Full wwPDB NMR Structure Validation Report (i)

Jun 16, 2024 – 11:35 AM EDT

PDB ID	:	2WGN
Title	:	Pseudomonas aeruginosa ICP
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Deposited on	:	2009-04-21

This is a Full wwPDB NMR 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/NMRValidationReportHelp
with specific help available everywhere you see the (i) 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 (i)) were used in the production of this report:

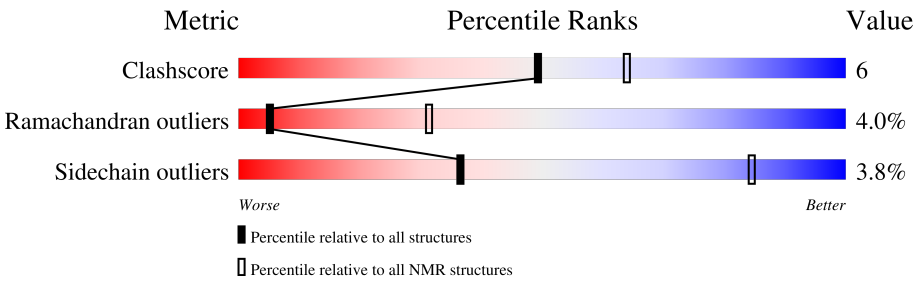
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
SOLUTION NMR

The overall completeness of chemical shifts assignment was not calculated.

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)	NMR archive (#Entries)
Clashscore	158937	12864
Ramachandran outliers	154571	11451
Sidechain outliers	154315	11428

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and 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%

Mol	Chain	Length	Quality of chain
1	B	132	58% 8% 34%

2 Ensemble composition and analysis (i)

This entry contains 25 models. Model 12 is the overall representative, medoid model (most similar to other models).

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	**Residue range (total)**	**Backbone RMSD (Å)**	**Medoid model**
1	B:5-B:50, B:71-B:111 (87)	1.09	12

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 2 clusters and 6 single-model clusters were found.

Cluster number	Models
1	1, 3, 4, 8, 9, 10, 12, 13, 15, 16, 17, 18, 20, 21, 23
2	5, 11, 14, 22
Single-model clusters	2; 6; 7; 19; 24; 25

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 2010 atoms, of which 985 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	B	132	2010	631	985	190	200	4	0

There are 21 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-20	MET	-	expression tag	UNP Q9I5G0
B	-19	GLY	-	expression tag	UNP Q9I5G0
B	-18	SER	-	expression tag	UNP Q9I5G0
B	-17	SER	-	expression tag	UNP Q9I5G0
B	-16	HIS	-	expression tag	UNP Q9I5G0
B	-15	HIS	-	expression tag	UNP Q9I5G0
B	-14	HIS	-	expression tag	UNP Q9I5G0
B	-13	HIS	-	expression tag	UNP Q9I5G0
B	-12	HIS	-	expression tag	UNP Q9I5G0
B	-11	HIS	-	expression tag	UNP Q9I5G0
B	-10	SER	-	expression tag	UNP Q9I5G0
B	-9	SER	-	expression tag	UNP Q9I5G0
B	-8	GLY	-	expression tag	UNP Q9I5G0
B	-7	LEU	-	expression tag	UNP Q9I5G0
B	-6	VAL	-	expression tag	UNP Q9I5G0
B	-5	PRO	-	expression tag	UNP Q9I5G0
B	-4	ARG	-	expression tag	UNP Q9I5G0
B	-3	GLY	-	expression tag	UNP Q9I5G0
B	-2	SER	-	expression tag	UNP Q9I5G0
B	-1	HIS	-	expression tag	UNP Q9I5G0
B	0	MET	-	expression tag	UNP Q9I5G0

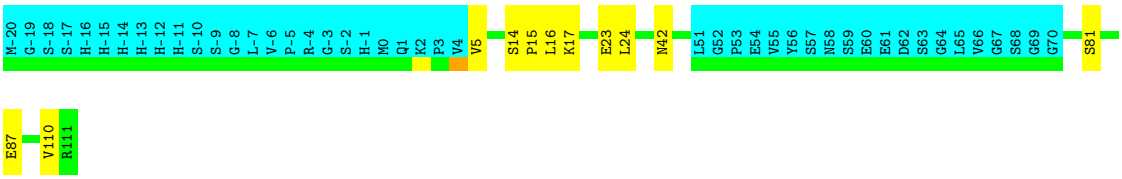
4 Residue-property plots (i)

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-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 outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 58% 8% 34%



