WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Oct 18, 2023 – 07:23 PM EDT

PDB ID	:	1V9U
Title	:	Human Rhinovirus 2 bound to a fragment of its cellular receptor protein
Authors	:	Verdaguer, N.; Fita, I.; Reithmayer, M.; Moser, R.; Blaas, D.
Deposited on	:	2004-02-03
Resolution	:	3.60 Å(reported)

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

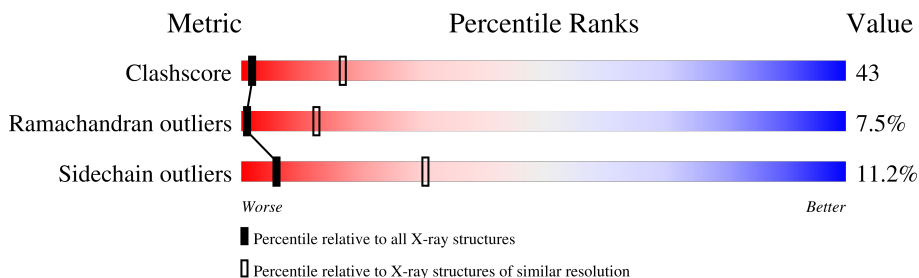|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 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	Percentile Ranks	Value
Clashscore		43
Ramachandran outliers		7.5%
Sidechain outliers		11.2%

Worse *Better*

▌Percentile relative to all X-ray structures

◫ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)

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 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 <=5%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	1	289	39% 40% 13% 7%
2	2	261	38% 44% 14% •
3	3	237	38% 51% 11% •
4	4	68	18% 12% 7% 63%
5	5	41	66% 29% 5%

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 6451 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 Coat protein VP1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	1	269	Total	C	N	O	S	0	0	0
			2155	1356	378	410	11			

- Molecule 2 is a protein called Coat protein VP2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	2	250	Total	C	N	O	S	8	0	0
			1961	1245	339	369	8			

- Molecule 3 is a protein called Coat protein VP3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	3	237	Total	C	N	O	S	0	0	0
			1834	1172	304	346	12			

- Molecule 4 is a protein called Coat protein VP4.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	4	25	Total	C	N	O	0	0	0
			194	122	35	37			

- Molecule 5 is a protein called LDL-receptor class A 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	5	39	Total	C	N	O	S	0	0	0
			292	166	54	66	6			

- Molecule 6 is LAURIC ACID (three-letter code: DAO) (formula: $C_{12}H_{24}O_2$).

DAO
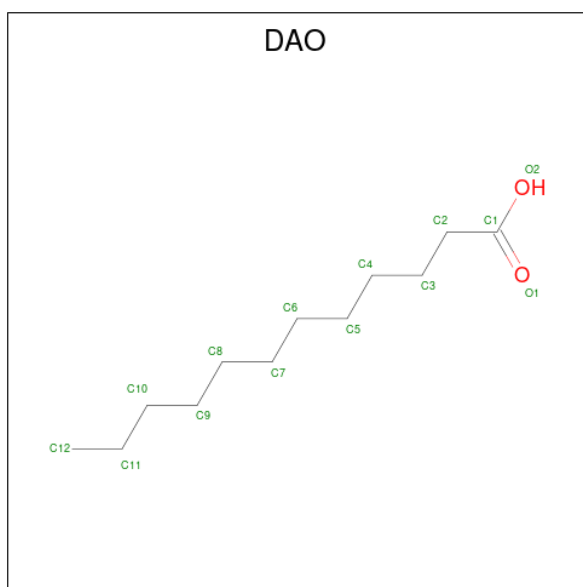
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
6	1	1	14	12	2	0	0

- Molecule 7 is CALCIUM ION (three-letter code: CA) (formula: Ca).
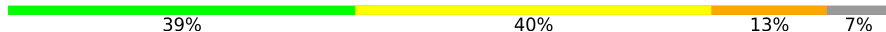
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Ca		
7	5	1	1	1	0	0

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: Coat protein VP1

Chain 1:
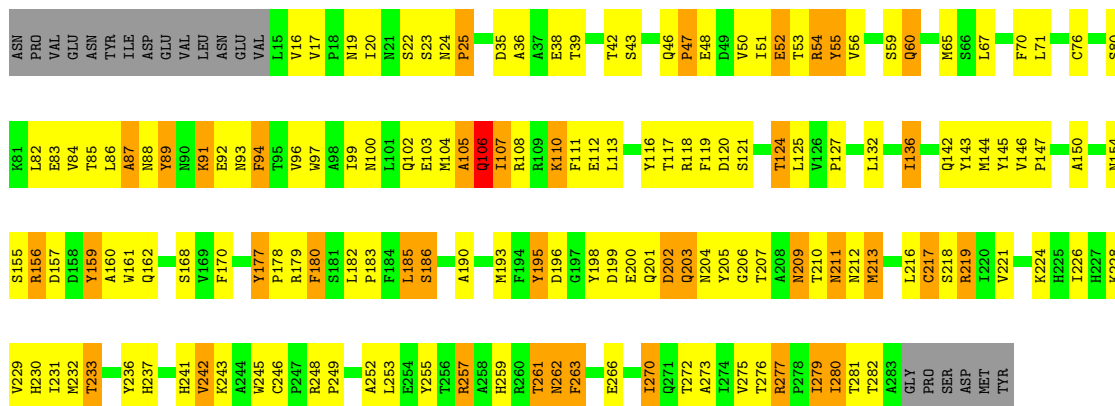
• Molecule 2: Coat protein VP2

Chain 2:
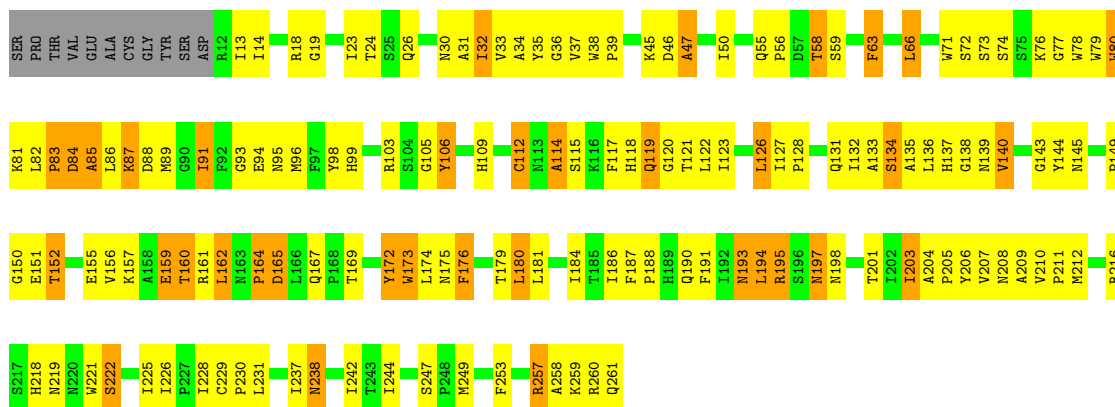
• Molecule 3: Coat protein VP3

Chain 3:

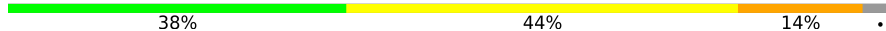G1 L2 P3 V4 F5 I6 T7 P8 G9 Q12 F13 L14 D17 D18 F19 Q20 S21 P22 C23 A24 L25 P26 W27 Y28 H29 P30 I34 S35 I36 E39 V40 K41 N42 L43 V44 E45 I46 C47 Q48 V49 D50 S51 L52 V53 P54 I55 N56 N57 T58 D59 T60 Y61 I62 N63 S64 E65

N66 M67 Y68 S69 V70 V71 L72 Q73 I76 N77 A78 P79 D80 K81 I82 F83 S84 I85 R86 T87 D88 V89 A90 S91 Q92 P93 L94 A95 T96 T97 L98 I99 G100 E101 I102 S103 S104 Y105 F106 T107 H108 W109 T110 G111 F115 T122 A123 N124 T125 T126 V127 K128 L129 L130 L131 A132 Y133

