



Full wwPDB NMR Structure Validation Report ⓘ

Feb 12, 2017 – 05:35 pm GMT

PDB ID : 1BAK

Title : SIGNAL TRANSDUCTION PLECKSTRIN HOMOLOGY DOMAIN OF G-PROTEIN COUPLED RECEPTOR KINASE 2 (BETA-ADRENERGIC RECEPTOR KINASE 1), C-TERMINAL EXTENDED, NMR, 20 STRUCTURES

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Deposited on : 1997-11-21

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

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

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:

Cyrange	:	Kirchner and Güntert (2011)
NmrClust	:	Kelley et al. (1996)
MolProbity	:	4.02b-467
Percentile statistics	:	20161228.v01 (using entries in the PDB archive December 28th 2016)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	trunk28760
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	recalc28949

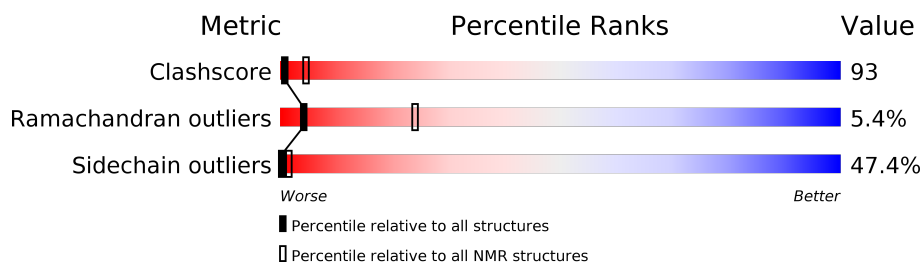
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

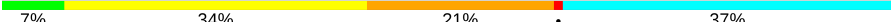
The overall completeness of chemical shifts assignment was not calculated.

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	125131	11601
Ramachandran outliers	121729	10391
Sidechain outliers	121581	10367

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 $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	119	

2 Ensemble composition and analysis

This entry contains 20 models. Model 7 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	A:559-A:567, A:578-A:588, A:601-A:655 (75)	0.24	7

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 8 single-model clusters were found.

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

3 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 1997 atoms, of which 1003 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called G-PROTEIN COUPLED RECEPTOR KINASE 2.

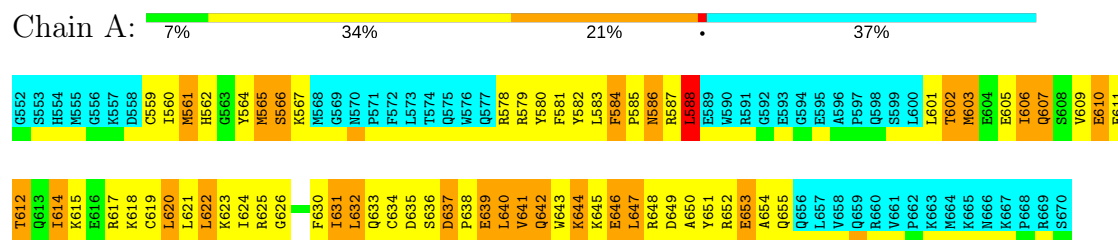
Mol	Chain	Residues	Atoms						Trace
1	A	119	Total	C	H	N	O	S	0
			1997	627	1003	181	177	9	

4 Residue-property plots

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA and DNA 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: G-PROTEIN COUPLED RECEPTOR KINASE 2

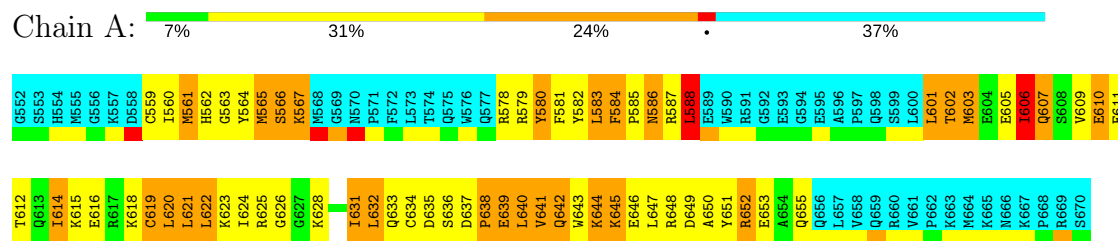


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



4.2.2 Score per residue for model 2

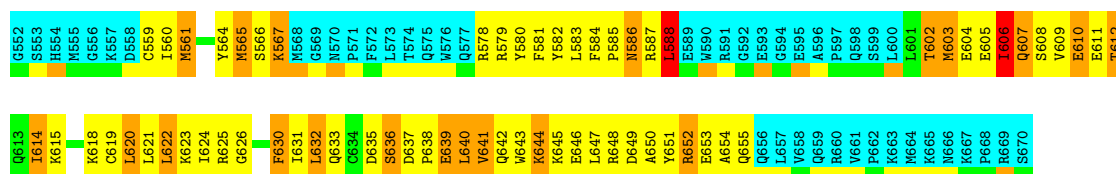
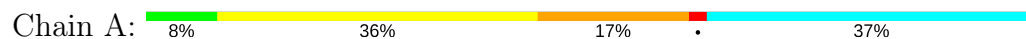
- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2





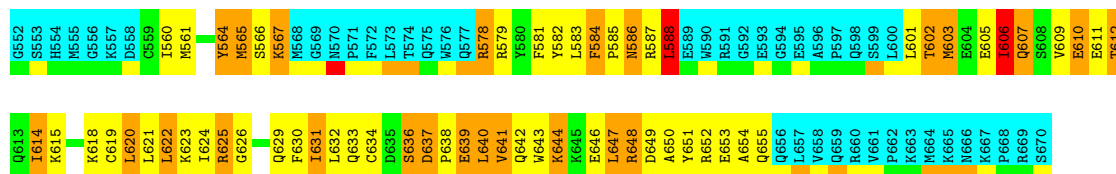
4.2.3 Score per residue for model 3

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



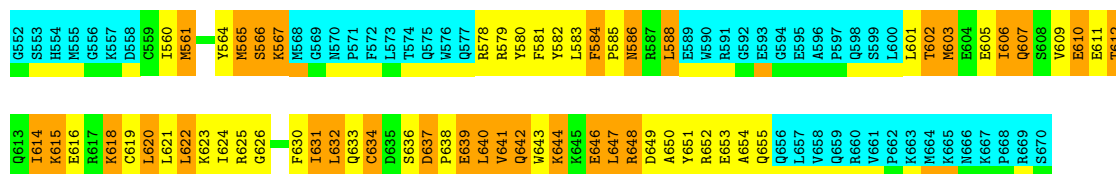
4.2.4 Score per residue for model 4

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



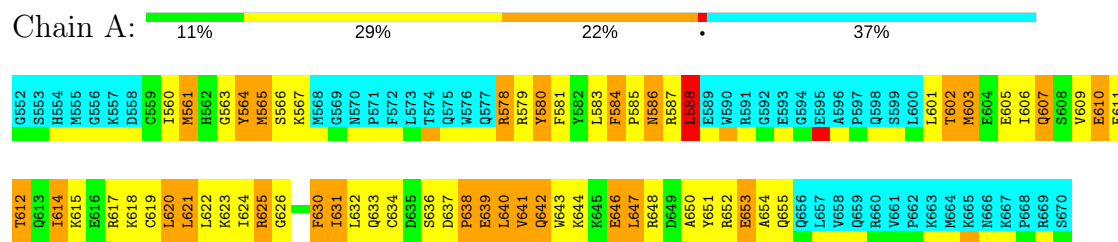
4.2.5 Score per residue for model 5

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



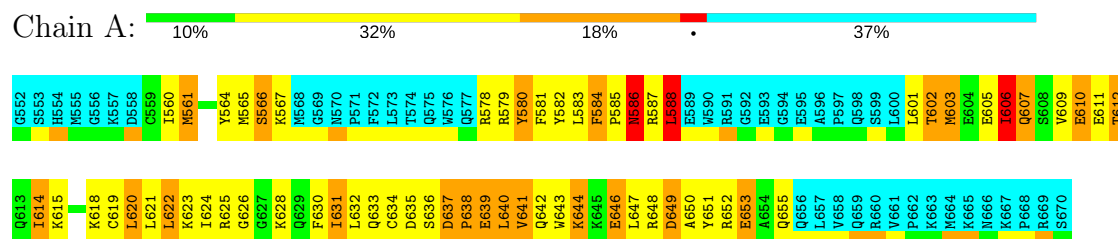
4.2.6 Score per residue for model 6

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



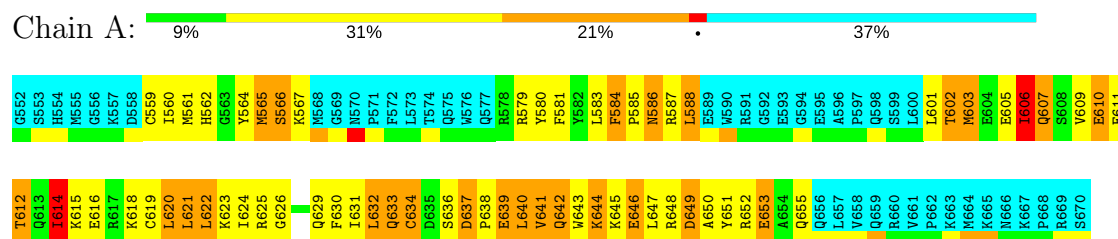
4.2.7 Score per residue for model 7 (medoid)