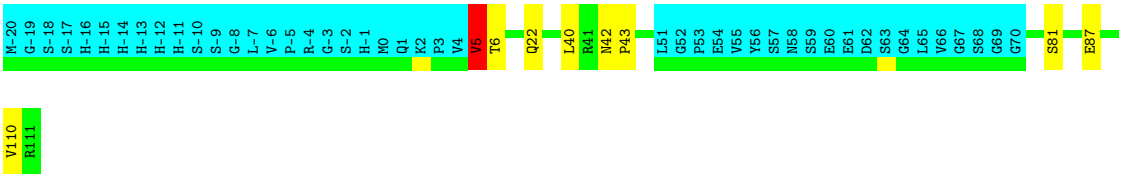
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 59% 6% • 34%



4.2.2 Score per residue for model 2

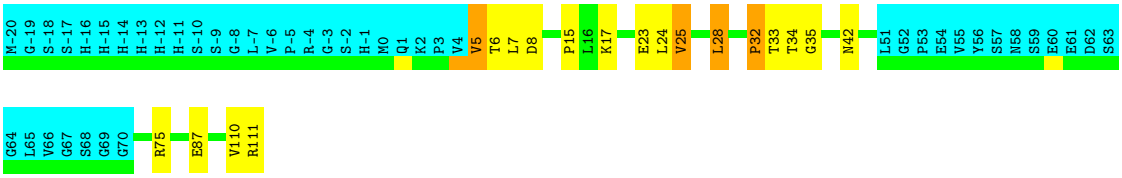
• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 51% 14% •• 34%

4.2.3 Score per residue for model 3

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

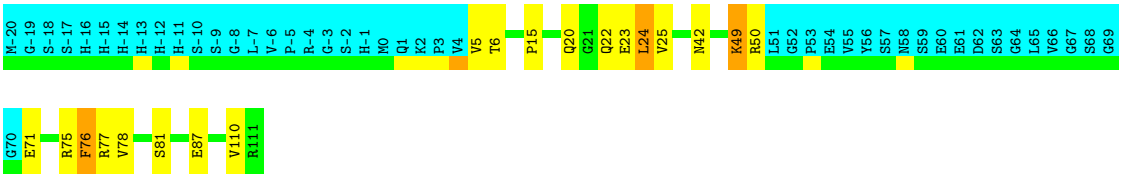
Chain B:



4.2.4 Score per residue for model 4

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

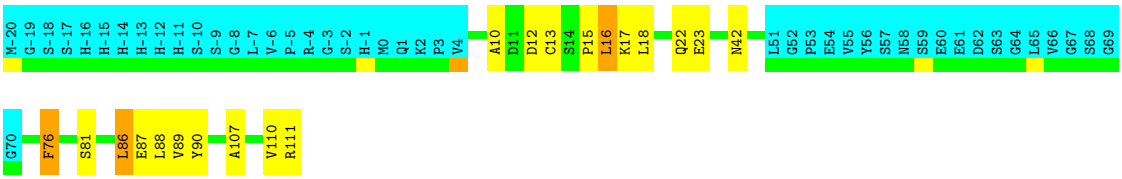
Chain B:



4.2.5 Score per residue for model 5

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B:



4.2.6 Score per residue for model 6

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 56% 6% • 34%

M-20 G-19 S-18 S-17 H-16 H-15 H-14 H-13 H-12 H-11 S-10 S-9 G-8 L-7 V-6 P-5 R-4 G-3 S-2 H-1 M0 Q1 K2 P3 V4 V5 T6 L7 D8 T19 E23 L24 V25 N42 L48 L51 G52 P53 E54 V55 Y56 S57 N58 S59 E60 E61 D62 S63 G64 L65 V66 G67 S68 G69 G70

R77 V78 E87 C106 R111

4.2.7 Score per residue for model 7

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 55% 9% • • 34%

M-20 G-19 S-18 S-17 H-16 H-15 H-14 H-13 H-12 H-11 S-10 S-9 G-8 L-7 V-6 P-5 R-4 G-3 S-2 H-1 M0 Q1 K2 P3 V4 V5 C13 S14 P15 L16 E23 R41 N42 L51 G52 P53 E54 V55 Y56 S57 N58 S59 E60 E61 D62 S63 G64 L65 V66 G67 S68 G69 G70 R75

E87 Y90 E95 E102 A107 V110 R111

4.2.8 Score per residue for model 8

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 59% 6% • 34%

M-20 G-19 S-18 S-17 H-16 H-15 H-14 H-13 H-12 H-11 S-10 S-9 G-8 L-7 V-6 P-5 R-4 G-3 S-2 H-1 M0 Q1 K2 P3 V4 P15 L16 K17 L18 T19 Q20 E23 L24 V25 L51 G52 P53 E54 V55 Y56 S57 N58 S59 E60 E61 D62 S63 G64 L65 V66 G67 S68 G69 G70 V89 Y90