T134 P135 I138 A139 E140 P141 T142 T143 R144 K145 D146 A147 M148 L149 W155 D156 V157 G158 T162 I163 S164 M165 V166 V167 P168 W169 I170 S171 A172 R176 N177 T178 T184 S185 G186 Y187 I188 T189 C190 W191 Y192 Q193 T194 R195 L196 V197 I198 P199 P200 Q201 L209 C210 C215

K216 D217 F218 C219 L220 R221 M222 D225 T226 N227 L228 H229 L230 A234 Q237

• Molecule 4: Coat protein VP4

Chain 4:　　　18%　　　　12%　　　7%　　　　　　　　　63%

GLY A2 Q3 V4 S5 R6 Q7 ASN VAL GLY THR HIS SER THR GLN ASN SER VAL SER ASN GLY SER SER LEU N25 Y26 F27 N28 I29 N30 K33 D34 K42 L43 GLU PHE THR GLN ASP PRO SER LYS PHE THR ASP PRO VAL LYS ASP VAL LEU GLU LYS GLY ILE PRO THR LEU

GLN
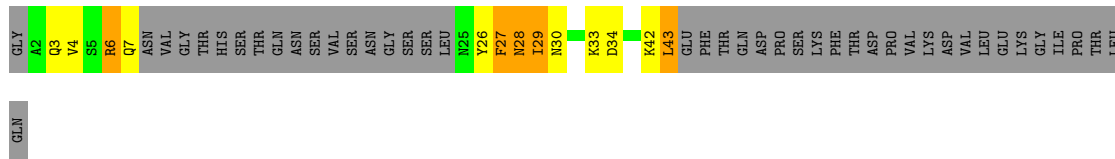
• Molecule 5: LDL-receptor class A 3

Chain 5:　　　　　66%　　　　　　　　　　29%　　　　5%

ARG THR C113 R114 I115 I118 S119 C120 G121 T125 Q126 P129 W132 D139 E144 G150 N151
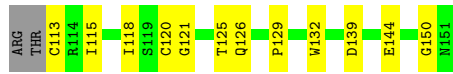
4 Data and refinement statistics ⓘ

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

Property	Value	Source
Space group	P 21 2 21	Depositor
Cell constants a, b, c, α, β, γ	313.10Å　348.79Å　380.89Å 90.00°　　90.00°　　90.00°	Depositor
Resolution (Å)	20.00　–　3.60	Depositor
% Data completeness (in resolution range)	(Not available) (20.00-3.60)	Depositor
R_{merge}	0.13	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.285　,　0.295	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	6451	wwPDB-VP
Average B, all atoms (Å^2)	25.0	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: DAO, CA

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	1	0.60	0/2211	0.76	1/3011 (0.0%)
2	2	0.62	0/2016	0.78	0/2752
3	3	0.60	0/1884	0.76	1/2579 (0.0%)
4	4	0.82	0/196	0.91	0/261
5	5	0.83	0/296	0.81	0/399
All	All	0.63	0/6603	0.77	2/9002 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	242	VAL	N-CA-C	5.26	125.20	111.00
3	3	62	ILE	N-CA-C	5.11	124.80	111.00

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	1	2155	0	2080	204	0
2	2	1961	0	1902	176	0
3	3	1834	0	1817	165	0
4	4	194	0	180	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	5	292	0	238	6	0
6	1	14	0	23	0	0
7	5	1	0	0	0	0
All	All	6451	0	6240	549	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 43.

