:C:1:MET:HE1	1:C:172:GLY:HA3	1.59	0.83
1:C:18:ILE:HD11	1:C:55:ILE:HG22	1.60	0.83
1:A:241:LYS:HE3	1:A:241:LYS:H	1.45	0.81
1:A:181:LYS:H	1:A:181:LYS:CD	1.83	0.81
1:B:210:ARG:HD2	1:B:247:GLU:OE2	1.80	0.81
1:A:19:PRO:HD2	5:A:1775:HOH:O	1.81	0.81
1:C:1:MET:CE	1:C:172:GLY:HA3	2.11	0.81
1:C:105:LYS:HD2	1:C:105:LYS:H	1.45	0.80
1:B:133:LEU:HD23	1:B:133:LEU:H	1.46	0.80
1:A:1:MET:CE	1:A:172:GLY:HA3	2.13	0.78
1:B:178:SER:HB2	5:B:720:HOH:O	1.83	0.77
1:A:241:LYS:HD2	1:A:241:LYS:O	1.84	0.77
1:C:260:THR:HG22	1:C:263:VAL:HG23	1.63	0.77
1:C:259:ILE:HD12	1:C:320:LYS:HG2	1.65	0.77
1:B:19:PRO:HD2	1:B:20:TRP:CZ3	2.20	0.77
1:C:61:LEU:HD23	1:C:162:ILE:HD11	1.65	0.77
1:C:112:TYR:HE1	1:C:122:THR:HG21	1.51	0.76
1:B:232:LYS:O	1:B:236:GLU:HG3	1.84	0.76
1:B:280:PRO:HB3	1:B:321:LEU:HD21	1.68	0.76
1:A:319:ASP:OD1	1:A:320:LYS:N	2.19	0.75
1:B:142:GLU:O	1:B:145:LYS:HG2	1.86	0.75
1:B:125:TYR:HB3	1:B:127:ALA:HB2	1.67	0.75
1:A:121:GLU:CG	1:A:123:ARG:HH12	2.01	0.73
1:B:140:ILE:O	1:B:144:LEU:HB2	1.86	0.73
1:A:20:TRP:HZ2	1:A:45:LEU:O	1.71	0.73
1:C:221:GLU:HA	1:C:224:THR:HG22	1.71	0.72
1:A:143:GLU:HB2	1:A:146:ARG:NH2	2.05	0.72
1:A:14:ARG:HH11	4:A:1747:IPA:H13	1.54	0.72
1:B:113:LEU:HD22	1:B:117:ILE:HD11	1.72	0.71
1:A:162:ILE:HD12	1:A:163:GLY:N	2.06	0.71
1:A:64:ASP:OD1	1:A:68:LYS:HE2	1.92	0.70
1:B:214:ILE:HD13	1:B:286:ALA:HA	1.72	0.70
1:C:26:TYR:O	1:C:28:PRO:HD3	1.91	0.69
1:A:1:MET:HE1	1:A:172:GLY:HA3	1.74	0.69
1:A:162:ILE:HD12	1:A:163:GLY:H	1.56	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:61:LEU:HD23	1:B:162:ILE:CD1	2.23	0.69
1:B:135:LYS:HE3	1:B:136:TYR:CE2	2.29	0.68
1:B:260:THR:HG23	1:B:263:VAL:HG23	1.76	0.68
1:A:227:LEU:O	1:A:231:ILE:HG13	1.94	0.67
1:A:214:ILE:HG21	1:A:286:ALA:HA	1.76	0.67
1:B:181:LYS:HE2	1:B:181:LYS:H	1.59	0.67
1:C:253:PHE:O	1:C:258:LYS:HD3	1.94	0.67
1:B:41:LYS:HD3	1:B:174:ILE:HD11	1.77	0.67
1:A:229:ASN:HA	1:A:232:LYS:HE2	1.75	0.67
1:C:144:LEU:HD11	1:C:149:ARG:HD3	1.77	0.66
1:B:171:VAL:HG21	1:B:201:GLY:HA3	1.76	0.66
1:A:143:GLU:HB2	1:A:146:ARG:HH21	1.60	0.66
1:B:181:LYS:H	1:B:181:LYS:CD	2.09	0.66
1:A:121:GLU:CG	1:A:123:ARG:NH1	2.57	0.66
1:A:220:GLY:HA2	1:A:223:MET:HB2	1.77	0.66
1:A:240:VAL:HG22	1:A:241:LYS:HE3	1.78	0.65
1:B:133:LEU:HB2	1:B:136:TYR:HD2	1.61	0.65
1:B:125:TYR:C	1:B:127:ALA:H	1.99	0.65
1:A:140:ILE:O	1:A:144:LEU:HB2	1.97	0.65
1:B:19:PRO:HD2	1:B:20:TRP:CE3	2.33	0.64
1:B:79:VAL:HG13	1:B:112:TYR:CD1	2.33	0.64