R111

4.2.9 Score per residue for model 9

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 52% 12% • 34%

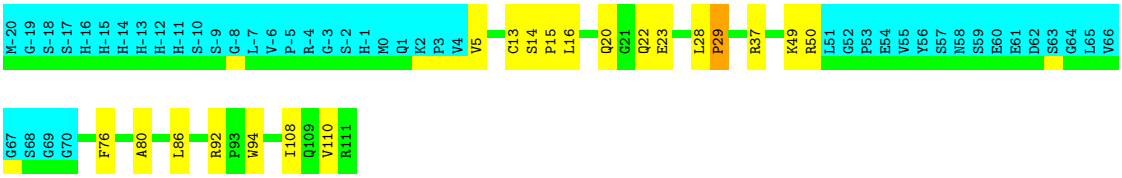
M-20 G-19 S-18 S-17 H-16 H-15 H-14 H-13 H-12 H-11 S-10 S-9 G-8 L-7 V-6 P-5 R-4 G-3 S-2 H-1 M0 Q1 K2 P3 V4 S14 P15 L16 K17 Q20 G21 Q22 E23 N42 P43 A44 V47 L48 L51 G52 P53 E54 V55 Y56 S57 N58 S59 E60 E61 D62 S63 G64 L65 V66 G67

S68 G69 G70 E71 V78 A79 A80 S81 L86 E87 I108 Q109 V110 R111

4.2.10 Score per residue for model 10

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

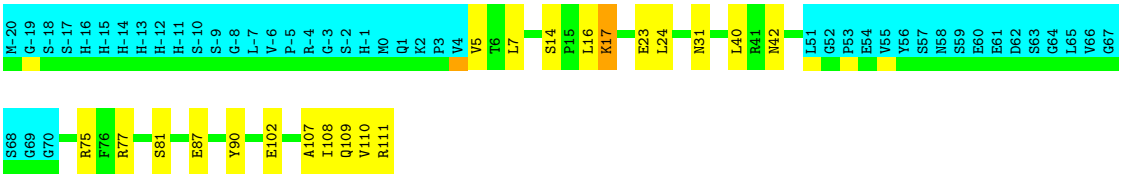
Chain B: 51% 14% • 34%



4.2.11 Score per residue for model 11

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

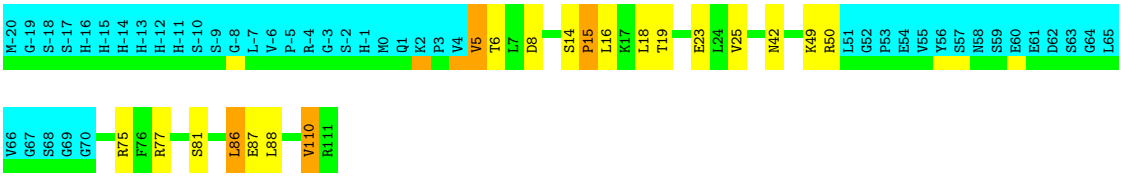
Chain B: 50% 15% • 34%



4.2.12 Score per residue for model 12 (medoid)