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



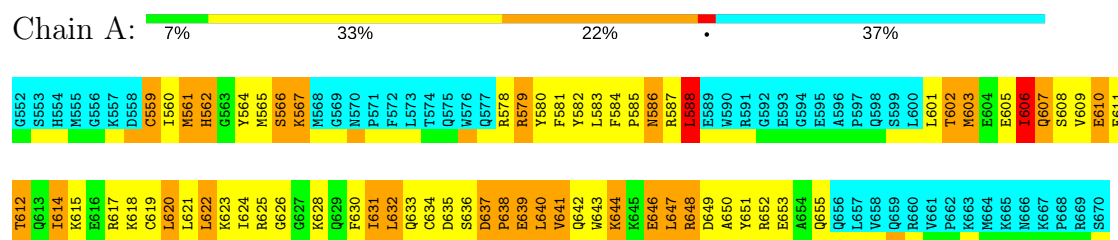
4.2.8 Score per residue for model 8

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



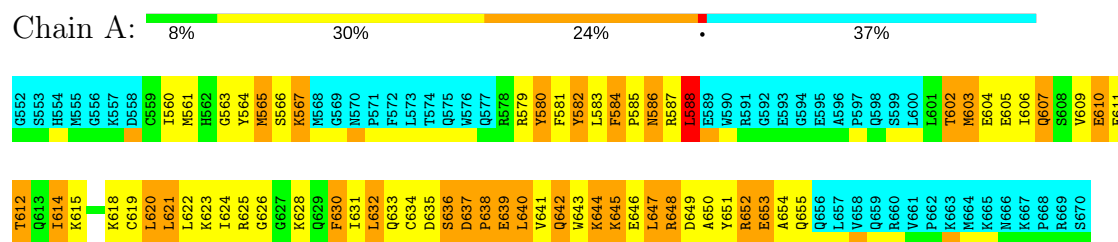
4.2.9 Score per residue for model 9

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



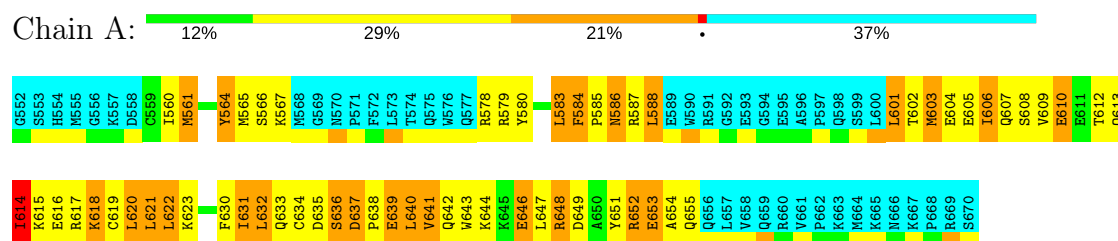
4.2.10 Score per residue for model 10

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



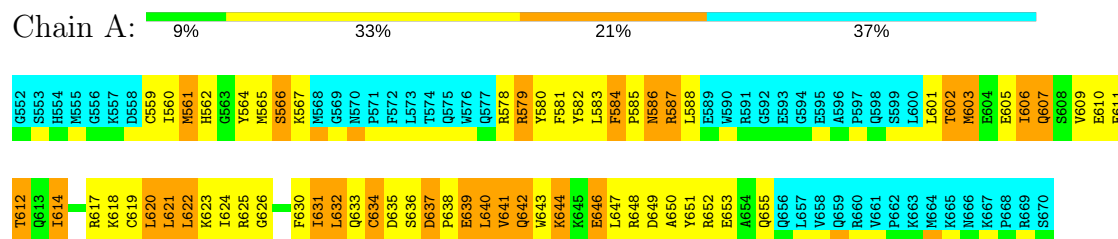
4.2.11 Score per residue for model 11

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



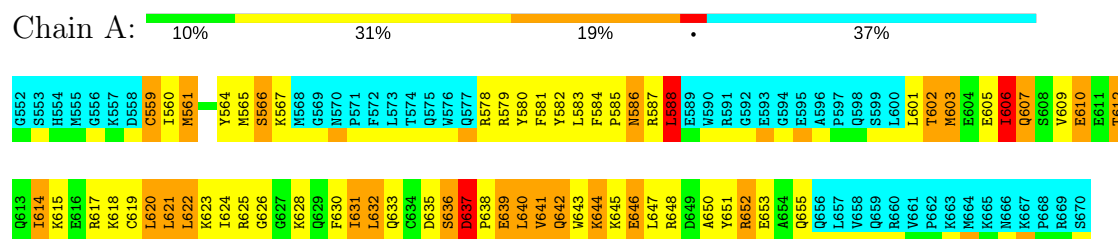
4.2.12 Score per residue for model 12

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



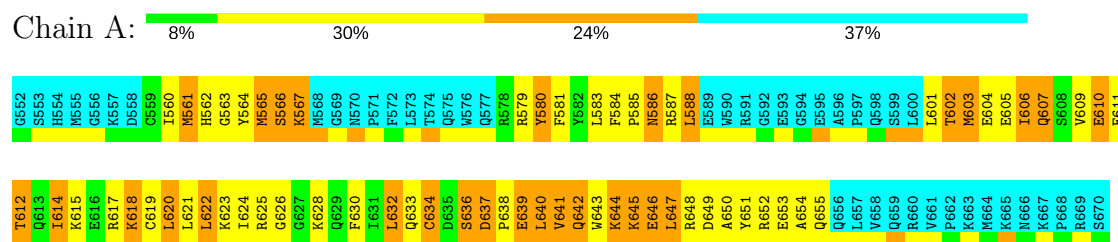
4.2.13 Score per residue for model 13

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



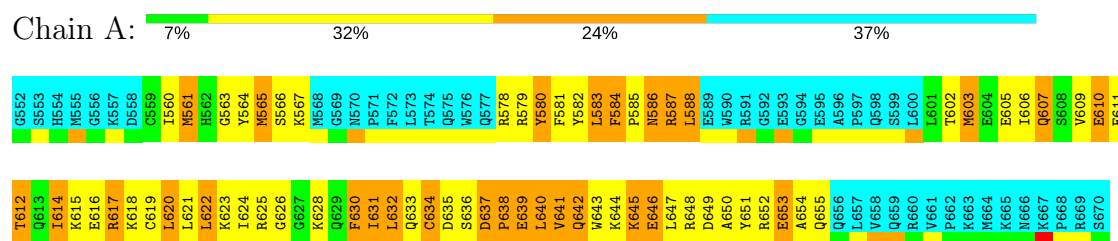
4.2.14 Score per residue for model 14

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



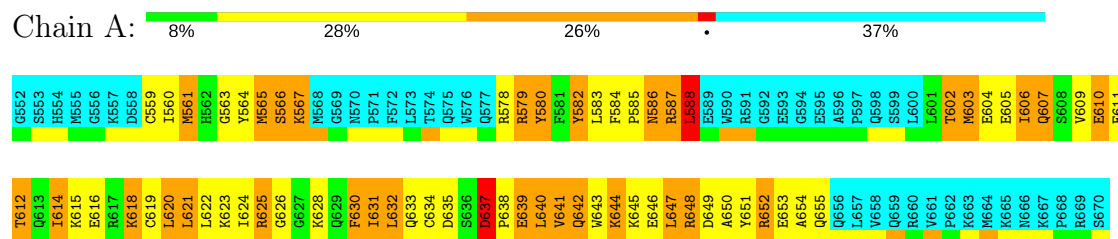
4.2.15 Score per residue for model 15

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



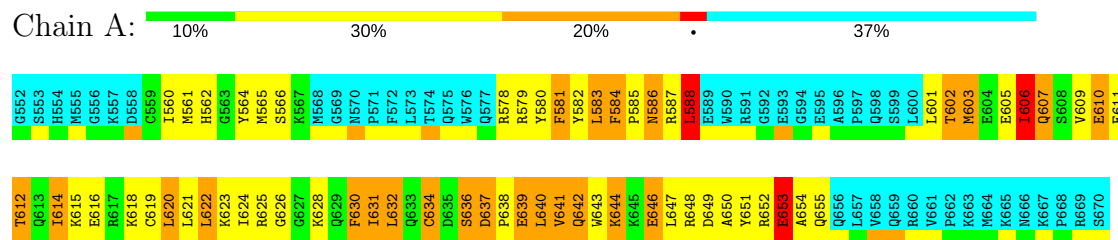
4.2.16 Score per residue for model 16

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



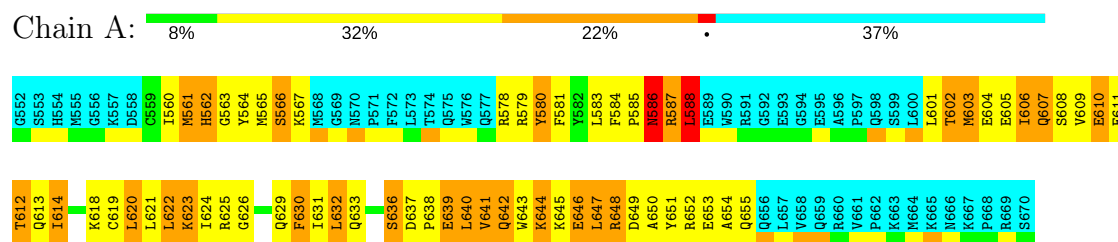
4.2.17 Score per residue for model 17

- Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



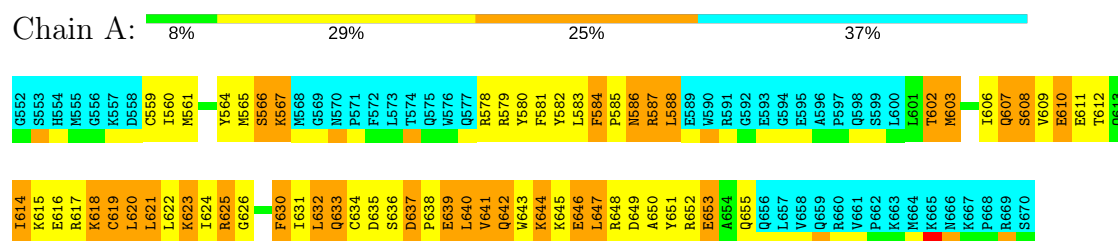
4.2.18 Score per residue for model 18

• Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



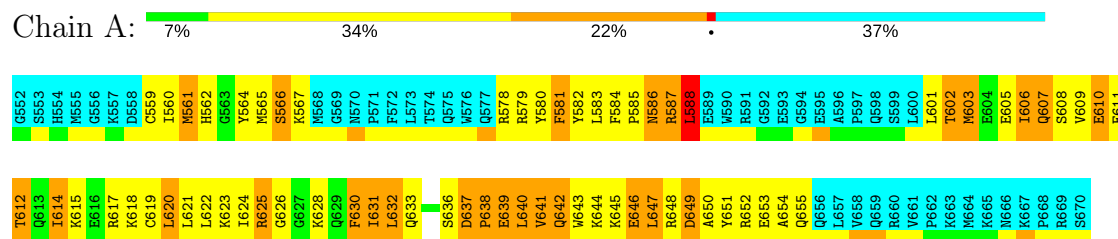
4.2.19 Score per residue for model 19

• Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



4.2.20 Score per residue for model 20

• Molecule 1: G-PROTEIN COUPLED RECEPTOR KINASE 2



5 Refinement protocol and experimental data overview

The models were refined using the following method: *DISTANCE GEOMETRY*.

Of the 400 calculated structures, 20 were deposited, based on the following criterion: *LEAST RESTRAINT VIOLATION*.

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

Software name	Classification	Version
XWINNMR	structure solution	
XEASY	structure solution	
DIANA	structure solution	
DYANA	structure solution	
DYANA	refinement	

No chemical shift data was provided. No validations of the models with respect to experimental NMR restraints is performed at this time.

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	A	639	652	652	119±8
All	All	12780	13040	13040	2389

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 93.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:606:ILE:HG21	1:A:651:TYR:CD2	1.28	1.63	17	20