1:C:34:ILE:HG22	1:C:36:ALA:H	1.63	0.64
1:A:79:VAL:HG13	1:A:112:TYR:HB2	1.80	0.64
1:C:214:ILE:HG21	1:C:286:ALA:HA	1.80	0.63
1:C:128:LYS:CD	1:C:128:LYS:H	2.03	0.63
1:B:113:LEU:HD22	1:B:117:ILE:CD1	2.29	0.63
1:C:113:LEU:O	1:C:117:ILE:HG13	1.99	0.63
1:B:103:ARG:NH1	1:B:131:PHE:HB3	2.14	0.63
1:A:84:ALA:HB1	1:A:100:LEU:HG	1.81	0.63
1:B:135:LYS:O	1:B:139:GLU:HG2	1.99	0.62
1:C:259:ILE:CD1	1:C:320:LYS:HG2	2.28	0.62
1:C:112:TYR:CE1	1:C:122:THR:HG21	2.34	0.62
1:A:210:ARG:HD2	1:A:247:GLU:OE2	1.99	0.62
1:B:262:GLU:O	1:B:266:ILE:HD13	2.00	0.62
1:B:188:ALA:HB2	1:B:286:ALA:HB2	1.82	0.62
1:C:132:GLU:O	1:C:135:LYS:HG2	1.98	0.62
1:A:145:LYS:HA	1:A:149:ARG:O	2.00	0.62
1:C:72:VAL:HG11	1:C:144:LEU:CD2	2.30	0.62
1:A:296:LYS:O	1:A:298:GLU:HG3	2.00	0.61
1:A:72:VAL:HG12	1:A:150:LYS:O	2.00	0.61
1:B:143:GLU:O	1:B:146:ARG:HG2	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:198:LEU:HD11	1:A:306:ILE:HD12	1.83	0.61
1:A:218:ARG:NH2	1:A:222:VAL:HG12	2.16	0.61
1:B:181:LYS:CE	1:B:181:LYS:H	2.13	0.61
1:B:76:VAL:HG12	1:B:101:VAL:HB	1.83	0.61
1:B:318:GLY:HA3	1:C:113:LEU:HD11	1.83	0.61
1:B:100:LEU:HB3	1:B:102:LEU:HD21	1.82	0.61
1:C:72:VAL:HG11	1:C:144:LEU:HD21	1.83	0.60
1:A:121:GLU:HG3	1:A:123:ARG:HH12	1.57	0.60
1:A:19:PRO:O	1:A:20:TRP:HB3	2.01	0.59
1:A:100:LEU:HD22	1:A:120:ILE:HG21	1.84	0.59
1:C:69:GLY:O	1:C:150:LYS:HE2	2.03	0.59
1:A:128:LYS:HG2	1:A:132:GLU:OE1	2.02	0.59
1:B:244:VAL:CG1	1:B:245:ARG:N	2.65	0.59
1:B:281:VAL:HG22	1:B:282:TYR:CD1	2.38	0.59
1:C:105:LYS:HD2	1:C:105:LYS:N	2.17	0.59
1:A:105:LYS:HE3	1:A:107:GLU:CD	2.23	0.59
1:B:222:VAL:HG13	1:B:223:MET:H	1.68	0.59
1:C:200:LEU:HD21	1:C:240:VAL:HG11	1.83	0.59
1:A:1:MET:HE3	1:A:172:GLY:HA3	1.85	0.58
1:C:128:LYS:C	1:C:130:SER:H	2.06	0.58
1:A:241:LYS:C	1:A:241:LYS:HD2	2.24	0.58
1:A:281:VAL:HG22	1:A:282:TYR:CD1	2.39	0.57
1:A:229:ASN:O	1:A:233:GLU:HG3	2.04	0.57
1:A:253:PHE:O	1:A:258:LYS:HD3	2.05	0.57
1:A:263:VAL:HG21	5:A:1773:HOH:O	2.03	0.57
1:C:244:VAL:HG22	1:C:245:ARG:CD	2.35	0.57
1:C:162:ILE:C	1:C:162:ILE:HD12	2.25	0.56
1:B:243:GLU:O	1:B:244:VAL:HG23	2.05	0.56
1:B:214:ILE:CD1	1:B:251:TYR:HB2	2.35	0.56
1:A:219:PHE:HD1	1:A:250:ASP:HB2	1.70	0.56
1:C:253:PHE:CD2	1:C:260:THR:HG21	2.41	0.56
1:B:113:LEU:HD11	1:C:318:GLY:HA3	1.88	0.56
1:B:70:ALA:HA	1:B:150:LYS:O	2.05	0.56
1:B:244:VAL:HG13	1:B:245:ARG:N	2.20	0.56
1:A:219:PHE:CD2	1:A:220:GLY:N	2.74	0.56
1:B:218:ARG:NH2	1:B:255:GLU:HB2	2.20	0.56
