



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 09:37 PM UTC

PDB ID : 1YKN / pdb\_00001ykn  
Title : Protocatechuate 3,4-dioxygenase Y408E mutant bound to DHB  
Authors : Brown, C.K.; Ohlendorf, D.H.  
Deposited on : 2005-01-18  
Resolution : 2.06 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

---

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

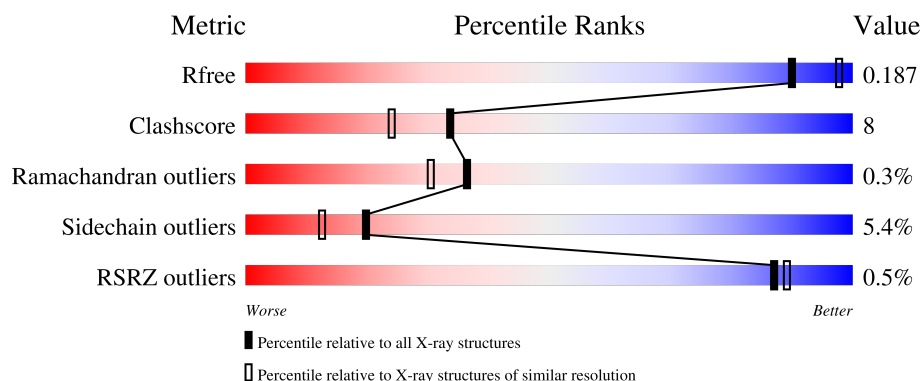
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

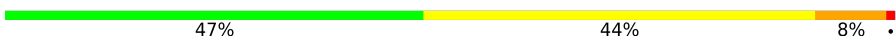

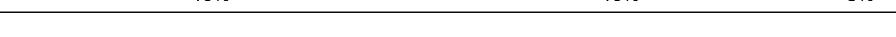
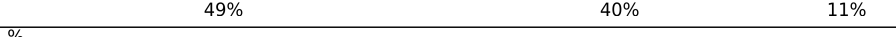

The reported resolution of this entry is 2.06 Å.

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




Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	3774 (2.08-2.04)
Clashscore	190562	3883 (2.08-2.04)
Ramachandran outliers	187476	3860 (2.08-2.04)
Sidechain outliers	187428	3860 (2.08-2.04)
RSRZ outliers	180081	3775 (2.08-2.04)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	200	
1	C	200	
1	E	200	
1	G	200	
1	I	200	

*Continued on next page...*

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	K	200	
2	B	238	
2	D	238	
2	F	238	
2	H	238	
2	J	238	
2	L	238	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	CME	H	429	-	X	-	-
4	DHB	B	550	-	-	X	-
4	DHB	F	2550	-	-	X	-
4	DHB	H	3550	-	-	X	-
4	DHB	L	5550	-	-	X	-

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 22266 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 Protocatechuate 3,4-dioxygenase alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			
1	C	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			
1	E	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			
1	G	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			
1	I	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			
1	K	200	Total	C	N	O	S	0	0	0
			1571	993	276	299	3			

- Molecule 2 is a protein called Protocatechuate 3,4-dioxygenase beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			
2	D	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			
2	F	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			
2	H	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			
2	J	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			
2	L	238	Total	C	N	O	S	0	0	0
			1876	1186	342	339	9			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	408	GLU	TYR	engineered mutation	UNP P00437