1:A:620:LEU:HD13	1:A:640:LEU:HD12	1.13	1.18	9	20
1:A:606:ILE:HD13	1:A:651:TYR:CE1	1.08	1.81	7	20
1:A:620:LEU:CD1	1:A:640:LEU:HD12	1.05	1.81	19	20
1:A:622:LEU:HD21	1:A:651:TYR:OH	1.05	1.49	17	3
1:A:606:ILE:HD13	1:A:651:TYR:CZ	1.04	1.87	6	20
1:A:606:ILE:CG2	1:A:651:TYR:CD2	1.03	2.41	5	20
1:A:622:LEU:HD12	1:A:632:LEU:HD11	1.03	1.30	7	12
1:A:620:LEU:HD13	1:A:640:LEU:CD1	0.99	1.88	19	20
1:A:609:VAL:HG22	1:A:644:LYS:CD	0.98	1.88	5	20
1:A:622:LEU:HD13	1:A:632:LEU:HD21	0.95	1.33	5	5
1:A:586:ASN:O	1:A:603:MET:HG3	0.94	1.63	15	4
1:A:622:LEU:CD1	1:A:632:LEU:HD11	0.91	1.96	7	14
1:A:606:ILE:HG21	1:A:651:TYR:CE2	0.88	2.04	7	20

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:647:LEU:HD22	1:A:651:TYR:OH	0.88	1.67	11	13
1:A:609:VAL:HG22	1:A:644:LYS:HD2	0.88	1.43	11	20
1:A:622:LEU:HD12	1:A:632:LEU:HD21	0.86	1.44	14	11
1:A:560:ILE:HG22	1:A:646:GLU:CG	0.86	2.00	12	9
1:A:603:MET:SD	1:A:654:ALA:HB2	0.85	2.10	2	4
1:A:603:MET:HE3	1:A:654:ALA:HB2	0.85	1.49	10	2
1:A:610:GLU:CD	1:A:621:LEU:HD23	0.84	1.92	14	15
1:A:647:LEU:HD22	1:A:651:TYR:CZ	0.83	2.08	7	8
1:A:610:GLU:HG3	1:A:621:LEU:HD23	0.82	1.51	12	19
1:A:610:GLU:CG	1:A:621:LEU:HD23	0.82	2.05	14	19
1:A:620:LEU:HD22	1:A:640:LEU:CD1	0.82	2.05	13	16
1:A:583:LEU:HD12	1:A:647:LEU:HG	0.82	1.52	2	7
1:A:583:LEU:HD21	1:A:646:GLU:HB3	0.80	1.54	13	1
1:A:583:LEU:HD23	1:A:583:LEU:O	0.80	1.77	15	2
1:A:610:GLU:HB2	1:A:621:LEU:HD23	0.79	1.52	18	1
1:A:643:TRP:O	1:A:647:LEU:HD12	0.79	1.77	20	8
1:A:603:MET:SD	1:A:650:ALA:HB1	0.78	2.18	17	12
1:A:622:LEU:CG	1:A:632:LEU:HD11	0.78	2.08	6	9
1:A:643:TRP:C	1:A:647:LEU:HD12	0.78	1.99	20	9
1:A:632:LEU:HD23	1:A:632:LEU:N	0.78	1.91	15	3
1:A:622:LEU:HD21	1:A:651:TYR:CE2	0.77	2.14	1	10
1:A:614:ILE:O	1:A:614:ILE:HG23	0.77	1.76	11	1
1:A:583:LEU:HD23	1:A:646:GLU:CB	0.77	2.10	12	11
1:A:560:ILE:HD11	1:A:585:PRO:HA	0.77	1.56	11	19
1:A:606:ILE:CD1	1:A:651:TYR:CZ	0.77	2.67	6	16
1:A:632:LEU:N	1:A:632:LEU:HD23	0.77	1.94	5	3
1:A:614:ILE:O	1:A:614:ILE:HG22	0.77	1.80	8	5
1:A:622:LEU:CD1	1:A:632:LEU:HD21	0.76	2.11	15	15
1:A:588:LEU:C	1:A:588:LEU:HD12	0.76	2.01	11	9
1:A:614:ILE:HG22	1:A:614:ILE:O	0.76	1.81	6	14
1:A:614:ILE:CG2	1:A:614:ILE:O	0.76	2.34	20	14
1:A:622:LEU:HD12	1:A:632:LEU:CD1	0.75	2.10	7	11
1:A:647:LEU:HD22	1:A:651:TYR:CE1	0.75	2.14	2	6
1:A:604:GLU:HB3	1:A:654:ALA:HB1	0.75	1.58	10	7
1:A:583:LEU:HB2	1:A:643:TRP:CZ3	0.74	2.17	7	20
1:A:612:THR:HG23	1:A:618:LYS:HG3	0.74	1.58	7	18
1:A:583:LEU:O	1:A:583:LEU:HD23	0.74	1.81	1	3
1:A:586:ASN:O	1:A:602:THR:HG22	0.74	1.82	4	16
1:A:614:ILE:O	1:A:614:ILE:CG2	0.73	2.36	19	6
1:A:583:LEU:HD23	1:A:583:LEU:C	0.73	2.03	15	5
1:A:609:VAL:HG22	1:A:644:LYS:HD3	0.73	1.60	12	20