1:B:214:ILE:HD11	1:B:251:TYR:HB2	1.88	0.56
1:A:132:GLU:O	1:A:135:LYS:HG2	2.06	0.55
1:A:129:ASP:HB2	1:A:132:GLU:HB2	1.89	0.55
1:A:103:ARG:HG3	1:A:103:ARG:HH11	1.71	0.55
1:B:214:ILE:CD1	1:B:286:ALA:HA	2.35	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:245:ARG:HD2	1:C:245:ARG:N	2.15	0.55
1:B:133:LEU:HB2	1:B:136:TYR:CD2	2.39	0.55
1:A:100:LEU:HD22	1:A:120:ILE:CG2	2.37	0.55
1:B:130:SER:O	1:B:132:GLU:N	2.33	0.55
1:A:240:VAL:HG22	1:A:241:LYS:CE	2.36	0.55
1:C:290:LEU:C	1:C:290:LEU:HD12	2.27	0.55
1:B:134:MET:HE2	1:B:155:PRO:HA	1.89	0.55
1:C:109:LYS:HE3	1:C:316:HIS:NE2	2.22	0.55
1:B:210:ARG:NH2	1:B:299:LEU:HA	2.22	0.54
1:C:167:TYR:CD1	1:C:194:THR:HG23	2.42	0.54
1:C:232:LYS:HG3	1:C:233:GLU:N	2.22	0.54
1:A:319:ASP:OD1	1:A:320:LYS:HG2	2.08	0.54
1:B:232:LYS:HG3	1:B:233:GLU:N	2.22	0.54
1:B:125:TYR:C	1:B:127:ALA:N	2.57	0.54
1:B:15:VAL:HG12	1:B:17:LEU:HD13	1.89	0.54
1:A:20:TRP:CZ2	1:A:45:LEU:O	2.58	0.54
1:B:200:LEU:HD22	1:B:204:ILE:HD11	1.88	0.54
1:C:30:ILE:O	1:C:34:ILE:HB	2.08	0.54
1:A:146:ARG:C	1:A:148:GLY:H	2.11	0.53
1:A:62:LEU:HD13	1:A:94:LEU:HD12	1.90	0.53
1:B:15:VAL:HG11	1:B:94:LEU:HD21	1.90	0.53
1:A:121:GLU:HG2	1:A:123:ARG:HH12	1.73	0.53
1:B:171:VAL:HG21	1:B:201:GLY:CA	2.38	0.53
1:B:1:MET:CE	1:B:172:GLY:HA3	2.38	0.53
1:C:71:ASP:HA	1:C:96:LEU:HD22	1.90	0.53
1:C:265:GLN:HG3	1:C:269:LYS:HE3	1.91	0.53
1:C:2:HIS:HD2	1:C:4:LYS:H	1.56	0.53
1:C:227:LEU:O	1:C:231:ILE:HG13	2.08	0.53
1:C:204:ILE:HG12	1:C:240:VAL:HG21	1.89	0.53
1:C:109:LYS:HE3	1:C:316:HIS:CD2	2.44	0.53
1:A:53:ASN:HB3	1:A:308:THR:HG22	1.91	0.52
1:B:261:GLY:N	1:B:324:LEU:HD22	2.24	0.52
1:B:161:PRO:O	1:B:164:THR:HB	2.09	0.52
1:C:221:GLU:HA	1:C:224:THR:CG2	2.38	0.52
1:C:1:MET:CE	1:C:172:GLY:CA	2.87	0.52
1:A:72:VAL:HG13	1:A:151:PRO:HA	1.90	0.52
1:A:205:LEU:HB2	1:A:207:GLU:HG2	1.92	0.51
1:B:1:MET:HE1	1:B:172:GLY:HA3	1.90	0.51
1:C:105:LYS:CD	1:C:105:LYS:H	2.09	0.51
1:C:244:VAL:HG22	1:C:245:ARG:HD3	1.92	0.51
1:C:260:THR:CG2	1:C:263:VAL:HG23	2.37	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:253:PHE:CD2	1:B:260:THR:HG21	2.45	0.51
1:A:218:ARG:CZ	1:A:222:VAL:HG12	2.41	0.51
1:C:34:ILE:HD11	1:C:291:VAL:HG22	1.93	0.51
1:B:229:ASN:HA	1:B:232:LYS:HG2	1.91	0.51
1:C:2:HIS:CD2	1:C:4:LYS:H	2.29	0.50
1:A:287:PHE:O	1:A:290:LEU:HB3	2.11	0.50
1:B:107:GLU:CD	1:B:109:LYS:HE2	2.30	0.50
1:B:143:GLU:OE2	1:B:144:LEU:HD13	2.11	0.50
1:B:295:ARG:C	1:B:297:GLY:H	2.13	0.50