*Continued on next page...*

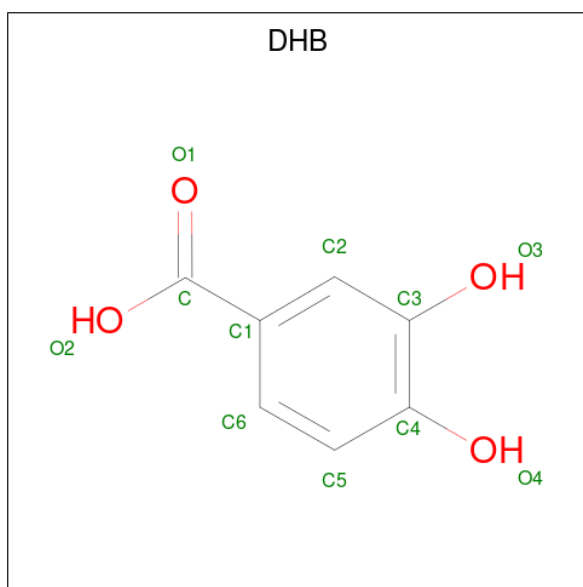
*Continued from previous page...*

Chain	Residue	Modelled	Actual	Comment	Reference
B	429	CME	CYS	modified residue	UNP P00437
D	408	GLU	TYR	engineered mutation	UNP P00437
D	429	CME	CYS	modified residue	UNP P00437
F	408	GLU	TYR	engineered mutation	UNP P00437
F	429	CME	CYS	modified residue	UNP P00437
H	408	GLU	TYR	engineered mutation	UNP P00437
H	429	CME	CYS	modified residue	UNP P00437
J	408	GLU	TYR	engineered mutation	UNP P00437
J	429	CME	CYS	modified residue	UNP P00437
L	408	GLU	TYR	engineered mutation	UNP P00437
L	429	CME	CYS	modified residue	UNP P00437

- Molecule 3 is FE (III) ION (CCD ID: FE) (formula: Fe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Fe 1 1	0	0
3	D	1	Total Fe 1 1	0	0
3	F	1	Total Fe 1 1	0	0
3	H	1	Total Fe 1 1	0	0
3	J	1	Total Fe 1 1	0	0
3	L	1	Total Fe 1 1	0	0

- Molecule 4 is 3,4-DIHYDROXYBENZOIC ACID (CCD ID: DHB) (formula: C<sub>7</sub>H<sub>6</sub>O<sub>4</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			11	7	4		
4	D	1	Total	C	O	0	0
			11	7	4		
4	F	1	Total	C	O	0	0
			11	7	4		
4	H	1	Total	C	O	0	0
			11	7	4		
4	J	1	Total	C	O	0	0
			11	7	4		
4	L	1	Total	C	O	0	0
			11	7	4		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	88	Total	O	0	0
			88	88		
5	B	162	Total	O	0	0
			162	162		
5	C	88	Total	O	0	0
			88	88		
5	D	168	Total	O	0	0
			168	168		
5	E	86	Total	O	0	0
			86	86		
5	F	163	Total	O	0	0
			163	163		

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	G	92	Total 92	O 92	0	0
5	H	157	Total 157	O 157	0	0
5	I	87	Total 87	O 87	0	0
5	J	172	Total 172	O 172	0	0
5	K	81	Total 81	O 81	0	0
5	L	168	Total 168	O 168	0	0

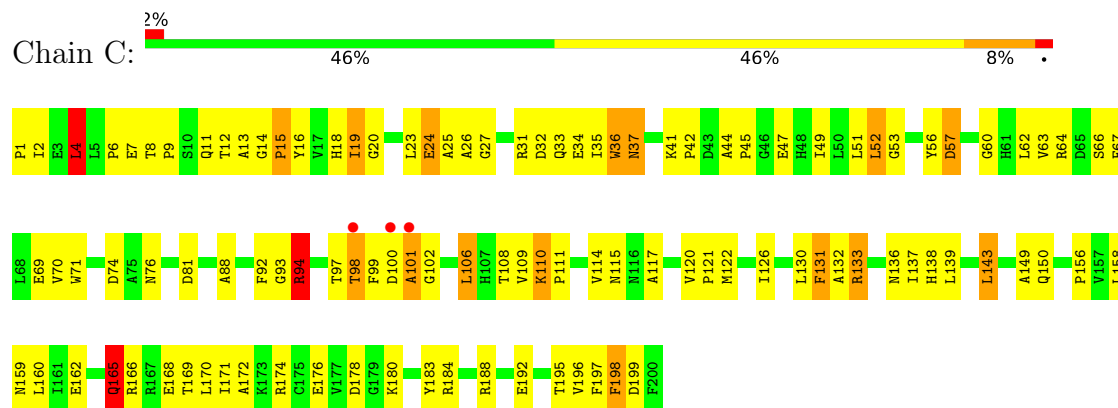
### 3 Residue-property plots

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 and electron density. 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. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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.