All (549) 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)
2:2:91:ILE:H	2:2:91:ILE:HD12	1.14	1.13
3:3:143:THR:HG23	3:3:146:ASP:HB2	1.32	1.06
3:3:138:ILE:HG12	3:3:139:ALA:H	1.18	1.03
2:2:13:ILE:HG22	2:2:14:ILE:H	1.23	1.01
1:1:136:ILE:HD13	1:1:136:ILE:H	1.27	0.99
2:2:193:ASN:H	2:2:197:ASN:HD21	1.02	0.99
3:3:122:THR:HG23	3:3:124:ASN:H	1.26	0.98
3:3:127:VAL:HG22	3:3:128:LYS:H	1.25	0.97
1:1:106:GLN:HA	1:1:106:GLN:HE21	1.31	0.95
1:1:54:ARG:HD3	1:1:55:TYR:H	1.30	0.94
2:2:91:ILE:HD12	2:2:91:ILE:N	1.83	0.93
2:2:135:ALA:HB2	2:2:169:THR:HA	1.46	0.92
3:3:162:THR:HG22	3:3:163:ILE:H	1.35	0.92
3:3:42:ASN:HD22	3:3:44:VAL:HG12	1.33	0.91
3:3:122:THR:HG22	3:3:125:THR:OG1	1.71	0.90
3:3:162:THR:HG22	3:3:163:ILE:N	1.85	0.90
1:1:270:ILE:HD12	1:1:270:ILE:H	1.35	0.90
2:2:257:ARG:HG2	2:2:258:ALA:H	1.36	0.88
1:1:143:TYR:OH	1:1:233:THR:HG21	1.72	0.88
2:2:13:ILE:HG22	2:2:14:ILE:N	1.89	0.88
2:2:82:LEU:HA	2:2:83:PRO:O	1.74	0.87
3:3:127:VAL:HG22	3:3:128:LYS:N	1.88	0.87
2:2:172:TYR:HA	2:2:176:PHE:CE2	2.10	0.87
2:2:257:ARG:HG2	2:2:258:ALA:N	1.89	0.87
4:4:6:ARG:H	4:4:6:ARG:HE	1.25	0.84
1:1:277:ARG:HD3	3:3:57:ASN:HD21	1.42	0.84
3:3:162:THR:CG2	3:3:163:ILE:H	1.89	0.83
2:2:155:GLU:HB3	2:2:157:LYS:HE3	1.57	0.83
2:2:238:ASN:HD22	2:2:238:ASN:H	1.26	0.83
5:5:125:THR:HG22	5:5:126:GLN:H	1.44	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:16:VAL:HG12	1:1:17:VAL:N	1.94	0.82
3:3:138:ILE:HG12	3:3:139:ALA:N	1.96	0.81
4:4:29:ILE:HD13	4:4:29:ILE:H	1.46	0.81
2:2:91:ILE:H	2:2:91:ILE:CD1	1.80	0.81
2:2:84:ASP:O	2:2:86:LEU:N	2.15	0.80
3:3:122:THR:HG23	3:3:124:ASN:N	1.96	0.80
1:1:16:VAL:HG12	1:1:17:VAL:H	1.47	0.80
3:3:155:TRP:CD2	3:3:163:ILE:HG21	2.17	0.79
2:2:136:LEU:CD1	2:2:165:ASP:HA	2.10	0.79
1:1:132:LEU:HB2	1:1:228:LYS:O	1.84	0.78
1:1:198:TYR:CE1	1:1:205:TYR:HB2	2.18	0.77
2:2:38:TRP:CD1	2:2:39:PRO:HD2	2.19	0.77
1:1:199:ASP:HB2	1:1:203:GLN:O	1.84	0.77
1:1:145:TYR:HE1	1:1:147:PRO:HG3	1.48	0.77
4:4:6:ARG:HG2	4:4:7:GLN:H	1.47	0.77
2:2:123:ILE:HG12	2:2:191:PHE:HE1	1.50	0.76
2:2:138:GLY:O	2:2:140:VAL:HG13	1.85	0.76
2:2:203:ILE:HD12	2:2:203:ILE:N	2.01	0.76
2:2:63:PHE:CD2	2:2:247:SER:HB2	2.21	0.76
3:3:127:VAL:CG2	3:3:128:LYS:H	1.99	0.76
2:2:115:SER:HB3	2:2:118:HIS:CE1	2.20	0.75
2:2:136:LEU:HD12	2:2:165:ASP:HA	1.65	0.75
2:2:197:ASN:N	2:2:197:ASN:HD22	1.84	0.75
2:2:23:ILE:HD13	2:2:63:PHE:CD1	2.21	0.74
1:1:276:THR:HG22	3:3:62:ILE:HD11	1.68	0.74
4:4:33:LYS:O	4:4:33:LYS:HG2	1.87	0.74
4:4:43:LEU:N	4:4:43:LEU:HD12	2.02	0.74
1:1:280:ILE:HD13	1:1:280:ILE:H	1.51	0.73
2:2:13:ILE:CG2	2:2:14:ILE:H	2.00	0.73
4:4:29:ILE:HD13	4:4:29:ILE:N	2.03	0.73
3:3:141:PRO:HG2	3:3:189:THR:HG21	1.69	0.73
1:1:145:TYR:CE1	1:1:147:PRO:HG3	2.23	0.72
1:1:76:CYS:HB2	1:1:236:TYR:CE2	2.24	0.72
3:3:110:THR:HA	3:3:169:TRP:CZ3	2.25	0.71
2:2:221:TRP:O	2:2:222:SER:HB2	1.91	0.71
4:4:6:ARG:HG2	4:4:7:GLN:N	2.05	0.70
3:3:51:SER:HB3	3:3:98:LEU:HD12	1.72	0.70
1:1:25:PRO:HD3	1:1:52:GLU:OE2	1.91	0.70
2:2:59:SER:O	2:2:91:ILE:HD13	1.91	0.70
1:1:146:VAL:HG13	1:1:150:ALA:HB3	1.74	0.70
1:1:83:GLU:HG2	1:1:230:HIS:NE2	2.07	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:54:ARG:CD	1:1:55:TYR:H	2.05	0.69
1:1:242:VAL:HG12	1:1:243:LYS:N	2.06	0.69
3:3:39:GLU:HG2	3:3:40:VAL:H	1.57	0.69
3:3:95:ALA:HB1	3:3:228:LEU:HD21	1.75	0.69
3:3:65:GLU:HG2	3:3:66:ASN:N	2.06	0.69
1:1:102:GLN:HA	1:1:108:ARG:HD2	1.72	0.69
3:3:42:ASN:ND2	3:3:44:VAL:HG12	2.07	0.69
1:1:124:THR:HG21	3:3:13:PHE:CE1	2.28	0.69
1:1:125:LEU:HB2	1:1:178:PRO:HG2	1.74	0.69
3:3:141:PRO:CG	3:3:189:THR:HG21	2.23	0.68
3:3:90:ALA:HB3	3:3:178:THR:O	1.93	0.68
3:3:138:ILE:CG1	3:3:139:ALA:H	1.97	0.68
1:1:16:VAL:CG1	1:1:17:VAL:H	2.06	0.68
1:1:199:ASP:OD1	1:1:200:GLU:N	2.27	0.68
2:2:95:ASN:HB3	2:2:253:PHE:CE2	2.28	0.68
1:1:89:TYR:CE1	1:1:224:LYS:HA	2.29	0.68
1:1:50:VAL:HG12	1:1:50:VAL:O	1.95	0.67
1:1:203:GLN:O	1:1:204:ASN:HB2	1.94	0.67
1:1:206:GLY:O	1:1:209:ASN:HB2	1.94	0.67
2:2:86:LEU:O	2:2:88:ASP:N	2.28	0.67
3:3:77:ASN:O	3:3:78:ALA:HB2	1.95	0.66
2:2:123:ILE:HG12	2:2:191:PHE:CE1	2.29	0.66
1:1:120:ASP:OD1	1:1:183:PRO:HA	1.95	0.66
1:1:54:ARG:HD3	1:1:55:TYR:N	2.09	0.66
3:3:201:GLN:HE21	3:3:201:GLN:HA	1.60	0.66
4:4:6:ARG:CG	4:4:7:GLN:N	2.57	0.66
1:1:159:TYR:O	1:1:162:GLN:HG3	1.96	0.66
1:1:263:PHE:N	1:1:263:PHE:CD2	2.64	0.65
1:1:279:ILE:HD13	1:1:280:ILE:H	1.61	0.65
2:2:84:ASP:O	2:2:87:LYS:N	2.23	0.65
3:3:227:ASN:OD1	3:3:228:LEU:HD12	1.96	0.65
2:2:121:THR:HB	2:2:229:CYS:HB2	1.79	0.65
3:3:124:ASN:N	3:3:124:ASN:HD22	1.93	0.65
1:1:277:ARG:HD3	3:3:57:ASN:ND2	2.09	0.65
3:3:209:LEU:HD12	3:3:209:LEU:N	2.11	0.65
1:1:245:TRP:NE1	3:3:36:ILE:HB	2.12	0.65
4:4:3:GLN:HB3	4:4:27:PHE:HA	1.77	0.65
4:4:27:PHE:C	4:4:27:PHE:CD2	2.69	0.65
3:3:9:GLY:O	3:3:12:GLN:HG2	1.96	0.65
4:4:3:GLN:HB2	4:4:26:TYR:O	1.97	0.64
3:3:230:LEU:H	3:3:230:LEU:HD22	1.60	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:136:ILE:H	1:1:136:ILE:CD1	2.06	0.64
2:2:157:LYS:HD2	2:2:161:ARG:HH12	1.61	0.64
3:3:54:PRO:HG2	3:3:93:PRO:HB2	1.78	0.64
1:1:142:GLN:HG3	1:1:170:PHE:CE1	2.32	0.64
1:1:16:VAL:CG1	1:1:17:VAL:N	2.60	0.64
2:2:238:ASN:HD22	2:2:238:ASN:N	1.94	0.63
1:1:94:PHE:C	1:1:94:PHE:CD2	2.71	0.63
1:1:279:ILE:HD13	1:1:280:ILE:HD13	1.81	0.63
3:3:143:THR:CG2	3:3:146:ASP:HB2	2.19	0.63
1:1:210:THR:O	1:1:212:ASN:N	2.31	0.63
3:3:148:MET:SD	3:3:149:LEU:HD23	2.38	0.63
1:1:84:VAL:HG23	1:1:229:VAL:O	1.98	0.62
2:2:66:LEU:HD12	2:2:244:ILE:HB	1.80	0.62
1:1:111:PHE:C	1:1:113:LEU:H	2.02	0.62
1:1:263:PHE:N	1:1:263:PHE:HD2	1.98	0.62
2:2:197:ASN:ND2	2:2:197:ASN:H	1.98	0.62
1:1:161:TRP:CE2	1:1:219:ARG:HG2	2.34	0.62
3:3:165:MET:HG2	3:3:166:VAL:N	2.15	0.61
1:1:23:SER:HB3	1:1:53:THR:HG22	1.82	0.61
2:2:180:LEU:N	2:2:180:LEU:HD12	2.15	0.61
1:1:252:ALA:HB2	2:2:180:LEU:HD11	1.83	0.61
2:2:238:ASN:H	2:2:238:ASN:ND2	1.97	0.61
1:1:213:MET:HA	1:1:213:MET:HE2	1.83	0.61
2:2:83:PRO:HD2	2:2:219:ASN:HA	1.83	0.61
3:3:228:LEU:HD12	3:3:228:LEU:N	2.16	0.61