1:C:134:MET:HA	1:C:134:MET:HE3	1.93	0.50
1:A:221:GLU:O	1:A:225:SER:HB2	2.11	0.50
1:A:240:VAL:HG22	1:A:241:LYS:NZ	2.26	0.50
1:B:272:THR:HG23	1:C:92:LYS:HB3	1.93	0.50
1:A:80:HIS:CD2	1:A:80:HIS:C	2.85	0.50
1:B:203:SER:HB2	1:B:244:VAL:HB	1.93	0.50
1:A:269:LYS:NZ	1:A:273:ARG:HD2	2.26	0.50
1:C:15:VAL:HG23	1:C:63:GLY:CA	2.41	0.50
1:A:293:LEU:HB3	1:A:299:LEU:HG	1.94	0.50
1:A:123:ARG:HH11	1:A:123:ARG:HG2	1.76	0.50
1:C:128:LYS:C	1:C:130:SER:N	2.65	0.50
1:C:79:VAL:HA	1:C:102:LEU:HD13	1.92	0.50
1:C:320:LYS:O	1:C:324:LEU:HD13	2.12	0.49
1:A:219:PHE:HD2	1:A:220:GLY:N	2.09	0.49
1:C:15:VAL:HG23	1:C:63:GLY:HA2	1.95	0.49
1:A:54:LYS:CD	1:A:83:HIS:HB2	2.30	0.49
1:B:15:VAL:CG1	1:B:17:LEU:HD13	2.43	0.49
1:B:40:ILE:HD11	1:B:307:HIS:HB2	1.95	0.49
1:B:205:LEU:HB3	1:B:207:GLU:HG2	1.94	0.49
1:B:235:ALA:HB1	1:B:240:VAL:O	2.13	0.49
1:A:56:ARG:HD2	1:A:167:TYR:CZ	2.47	0.49
1:B:125:TYR:HB3	1:B:127:ALA:CB	2.38	0.49
1:B:1:MET:HE1	1:B:5:ILE:CG2	2.43	0.49
1:C:223:MET:HG3	1:C:224:THR:N	2.27	0.49
1:B:221:GLU:HB2	5:B:730:HOH:O	2.12	0.48
1:B:292:ASP:OD2	1:B:296:LYS:HE3	2.13	0.48
1:B:54:LYS:O	1:B:58:LEU:HD22	2.13	0.48
1:B:221:GLU:HA	1:B:224:THR:HG22	1.95	0.48
1:A:17:LEU:O	1:A:19:PRO:HD3	2.13	0.48
1:B:211:PRO:HG2	1:B:246:PRO:HA	1.95	0.48
1:B:263:VAL:HG11	1:B:280:PRO:HA	1.96	0.48
1:A:322:LEU:C	1:A:324:LEU:H	2.17	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:219:PHE:O	1:C:223:MET:HB3	2.14	0.48
1:B:139:GLU:O	1:B:143:GLU:HG3	2.13	0.48
1:C:144:LEU:CD1	1:C:149:ARG:HD3	2.43	0.48
1:C:61:LEU:HD23	1:C:162:ILE:CD1	2.40	0.48
1:C:207:GLU:OE1	1:C:207:GLU:HA	2.14	0.48
1:A:42:ARG:HB3	1:A:45:LEU:HD12	1.96	0.47
1:B:55:ILE:N	1:B:55:ILE:HD12	2.29	0.47
1:C:60:TYR:O	1:C:162:ILE:HD13	2.14	0.47
1:A:138:GLU:OE1	1:A:138:GLU:HA	2.14	0.47
1:B:322:LEU:CD1	1:C:108:LEU:HD23	2.44	0.47
1:B:290:LEU:HD21	1:B:303:ILE:HG21	1.97	0.47
1:C:144:LEU:HG	1:C:149:ARG:HB2	1.97	0.47
1:C:171:VAL:HG11	1:C:201:GLY:HA3	1.97	0.47
1:B:200:LEU:HD12	1:B:234:ALA:HB1	1.96	0.47
1:C:259:ILE:HD11	1:C:317:TYR:CD2	2.50	0.47
1:C:260:THR:HG22	1:C:263:VAL:CG2	2.42	0.47
1:A:188:ALA:HB2	1:A:286:ALA:HB2	1.95	0.47
1:A:242:VAL:HG13	1:A:242:VAL:O	2.14	0.47
1:A:109:LYS:HG3	1:A:316:HIS:CE1	2.49	0.47
1:C:128:LYS:HD2	1:C:128:LYS:N	2.07	0.47
1:C:142:GLU:HG3	1:C:146:ARG:CZ	2.45	0.47
1:C:1:MET:HE3	1:C:172:GLY:CA	2.45	0.46
1:A:255:GLU:HG2	1:A:258:LYS:HD2	1.95	0.46
1:B:113:LEU:CD2	1:B:117:ILE:HD11	2.44	0.46