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

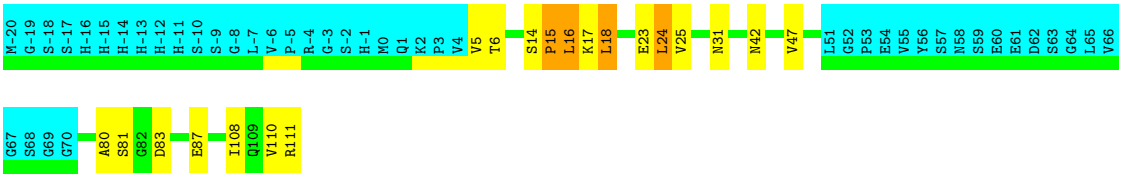
Chain B: 51% 12% • 34%



4.2.13 Score per residue for model 13

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

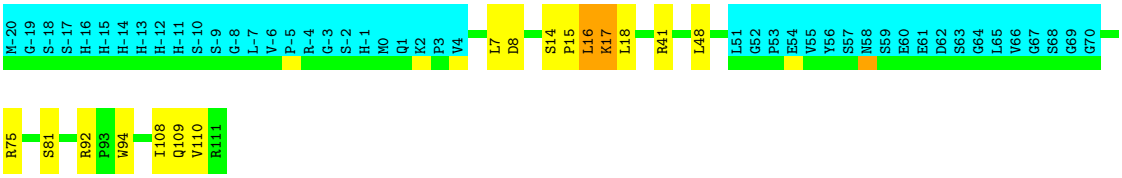
Chain B: 51% 12% • 34%



4.2.14 Score per residue for model 14

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

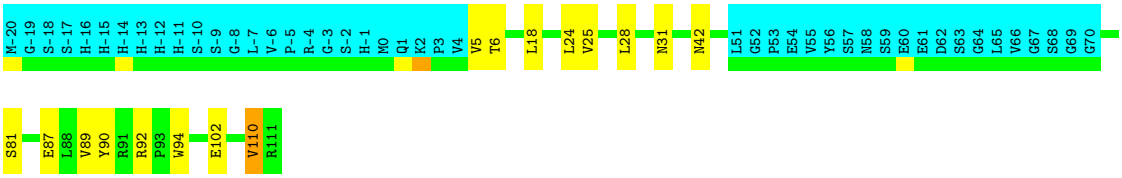
Chain B: 54% 11% • 34%



4.2.15 Score per residue for model 15

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

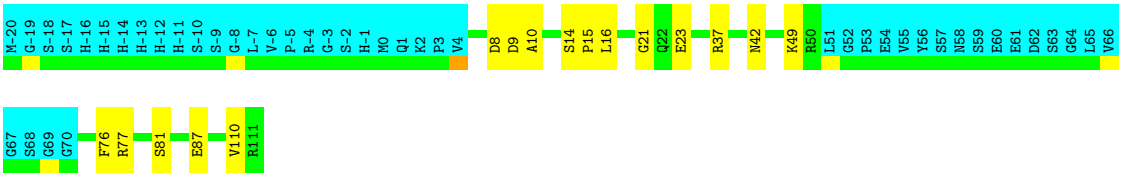
Chain B: 54% 11% • 34%



4.2.16 Score per residue for model 16

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 54% 12% 34%



4.2.17 Score per residue for model 17

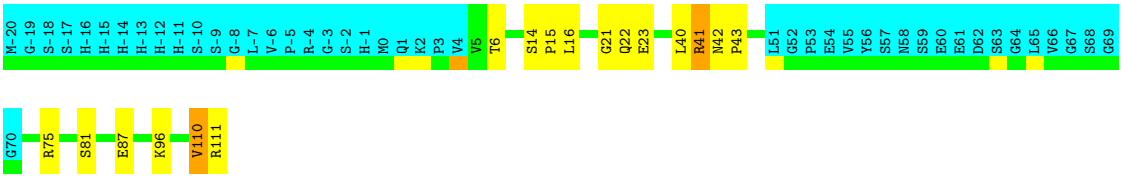
• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 49% 15% • 34%