5:5:121:GLY:O	5:5:144:GLU:HB3	2.01	0.61
2:2:132:ILE:HG23	2:2:176:PHE:HB3	1.83	0.60
2:2:218:HIS:HD2	2:2:219:ASN:N	1.99	0.60
1:1:216:LEU:HD12	1:1:217:CYS:N	2.16	0.60
2:2:162:LEU:C	2:2:164:PRO:N	2.52	0.60
2:2:172:TYR:CD2	2:2:173:TRP:N	2.68	0.60
1:1:106:GLN:HA	1:1:106:GLN:NE2	2.11	0.60
3:3:138:ILE:HG23	3:3:139:ALA:N	2.16	0.60
1:1:277:ARG:CD	3:3:57:ASN:HD21	2.14	0.60
2:2:19:GLY:HA2	2:2:58:THR:HG22	1.83	0.60
2:2:181:LEU:O	3:3:68:TYR:CE1	2.55	0.60
4:4:6:ARG:HE	4:4:6:ARG:N	1.99	0.60
1:1:161:TRP:HB2	1:1:219:ARG:HH21	1.66	0.60
1:1:105:ALA:O	1:1:106:GLN:C	2.40	0.60
3:3:107:THR:CB	3:3:222:MET:HG2	2.31	0.60
2:2:193:ASN:H	2:2:197:ASN:ND2	1.86	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:38:GLU:HA	2:2:191:PHE:HB2	1.84	0.59
1:1:19:ASN:HB3	1:1:56:VAL:O	2.01	0.59
3:3:122:THR:HG22	3:3:125:THR:N	2.17	0.59
3:3:62:ILE:HG23	3:3:63:ASN:OD1	2.01	0.59
1:1:86:LEU:O	1:1:87:ALA:HB3	2.03	0.59
3:3:99:ILE:HG23	3:3:100:GLY:H	1.66	0.59
1:1:50:VAL:O	1:1:51:ILE:HG23	2.02	0.59
1:1:110:LYS:O	1:1:113:LEU:HB2	2.03	0.59
3:3:125:THR:CG2	3:3:196:LEU:HD11	2.33	0.59
1:1:94:PHE:C	1:1:94:PHE:HD2	2.06	0.58
1:1:232:MET:HE3	1:1:232:MET:HA	1.86	0.58
2:2:122:LEU:HD11	2:2:242:ILE:HD11	1.84	0.58
2:2:260:ARG:HG3	2:2:261:GLN:N	2.18	0.58
2:2:197:ASN:HD22	2:2:197:ASN:H	1.48	0.58
2:2:203:ILE:HD12	2:2:203:ILE:H	1.69	0.58
3:3:61:TYR:O	3:3:63:ASN:N	2.36	0.58
1:1:242:VAL:CG1	1:1:243:LYS:N	2.66	0.58
3:3:200:PRO:O	3:3:201:GLN:HB2	2.03	0.58
4:4:30:ASN:N	4:4:30:ASN:HD22	2.00	0.58
3:3:2:LEU:HD23	3:3:3:PRO:N	2.19	0.58
3:3:122:THR:HG22	3:3:125:THR:H	1.69	0.58
4:4:30:ASN:N	4:4:30:ASN:ND2	2.52	0.58
2:2:84:ASP:OD1	2:2:85:ALA:N	2.37	0.57
3:3:130:LEU:C	3:3:130:LEU:HD23	2.25	0.57
1:1:277:ARG:NH1	1:1:280:ILE:HG22	2.19	0.57
2:2:181:LEU:O	3:3:68:TYR:HE1	1.87	0.57
3:3:7:THR:HG23	3:3:8:PRO:HD2	1.86	0.57
5:5:118:ILE:HA	5:5:129:PRO:HA	1.86	0.57
3:3:107:THR:HB	3:3:222:MET:HG2	1.86	0.57
1:1:262:ASN:HA	2:2:133:ALA:HB1	1.87	0.57
2:2:127:ILE:HG23	2:2:187:PHE:CE2	2.39	0.57
3:3:196:LEU:HD12	3:3:197:VAL:H	1.68	0.57
2:2:132:ILE:HG22	2:2:133:ALA:H	1.69	0.57
1:1:270:ILE:H	1:1:270:ILE:CD1	2.08	0.57
2:2:50:ILE:O	2:2:50:ILE:HG13	2.04	0.57
3:3:39:GLU:HG2	3:3:40:VAL:N	2.20	0.56
3:3:163:ILE:HG23	3:3:163:ILE:O	2.05	0.56
2:2:225:ILE:O	2:2:226:ILE:HD13	2.05	0.56
1:1:156:ARG:O	1:1:156:ARG:HG2	2.04	0.56
1:1:161:TRP:CD2	1:1:219:ARG:HG2	2.39	0.56
1:1:195:TYR:HE2	2:2:218:HIS:CE1	2.23	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:118:HIS:O	2:2:119:GLN:HB3	2.04	0.56
3:3:101:GLU:O	3:3:104:SER:HB2	2.05	0.56
4:4:3:GLN:HE21	4:4:27:PHE:CB	2.19	0.56
1:1:99:ILE:O	1:1:100:ASN:HB3	2.05	0.56
2:2:218:HIS:CD2	2:2:219:ASN:N	2.74	0.56
1:1:257:ARG:HH11	1:1:257:ARG:HB3	1.70	0.56
2:2:180:LEU:HD12	2:2:180:LEU:H	1.71	0.56
2:2:193:ASN:N	2:2:197:ASN:HD21	1.86	0.56
4:4:42:LYS:C	4:4:43:LEU:HD12	2.24	0.56
1:1:193:MET:HA	1:1:193:MET:CE	2.36	0.56
1:1:198:TYR:C	1:1:209:ASN:HD21	2.09	0.56
2:2:135:ALA:HB2	2:2:169:THR:CA	2.29	0.56
1:1:39:THR:O	2:2:190:GLN:HG2	2.06	0.56
1:1:195:TYR:HE2	2:2:218:HIS:ND1	2.04	0.56
2:2:164:PRO:HA	2:2:167:GLN:HG2	1.87	0.56
4:4:6:ARG:H	4:4:6:ARG:NE	2.00	0.55
3:3:198:ILE:HB	3:3:199:PRO:HD2	1.89	0.55
3:3:171:SER:OG	3:3:172:ALA:N	2.38	0.55
1:1:198:TYR:CZ	2:2:144:TYR:HA	2.42	0.55
1:1:51:ILE:O	1:1:53:THR:N	2.40	0.55
1:1:226:ILE:HG22	1:1:226:ILE:O	2.06	0.55
2:2:120:GLY:N	2:2:194:LEU:HD12	2.20	0.55
2:2:176:PHE:N	2:2:176:PHE:CD2	2.74	0.55
3:3:111:GLY:O	3:3:169:TRP:HB2	2.06	0.55
1:1:35:ASP:CG	1:1:36:ALA:H	2.10	0.55
3:3:51:SER:HB3	3:3:98:LEU:CD1	2.36	0.55
3:3:65:GLU:N	3:3:65:GLU:OE1	2.39	0.55
1:1:257:ARG:HB3	1:1:257:ARG:NH1	2.22	0.55
1:1:277:ARG:HH12	1:1:280:ILE:HG22	1.71	0.55
2:2:86:LEU:O	2:2:89:MET:HG2	2.06	0.55
2:2:98:TYR:CE1	2:2:259:LYS:HB2	2.42	0.55
2:2:257:ARG:CG	2:2:258:ALA:N	2.62	0.55
2:2:126:LEU:HD13	2:2:221:TRP:CE3	2.42	0.54
3:3:111:GLY:HA3	3:3:218:PHE:HA	1.88	0.54
3:3:191:TRP:CD1	3:3:191:TRP:N	2.74	0.54
1:1:207:THR:OG1	1:1:259:HIS:ND1	2.41	0.54
3:3:128:LYS:HB2	3:3:194:THR:OG1	2.06	0.54
1:1:50:VAL:O	1:1:50:VAL:CG1	2.55	0.54
2:2:203:ILE:CG2	2:2:249:MET:HE1	2.37	0.54
1:1:198:TYR:HA	1:1:209:ASN:HD21	1.72	0.54
3:3:131:LEU:N	3:3:131:LEU:HD22	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:6:ILE:HG22	3:3:7:THR:N	2.23	0.54
3:3:99:ILE:HG23	3:3:100:GLY:N	2.23	0.54
3:3:171:SER:HB2	3:3:176:ARG:CZ	2.37	0.54
2:2:127:ILE:HG23	2:2:128:PRO:HD2	1.89	0.54
2:2:237:ILE:N	2:2:237:ILE:HD12	2.23	0.54
2:2:32:ILE:HD13	2:2:33:VAL:H	1.73	0.53
2:2:80:TRP:CE3	2:2:80:TRP:N	2.76	0.53
1:1:110:LYS:O	1:1:113:LEU:CB	2.57	0.53
1:1:249:PRO:HD3	2:2:187:PHE:CE1	2.43	0.53
2:2:91:ILE:N	2:2:91:ILE:CD1	2.53	0.53
2:2:103:ARG:HB2	2:2:212:MET:HG2	1.90	0.53
2:2:175:ASN:O	2:2:176:PHE:HB2	2.08	0.53
1:1:111:PHE:HD1	1:1:111:PHE:H	1.57	0.53
2:2:115:SER:HB3	2:2:118:HIS:ND1	2.23	0.53
3:3:92:GLN:OE1	3:3:93:PRO:HA	2.09	0.53
3:3:221:ARG:O	3:3:222:MET:HB3	2.08	0.53
1:1:84:VAL:HG21	1:1:229:VAL:HG23	1.91	0.53
2:2:149:PRO:HG2	2:2:150:GLY:H	1.73	0.53
1:1:96:VAL:HG12	1:1:97:TRP:N	2.22	0.53
1:1:159:TYR:CD2	1:1:160:ALA:N	2.77	0.53
1:1:103:GLU:O	1:1:104:MET:HG2	2.09	0.52
3:3:54:PRO:HG3	3:3:96:THR:CG2	2.40	0.52
3:3:122:THR:CG2	3:3:125:THR:H	2.22	0.52
2:2:237:ILE:HD12	2:2:237:ILE:H	1.75	0.52
1:1:277:ARG:NH2	1:1:280:ILE:HA	2.25	0.52
4:4:6:ARG:CG	4:4:7:GLN:H	2.13	0.52
1:1:161:TRP:CB	1:1:219:ARG:HH21	2.22	0.52
2:2:172:TYR:CD2	2:2:172:TYR:N	2.77	0.52
2:2:162:LEU:C	2:2:164:PRO:HD3	2.29	0.52
2:2:193:ASN:O	2:2:195:ARG:N	2.43	0.52
1:1:55:TYR:C	1:1:55:TYR:CD2	2.82	0.52
1:1:20:ILE:N	1:1:20:ILE:HD12	2.25	0.52
3:3:52:LEU:HD23	3:3:210:CYS:O	2.09	0.52
3:3:184:THR:HG22	3:3:185:SER:H	1.75	0.52
3:3:82:ILE:HG12	3:3:192:TYR:CE1	2.45	0.51
1:1:161:TRP:CZ2	1:1:219:ARG:HG2	2.46	0.51
2:2:23:ILE:HG21	2:2:109:HIS:CD2	2.45	0.51
1:1:86:LEU:O	1:1:87:ALA:CB	2.58	0.51
1:1:270:ILE:HD12	1:1:270:ILE:N	2.17	0.51
1:1:276:THR:HG22	3:3:62:ILE:CD1	2.40	0.51