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:583:LEU:C	1:A:583:LEU:HD23	0.73	2.03	11	1
1:A:606:ILE:HG12	1:A:622:LEU:HD23	0.73	1.58	11	2
1:A:582:TYR:CD1	1:A:582:TYR:O	0.73	2.41	10	1
1:A:624:ILE:HG22	1:A:626:GLY:H	0.72	1.43	1	19
1:A:620:LEU:HD21	1:A:644:LYS:HD3	0.72	1.60	8	15
1:A:637:ASP:N	1:A:638:PRO:CD	0.72	2.51	10	20
1:A:583:LEU:HD23	1:A:646:GLU:HB3	0.72	1.59	19	4
1:A:620:LEU:HD13	1:A:640:LEU:CG	0.72	2.15	4	10
1:A:606:ILE:HG21	1:A:651:TYR:HD2	0.71	1.35	17	15
1:A:606:ILE:HG13	1:A:624:ILE:HD13	0.71	1.61	2	1
1:A:560:ILE:CG2	1:A:646:GLU:CG	0.70	2.68	12	12
1:A:586:ASN:CA	1:A:603:MET:HG2	0.70	2.16	12	6
1:A:560:ILE:CG2	1:A:646:GLU:HG3	0.70	2.15	12	9
1:A:622:LEU:HD21	1:A:651:TYR:HE2	0.70	1.46	14	10
1:A:586:ASN:HA	1:A:603:MET:CG	0.69	2.17	3	19
1:A:586:ASN:OD1	1:A:654:ALA:HB2	0.69	1.87	11	1
1:A:601:LEU:HD23	1:A:605:GLU:OE2	0.69	1.87	2	1
1:A:587:ARG:O	1:A:603:MET:CE	0.69	2.40	8	1
1:A:586:ASN:O	1:A:603:MET:CG	0.69	2.40	20	9
1:A:622:LEU:HD13	1:A:632:LEU:CD2	0.69	2.15	5	2
1:A:634:CYS:HB3	1:A:640:LEU:HD23	0.69	1.64	16	2
1:A:587:ARG:O	1:A:603:MET:HE1	0.68	1.87	8	1
1:A:603:MET:CE	1:A:654:ALA:HB2	0.68	2.18	10	2
1:A:559:CYS:SG	1:A:584:PHE:CD1	0.68	2.86	13	2
1:A:560:ILE:HG22	1:A:646:GLU:HG2	0.68	1.63	13	12
1:A:620:LEU:HD11	1:A:644:LYS:CE	0.68	2.19	11	1
1:A:612:THR:O	1:A:618:LYS:CB	0.67	2.41	11	1
1:A:622:LEU:HG	1:A:632:LEU:HD11	0.67	1.67	10	5
1:A:583:LEU:HD11	1:A:647:LEU:CD2	0.67	2.19	7	5
1:A:619:CYS:SG	1:A:633:GLN:CG	0.67	2.83	19	2
1:A:614:ILE:HD12	1:A:618:LYS:CG	0.67	2.20	5	6
1:A:583:LEU:HD21	1:A:647:LEU:HG	0.66	1.66	20	7
1:A:620:LEU:HD11	1:A:644:LYS:HE3	0.66	1.65	11	1
1:A:565:MET:O	1:A:579:ARG:O	0.66	2.14	10	20
1:A:620:LEU:HD11	1:A:644:LYS:HE2	0.66	1.68	6	1
1:A:588:LEU:HD12	1:A:588:LEU:C	0.66	2.11	17	5
1:A:567:LYS:HE3	1:A:632:LEU:HD22	0.66	1.67	5	1
1:A:632:LEU:HD13	1:A:640:LEU:HD11	0.65	1.68	19	2
1:A:622:LEU:HB2	1:A:632:LEU:HD11	0.65	1.68	14	1
1:A:622:LEU:HD21	1:A:651:TYR:CZ	0.65	2.26	17	2
1:A:620:LEU:HD22	1:A:640:LEU:HD11	0.65	1.67	17	7

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:614:ILE:HD12	1:A:618:LYS:HG2	0.65	1.69	16	5
1:A:583:LEU:CB	1:A:643:TRP:CZ3	0.65	2.80	13	7
1:A:565:MET:SD	1:A:640:LEU:HD22	0.64	2.32	2	6
1:A:585:PRO:O	1:A:586:ASN:CB	0.64	2.44	12	2
1:A:603:MET:SD	1:A:650:ALA:CB	0.64	2.86	17	6
1:A:619:CYS:SG	1:A:633:GLN:CB	0.64	2.84	19	2
1:A:617:ARG:CZ	1:A:637:ASP:OD1	0.64	2.46	19	3
1:A:618:LYS:CD	1:A:618:LYS:N	0.64	2.60	11	1
1:A:582:TYR:CD1	1:A:582:TYR:C	0.64	2.71	10	1
1:A:588:LEU:HD23	1:A:603:MET:SD	0.63	2.33	11	1
1:A:614:ILE:HD12	1:A:618:LYS:HB2	0.63	1.69	17	11
1:A:632:LEU:HD23	1:A:632:LEU:H	0.63	1.53	12	2
1:A:583:LEU:HD11	1:A:647:LEU:HG	0.63	1.70	18	7
1:A:565:MET:SD	1:A:643:TRP:CE2	0.63	2.92	9	6
1:A:565:MET:SD	1:A:640:LEU:CD2	0.63	2.87	7	7
1:A:585:PRO:O	1:A:603:MET:HE2	0.63	1.92	9	1
1:A:620:LEU:CG	1:A:640:LEU:HD12	0.63	2.22	19	8
1:A:580:TYR:CD1	1:A:582:TYR:CE1	0.62	2.88	2	1
1:A:622:LEU:HD12	1:A:632:LEU:CD2	0.62	2.23	14	6
1:A:621:LEU:HD12	1:A:622:LEU:H	0.62	1.54	8	19
1:A:632:LEU:H	1:A:632:LEU:HD23	0.62	1.54	13	4
1:A:606:ILE:HA	1:A:624:ILE:HA	0.62	1.70	5	19
1:A:560:ILE:HB	1:A:583:LEU:CD2	0.62	2.24	11	7
1:A:610:GLU:O	1:A:621:LEU:N	0.62	2.32	13	15
1:A:583:LEU:HD12	1:A:647:LEU:CD2	0.62	2.24	13	3
1:A:609:VAL:CG2	1:A:644:LYS:CD	0.62	2.75	11	16
1:A:567:LYS:CE	1:A:630:PHE:CD1	0.61	2.83	19	1
1:A:636:SER:CB	1:A:639:GLU:CG	0.61	2.78	11	10
1:A:586:ASN:OD1	1:A:603:MET:CE	0.61	2.48	6	4
1:A:603:MET:HE3	1:A:650:ALA:O	0.61	1.95	17	2
1:A:559:CYS:SG	1:A:584:PHE:CE1	0.61	2.89	13	2
1:A:559:CYS:SG	1:A:562:HIS:CD2	0.61	2.94	1	2
1:A:638:PRO:O	1:A:639:GLU:C	0.61	2.40	7	20
1:A:620:LEU:HD11	1:A:644:LYS:NZ	0.61	2.11	4	4
1:A:632:LEU:CD2	1:A:632:LEU:N	0.60	2.64	15	1
1:A:586:ASN:C	1:A:603:MET:HG2	0.60	2.16	12	9
1:A:603:MET:SD	1:A:650:ALA:CA	0.60	2.90	17	6
1:A:566:SER:OG	1:A:633:GLN:O	0.59	2.13	4	8
1:A:634:CYS:HB2	1:A:640:LEU:HD23	0.59	1.74	5	5
1:A:586:ASN:O	1:A:603:MET:N	0.59	2.35	3	12
1:A:637:ASP:H	1:A:638:PRO:CD	0.59	2.10	16	9