4.2.18 Score per residue for model 18

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

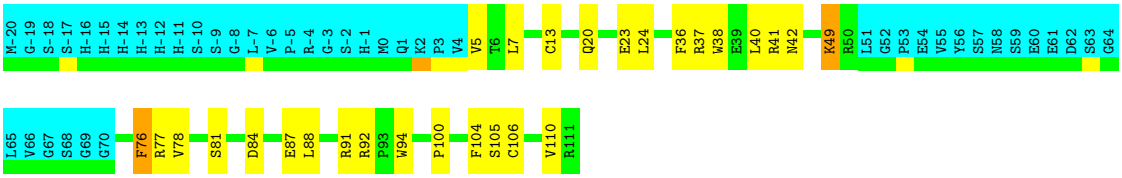
Chain B: 53% 11% • 34%



4.2.19 Score per residue for model 19

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

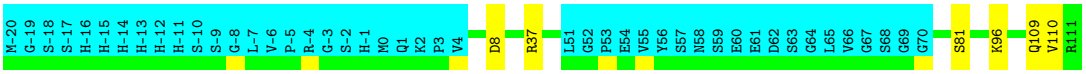
Chain B: 45% 20% • 34%



4.2.20 Score per residue for model 20

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

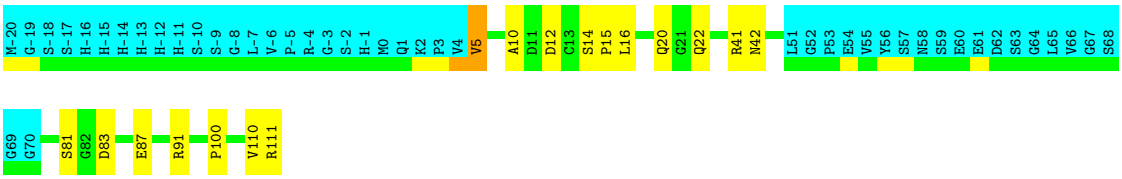
Chain B: 61% 5% 34%



4.2.21 Score per residue for model 21

- Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

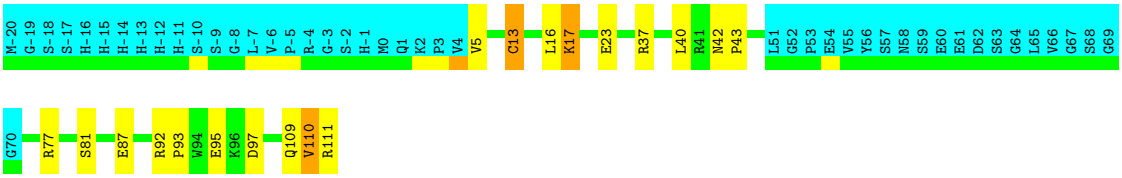
Chain B: 53% 12% • 34%



4.2.22 Score per residue for model 22

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

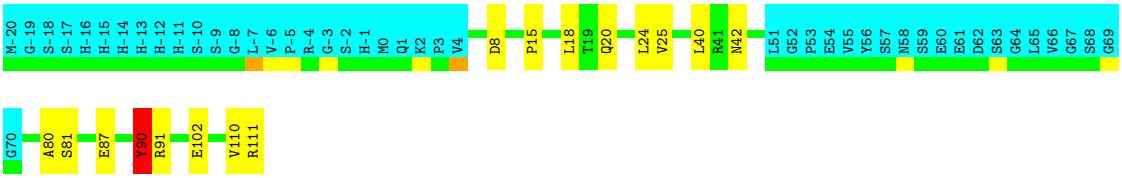
Chain B: 52% 12% • 34%



4.2.23 Score per residue for model 23

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

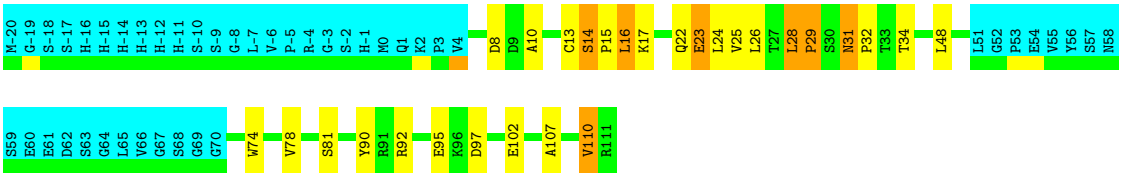
Chain B: 54% 11% • 34%



4.2.24 Score per residue for model 24

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

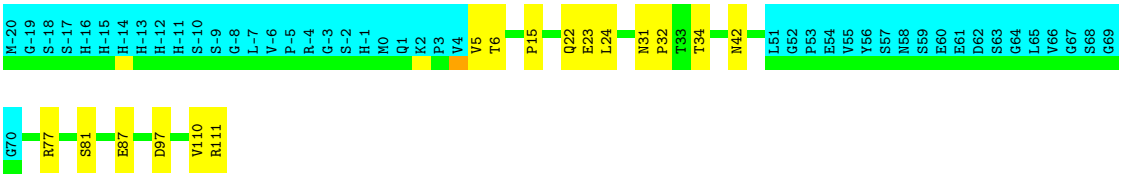
Chain B: 45% 16% 5% 34%



4.2.25 Score per residue for model 25

• Molecule 1: INHIBITOR OF CYSTEINE PEPTIDASE COMPND 3

Chain B: 54% 12% 34%



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *ARIA ALIKE METHOD*.

Of the 25 calculated structures, 25 were deposited, based on the following criterion: *LOWEST ENEGY*.

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
CNS	refinement	
AZARA	structure solution	
CNS	structure solution	
CCPNMR ANALYSIS ANALYSIS	structure solution	ANALYSIS
TOPSPIN	structure solution	

No chemical shift data was provided.

6 Model quality (i)

6.1 Standard geometry (i)

There are no covalent bond-length or bond-angle outliers.