2:2:23:ILE:HD13	2:2:63:PHE:CE1	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:71:LEU:N	1:1:71:LEU:HD23	2.25	0.51
5:5:125:THR:HG22	5:5:126:GLN:N	2.21	0.51
4:4:43:LEU:N	4:4:43:LEU:CD1	2.72	0.51
1:1:92:GLU:O	1:1:156:ARG:HB2	2.11	0.51
2:2:76:LYS:HB3	2:2:172:TYR:CE1	2.46	0.51
3:3:107:THR:OG1	3:3:222:MET:HG2	2.10	0.51
1:1:24:ASN:HB3	1:1:25:PRO:HD2	1.93	0.51
1:1:261:THR:HB	2:2:133:ALA:HB2	1.93	0.51
3:3:70:VAL:HG12	3:3:71:VAL:N	2.26	0.51
4:4:3:GLN:NE2	4:4:27:PHE:HB3	2.26	0.51
1:1:136:ILE:HD13	1:1:136:ILE:N	2.11	0.51
2:2:172:TYR:N	2:2:172:TYR:HD2	2.08	0.51
3:3:54:PRO:HG3	3:3:96:THR:HG21	1.92	0.51
2:2:157:LYS:HD2	2:2:161:ARG:NH1	2.25	0.51
3:3:73:GLN:HB3	3:3:76:ILE:HG13	1.93	0.51
2:2:34:ALA:HB3	2:2:205:PRO:CD	2.42	0.50
2:2:127:ILE:HD11	2:2:184:ILE:HD11	1.93	0.50
3:3:82:ILE:HG12	3:3:192:TYR:HE1	1.76	0.50
4:4:6:ARG:N	4:4:6:ARG:NE	2.58	0.50
2:2:203:ILE:HG23	2:2:249:MET:HE1	1.93	0.50
3:3:122:THR:HG22	3:3:125:THR:CB	2.42	0.50
3:3:193:GLN:HA	3:3:193:GLN:HE21	1.77	0.50
1:1:65:MET:HB2	3:3:42:ASN:HD21	1.77	0.50
1:1:155:SER:O	1:1:157:ASP:N	2.45	0.50
1:1:23:SER:CB	1:1:53:THR:HG22	2.42	0.50
1:1:96:VAL:CG1	1:1:97:TRP:N	2.75	0.49
2:2:173:TRP:O	2:2:174:LEU:HD23	2.12	0.49
3:3:127:VAL:CG2	3:3:128:LYS:N	2.60	0.49
1:1:155:SER:C	1:1:157:ASP:N	2.66	0.49
1:1:83:GLU:HG2	1:1:230:HIS:CD2	2.47	0.49
1:1:156:ARG:NH2	1:1:221:VAL:O	2.45	0.49
1:1:182:LEU:HD23	1:1:183:PRO:HD2	1.94	0.49
3:3:65:GLU:O	3:3:67:MET:N	2.45	0.49
1:1:55:TYR:C	1:1:55:TYR:HD2	2.15	0.49
1:1:124:THR:HG23	1:1:179:ARG:HB2	1.95	0.49
1:1:202:ASP:HB3	2:2:144:TYR:CD1	2.48	0.49
1:1:144:MET:HE3	1:1:146:VAL:HG22	1.95	0.49
2:2:126:LEU:HD22	2:2:221:TRP:HE3	1.78	0.49
1:1:193:MET:HA	1:1:193:MET:HE2	1.95	0.48
1:1:22:SER:HA	1:1:54:ARG:O	2.13	0.48
2:2:23:ILE:CG2	2:2:24:THR:N	2.76	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:34:ALA:O	2:2:36:GLY:N	2.47	0.48
3:3:155:TRP:CE2	3:3:163:ILE:HG21	2.48	0.48
1:1:87:ALA:O	1:1:88:ASN:HB2	2.12	0.48
1:1:182:LEU:CD2	1:1:183:PRO:HD2	2.43	0.48
3:3:148:MET:SD	3:3:148:MET:C	2.91	0.48
1:1:185:LEU:O	1:1:186:SER:O	2.31	0.48
3:3:54:PRO:HA	3:3:68:TYR:CD2	2.48	0.48
1:1:279:ILE:HG23	1:1:281:THR:H	1.79	0.48
3:3:82:ILE:HD12	3:3:190:CYS:SG	2.54	0.48
1:1:155:SER:C	1:1:157:ASP:H	2.16	0.48
1:1:272:THR:OG1	1:1:273:ALA:N	2.46	0.48
2:2:162:LEU:C	2:2:164:PRO:CD	2.81	0.48
3:3:55:ILE:HD12	3:3:83:PHE:CD2	2.47	0.48
1:1:48:GLU:HG3	1:1:53:THR:HG21	1.96	0.48
1:1:204:ASN:O	1:1:205:TYR:C	2.51	0.48
1:1:241:HIS:N	1:1:241:HIS:CD2	2.79	0.48
2:2:84:ASP:O	2:2:85:ALA:C	2.52	0.48
2:2:84:ASP:CG	2:2:85:ALA:N	2.67	0.48
3:3:26:PRO:O	3:3:27:TRP:HB2	2.14	0.48
2:2:176:PHE:N	2:2:176:PHE:HD2	2.10	0.48
3:3:170:ILE:O	3:3:170:ILE:HG22	2.14	0.48
1:1:85:THR:HG23	1:1:85:THR:O	2.14	0.48
1:1:16:VAL:HG12	1:1:17:VAL:O	2.14	0.47
3:3:14:LEU:HB3	3:3:17:ASP:HB3	1.96	0.47
1:1:198:TYR:HA	1:1:209:ASN:ND2	2.29	0.47
1:1:198:TYR:CA	1:1:209:ASN:HD21	2.28	0.47
2:2:162:LEU:O	2:2:164:PRO:N	2.47	0.47
3:3:84:SER:O	3:3:85:ILE:HG23	2.14	0.47
3:3:155:TRP:CE3	3:3:163:ILE:HG21	2.48	0.47
1:1:252:ALA:HB2	2:2:180:LEU:CD1	2.44	0.47
2:2:186:ILE:HG13	2:2:186:ILE:O	2.14	0.47
2:2:198:ASN:OD1	2:2:198:ASN:O	2.32	0.47
2:2:55:GLN:HA	2:2:56:PRO:HD2	1.74	0.47
3:3:122:THR:CG2	3:3:125:THR:N	2.77	0.47
3:3:2:LEU:O	3:3:4:VAL:HG13	2.14	0.47
3:3:115:PHE:CE2	3:3:188:ILE:HD11	2.49	0.47
1:1:88:ASN:O	1:1:89:TYR:C	2.52	0.47
1:1:237:HIS:ND1	1:1:237:HIS:C	2.68	0.47
2:2:98:TYR:CZ	2:2:259:LYS:HB2	2.49	0.47
3:3:2:LEU:C	3:3:2:LEU:CD2	2.83	0.47
2:2:34:ALA:HB3	2:2:204:ALA:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:175:ASN:C	2:2:176:PHE:HD2	2.18	0.47
3:3:130:LEU:HD12	3:3:193:GLN:NE2	2.29	0.47
1:1:17:VAL:O	1:1:17:VAL:HG23	2.15	0.47
2:2:46:ASP:O	2:2:47:ALA:O	2.32	0.47
2:2:94:GLU:O	2:2:95:ASN:C	2.53	0.47
2:2:115:SER:C	2:2:117:PHE:H	2.17	0.47
2:2:197:ASN:N	2:2:197:ASN:ND2	2.50	0.47
3:3:133:TYR:HE1	3:3:186:GLY:HA3	1.80	0.46
2:2:206:TYR:CE1	2:2:208:ASN:HB3	2.50	0.46
3:3:18:ASP:O	3:3:19:PHE:CD1	2.69	0.46
1:1:262:ASN:ND2	2:2:134:SER:OG	2.44	0.46
3:3:195:ARG:O	3:3:197:VAL:HG23	2.16	0.46
2:2:84:ASP:C	2:2:86:LEU:N	2.69	0.46
3:3:144:ARG:O	3:3:145:LYS:C	2.53	0.46
4:4:3:GLN:HE21	4:4:27:PHE:HB3	1.81	0.46
2:2:207:VAL:O	2:2:208:ASN:HB2	2.15	0.46
1:1:253:LEU:CD1	1:1:263:PHE:HD1	2.29	0.46
3:3:73:GLN:HE21	3:3:73:GLN:HB2	1.65	0.46
1:1:245:TRP:CE2	3:3:36:ILE:HB	2.51	0.46
2:2:45:LYS:O	2:2:45:LYS:HG2	2.15	0.46
2:2:79:TRP:NE1	2:2:176:PHE:CE1	2.84	0.46
2:2:126:LEU:HD22	2:2:221:TRP:CE3	2.51	0.46
4:4:27:PHE:HD2	4:4:27:PHE:O	1.99	0.46
4:4:27:PHE:O	4:4:28:ASN:HB3	2.15	0.46
2:2:105:GLY:O	2:2:249:MET:N	2.50	0.45
2:2:165:ASP:N	2:2:165:ASP:OD1	2.49	0.45
1:1:25:PRO:HD3	1:1:52:GLU:CD	2.37	0.45
1:1:46:GLN:HB3	1:1:47:PRO:HD2	1.97	0.45
1:1:143:TYR:O	1:1:168:SER:HA	2.17	0.45
3:3:77:ASN:O	3:3:78:ALA:CB	2.62	0.45
1:1:42:THR:O	1:1:43:SER:C	2.54	0.45
1:1:89:TYR:CD1	1:1:224:LYS:HA	2.52	0.45
2:2:95:ASN:OD1	2:2:99:HIS:HE1	1.98	0.45
4:4:4:VAL:HG23	4:4:26:TYR:CE1	2.52	0.45
2:2:172:TYR:O	2:2:175:ASN:N	2.48	0.45
2:2:231:LEU:O	2:2:231:LEU:HG	2.16	0.45
1:1:67:LEU:HD23	1:1:67:LEU:HA	1.78	0.45
2:2:71:TRP:CE2	2:2:231:LEU:HB2	2.51	0.45
2:2:79:TRP:HE1	2:2:176:PHE:HE1	1.64	0.45
3:3:54:PRO:HB3	3:3:68:TYR:CE2	2.51	0.45
3:3:166:VAL:CG1	3:3:167:VAL:N	2.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:51:ILE:O	1:1:52:GLU:C	2.55	0.45
1:1:207:THR:HG23	2:2:131:GLN:HE22	1.80	0.45
2:2:260:ARG:CG	2:2:261:GLN:N	2.80	0.45
3:3:87:THR:O	3:3:88:ASP:C	2.55	0.45
2:2:72:SER:C	2:2:74:SER:H	2.20	0.45
2:2:79:TRP:CD1	2:2:176:PHE:CE1	3.05	0.45
2:2:106:TYR:HB3	2:2:247:SER:O	2.17	0.45
1:1:196:ASP:OD1	2:2:81:LYS:HD3	2.16	0.44
2:2:34:ALA:HB3	2:2:205:PRO:HD3	1.99	0.44
4:4:29:ILE:N	4:4:29:ILE:CD1	2.74	0.44
1:1:104:MET:O	1:1:105:ALA:C	2.55	0.44
2:2:32:ILE:O	2:2:203:ILE:HD12	2.18	0.44
3:3:196:LEU:HD12	3:3:197:VAL:N	2.30	0.44
1:1:161:TRP:CE3	1:1:219:ARG:HG2	2.51	0.44
1:1:261:THR:O	1:1:262:ASN:O	2.36	0.44
3:3:122:THR:HG22	3:3:125:THR:HG1	1.78	0.44
1:1:54:ARG:HD3	1:1:55:TYR:O	2.17	0.44