1:B:108:LEU:H	1:B:108:LEU:HD12	1.80	0.46
1:B:222:VAL:HG13	1:B:223:MET:N	2.29	0.46
1:B:244:VAL:HG13	1:B:245:ARG:H	1.77	0.46
1:B:217:GLY:O	1:B:252:SER:HB3	2.15	0.46
1:C:74:ILE:HD12	1:C:141:ALA:HB2	1.96	0.46
1:A:103:ARG:HG3	1:A:103:ARG:NH1	2.31	0.46
1:A:210:ARG:NH2	1:A:299:LEU:HA	2.29	0.46
1:A:5:ILE:HG13	1:A:205:LEU:HD21	1.98	0.46
1:B:85:PHE:HA	1:B:115:ASP:OD1	2.15	0.46
1:B:56:ARG:HD2	1:B:167:TYR:CZ	2.51	0.46
1:B:134:MET:O	1:B:138:GLU:HG2	2.16	0.46
1:B:296:LYS:HB2	1:B:298:GLU:HG3	1.96	0.46
1:C:207:GLU:HB3	1:C:209:ILE:HG13	1.96	0.46
1:C:219:PHE:CD2	1:C:220:GLY:N	2.83	0.46
1:A:259:ILE:HA	5:A:1773:HOH:O	2.16	0.46
1:C:311:ILE:HG23	1:C:312:SER:N	2.31	0.46
1:A:61:LEU:HD23	1:A:162:ILE:CD1	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:42:ARG:HD2	1:B:44:ASP:OD1	2.15	0.45
1:C:113:LEU:HD22	1:C:117:ILE:HG13	1.99	0.45
1:C:61:LEU:HD21	1:C:160:SER:HB3	1.97	0.45
1:B:154:ILE:HA	1:B:155:PRO:HD3	1.79	0.45
1:B:227:LEU:O	1:B:231:ILE:HG13	2.16	0.45
1:C:222:VAL:HG23	1:C:223:MET:N	2.30	0.45
1:A:306:ILE:HG22	1:A:308:THR:HG23	1.97	0.45
1:B:218:ARG:CZ	1:B:255:GLU:HB2	2.46	0.45
1:C:72:VAL:HG13	1:C:151:PRO:HA	1.98	0.45
1:A:219:PHE:CD1	1:A:250:ASP:HB2	2.49	0.45
1:A:278:LEU:HD22	1:A:283:THR:HB	1.98	0.45
1:B:181:LYS:HD3	1:B:181:LYS:H	1.82	0.45
1:B:261:GLY:N	1:B:324:LEU:CD2	2.80	0.45
1:C:18:ILE:CD1	1:C:55:ILE:HG22	2.39	0.45
1:B:41:LYS:CD	1:B:174:ILE:HD11	2.45	0.45
1:B:1:MET:HE1	1:B:5:ILE:HG21	1.97	0.45
1:B:221:GLU:HA	1:B:224:THR:CG2	2.46	0.45
1:B:93:LYS:HA	1:C:272:THR:O	2.17	0.45
1:A:109:LYS:NZ	1:A:109:LYS:HB3	2.32	0.45
1:A:42:ARG:NH2	5:A:1751:HOH:O	2.50	0.45
1:B:103:ARG:HH11	1:B:103:ARG:HG2	1.82	0.45
1:B:54:LYS:HE2	1:B:83:HIS:HB2	1.98	0.45
1:C:112:TYR:O	1:C:116:LYS:HG2	2.18	0.44
1:A:241:LYS:N	1:A:241:LYS:HE3	2.24	0.44
1:A:226:LYS:O	1:A:230:LEU:N	2.51	0.44
1:B:116:LYS:HB2	1:C:322:LEU:HD21	1.99	0.44
1:C:56:ARG:HD2	1:C:167:TYR:CZ	2.52	0.44
1:A:218:ARG:NH2	1:A:221:GLU:OE1	2.48	0.44
1:B:66:LEU:O	1:B:67:SER:C	2.55	0.44
1:B:221:GLU:CA	1:B:224:THR:HG22	2.48	0.44
1:A:20:TRP:N	1:A:20:TRP:CD1	2.84	0.44
1:B:167:TYR:CG	1:B:194:THR:HG23	2.53	0.44
1:B:79:VAL:HG13	1:B:112:TYR:CG	2.52	0.44
1:B:322:LEU:HD12	1:C:108:LEU:HD23	1.99	0.44
1:C:40:ILE:HD11	1:C:307:HIS:HB2	2.00	0.44
1:A:72:VAL:CG1	1:A:151:PRO:HA	2.47	0.44
1:B:110:GLY:HA3	1:B:316:HIS:CD2	2.53	0.44
1:B:71:ASP:OD2	1:B:149:ARG:HB3	2.18	0.44
1:A:269:LYS:HZ1	1:A:273:ARG:HD2	1.81	0.43