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:637:ASP:H	1:A:638:PRO:HD2	0.59	1.58	16	3
1:A:612:THR:HG23	1:A:618:LYS:CG	0.59	2.28	13	4
1:A:637:ASP:N	1:A:638:PRO:HD2	0.59	2.12	10	18
1:A:565:MET:SD	1:A:643:TRP:CD2	0.59	2.96	19	7
1:A:641:VAL:HG12	1:A:642:GLN:N	0.59	2.13	18	20
1:A:586:ASN:CA	1:A:603:MET:CG	0.59	2.81	12	11
1:A:584:PHE:CD2	1:A:585:PRO:HD2	0.58	2.33	15	8
1:A:566:SER:OG	1:A:633:GLN:CG	0.58	2.51	13	2
1:A:606:ILE:HG12	1:A:622:LEU:CD2	0.58	2.27	8	10
1:A:582:TYR:CG	1:A:582:TYR:O	0.58	2.56	10	1
1:A:652:ARG:O	1:A:655:GLN:N	0.58	2.37	4	10
1:A:606:ILE:CB	1:A:651:TYR:CD2	0.58	2.86	5	11
1:A:651:TYR:CD1	1:A:651:TYR:N	0.58	2.70	1	4
1:A:632:LEU:N	1:A:632:LEU:CD2	0.58	2.67	5	5
1:A:617:ARG:NE	1:A:637:ASP:OD1	0.58	2.37	19	1
1:A:644:LYS:O	1:A:648:ARG:N	0.58	2.35	1	18
1:A:620:LEU:HD21	1:A:644:LYS:CD	0.58	2.28	8	3
1:A:583:LEU:N	1:A:643:TRP:CZ3	0.58	2.72	13	2
1:A:647:LEU:CD2	1:A:651:TYR:OH	0.57	2.51	6	12
1:A:607:GLN:HG2	1:A:625:ARG:CB	0.57	2.29	18	17
1:A:583:LEU:HD12	1:A:647:LEU:CG	0.57	2.27	2	6
1:A:567:LYS:HE2	1:A:630:PHE:CD1	0.57	2.34	20	5
1:A:584:PHE:HB2	1:A:587:ARG:O	0.57	1.99	15	5
1:A:588:LEU:CD2	1:A:601:LEU:HD11	0.57	2.30	6	1
1:A:605:GLU:O	1:A:606:ILE:C	0.57	2.42	8	18
1:A:583:LEU:CD1	1:A:647:LEU:HG	0.57	2.29	18	8
1:A:606:ILE:HB	1:A:651:TYR:CG	0.57	2.33	5	5
1:A:563:GLY:CA	1:A:580:TYR:CE1	0.57	2.87	18	2
1:A:620:LEU:HD21	1:A:644:LYS:HZ2	0.57	1.59	18	5
1:A:631:ILE:CG2	1:A:631:ILE:O	0.56	2.52	13	6
1:A:585:PRO:O	1:A:603:MET:HE1	0.56	2.00	5	5
1:A:620:LEU:CD2	1:A:640:LEU:HD12	0.56	2.29	19	6
1:A:607:GLN:CG	1:A:625:ARG:CB	0.56	2.82	10	13
1:A:606:ILE:HG12	1:A:651:TYR:CE2	0.56	2.36	5	5
1:A:560:ILE:CG2	1:A:646:GLU:HG2	0.56	2.31	1	5
1:A:583:LEU:HD23	1:A:646:GLU:HB2	0.56	1.75	12	6
1:A:563:GLY:O	1:A:580:TYR:CD1	0.56	2.59	18	7
1:A:561:MET:CE	1:A:642:GLN:OE1	0.56	2.53	7	2
1:A:565:MET:CE	1:A:643:TRP:CE3	0.56	2.89	1	4
1:A:567:LYS:HE2	1:A:630:PHE:CE1	0.56	2.36	19	1
1:A:585:PRO:O	1:A:603:MET:HE3	0.55	2.01	2	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:560:ILE:HD12	1:A:584:PHE:O	0.55	2.01	10	6
1:A:636:SER:HB2	1:A:639:GLU:CG	0.55	2.32	7	6
1:A:585:PRO:O	1:A:603:MET:CE	0.55	2.55	2	1
1:A:620:LEU:HD21	1:A:644:LYS:NZ	0.55	2.17	18	5
1:A:631:ILE:O	1:A:631:ILE:HG23	0.55	2.01	11	1
1:A:561:MET:CG	1:A:646:GLU:OE1	0.55	2.55	16	1
1:A:566:SER:O	1:A:633:GLN:O	0.55	2.24	4	2
1:A:560:ILE:HB	1:A:583:LEU:HD23	0.55	1.78	13	1
1:A:603:MET:SD	1:A:650:ALA:O	0.55	2.64	1	8
1:A:638:PRO:O	1:A:641:VAL:N	0.55	2.40	15	19
1:A:565:MET:HA	1:A:634:CYS:SG	0.55	2.42	17	4
1:A:560:ILE:HG22	1:A:646:GLU:OE1	0.55	2.01	16	1
1:A:621:LEU:O	1:A:622:LEU:HD12	0.54	2.02	5	2
1:A:583:LEU:HD13	1:A:643:TRP:CZ3	0.54	2.37	4	5
1:A:649:ASP:O	1:A:653:GLU:N	0.54	2.29	3	17
1:A:567:LYS:HE2	1:A:630:PHE:CD2	0.54	2.37	13	1
1:A:637:ASP:CB	1:A:638:PRO:HD3	0.54	2.33	13	1
1:A:559:CYS:N	1:A:585:PRO:CD	0.54	2.71	19	1
1:A:610:GLU:CD	1:A:621:LEU:CD2	0.54	2.76	6	10
1:A:603:MET:SD	1:A:650:ALA:HA	0.54	2.43	17	4
1:A:583:LEU:CD2	1:A:583:LEU:O	0.54	2.55	15	2
1:A:620:LEU:HD21	1:A:644:LYS:CE	0.54	2.32	16	5
1:A:609:VAL:CG2	1:A:644:LYS:HD3	0.54	2.33	17	18
1:A:582:TYR:O	1:A:588:LEU:HA	0.54	2.02	2	8
1:A:620:LEU:CD2	1:A:640:LEU:CD1	0.54	2.84	13	1
1:A:612:THR:O	1:A:618:LYS:HB3	0.54	2.02	11	2
1:A:567:LYS:CE	1:A:630:PHE:CG	0.53	2.92	20	3
1:A:631:ILE:HG22	1:A:631:ILE:O	0.53	2.03	12	5
1:A:631:ILE:O	1:A:631:ILE:CG2	0.53	2.55	17	4
1:A:620:LEU:O	1:A:631:ILE:HD13	0.53	2.02	12	2
1:A:621:LEU:HD12	1:A:630:PHE:O	0.53	2.03	17	1
1:A:634:CYS:SG	1:A:640:LEU:HD23	0.53	2.43	4	1
1:A:565:MET:SD	1:A:643:TRP:CG	0.53	3.02	2	1
1:A:631:ILE:O	1:A:631:ILE:HG22	0.53	2.03	6	5
1:A:581:PHE:CD2	1:A:588:LEU:HD11	0.53	2.38	19	1
1:A:622:LEU:HD12	1:A:632:LEU:CG	0.53	2.34	3	5
1:A:585:PRO:O	1:A:586:ASN:CG	0.53	2.47	12	16
1:A:622:LEU:HD13	1:A:632:LEU:HD11	0.53	1.79	15	1
1:A:583:LEU:HB2	1:A:643:TRP:CE3	0.53	2.39	13	1
1:A:606:ILE:HG12	1:A:622:LEU:HD22	0.53	1.80	14	6
1:A:583:LEU:CD2	1:A:583:LEU:C	0.53	2.77	15	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:641:VAL:CG1	1:A:642:GLN:N	0.53	2.72	19	19
1:A:617:ARG:NH1	1:A:637:ASP:OD1	0.53	2.42	6	1
1:A:586:ASN:OD1	1:A:654:ALA:CB	0.53	2.57	11	1
1:A:617:ARG:CZ	1:A:637:ASP:OD2	0.52	2.56	2	1
1:A:648:ARG:O	1:A:652:ARG:CG	0.52	2.57	4	4
1:A:622:LEU:HD11	1:A:647:LEU:HD13	0.52	1.80	1	1
1:A:560:ILE:CG2	1:A:646:GLU:HB3	0.52	2.34	12	2
1:A:603:MET:O	1:A:654:ALA:HB3	0.52	2.04	17	1
1:A:586:ASN:HA	1:A:603:MET:HG3	0.52	1.82	3	3
1:A:604:GLU:CB	1:A:654:ALA:HB1	0.52	2.34	3	3
1:A:614:ILE:HD12	1:A:618:LYS:CB	0.52	2.35	17	6
1:A:652:ARG:O	1:A:655:GLN:HG2	0.52	2.05	18	6
1:A:566:SER:O	1:A:633:GLN:N	0.52	2.40	8	6
1:A:584:PHE:CB	1:A:585:PRO:CD	0.52	2.87	8	5
1:A:619:CYS:HG	1:A:633:GLN:CB	0.52	2.18	19	1
1:A:583:LEU:C	1:A:583:LEU:CD2	0.52	2.78	11	2
1:A:608:SER:O	1:A:623:LYS:CD	0.52	2.58	19	2
1:A:643:TRP:O	1:A:647:LEU:N	0.51	2.43	3	12
1:A:620:LEU:HD22	1:A:640:LEU:HD12	0.51	1.81	19	6
1:A:579:ARG:HB2	1:A:581:PHE:CE1	0.51	2.40	18	1
1:A:644:LYS:O	1:A:647:LEU:N	0.51	2.43	15	16
1:A:610:GLU:C	1:A:644:LYS:NZ	0.51	2.63	7	4
1:A:583:LEU:CD2	1:A:646:GLU:CB	0.51	2.87	12	2
1:A:581:PHE:O	1:A:582:TYR:CD1	0.51	2.64	13	2
1:A:647:LEU:CD2	1:A:651:TYR:CZ	0.51	2.94	14	5
1:A:609:VAL:CG1	1:A:648:ARG:HG3	0.51	2.35	11	3
1:A:617:ARG:C	1:A:618:LYS:CD	0.51	2.79	11	1
1:A:611:GLU:CG	1:A:619:CYS:O	0.51	2.59	10	17
1:A:560:ILE:CD1	1:A:585:PRO:HA	0.51	2.35	11	4
1:A:584:PHE:CG	1:A:585:PRO:HD2	0.51	2.40	15	2
1:A:647:LEU:HD23	1:A:651:TYR:OH	0.51	2.05	20	2
1:A:606:ILE:CG1	1:A:651:TYR:CE2	0.51	2.94	5	7
1:A:567:LYS:HD3	1:A:630:PHE:CD1	0.51	2.40	3	5
1:A:560:ILE:HG21	1:A:646:GLU:CG	0.51	2.35	17	4
1:A:585:PRO:O	1:A:586:ASN:HB2	0.51	2.06	12	1
1:A:561:MET:SD	1:A:646:GLU:OE2	0.51	2.69	3	5
1:A:614:ILE:CD1	1:A:618:LYS:HG2	0.51	2.36	6	11
1:A:584:PHE:HB2	1:A:587:ARG:C	0.51	2.27	16	5
1:A:588:LEU:O	1:A:601:LEU:N	0.51	2.44	8	1
1:A:583:LEU:O	1:A:583:LEU:CD2	0.51	2.58	17	2
1:A:586:ASN:O	1:A:602:THR:HA	0.51	2.05	12	10