1:1:224:LYS:HB3	5:5:132:TRP:HZ2	1.82	0.44
2:2:38:TRP:CD1	2:2:39:PRO:CD	2.97	0.44
2:2:132:ILE:CG2	2:2:176:PHE:HB3	2.47	0.44
1:1:24:ASN:CB	1:1:25:PRO:HD2	2.48	0.44
1:1:111:PHE:C	1:1:113:LEU:N	2.70	0.44
3:3:46:ILE:O	3:3:49:VAL:N	2.46	0.44
3:3:103:SER:HA	3:3:220:LEU:HD21	1.98	0.44
1:1:145:TYR:CD1	1:1:145:TYR:C	2.91	0.44
2:2:150:GLY:O	2:2:152:THR:N	2.50	0.44
3:3:128:LYS:O	3:3:193:GLN:HB3	2.18	0.44
1:1:275:VAL:CG1	1:1:276:THR:N	2.81	0.44
3:3:209:LEU:HD12	3:3:209:LEU:H	1.80	0.44
1:1:59:SER:O	1:1:60:GLN:O	2.36	0.44
2:2:95:ASN:CB	2:2:253:PHE:CE2	3.00	0.44
2:2:174:LEU:HA	2:2:179:THR:O	2.18	0.44
3:3:7:THR:HG22	3:3:8:PRO:O	2.18	0.44
1:1:210:THR:OG1	1:1:211:ASN:N	2.51	0.43
1:1:245:TRP:CD1	3:3:36:ILE:HG22	2.53	0.43
2:2:229:CYS:HA	2:2:230:PRO:HD2	1.70	0.43
4:4:27:PHE:C	4:4:27:PHE:HD2	2.17	0.43
5:5:115:ILE:HG22	5:5:115:ILE:O	2.18	0.43
1:1:177:TYR:CD2	1:1:177:TYR:N	2.81	0.43
3:3:46:ILE:O	3:3:48:GLN:N	2.51	0.43
3:3:128:LYS:HD2	3:3:194:THR:HG21	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:134:THR:HA	3:3:135:PRO:HD3	1.79	0.43
1:1:207:THR:HG1	1:1:259:HIS:HD1	1.60	0.43
1:1:85:THR:N	1:1:93:ASN:OD1	2.48	0.43
1:1:94:PHE:HE1	1:1:154:ASN:C	2.21	0.43
1:1:107:ILE:HG22	1:1:108:ARG:N	2.33	0.43
2:2:210:VAL:HB	2:2:211:PRO:HD2	1.99	0.43
3:3:155:TRP:CD1	3:3:156:ASP:N	2.87	0.43
2:2:114:ALA:CB	2:2:194:LEU:HD22	2.49	0.43
2:2:216:ARG:HG3	2:2:216:ARG:HH11	1.82	0.43
2:2:172:TYR:O	2:2:174:LEU:N	2.51	0.43
3:3:25:LEU:HD23	3:3:25:LEU:HA	1.76	0.43
3:3:200:PRO:O	3:3:201:GLN:CB	2.67	0.43
2:2:143:GLY:O	2:2:144:TYR:C	2.57	0.43
3:3:78:ALA:HB1	3:3:79:PRO:HD2	2.00	0.43
2:2:198:ASN:OD1	2:2:198:ASN:C	2.57	0.43
3:3:108:HIS:HA	3:3:176:ARG:O	2.19	0.43
4:4:3:GLN:CB	4:4:26:TYR:O	2.67	0.43
1:1:53:THR:OG1	1:1:54:ARG:N	2.52	0.42
1:1:103:GLU:C	1:1:104:MET:HG2	2.38	0.42
1:1:202:ASP:OD2	1:1:202:ASP:N	2.52	0.42
3:3:26:PRO:HA	4:4:34:ASP:OD1	2.19	0.42
1:1:118:ARG:O	1:1:119:PHE:HB3	2.19	0.42
1:1:183:PRO:HD3	3:3:23:CYS:SG	2.59	0.42
2:2:115:SER:C	2:2:117:PHE:N	2.72	0.42
1:1:80:SER:C	1:1:232:MET:CE	2.87	0.42
1:1:201:GLN:O	1:1:203:GLN:HB2	2.19	0.42
2:2:228:ILE:HD12	2:2:228:ILE:HA	1.89	0.42
3:3:2:LEU:HD23	3:3:2:LEU:C	2.37	0.42
3:3:83:PHE:CE1	3:3:190:CYS:HB3	2.54	0.42
2:2:37:VAL:O	2:2:205:PRO:HB3	2.19	0.42
3:3:215:CYS:C	3:3:217:ASP:N	2.71	0.42
1:1:108:ARG:NE	1:1:255:TYR:CE2	2.88	0.42
1:1:116:TYR:OH	2:2:208:ASN:HA	2.19	0.42
1:1:161:TRP:CB	1:1:219:ARG:NH2	2.83	0.42
2:2:18:ARG:O	2:2:19:GLY:C	2.57	0.42
2:2:82:LEU:HA	2:2:83:PRO:C	2.31	0.42
3:3:48:GLN:HE21	3:3:48:GLN:HB2	1.51	0.42
2:2:159:GLU:O	2:2:160:THR:O	2.37	0.42
2:2:126:LEU:HD23	2:2:126:LEU:HA	1.64	0.42
3:3:57:ASN:OD1	3:3:57:ASN:N	2.52	0.42
3:3:83:PHE:CE1	3:3:190:CYS:CB	3.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:230:LEU:HD13	3:3:230:LEU:N	2.35	0.42
1:1:110:LYS:O	1:1:113:LEU:N	2.52	0.42
2:2:71:TRP:CZ2	2:2:231:LEU:HB2	2.55	0.42
3:3:199:PRO:HB2	3:3:200:PRO:CD	2.50	0.42
1:1:161:TRP:CH2	1:1:219:ARG:HG2	2.55	0.42
2:2:34:ALA:HB3	2:2:205:PRO:HD2	2.01	0.42
3:3:155:TRP:CD1	3:3:155:TRP:C	2.92	0.42
3:3:42:ASN:O	3:3:45:GLU:HG3	2.19	0.42
1:1:161:TRP:HB2	1:1:219:ARG:NH2	2.34	0.41
1:1:201:GLN:O	1:1:202:ASP:C	2.58	0.41
3:3:34:ILE:HG13	3:3:35:SER:N	2.34	0.41
3:3:209:LEU:N	3:3:209:LEU:CD1	2.83	0.41
1:1:110:LYS:O	1:1:111:PHE:C	2.57	0.41
1:1:127:PRO:HG3	1:1:233:THR:CG2	2.50	0.41
1:1:146:VAL:HA	1:1:147:PRO:HD3	1.80	0.41
4:4:4:VAL:HG21	4:4:42:LYS:NZ	2.36	0.41
1:1:132:LEU:HD23	1:1:132:LEU:HA	1.79	0.41
3:3:29:HIS:O	3:3:30:PRO:C	2.58	0.41
3:3:54:PRO:HB3	3:3:68:TYR:HE2	1.85	0.41
1:1:199:ASP:HB3	1:1:203:GLN:H	1.84	0.41
2:2:106:TYR:C	2:2:249:MET:HE2	2.40	0.41
2:2:187:PHE:HB3	2:2:188:PRO:CD	2.49	0.41
3:3:56:ASN:HB3	3:3:67:MET:HA	2.02	0.41
3:3:106:PHE:O	3:3:178:THR:HG21	2.20	0.41
3:3:166:VAL:HG12	3:3:167:VAL:N	2.34	0.41
3:3:193:GLN:HA	3:3:193:GLN:NE2	2.36	0.41
1:1:70:PHE:CD2	1:1:71:LEU:HD21	2.56	0.41
2:2:99:HIS:CG	2:2:253:PHE:HB3	2.56	0.41
2:2:112:CYS:O	2:2:112:CYS:SG	2.78	0.41
2:2:218:HIS:CD2	2:2:218:HIS:C	2.93	0.41
3:3:58:THR:C	3:3:60:THR:N	2.73	0.41
3:3:228:LEU:N	3:3:228:LEU:CD1	2.83	0.41
1:1:19:ASN:N	1:1:19:ASN:HD22	2.16	0.41
1:1:117:THR:O	1:1:190:ALA:HB1	2.21	0.41
1:1:179:ARG:HG2	1:1:180:PHE:N	2.35	0.41
1:1:111:PHE:CD1	1:1:111:PHE:N	2.89	0.41
2:2:118:HIS:O	3:3:122:THR:HA	2.21	0.41
3:3:184:THR:HG21	3:3:187:TYR:CE1	2.56	0.41
1:1:142:GLN:O	1:1:218:SER:HA	2.20	0.41
1:1:145:TYR:O	1:1:147:PRO:HD3	2.21	0.41
1:1:203:GLN:O	1:1:204:ASN:CB	2.67	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:245:TRP:CD1	3:3:36:ILE:CG2	3.04	0.41
2:2:34:ALA:C	2:2:36:GLY:N	2.74	0.41
2:2:93:GLY:O	2:2:96:MET:HB3	2.20	0.41
2:2:144:TYR:C	2:2:144:TYR:CD2	2.95	0.41
3:3:58:THR:O	3:3:60:THR:N	2.53	0.41
1:1:111:PHE:O	1:1:113:LEU:N	2.51	0.41
1:1:180:PHE:CD1	1:1:180:PHE:C	2.95	0.41
3:3:102:ILE:O	3:3:105:TYR:HB2	2.20	0.41
1:1:179:ARG:CG	1:1:180:PHE:N	2.82	0.40
1:1:257:ARG:HH11	1:1:257:ARG:CB	2.33	0.40
3:3:51:SER:HB3	3:3:98:LEU:CG	2.51	0.40
3:3:55:ILE:HG22	3:3:56:ASN:N	2.37	0.40
1:1:46:GLN:O	1:1:47:PRO:C	2.60	0.40
1:1:91:LYS:O	1:1:91:LYS:HG2	2.21	0.40
1:1:231:ILE:O	1:1:231:ILE:HG22	2.21	0.40
1:1:248:ARG:HB3	1:1:249:PRO:HD2	2.03	0.40
3:3:54:PRO:HA	3:3:68:TYR:HD2	1.85	0.40
3:3:58:THR:O	3:3:62:ILE:HD13	2.21	0.40
3:3:184:THR:HG22	3:3:185:SER:N	2.36	0.40
1:1:113:LEU:HD12	1:1:113:LEU:O	2.22	0.40
2:2:77:GLY:O	2:2:156:VAL:HG23	2.21	0.40
1:1:198:TYR:HB3	1:1:199:ASP:H	1.72	0.40
2:2:78:TRP:O	2:2:79:TRP:HB3	2.22	0.40
1:1:84:VAL:HA	1:1:93:ASN:OD1	2.22	0.40
1:1:263:PHE:HD2	1:1:263:PHE:H	1.66	0.40
2:2:209:ALA:O	2:2:210:VAL:HG12	2.21	0.40
3:3:98:LEU:O	3:3:99:ILE:C	2.60	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	267/289 (92%)	208 (78%)	38 (14%)	21 (8%)	1	11
2	2	248/261 (95%)	179 (72%)	47 (19%)	22 (9%)	1	9
3	3	235/237 (99%)	180 (77%)	39 (17%)	16 (7%)	1	15
4	4	21/68 (31%)	15 (71%)	5 (24%)	1 (5%)	2	22
5	5	37/41 (90%)	24 (65%)	12 (32%)	1 (3%)	5	35
All	All	808/896 (90%)	606 (75%)	141 (18%)	61 (8%)	1	12