1:B:34:ILE:CG2	1:B:291:VAL:HG13	2.48	0.43
1:B:202:LEU:HD22	1:B:209:ILE:HB	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:210:ARG:NH2	1:B:298:GLU:O	2.26	0.43
1:C:142:GLU:HG3	1:C:146:ARG:NH2	2.33	0.43
1:B:251:TYR:OH	1:B:293:LEU:HD13	2.18	0.43
1:C:274:GLU:HA	1:C:274:GLU:OE1	2.19	0.43
1:B:171:VAL:CG2	1:B:201:GLY:HA3	2.47	0.43
1:B:65:ALA:HA	1:B:152:TYR:CD1	2.53	0.43
1:C:177:GLN:HG3	1:C:178:SER:N	2.33	0.43
1:A:4:LYS:HE2	1:A:204:ILE:HG23	2.01	0.43
1:C:128:LYS:O	1:C:130:SER:N	2.51	0.43
1:C:76:VAL:HB	1:C:133:LEU:HD23	2.01	0.43
1:B:207:GLU:HB3	1:B:209:ILE:HG13	2.00	0.43
1:C:260:THR:HG23	1:C:263:VAL:H	1.83	0.43
1:C:139:GLU:O	1:C:142:GLU:HB3	2.19	0.43
1:C:14:ARG:HD2	1:C:60:TYR:CZ	2.53	0.43
1:A:136:TYR:O	1:A:139:GLU:HB3	2.19	0.42
1:B:162:ILE:HD12	1:B:163:GLY:N	2.34	0.42
1:B:18:ILE:HA	1:B:19:PRO:HD3	1.80	0.42
1:C:182:PHE:CD2	1:C:304:LEU:HB2	2.54	0.42
1:B:181:LYS:HE2	1:B:181:LYS:N	2.30	0.42
1:C:1:MET:HE3	1:C:2:HIS:H	1.84	0.42
1:A:260:THR:HG22	1:A:261:GLY:N	2.35	0.42
1:B:243:GLU:HG2	1:B:243:GLU:O	2.20	0.42
1:B:15:VAL:HG23	1:B:63:GLY:HA2	2.02	0.42
1:C:143:GLU:OE2	1:C:146:ARG:HD2	2.19	0.42
1:C:34:ILE:HD11	1:C:291:VAL:HG13	2.01	0.42
1:A:1:MET:HE3	1:A:172:GLY:CA	2.47	0.42
1:A:322:LEU:O	1:A:324:LEU:N	2.52	0.42
1:B:162:ILE:C	1:B:162:ILE:HD12	2.39	0.42
1:B:295:ARG:C	1:B:297:GLY:N	2.72	0.42
1:C:245:ARG:N	1:C:245:ARG:CD	2.81	0.42
1:C:263:VAL:O	1:C:266:ILE:HG22	2.19	0.42
1:C:264:ALA:HB1	1:C:325:LEU:HD13	2.01	0.42
1:A:137:ALA:C	1:A:139:GLU:H	2.22	0.42
1:C:232:LYS:HG3	1:C:233:GLU:H	1.83	0.42
1:C:243:GLU:HB3	1:C:244:VAL:H	1.56	0.42
1:A:101:VAL:HG12	1:A:133:LEU:HD22	2.01	0.42
1:A:19:PRO:O	1:A:20:TRP:CB	2.68	0.42
1:A:255:GLU:CG	1:A:258:LYS:HB2	2.50	0.42
1:A:261:GLY:N	1:A:324:LEU:HD23	2.34	0.42
1:B:133:LEU:HD23	1:B:133:LEU:N	2.23	0.42
1:C:167:TYR:CG	1:C:194:THR:HG23	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:THR:C	1:A:324:LEU:HD23	2.40	0.42
1:B:33:GLU:OE1	1:B:273:ARG:NH1	2.52	0.42
1:B:85:PHE:CE1	1:B:114:LEU:HB3	2.55	0.42
1:A:210:ARG:HH22	1:A:299:LEU:HA	1.85	0.42
1:B:34:ILE:HD12	1:B:294:ALA:HB3	2.00	0.42
1:A:72:VAL:HG13	1:A:72:VAL:O	2.19	0.42
1:B:132:GLU:OE1	1:B:132:GLU:HA	2.20	0.42
1:A:207:GLU:OE1	1:A:207:GLU:HA	2.19	0.41
1:B:263:VAL:CG1	1:B:280:PRO:HA	2.51	0.41
1:B:40:ILE:HA	1:B:305:PHE:O	2.20	0.41
1:C:103:ARG:HD2	1:C:128:LYS:O	2.20	0.41
1:C:132:GLU:HA	1:C:132:GLU:OE1	2.20	0.41
1:B:134:MET:CE	1:B:155:PRO:HA	2.48	0.41