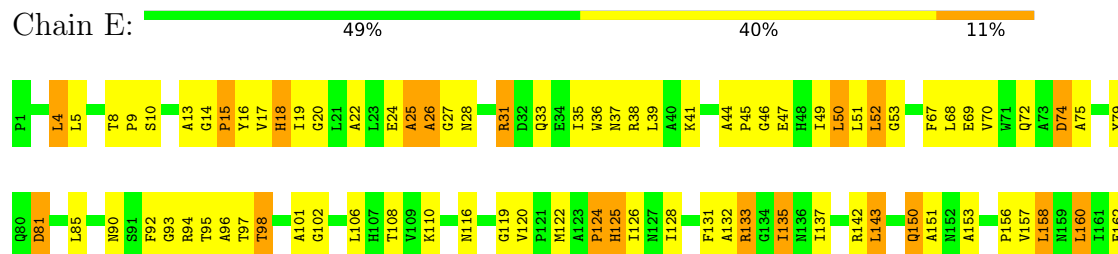
- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain



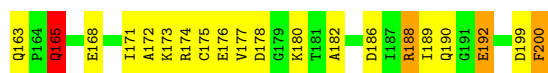
- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain



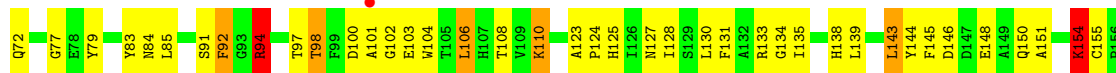
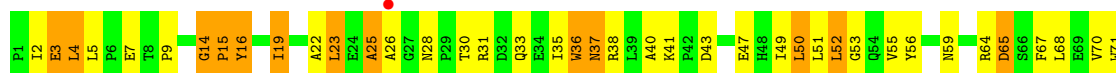
- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain



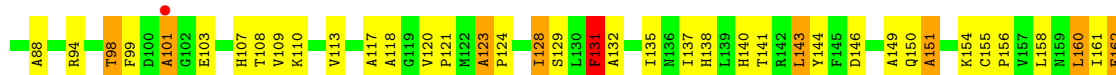
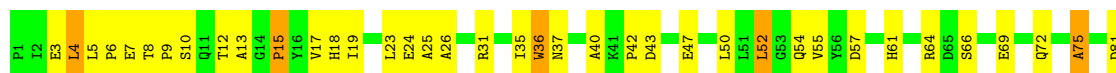




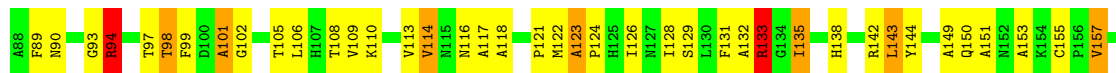
- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain



- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain

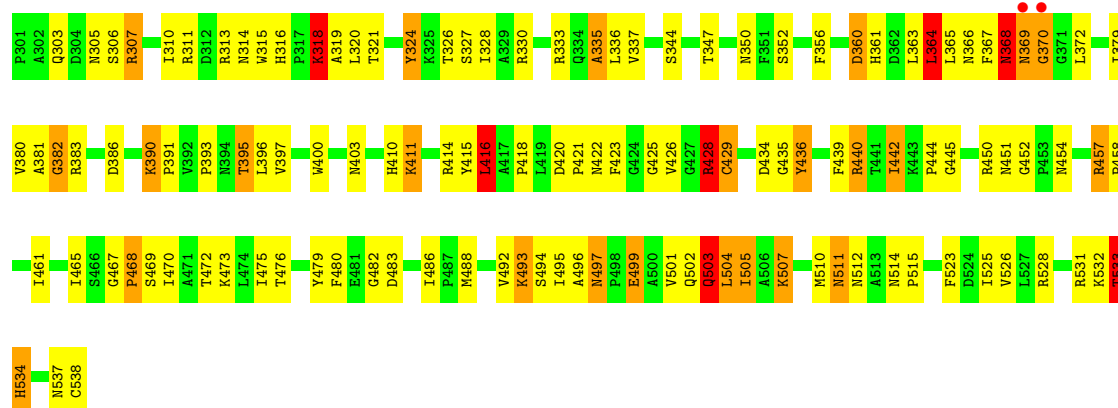


- Molecule 1: Protocatechuate 3,4-dioxygenase alpha chain



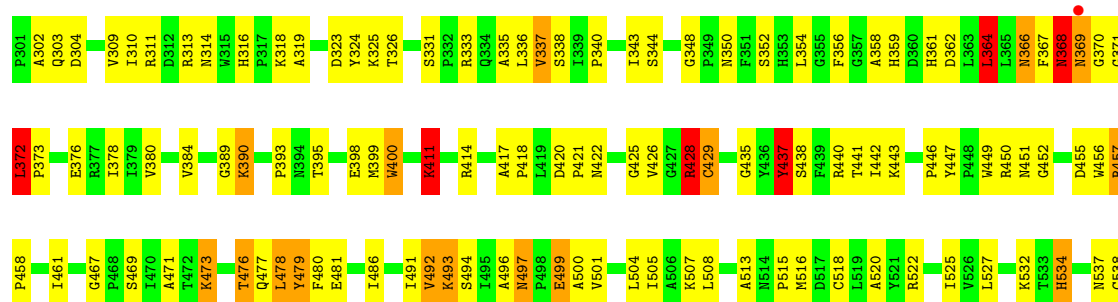
- Molecule 2: Protocatechuate 3,4-dioxygenase beta chain





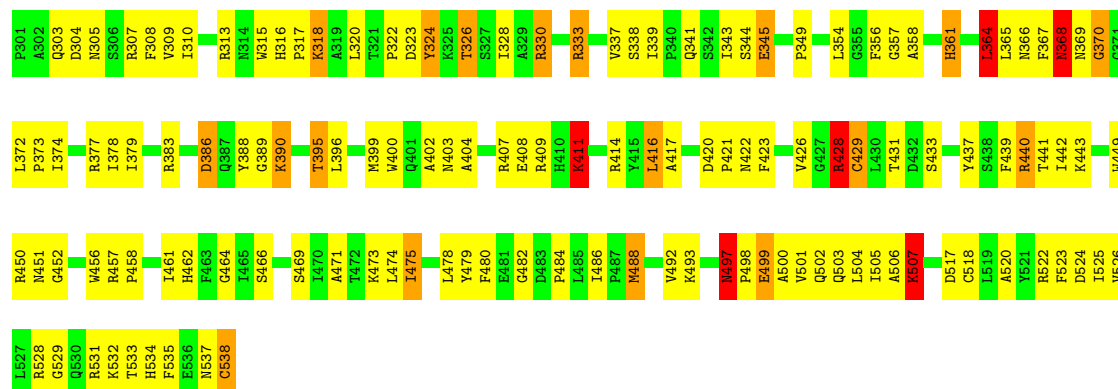
• Molecule 2: Protocatechuate 3,4-dioxygenase beta chain

Chain D: 50% 40% 7%



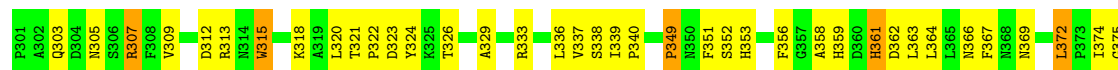
• Molecule 2: Protocatechuate 3,4-dioxygenase beta chain