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 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 each 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 averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	B	696	679	679	8±4
All	All	17400	16975	16975	210

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 6.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:47:VAL:HG23	1:B:48:LEU:HD12	0.70	1.63	9	1
1:B:15:PRO:C	1:B:16:LEU:HD23	0.63	2.13	2	1
1:B:19:THR:HG23	1:B:78:VAL:HG11	0.63	1.70	6	1
1:B:28:LEU:N	1:B:29:PRO:CD	0.62	2.61	10	1
1:B:28:LEU:N	1:B:29:PRO:HD2	0.62	2.07	10	1
1:B:28:LEU:H	1:B:29:PRO:HD2	0.61	1.55	24	1
1:B:81:SER:HA	1:B:110:VAL:HB	0.60	1.73	14	20
1:B:6:THR:HG21	1:B:25:VAL:HA	0.59	1.72	6	1
1:B:14:SER:O	1:B:16:LEU:N	0.59	2.36	21	9
1:B:5:VAL:HA	1:B:24:LEU:HD12	0.58	1.75	6	1
1:B:31:ASN:N	1:B:32:PRO:HD3	0.56	2.15	25	1
1:B:24:LEU:HG	1:B:25:VAL:N	0.56	2.15	4	3
1:B:28:LEU:HD13	1:B:28:LEU:N	0.55	2.16	3	1
1:B:91:ARG:HB3	1:B:100:PRO:HB3	0.55	1.78	19	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:110:VAL:HG12	1:B:111:ARG:H	0.54	1.62	3	1
1:B:23:GLU:HB2	1:B:77:ARG:HA	0.54	1.80	4	1
1:B:16:LEU:HD23	1:B:16:LEU:N	0.54	2.18	2	1
1:B:14:SER:H	1:B:15:PRO:HD2	0.53	1.63	24	1
1:B:48:LEU:HD11	1:B:108:ILE:HG21	0.53	1.80	14	1
1:B:16:LEU:HD12	1:B:16:LEU:N	0.53	2.19	5	2
1:B:81:SER:HB2	1:B:111:ARG:HA	0.52	1.81	5	6
1:B:16:LEU:HB3	1:B:109:GLN:HB3	0.52	1.80	14	1
1:B:16:LEU:HG	1:B:107:ALA:HB1	0.52	1.81	24	3
1:B:86:LEU:HD12	1:B:88:LEU:HD11	0.51	1.81	12	2
1:B:48:LEU:HG	1:B:78:VAL:HG22	0.51	1.82	9	1
1:B:17:LYS:HA	1:B:109:GLN:O	0.51	2.06	22	2
1:B:14:SER:HB3	1:B:15:PRO:HD2	0.50	1.82	13	2
1:B:23:GLU:HG3	1:B:24:LEU:N	0.50	2.21	4	1
1:B:15:PRO:O	1:B:17:LYS:N	0.50	2.44	2	3
1:B:50:ARG:HA	1:B:50:ARG:NE	0.49	2.23	4	2
1:B:14:SER:N	1:B:15:PRO:HD3	0.49	2.22	7	1
1:B:44:ALA:HB1	1:B:48:LEU:HD13	0.49	1.82	9	1
1:B:14:SER:N	1:B:15:PRO:CD	0.48	2.76	24	2
1:B:47:VAL:CG2	1:B:48:LEU:HD12	0.48	2.37	9	1
1:B:18:LEU:HD22	1:B:108:ILE:HG23	0.48	1.86	14	1
1:B:5:VAL:HG23	1:B:24:LEU:HD12	0.47	1.85	4	1
1:B:13:CYS:HB3	1:B:106:CYS:HA	0.47	1.86	2	2
1:B:48:LEU:HD22	1:B:78:VAL:HG22	0.47	1.86	24	2
1:B:20:GLN:HE21	1:B:80:ALA:HA	0.46	1.71	10	3
1:B:24:LEU:HD22	1:B:25:VAL:H	0.46	1.70	6	1
1:B:40:LEU:HD21	1:B:43:PRO:HB3	0.46	1.87	18	3
1:B:42:ASN:HB3	1:B:87:GLU:HG3	0.46	1.88	12	19
1:B:5:VAL:O	1:B:24:LEU:HD12	0.46	2.11	3	1
1:B:31:ASN:N	1:B:32:PRO:CD	0.46	2.78	25	2
1:B:17:LYS:N	1:B:17:LYS:HD2	0.45	2.26	9	1
1:B:24:LEU:CD2	1:B:25:VAL:H	0.45	2.24	6	1
1:B:15:PRO:HD2	1:B:107:ALA:HB3	0.45	1.87	7	1
1:B:41:ARG:HE	1:B:41:ARG:HA	0.45	1.71	18	1
1:B:32:PRO:O	1:B:34:THR:N	0.45	2.50	3	1
1:B:41:ARG:NE	1:B:41:ARG:HA	0.45	2.27	7	4
1:B:90:TYR:HB3	1:B:102:GLU:HB2	0.45	1.88	11	1
1:B:16:LEU:HB2	1:B:108:ILE:HG12	0.45	1.88	13	1
1:B:77:ARG:HD3	1:B:78:VAL:N	0.45	2.26	4	1
1:B:28:LEU:N	1:B:28:LEU:HD22	0.45	2.27	10	1