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:620:LEU:HD13	1:A:640:LEU:HG	0.51	1.81	4	1
1:A:619:CYS:SG	1:A:633:GLN:HB2	0.51	2.45	19	4
1:A:646:GLU:CD	1:A:646:GLU:N	0.50	2.64	14	4
1:A:583:LEU:HD11	1:A:647:LEU:HD21	0.50	1.84	7	1
1:A:565:MET:HE1	1:A:643:TRP:CE3	0.50	2.40	8	5
1:A:588:LEU:CD2	1:A:603:MET:SD	0.50	2.99	11	1
1:A:651:TYR:N	1:A:651:TYR:CD1	0.50	2.74	17	3
1:A:611:GLU:HA	1:A:620:LEU:HA	0.50	1.83	1	9
1:A:561:MET:CB	1:A:646:GLU:OE1	0.50	2.60	16	1
1:A:583:LEU:CD2	1:A:646:GLU:HB2	0.50	2.36	12	4
1:A:559:CYS:CA	1:A:585:PRO:HD3	0.50	2.37	19	1
1:A:614:ILE:HD13	1:A:618:LYS:CG	0.50	2.37	19	1
1:A:583:LEU:HD12	1:A:647:LEU:HD23	0.50	1.84	13	1
1:A:604:GLU:O	1:A:604:GLU:CG	0.50	2.60	3	1
1:A:567:LYS:HD2	1:A:630:PHE:CD1	0.50	2.42	6	1
1:A:586:ASN:HA	1:A:603:MET:SD	0.50	2.46	10	9
1:A:567:LYS:HD2	1:A:630:PHE:CD2	0.50	2.41	4	1
1:A:646:GLU:N	1:A:646:GLU:CD	0.50	2.65	9	2
1:A:586:ASN:HA	1:A:603:MET:CE	0.50	2.37	12	7
1:A:612:THR:C	1:A:618:LYS:HB3	0.50	2.26	18	15
1:A:618:LYS:CD	1:A:618:LYS:C	0.50	2.80	18	6
1:A:603:MET:HA	1:A:603:MET:CE	0.49	2.37	11	1
1:A:649:ASP:O	1:A:652:ARG:N	0.49	2.45	11	2
1:A:588:LEU:HG	1:A:601:LEU:HD11	0.49	1.83	6	1
1:A:606:ILE:CG1	1:A:651:TYR:CZ	0.49	2.96	5	1
1:A:619:CYS:HG	1:A:633:GLN:CA	0.49	2.20	19	1
1:A:560:ILE:CG2	1:A:646:GLU:CB	0.49	2.91	12	1
1:A:621:LEU:HA	1:A:631:ILE:HD12	0.49	1.84	11	1
1:A:643:TRP:O	1:A:647:LEU:CD1	0.49	2.59	5	1
1:A:566:SER:OG	1:A:633:GLN:HG2	0.49	2.07	13	2
1:A:567:LYS:NZ	1:A:630:PHE:CD2	0.49	2.70	14	1
1:A:622:LEU:N	1:A:630:PHE:O	0.49	2.45	11	5
1:A:565:MET:O	1:A:581:PHE:CE1	0.49	2.65	14	2
1:A:586:ASN:C	1:A:602:THR:HG22	0.49	2.28	2	1
1:A:561:MET:SD	1:A:643:TRP:NE1	0.49	2.85	14	3
1:A:587:ARG:O	1:A:588:LEU:CB	0.49	2.61	17	2
1:A:605:GLU:HB2	1:A:624:ILE:HG23	0.49	1.84	20	3
1:A:560:ILE:HG21	1:A:646:GLU:HG3	0.49	1.85	17	4
1:A:583:LEU:CD2	1:A:647:LEU:HG	0.49	2.38	5	4
1:A:605:GLU:O	1:A:625:ARG:CG	0.49	2.60	2	7
1:A:563:GLY:C	1:A:580:TYR:CE1	0.49	2.86	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:603:MET:CG	1:A:650:ALA:HB1	0.49	2.37	8	1
1:A:559:CYS:SG	1:A:582:TYR:CD2	0.49	3.05	16	1
1:A:614:ILE:CD1	1:A:618:LYS:CG	0.49	2.91	19	10
1:A:617:ARG:NH1	1:A:637:ASP:OD2	0.49	2.46	20	1
1:A:586:ASN:HA	1:A:603:MET:HE3	0.49	1.84	2	1
1:A:607:GLN:HG3	1:A:625:ARG:CB	0.48	2.38	10	2
1:A:606:ILE:CG2	1:A:651:TYR:CE2	0.48	2.91	10	5
1:A:583:LEU:HD11	1:A:647:LEU:CG	0.48	2.37	12	2
1:A:561:MET:CE	1:A:646:GLU:OE2	0.48	2.61	11	1
1:A:586:ASN:HA	1:A:603:MET:HG2	0.48	1.83	20	5
1:A:646:GLU:OE1	1:A:646:GLU:N	0.48	2.47	8	3
1:A:601:LEU:CD2	1:A:605:GLU:OE2	0.48	2.61	9	1
1:A:632:LEU:HB3	1:A:640:LEU:HD21	0.48	1.86	19	1
1:A:583:LEU:CD2	1:A:646:GLU:HB3	0.48	2.33	13	1
1:A:609:VAL:HG13	1:A:644:LYS:HD2	0.48	1.84	17	1
1:A:619:CYS:SG	1:A:633:GLN:HA	0.48	2.48	19	1
1:A:603:MET:O	1:A:651:TYR:HA	0.48	2.08	11	5
1:A:588:LEU:N	1:A:601:LEU:O	0.48	2.46	7	2
1:A:633:GLN:HG3	1:A:634:CYS:N	0.48	2.23	15	1
1:A:620:LEU:CD1	1:A:644:LYS:CE	0.48	2.91	11	1
1:A:582:TYR:CE1	1:A:584:PHE:CD1	0.48	3.02	10	1
1:A:618:LYS:C	1:A:618:LYS:CD	0.48	2.82	5	5
1:A:652:ARG:CG	1:A:653:GLU:N	0.48	2.76	11	2
1:A:561:MET:HE1	1:A:642:GLN:OE1	0.48	2.08	7	1
1:A:620:LEU:HD11	1:A:644:LYS:HZ2	0.48	1.67	4	2
1:A:647:LEU:O	1:A:650:ALA:N	0.48	2.47	13	4
1:A:567:LYS:HD3	1:A:632:LEU:HD13	0.48	1.85	12	1
1:A:610:GLU:CA	1:A:644:LYS:HZ2	0.48	2.21	17	1
1:A:586:ASN:O	1:A:603:MET:HG2	0.48	2.09	17	9
1:A:644:LYS:HZ2	1:A:644:LYS:CB	0.47	2.20	1	2
1:A:584:PHE:CG	1:A:585:PRO:CD	0.47	2.97	15	1
1:A:618:LYS:CG	1:A:619:CYS:N	0.47	2.75	18	17
1:A:582:TYR:CA	1:A:643:TRP:HH2	0.47	2.22	12	2
1:A:561:MET:SD	1:A:643:TRP:CD1	0.47	3.07	1	3
1:A:622:LEU:O	1:A:630:PHE:N	0.47	2.47	19	5
1:A:647:LEU:HD23	1:A:651:TYR:CZ	0.47	2.44	18	3
1:A:567:LYS:HE3	1:A:630:PHE:CG	0.47	2.45	19	2
1:A:603:MET:CE	1:A:606:ILE:CD1	0.47	2.92	11	1
1:A:583:LEU:HD22	1:A:643:TRP:CE3	0.47	2.43	7	1
1:A:607:GLN:HG3	1:A:625:ARG:HA	0.47	1.87	18	8
1:A:634:CYS:CB	1:A:640:LEU:HD23	0.47	2.39	5	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:567:LYS:HE2	1:A:581:PHE:CZ	0.47	2.44	15	1
1:A:646:GLU:N	1:A:646:GLU:OE1	0.47	2.48	2	7
1:A:563:GLY:HA2	1:A:580:TYR:CZ	0.47	2.45	15	1
1:A:607:GLN:O	1:A:608:SER:OG	0.47	2.30	9	1
1:A:560:ILE:N	1:A:583:LEU:O	0.47	2.42	18	2
1:A:588:LEU:HG	1:A:601:LEU:CD1	0.47	2.39	6	1
1:A:567:LYS:CE	1:A:632:LEU:HD22	0.47	2.39	5	1
1:A:565:MET:HE3	1:A:581:PHE:CD2	0.47	2.45	10	2
1:A:560:ILE:HD12	1:A:584:PHE:C	0.47	2.29	10	2
1:A:566:SER:CB	1:A:633:GLN:O	0.47	2.63	8	5
1:A:566:SER:OG	1:A:633:GLN:HG3	0.47	2.10	13	2
1:A:567:LYS:HD2	1:A:632:LEU:HD22	0.47	1.85	12	1
1:A:563:GLY:HA2	1:A:580:TYR:CE1	0.47	2.45	18	2
1:A:565:MET:SD	1:A:640:LEU:HD21	0.47	2.50	3	1
1:A:610:GLU:OE2	1:A:621:LEU:HD23	0.47	2.10	12	1
1:A:606:ILE:CG2	1:A:651:TYR:CG	0.47	2.98	8	1
1:A:564:TYR:O	1:A:634:CYS:SG	0.47	2.73	11	1
1:A:565:MET:CB	1:A:581:PHE:HB2	0.46	2.40	10	1
1:A:607:GLN:HG2	1:A:625:ARG:HB3	0.46	1.86	7	2
1:A:618:LYS:O	1:A:619:CYS:SG	0.46	2.69	15	4
1:A:621:LEU:HD12	1:A:622:LEU:N	0.46	2.24	8	8
1:A:636:SER:CB	1:A:639:GLU:HG3	0.46	2.40	13	4
1:A:606:ILE:HD13	1:A:651:TYR:CD1	0.46	2.44	17	1
1:A:620:LEU:HD23	1:A:621:LEU:O	0.46	2.10	1	1
1:A:619:CYS:SG	1:A:620:LEU:N	0.46	2.88	13	1
1:A:586:ASN:OD1	1:A:603:MET:HE1	0.46	2.09	6	2
1:A:644:LYS:NZ	1:A:644:LYS:CB	0.46	2.79	1	3
1:A:642:GLN:O	1:A:646:GLU:OE1	0.46	2.34	4	2
1:A:645:LYS:CD	1:A:646:GLU:OE1	0.46	2.63	8	5
1:A:622:LEU:HG	1:A:632:LEU:CD1	0.46	2.39	6	1
1:A:585:PRO:C	1:A:586:ASN:CG	0.46	2.74	10	3
1:A:652:ARG:O	1:A:654:ALA:N	0.46	2.49	2	2
1:A:612:THR:O	1:A:618:LYS:CA	0.46	2.64	11	1
1:A:652:ARG:HA	1:A:655:GLN:HG2	0.46	1.87	11	1
1:A:603:MET:O	1:A:654:ALA:CB	0.46	2.64	17	4
1:A:584:PHE:CB	1:A:587:ARG:O	0.46	2.64	19	3
1:A:622:LEU:CD2	1:A:651:TYR:OH	0.46	2.64	12	1
1:A:586:ASN:O	1:A:602:THR:CA	0.46	2.64	13	7
1:A:583:LEU:HD13	1:A:643:TRP:CE3	0.46	2.46	19	3
1:A:609:VAL:CG2	1:A:644:LYS:HD2	0.45	2.36	10	2
1:A:622:LEU:CD2	1:A:651:TYR:HE2	0.45	2.24	16	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:601:LEU:HD11	1:A:605:GLU:OE2	0.45	2.11	18	1
1:A:586:ASN:C	1:A:603:MET:HG3	0.45	2.32	2	1
1:A:581:PHE:CE2	1:A:588:LEU:HD11	0.45	2.47	17	1
1:A:561:MET:CE	1:A:642:GLN:HB3	0.45	2.42	20	1
1:A:606:ILE:HB	1:A:651:TYR:CD2	0.45	2.47	5	2
1:A:622:LEU:CB	1:A:632:LEU:HD11	0.45	2.38	14	1
1:A:588:LEU:CG	1:A:601:LEU:HD11	0.45	2.41	6	1
1:A:567:LYS:HE2	1:A:630:PHE:CG	0.45	2.44	20	3