All (61) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1	60	GLN
1	1	91	LYS
1	1	105	ALA
1	1	185	LEU
1	1	186	SER
1	1	211	ASN
1	1	262	ASN
2	2	31	ALA
2	2	47	ALA
2	2	83	PRO
2	2	85	ALA
2	2	87	LYS
2	2	159	GLU
2	2	160	THR
2	2	194	LEU
2	2	222	SER
3	3	17	ASP
3	3	62	ILE
3	3	89	VAL
3	3	163	ILE
3	3	218	PHE
3	3	234	ALA
1	1	106	GLN
1	1	282	THR
2	2	73	SER
2	2	112	CYS
3	3	66	ASN
3	3	88	ASP
3	3	95	ALA
3	3	158	GLY
1	1	87	ALA

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Mol	Chain	Res	Type
1	1	202	ASP
2	2	35	TYR
2	2	84	ASP
2	2	145	ASN
2	2	151	GLU
2	2	165	ASP
2	2	173	TRP
1	1	25	PRO
1	1	112	GLU
1	1	156	ARG
1	1	266	GLU
2	2	30	ASN
2	2	66	LEU
2	2	139	ASN
3	3	79	PRO
3	3	222	MET
4	4	28	ASN
1	1	52	GLU
1	1	110	LYS
2	2	114	ALA
2	2	119	GLN
3	3	30	PRO
3	3	47	CYS
1	1	107	ILE
1	1	195	TYR
3	3	22	PRO
1	1	246	CYS
5	5	150	GLY
1	1	47	PRO
3	3	127	VAL