1:B:107:ALA:O	1:B:108:ILE:HG13	0.45	2.12	11	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:26:LEU:HB2	1:B:74:TRP:HB2	0.45	1.88	24	1
1:B:10:ALA:C	1:B:12:ASP:H	0.45	2.16	17	3
1:B:41:ARG:HA	1:B:41:ARG:NE	0.44	2.27	18	1
1:B:16:LEU:N	1:B:16:LEU:HD12	0.44	2.27	24	1
1:B:49:LYS:O	1:B:76:PHE:HA	0.44	2.12	19	2
1:B:14:SER:O	1:B:108:ILE:HA	0.44	2.12	11	1
1:B:15:PRO:C	1:B:16:LEU:HD12	0.44	2.33	24	1
1:B:5:VAL:HG13	1:B:5:VAL:O	0.44	2.13	1	2
1:B:37:ARG:HB2	1:B:93:PRO:HG3	0.44	1.88	22	1
1:B:16:LEU:HA	1:B:109:GLN:HB2	0.44	1.88	11	1
1:B:92:ARG:HB2	1:B:95:GLU:HG3	0.44	1.89	24	2
1:B:23:GLU:HG2	1:B:77:ARG:HG2	0.44	1.90	25	1
1:B:18:LEU:HB2	1:B:110:VAL:HG22	0.44	1.87	23	1
1:B:15:PRO:C	1:B:17:LYS:N	0.44	2.71	2	1
1:B:23:GLU:HB2	1:B:76:PHE:O	0.44	2.12	5	2
1:B:90:TYR:HB2	1:B:102:GLU:HB2	0.44	1.89	7	2
1:B:6:THR:HG23	1:B:25:VAL:HG23	0.44	1.90	3	1
1:B:49:LYS:HE2	1:B:49:LYS:HA	0.44	1.88	19	1
1:B:88:LEU:HB2	1:B:104:PHE:HB2	0.44	1.90	19	1
1:B:50:ARG:HB3	1:B:77:ARG:H	0.43	1.73	17	1
1:B:14:SER:OG	1:B:15:PRO:HD3	0.43	2.12	24	1
1:B:28:LEU:O	1:B:28:LEU:HD22	0.43	2.13	3	1
1:B:28:LEU:H	1:B:29:PRO:CD	0.43	2.26	10	1
1:B:18:LEU:O	1:B:111:ARG:N	0.43	2.52	13	1
1:B:89:VAL:HG22	1:B:90:TYR:N	0.43	2.29	15	3
1:B:14:SER:N	1:B:15:PRO:HD2	0.43	2.29	24	1
1:B:23:GLU:CG	1:B:24:LEU:N	0.43	2.81	4	1
1:B:17:LYS:HD3	1:B:108:ILE:HG23	0.43	1.91	13	1
1:B:23:GLU:HG2	1:B:77:ARG:HD3	0.42	1.90	22	1
1:B:20:GLN:HG2	1:B:78:VAL:HG12	0.42	1.92	2	1
1:B:50:ARG:HG3	1:B:77:ARG:HB2	0.42	1.91	4	1
1:B:40:LEU:HG	1:B:88:LEU:HG	0.42	1.91	17	1
1:B:25:VAL:HG12	1:B:75:ARG:HG2	0.42	1.92	3	1
1:B:50:ARG:HB3	1:B:77:ARG:N	0.42	2.28	12	2
1:B:14:SER:H	1:B:15:PRO:CD	0.42	2.28	24	1
1:B:16:LEU:O	1:B:17:LYS:C	0.42	2.57	14	3
1:B:47:VAL:O	1:B:80:ALA:HB3	0.42	2.15	13	1
1:B:7:LEU:HD23	1:B:8:ASP:N	0.42	2.29	14	1
1:B:92:ARG:HB3	1:B:94:TRP:NE1	0.42	2.30	10	1
1:B:77:ARG:HD2	1:B:78:VAL:N	0.42	2.30	19	1
1:B:110:VAL:HG12	1:B:111:ARG:N	0.42	2.30	13	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:7:LEU:HB2	1:B:24:LEU:HD11	0.42	1.92	11	1
1:B:24:LEU:HD23	1:B:25:VAL:N	0.42	2.29	15	3
1:B:9:ASP:O	1:B:10:ALA:HB3	0.42	2.15	16	1
1:B:5:VAL:O	1:B:24:LEU:HA	0.42	2.14	19	1
1:B:6:THR:HG22	1:B:7:LEU:N	0.41	2.30	3	1
1:B:92:ARG:HD3	1:B:94:TRP:CZ2	0.41	2.50	14	3
1:B:19:THR:OG1	1:B:78:VAL:HG21	0.41	2.15	6	1
1:B:13:CYS:C	1:B:15:PRO:HD3	0.41	2.36	7	1
1:B:90:TYR:HB3	1:B:102:GLU:H	0.41	1.76	24	1
1:B:86:LEU:HD22	1:B:88:LEU:HD11	0.41	1.92	2	1
1:B:24:LEU:O	1:B:25:VAL:HB	0.41	2.15	6	1
1:B:81:SER:HB2	1:B:111:ARG:HB2	0.41	1.91	18	2
1:B:25:VAL:HA	1:B:74:TRP:O	0.41	2.16	24	1
1:B:28:LEU:O	1:B:29:PRO:C	0.40	2.59	10	1
1:B:25:VAL:HG13	1:B:75:ARG:HG2	0.40	1.94	12	1
1:B:40:LEU:HD23	1:B:41:ARG:N	0.40	2.31	19	1
1:B:86:LEU:HG	1:B:108:ILE:HD12	0.40	1.93	10	1
1:B:28:LEU:HD22	1:B:28:LEU:N	0.40	2.31	15	1
1:B:36:PHE:HA	1:B:92:ARG:HG2	0.40	1.94	19	1
1:B:17:LYS:HD2	1:B:17:LYS:H	0.40	1.76	5	1
1:B:86:LEU:HD23	1:B:108:ILE:HD12	0.40	1.92	9	1
1:B:21:GLY:HA2	1:B:77:ARG:NH2	0.40	2.32	16	1