1:A:619:CYS:SG	1:A:632:LEU:O	0.45	2.75	19	2
1:A:609:VAL:CG1	1:A:644:LYS:HD2	0.45	2.42	17	1
1:A:567:LYS:HG2	1:A:631:ILE:O	0.45	2.11	7	2
1:A:606:ILE:HG13	1:A:624:ILE:CD1	0.45	2.38	2	1
1:A:565:MET:CE	1:A:581:PHE:CD2	0.45	3.00	13	1
1:A:586:ASN:O	1:A:603:MET:HE3	0.45	2.12	8	1
1:A:614:ILE:N	1:A:617:ARG:O	0.45	2.49	11	1
1:A:618:LYS:C	1:A:618:LYS:HD2	0.45	2.32	16	3
1:A:632:LEU:C	1:A:633:GLN:CG	0.45	2.85	3	1
1:A:620:LEU:HD13	1:A:640:LEU:HB3	0.45	1.88	3	3
1:A:606:ILE:O	1:A:655:GLN:NE2	0.45	2.50	12	1
1:A:585:PRO:O	1:A:586:ASN:ND2	0.45	2.49	20	1
1:A:583:LEU:HD21	1:A:647:LEU:N	0.45	2.26	18	3
1:A:618:LYS:C	1:A:619:CYS:SG	0.45	2.95	11	1
1:A:610:GLU:CB	1:A:621:LEU:HD23	0.45	2.36	18	1
1:A:565:MET:O	1:A:581:PHE:CD1	0.45	2.70	10	2
1:A:586:ASN:OD1	1:A:603:MET:HE2	0.45	2.12	20	2
1:A:566:SER:OG	1:A:566:SER:O	0.45	2.35	14	2
1:A:617:ARG:NH2	1:A:637:ASP:OD1	0.45	2.50	15	1
1:A:559:CYS:SG	1:A:561:MET:O	0.45	2.75	16	1
1:A:567:LYS:HD2	1:A:581:PHE:CZ	0.45	2.46	20	1
1:A:583:LEU:HB3	1:A:643:TRP:CZ3	0.45	2.47	17	1
1:A:614:ILE:O	1:A:615:LYS:CB	0.44	2.64	19	17
1:A:586:ASN:CA	1:A:603:MET:HG3	0.44	2.41	2	1
1:A:636:SER:CB	1:A:639:GLU:HG2	0.44	2.42	7	3
1:A:644:LYS:HA	1:A:647:LEU:HB2	0.44	1.89	3	6
1:A:586:ASN:O	1:A:602:THR:CG2	0.44	2.62	2	2
1:A:616:GLU:O	1:A:618:LYS:CD	0.44	2.65	11	1
1:A:636:SER:HB2	1:A:639:GLU:HB2	0.44	1.89	20	2
1:A:583:LEU:HD13	1:A:643:TRP:HZ3	0.44	1.73	4	2
1:A:606:ILE:CD1	1:A:651:TYR:CE1	0.44	2.83	8	1
1:A:584:PHE:CB	1:A:585:PRO:HD2	0.44	2.43	15	3
1:A:561:MET:HB2	1:A:646:GLU:OE1	0.44	2.13	16	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:587:ARG:HA	1:A:602:THR:HA	0.44	1.90	16	5
1:A:652:ARG:C	1:A:654:ALA:N	0.44	2.71	17	2
1:A:610:GLU:HG3	1:A:621:LEU:CD2	0.44	2.39	13	3
1:A:642:GLN:O	1:A:646:GLU:OE2	0.44	2.36	8	9
1:A:560:ILE:HG21	1:A:646:GLU:HB3	0.44	1.90	12	1
1:A:644:LYS:CB	1:A:644:LYS:NZ	0.44	2.81	14	2
1:A:560:ILE:HB	1:A:583:LEU:HD22	0.44	1.90	1	1
1:A:586:ASN:OD1	1:A:586:ASN:N	0.44	2.51	7	1
1:A:583:LEU:HD11	1:A:647:LEU:N	0.44	2.28	2	1
1:A:637:ASP:CB	1:A:638:PRO:CD	0.44	2.95	13	1
1:A:649:ASP:O	1:A:650:ALA:C	0.43	2.56	19	2
1:A:567:LYS:HA	1:A:632:LEU:HA	0.43	1.89	11	1
1:A:616:GLU:O	1:A:618:LYS:CE	0.43	2.66	11	1
1:A:614:ILE:CD1	1:A:618:LYS:HG3	0.43	2.42	19	1
1:A:622:LEU:HD21	1:A:651:TYR:HH	0.43	1.65	17	1
1:A:581:PHE:HB3	1:A:643:TRP:CH2	0.43	2.48	20	2
1:A:652:ARG:O	1:A:655:GLN:HB2	0.43	2.13	16	8
1:A:606:ILE:CB	1:A:651:TYR:CE2	0.43	3.02	5	1
1:A:559:CYS:N	1:A:585:PRO:HD3	0.43	2.27	19	1
1:A:567:LYS:HE3	1:A:630:PHE:CD1	0.43	2.47	19	1
1:A:567:LYS:HB3	1:A:581:PHE:CZ	0.43	2.47	10	1
1:A:644:LYS:O	1:A:645:LYS:C	0.43	2.56	1	8
1:A:588:LEU:C	1:A:588:LEU:CD1	0.43	2.75	6	1
1:A:567:LYS:CG	1:A:632:LEU:HB3	0.43	2.44	12	1
1:A:618:LYS:HG3	1:A:619:CYS:N	0.43	2.29	9	10
1:A:610:GLU:OE1	1:A:621:LEU:HD23	0.43	2.12	15	3
1:A:566:SER:HB2	1:A:578:ARG:HA	0.43	1.91	4	1
1:A:614:ILE:CD1	1:A:618:LYS:HB2	0.43	2.43	14	3
1:A:588:LEU:CB	1:A:603:MET:HE1	0.43	2.44	8	1
1:A:588:LEU:HD23	1:A:601:LEU:HD11	0.43	1.89	6	1
1:A:566:SER:OG	1:A:633:GLN:HB3	0.43	2.13	8	1
1:A:567:LYS:HB2	1:A:632:LEU:HD23	0.43	1.89	8	1
1:A:617:ARG:CD	1:A:637:ASP:OD1	0.43	2.67	19	1
1:A:649:ASP:HA	1:A:652:ARG:CD	0.43	2.44	10	1
1:A:566:SER:HG	1:A:633:GLN:HG3	0.43	1.73	9	1
1:A:622:LEU:HD11	1:A:632:LEU:HD21	0.42	1.89	10	1
1:A:647:LEU:O	1:A:648:ARG:C	0.42	2.57	19	4
1:A:636:SER:CB	1:A:639:GLU:HB2	0.42	2.44	19	4
1:A:559:CYS:SG	1:A:583:LEU:O	0.42	2.73	12	1
1:A:612:THR:N	1:A:619:CYS:O	0.42	2.47	1	1
1:A:634:CYS:SG	1:A:636:SER:O	0.42	2.75	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:620:LEU:N	1:A:632:LEU:O	0.42	2.52	17	1
1:A:586:ASN:OD1	1:A:603:MET:SD	0.42	2.77	15	1
1:A:652:ARG:O	1:A:653:GLU:C	0.42	2.56	2	2
1:A:583:LEU:N	1:A:643:TRP:HZ3	0.42	2.12	13	1
1:A:562:HIS:HA	1:A:643:TRP:CZ2	0.42	2.50	18	1
1:A:607:GLN:CG	1:A:625:ARG:HA	0.42	2.44	17	1
1:A:647:LEU:O	1:A:650:ALA:HB3	0.42	2.15	13	3
1:A:620:LEU:HD13	1:A:640:LEU:CB	0.42	2.44	3	3
1:A:614:ILE:HD13	1:A:618:LYS:HG2	0.42	1.91	19	1
1:A:583:LEU:CB	1:A:643:TRP:CE3	0.42	3.03	13	1
1:A:634:CYS:SG	1:A:639:GLU:OE1	0.42	2.77	19	1
1:A:633:GLN:CG	1:A:634:CYS:N	0.42	2.83	15	1
1:A:586:ASN:C	1:A:603:MET:SD	0.42	2.99	8	1
1:A:603:MET:CB	1:A:650:ALA:HB1	0.42	2.45	2	1
1:A:636:SER:HB2	1:A:639:GLU:CB	0.41	2.45	15	1
1:A:649:ASP:OD1	1:A:653:GLU:CD	0.41	2.58	15	1
1:A:584:PHE:HB3	1:A:585:PRO:HD2	0.41	1.92	1	1
1:A:614:ILE:O	1:A:615:LYS:HB3	0.41	2.15	20	3
1:A:567:LYS:HE3	1:A:581:PHE:CZ	0.41	2.50	2	1
1:A:638:PRO:O	1:A:642:GLN:N	0.41	2.47	16	1
1:A:603:MET:HB2	1:A:650:ALA:O	0.41	2.15	19	1
1:A:611:GLU:HG3	1:A:619:CYS:O	0.41	2.15	10	3
1:A:620:LEU:O	1:A:631:ILE:HA	0.41	2.16	4	3
1:A:583:LEU:N	1:A:643:TRP:CH2	0.41	2.88	12	1
1:A:618:LYS:HD2	1:A:618:LYS:C	0.41	2.36	7	3
1:A:620:LEU:CG	1:A:644:LYS:HZ3	0.41	2.29	17	1
1:A:620:LEU:HB3	1:A:632:LEU:HD12	0.41	1.93	19	1
1:A:565:MET:HG2	1:A:634:CYS:SG	0.41	2.55	5	1
1:A:614:ILE:O	1:A:615:LYS:HB2	0.41	2.16	15	1
1:A:643:TRP:O	1:A:647:LEU:HB2	0.41	2.16	4	1
1:A:603:MET:HA	1:A:603:MET:HE2	0.41	1.91	11	1
1:A:618:LYS:HD3	1:A:618:LYS:N	0.41	2.30	11	1
1:A:619:CYS:SG	1:A:633:GLN:CA	0.41	3.08	19	1
1:A:614:ILE:CD1	1:A:618:LYS:HE2	0.41	2.46	18	1
1:A:606:ILE:CG1	1:A:622:LEU:HD23	0.41	2.44	17	1
1:A:644:LYS:HZ2	1:A:644:LYS:HB2	0.41	1.76	4	1
1:A:622:LEU:HD12	1:A:632:LEU:HG	0.41	1.91	1	1
1:A:586:ASN:C	1:A:603:MET:CG	0.41	2.89	10	1
1:A:564:TYR:OH	1:A:578:ARG:NE	0.41	2.54	4	1
1:A:585:PRO:O	1:A:586:ASN:OD1	0.41	2.39	6	2
1:A:567:LYS:CB	1:A:632:LEU:HA	0.41	2.45	9	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:613:GLN:CA	1:A:618:LYS:HB3	0.41	2.45	18	1
1:A:620:LEU:HB3	1:A:632:LEU:CB	0.41	2.45	1	1
1:A:560:ILE:HD12	1:A:583:LEU:CD2	0.41	2.46	1	1
1:A:584:PHE:C	1:A:586:ASN:H	0.41	2.20	7	1
1:A:634:CYS:HB3	1:A:640:LEU:CD2	0.41	2.45	4	1
1:A:603:MET:O	1:A:603:MET:SD	0.40	2.79	2	1
1:A:567:LYS:CE	1:A:567:LYS:C	0.40	2.89	4	1
1:A:612:THR:CG2	1:A:618:LYS:HG3	0.40	2.42	18	1
1:A:611:GLU:HG2	1:A:612:THR:N	0.40	2.31	1	1
1:A:610:GLU:C	1:A:644:LYS:HE3	0.40	2.36	19	1
1:A:620:LEU:HD22	1:A:632:LEU:HD13	0.40	1.93	19	1
1:A:647:LEU:HD23	1:A:647:LEU:HA	0.40	1.79	7	1
1:A:619:CYS:HG	1:A:633:GLN:HB2	0.40	1.74	19	1
1:A:622:LEU:HB2	1:A:632:LEU:HD21	0.40	1.93	15	1
1:A:564:TYR:CZ	1:A:578:ARG:HD3	0.40	2.52	6	1
1:A:567:LYS:HE3	1:A:581:PHE:CE2	0.40	2.52	2	1
1:A:619:CYS:SG	1:A:633:GLN:OE1	0.40	2.80	14	1
1:A:564:TYR:CZ	1:A:578:ARG:CD	0.40	3.04	6	1