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	1	238/257 (93%)	213 (90%)	25 (10%)	7	33

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	2	216/226 (96%)	192 (89%)	24 (11%)	6	31
3	3	210/210 (100%)	186 (89%)	24 (11%)	5	29
4	4	19/59 (32%)	15 (79%)	4 (21%)	1	7
5	5	34/36 (94%)	31 (91%)	3 (9%)	10	40
All	All	717/788 (91%)	637 (89%)	80 (11%)	6	30

All (80) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	54	ARG
1	1	55	TYR
1	1	82	LEU
1	1	89	TYR
1	1	94	PHE
1	1	106	GLN
1	1	121	SER
1	1	124	THR
1	1	136	ILE
1	1	159	TYR
1	1	177	TYR
1	1	180	PHE
1	1	203	GLN
1	1	209	ASN
1	1	213	MET
1	1	217	CYS
1	1	219	ARG
1	1	233	THR
1	1	257	ARG
1	1	261	THR
1	1	263	PHE
1	1	270	ILE
1	1	277	ARG
1	1	279	ILE
1	1	280	ILE
2	2	26	GLN
2	2	32	ILE
2	2	58	THR
2	2	63	PHE
2	2	80	TRP
2	2	91	ILE
2	2	106	TYR

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Mol	Chain	Res	Type
2	2	126	LEU
2	2	134	SER
2	2	137	HIS
2	2	140	VAL
2	2	152	THR
2	2	162	LEU
2	2	164	PRO
2	2	172	TYR
2	2	176	PHE
2	2	180	LEU
2	2	193	ASN
2	2	195	ARG
2	2	197	ASN
2	2	201	THR
2	2	203	ILE
2	2	238	ASN
2	2	257	ARG
3	3	2	LEU
3	3	8	PRO
3	3	20	GLN
3	3	48	GLN
3	3	56	ASN
3	3	59	ASP
3	3	62	ILE
3	3	73	GLN
3	3	80	ASP
3	3	88	ASP
3	3	96	THR
3	3	122	THR
3	3	124	ASN
3	3	134	THR
3	3	142	THR
3	3	143	THR
3	3	146	ASP
3	3	148	MET
3	3	165	MET
3	3	171	SER
3	3	201	GLN
3	3	220	LEU
3	3	225	ASP
3	3	230	LEU
4	4	6	ARG

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Mol	Chain	Res	Type
4	4	27	PHE
4	4	29	ILE
4	4	43	LEU
5	5	113	CYS
5	5	120	CYS
5	5	139	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	19	ASN
1	1	106	GLN
1	1	162	GLN
1	1	166	ASN
1	1	201	GLN
1	1	209	ASN
2	2	15	GLN
2	2	26	GLN
2	2	55	GLN
2	2	95	ASN
2	2	99	HIS
2	2	109	HIS
2	2	131	GLN
2	2	137	HIS
2	2	175	ASN
2	2	193	ASN
2	2	197	ASN
2	2	219	ASN
2	2	238	ASN
3	3	20	GLN
3	3	42	ASN
3	3	48	GLN
3	3	56	ASN
3	3	73	GLN
3	3	108	HIS
3	3	124	ASN
3	3	193	GLN
3	3	201	GLN
4	4	3	GLN
4	4	30	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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 2 ligands modelled in this entry, 1 is 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	$\#|Z| > 2$
6	DAO	1	290	-	13,13,13	1.63	2 (15%)	13,13,13	0.89	1 (7%)

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
6	DAO	1	290	-	-	8/11/11/11	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	1	290	DAO	C2-C1	4.10	1.60	1.50
6	1	290	DAO	C3-C2	2.22	1.60	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	1	290	DAO	O2-C1-C2	2.05	120.61	114.03

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	1	290	DAO	C2-C3-C4-C5
6	1	290	DAO	C11-C10-C9-C8
6	1	290	DAO	C9-C10-C11-C12
6	1	290	DAO	C5-C6-C7-C8
6	1	290	DAO	C3-C4-C5-C6
6	1	290	DAO	C1-C2-C3-C4
6	1	290	DAO	O1-C1-C2-C3
6	1	290	DAO	O2-C1-C2-C3

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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.