6.3 Torsion angles (i)

6.3.1 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 PDB entries followed by that with respect to all NMR entries. 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	B	86/132 (65%)	67±3 (77±4%)	16±3 (19±4%)	3±2 (4±2%)	5 31
All	All	2150/3300 (65%)	1664 (77%)	399 (19%)	87 (4%)	5 31

All 29 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	B	15	PRO	15
1	B	8	ASP	8
1	B	5	VAL	7
1	B	16	LEU	7
1	B	110	VAL	7
1	B	20	GLN	6
1	B	97	ASP	4
1	B	13	CYS	4
1	B	17	LYS	3
1	B	31	ASN	3
1	B	14	SER	2
1	B	19	THR	2
1	B	29	PRO	2
1	B	34	THR	2
1	B	32	PRO	1
1	B	33	THR	1
1	B	35	GLY	1
1	B	6	THR	1
1	B	25	VAL	1
1	B	95	GLU	1
1	B	18	LEU	1
1	B	21	GLY	1
1	B	96	LYS	1
1	B	37	ARG	1
1	B	105	SER	1
1	B	90	TYR	1
1	B	91	ARG	1
1	B	10	ALA	1
1	B	28	LEU	1

6.3.2 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 PDB entries followed by that with respect to all NMR entries. 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	B	76/113 (67%)	73±2 (96±2%)	3±2 (4±2%)	36 84
All	All	1900/2825 (67%)	1827 (96%)	73 (4%)	36 84

All 32 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	B	6	THR	8
1	B	49	LYS	6
1	B	37	ARG	5
1	B	76	PHE	5
1	B	22	GLN	4
1	B	17	LYS	3
1	B	24	LEU	3
1	B	18	LEU	3
1	B	13	CYS	3
1	B	23	GLU	3
1	B	40	LEU	3
1	B	5	VAL	2
1	B	71	GLU	2
1	B	75	ARG	2
1	B	86	LEU	2
1	B	19	THR	2
1	B	83	ASP	2
1	B	16	LEU	1
1	B	25	VAL	1
1	B	28	LEU	1
1	B	106	CYS	1
1	B	50	ARG	1
1	B	102	GLU	1
1	B	110	VAL	1
1	B	41	ARG	1
1	B	7	LEU	1
1	B	38	TRP	1
1	B	84	ASP	1
1	B	96	LYS	1
1	B	109	GLN	1
1	B	90	TYR	1
1	B	31	ASN	1

6.3.3 RNA (i)

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains (i)

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

6.5 Carbohydrates (i)

There are no monosaccharides in this entry.

6.6 Ligand geometry (i)

There are no ligands in this entry.

6.7 Other polymers (i)

There are no such molecules in this entry.

6.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

7 Chemical shift validation (i)

No chemical shift data were provided