6.3 Torsion angles ⓘ

6.3.1 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 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	A	75/119 (63%)	53±2 (71±3%)	18±3 (24±4%)	4±1 (5±2%)	4	24
All	All	1500/2380 (63%)	1063 (71%)	356 (24%)	81 (5%)	4	24

All 8 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	586	ASN	20
1	A	639	GLU	20
1	A	606	ILE	13
1	A	588	LEU	13

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Mol	Chain	Res	Type	Models (Total)
1	A	638	PRO	8
1	A	614	ILE	3
1	A	637	ASP	2
1	A	653	GLU	2

6.3.2 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 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	A	70/108 (65%)	37±2 (53±3%)	33±2 (47±3%)	0	1
All	All	1400/2160 (65%)	737 (53%)	663 (47%)	0	1

All 58 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	A	640	LEU	20
1	A	620	LEU	20
1	A	614	ILE	20
1	A	623	LYS	20
1	A	607	GLN	20
1	A	588	LEU	20
1	A	564	TYR	20
1	A	603	MET	20
1	A	602	THR	20
1	A	561	MET	20
1	A	580	TYR	19
1	A	631	ILE	19
1	A	566	SER	19
1	A	641	VAL	19
1	A	610	GLU	19
1	A	632	LEU	17
1	A	578	ARG	17
1	A	612	THR	17
1	A	637	ASP	16
1	A	644	LYS	16
1	A	646	GLU	15

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Mol	Chain	Res	Type	Models (Total)
1	A	642	GLN	15
1	A	584	PHE	15
1	A	622	LEU	15
1	A	635	ASP	12
1	A	630	PHE	12
1	A	587	ARG	12
1	A	606	ILE	12
1	A	636	SER	11
1	A	634	CYS	11
1	A	628	LYS	10
1	A	647	LEU	10
1	A	565	MET	10
1	A	621	LEU	9
1	A	567	LYS	9
1	A	601	LEU	8
1	A	653	GLU	8
1	A	562	HIS	8
1	A	648	ARG	7
1	A	652	ARG	7
1	A	645	LYS	7
1	A	616	GLU	7
1	A	625	ARG	6
1	A	582	TYR	5
1	A	583	LEU	5
1	A	618	LYS	5
1	A	608	SER	4
1	A	633	GLN	4
1	A	617	ARG	4
1	A	559	CYS	4
1	A	579	ARG	3
1	A	649	ASP	3
1	A	629	GLN	3
1	A	619	CYS	2
1	A	581	PHE	2
1	A	615	LYS	2
1	A	586	ASN	2
1	A	613	GLN	1

6.3.3 RNA ⓘ

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 carbohydrates 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

No chemical shift data were provided