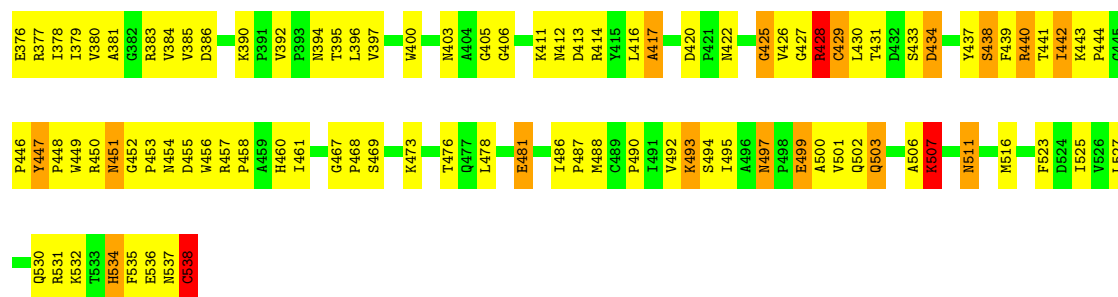
Chain F: 44% 46% 8%



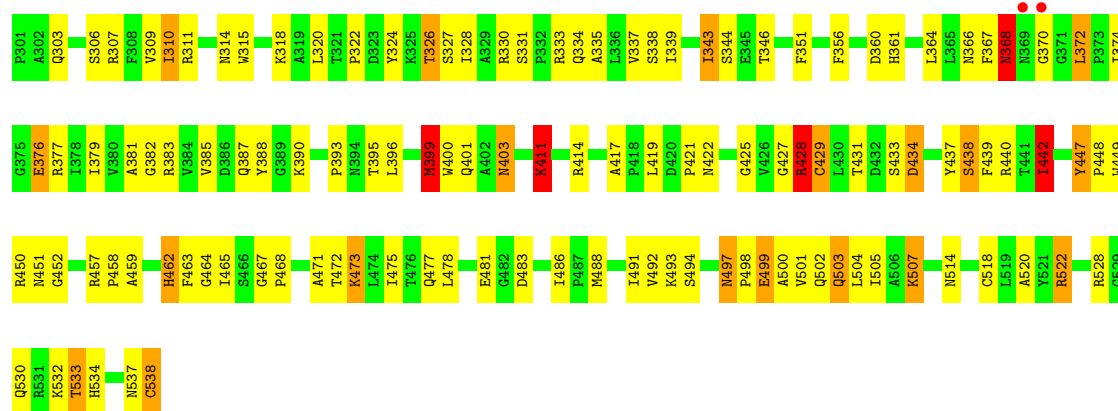
• Molecule 2: Protocatechuate 3,4-dioxygenase beta chain