1:B:296:LYS:HD3	1:B:298:GLU:OE1	2.20	0.41
1:C:39:TYR:CZ	1:C:180:VAL:HG21	2.56	0.41
1:C:265:GLN:O	1:C:269:LYS:HG3	2.21	0.41
1:A:218:ARG:HH21	1:A:221:GLU:HB2	1.85	0.41
1:B:18:ILE:HD11	1:B:55:ILE:HG22	2.02	0.41
1:B:205:LEU:HA	1:B:205:LEU:HD23	1.78	0.41
1:C:149:ARG:O	1:C:151:PRO:HD3	2.21	0.41
1:B:159:ALA:HB2	1:B:191:SER:HB2	2.02	0.41
1:C:221:GLU:CA	1:C:224:THR:HG22	2.47	0.41
1:C:245:ARG:HH11	1:C:245:ARG:HB3	1.86	0.41
1:A:251:TYR:OH	1:A:293:LEU:HD13	2.21	0.41
1:A:182:PHE:CE2	1:A:304:LEU:HB2	2.56	0.41
1:A:241:LYS:C	1:A:241:LYS:CD	2.88	0.41
1:B:168:VAL:O	1:B:171:VAL:HG22	2.20	0.41
1:B:218:ARG:O	1:B:219:PHE:C	2.60	0.41
1:C:200:LEU:CD1	1:C:238:LEU:HD12	2.51	0.41
1:C:219:PHE:HD2	1:C:220:GLY:N	2.18	0.41
1:B:245:ARG:HA	1:B:246:PRO:HD3	1.87	0.40
1:C:61:LEU:CA	1:C:162:ILE:HD11	2.40	0.40
1:B:34:ILE:HD12	1:B:294:ALA:CB	2.51	0.40
1:A:244:VAL:O	1:A:245:ARG:HB3	2.22	0.40
1:B:58:LEU:HD21	1:B:86:VAL:HG12	2.02	0.40
1:C:1:MET:HE1	1:C:5:ILE:HG21	2.02	0.40

All (1) 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)
1:A:20:TRP:CZ3	1:A:20:TRP:CZ3[5_675]	2.15	0.05

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	323/325 (99%)	294 (91%)	18 (6%)	11 (3%)	3	5
1	B	324/325 (100%)	294 (91%)	22 (7%)	8 (2%)	5	8
1	C	324/325 (100%)	300 (93%)	22 (7%)	2 (1%)	25	43
All	All	971/975 (100%)	888 (92%)	62 (6%)	21 (2%)	6	10

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	149	ARG
1	A	219	PHE
1	B	127	ALA
1	B	131	PHE
1	C	243	GLU
1	A	127	ALA
1	A	323	SER
1	B	220	GLY
1	B	244	VAL
1	A	142	GLU
1	A	20	TRP
1	A	159	ALA
1	A	221	GLU
1	A	245	ARG
1	B	68	LYS
1	C	129	ASP
1	B	69	GLY
1	B	159	ALA
1	B	242	VAL

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Mol	Chain	Res	Type
1	A	19	PRO
1	A	151	PRO

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	259/259 (100%)	237 (92%)	22 (8%)	10	21
1	B	260/259 (100%)	239 (92%)	21 (8%)	11	23
1	C	260/259 (100%)	237 (91%)	23 (9%)	10	19
All	All	779/777 (100%)	713 (92%)	66 (8%)	10	21

All (66) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	PRO
1	A	46	THR
1	A	80	HIS
1	A	100	LEU
1	A	109	LYS
1	A	113	LEU
1	A	122	THR
1	A	126	ASP
1	A	181	LYS
1	A	195	LEU
1	A	200	LEU
1	A	206	ASN
1	A	229	ASN
1	A	230	LEU
1	A	240	VAL
1	A	241	LYS
1	A	243	GLU
1	A	281	VAL
1	A	290	LEU
1	A	293	LEU

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Mol	Chain	Res	Type
1	A	304	LEU
1	A	325	LEU
1	B	17	LEU
1	B	58	LEU
1	B	113	LEU
1	B	122	THR
1	B	131	PHE
1	B	133	LEU
1	B	143	GLU
1	B	169	ARG
1	B	176	THR
1	B	181	LYS
1	B	195	LEU
1	B	200	LEU
1	B	203	SER
1	B	214	ILE
1	B	219	PHE
1	B	240	VAL
1	B	244	VAL
1	B	260	THR
1	B	281	VAL
1	B	293	LEU
1	B	325	LEU
1	C	17	LEU
1	C	20	TRP
1	C	34	ILE
1	C	46	THR
1	C	58	LEU
1	C	86	VAL
1	C	97	ASP
1	C	105	LYS
1	C	109	LYS
1	C	113	LEU
1	C	126	ASP
1	C	200	LEU
1	C	206	ASN
1	C	219	PHE
1	C	223	MET
1	C	240	VAL
1	C	244	VAL
1	C	245	ARG
1	C	290	LEU

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Mol	Chain	Res	Type
1	C	293	LEU
1	C	304	LEU
1	C	307	HIS
1	C	325	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	206	ASN
1	A	229	ASN
1	B	265	GLN
1	C	2	HIS
1	C	229	ASN
1	C	316	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

7 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
2	SO4	A	701	-	4,4,4	0.26	0	6,6,6	0.13	0
3	PLP	B	501	1	15,15,16	1.85	4 (26%)	20,22,23	2.09	4 (20%)
3	PLP	C	601	1	15,15,16	1.56	5 (33%)	20,22,23	2.21	4 (20%)
2	SO4	B	702	-	4,4,4	0.27	0	6,6,6	0.19	0
4	IPA	A	1747	-	3,3,3	0.39	0	3,3,3	0.37	0
3	PLP	A	401	1	15,15,16	1.68	2 (13%)	20,22,23	1.91	2 (10%)
2	SO4	C	703	-	4,4,4	0.34	0	6,6,6	0.22	0

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
3	PLP	C	601	1	-	0/6/6/8	0/1/1/1
3	PLP	B	501	1	-	0/6/6/8	0/1/1/1
3	PLP	A	401	1	-	0/6/6/8	0/1/1/1

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	501	PLP	C5-C4	3.98	1.44	1.40
3	A	401	PLP	C5-C4	3.82	1.44	1.40
3	B	501	PLP	C2-N1	3.38	1.40	1.33
3	A	401	PLP	C2-N1	3.34	1.40	1.33
3	C	601	PLP	C5-C4	2.84	1.43	1.40
3	C	601	PLP	C2-N1	2.74	1.39	1.33
3	C	601	PLP	C3-C2	-2.35	1.38	1.40
3	B	501	PLP	C6-N1	2.25	1.39	1.34
3	C	601	PLP	C2A-C2	2.16	1.54	1.50
3	C	601	PLP	P-O3P	-2.10	1.46	1.54
3	B	501	PLP	C3-C2	-2.08	1.38	1.40

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	601	PLP	O4P-C5A-C5	7.67	123.97	109.35
3	B	501	PLP	O4P-C5A-C5	7.08	122.83	109.35
3	A	401	PLP	O4P-C5A-C5	6.14	121.05	109.35
3	B	501	PLP	C5-C6-N1	-2.80	119.15	123.82
3	C	601	PLP	C5-C6-N1	-2.75	119.24	123.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	401	PLP	C5-C6-N1	-2.62	119.45	123.82
3	C	601	PLP	O2P-P-O4P	-2.58	99.88	106.73
3	B	501	PLP	C4A-C4-C3	-2.16	116.84	120.50
3	C	601	PLP	C6-N1-C2	2.13	123.12	119.17
3	B	501	PLP	C6-N1-C2	2.10	123.06	119.17

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1747	IPA	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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.