Chain H: 44% 46% 9%

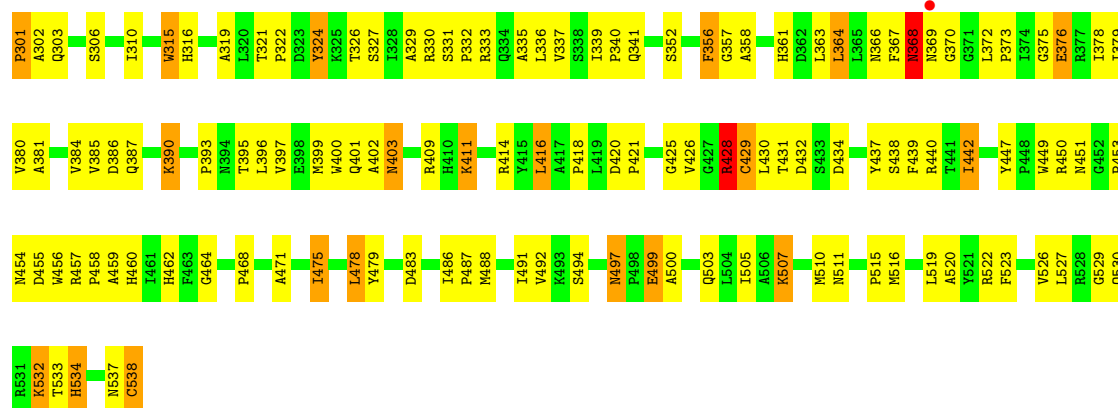




• Molecule 2: Protocatechuate 3,4-dioxygenase beta chain



• Molecule 2: Protocatechuate 3,4-dioxygenase beta chain



## 4 Data and refinement statistics

Property	Value	Source
Space group	I 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	195.82Å 128.57Å 134.36Å 90.00° 97.98° 90.00°	Depositor
Resolution (Å)	8.51 – 2.06 8.51 – 2.06	Depositor EDS
% Data completeness (in resolution range)	69.6 (8.51-2.06) 68.2 (8.51-2.06)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	0.00 (at 1.94Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.149 , 0.192 0.145 , 0.187	Depositor DCC
$R_{free}$ test set	1950 reflections (0.96%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	16.3	Xtriage
Anisotropy	0.221	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.48 , 65.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	22266	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	20.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.76% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: CME, DHB, FE

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z  > 5$	RMSZ	$\# Z  > 5$
1	A	2.56	98/1611 (6.1%)	1.85	37/2195 (1.7%)
1	C	2.61	100/1611 (6.2%)	1.97	53/2195 (2.4%)
1	E	2.54	83/1611 (5.2%)	1.81	32/2195 (1.5%)
1	G	2.51	93/1611 (5.8%)	1.87	35/2195 (1.6%)
1	I	2.62	91/1611 (5.6%)	1.84	22/2195 (1.0%)
1	K	2.57	101/1611 (6.3%)	1.90	45/2195 (2.1%)
2	B	2.59	109/1920 (5.7%)	1.98	60/2612 (2.3%)
2	D	2.53	96/1920 (5.0%)	1.98	59/2612 (2.3%)
2	F	2.54	102/1920 (5.3%)	2.01	67/2612 (2.6%)
2	H	2.55	108/1920 (5.6%)	1.92	53/2612 (2.0%)
2	J	2.55	102/1920 (5.3%)	1.96	52/2612 (2.0%)
2	L	2.58	113/1920 (5.9%)	1.95	46/2612 (1.8%)
All	All	2.56	1196/21186 (5.6%)	1.93	561/28842 (1.9%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
1	C	0	4
1	E	0	5
1	G	0	5
1	I	0	6
1	K	0	3
2	B	0	5
2	D	0	3
2	F	0	4
2	H	0	5
2	J	0	3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	#Chirality outliers	#Planarity outliers
2	L	0	5
All	All	0	52

All (1196) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	532	LYS	CA-CB	20.28	1.84	1.53
2	H	486	ILE	CA-CB	19.92	1.64	1.54
2	B	451	ASN	CA-C	19.08	1.61	1.52
1	I	108	THR	C-O	-15.33	1.12	1.24
2	D	486	ILE	CA-CB	13.85	1.61	1.54
2	L	339	ILE	C-O	13.35	1.33	1.24
1	E	5	LEU	CA-C	12.25	1.65	1.53
2	B	532	LYS	CA-CB	11.80	1.72	1.53
2	F	358	ALA	CA-CB	11.70	1.72	1.53
2	L	303	GLN	CA-CB	11.69	1.74	1.53
2	J	532	LYS	CA-CB	11.59	1.72	1.53
1	E	22	ALA	CA-CB	11.42	1.64	1.53
2	D	471	ALA	CA-CB	-11.38	1.34	1.53
2	J	419	LEU	C-O	11.34	1.38	1.23
2	L	486	ILE	CA-CB	11.25	1.59	1.54
2	B	379	ILE	CA-CB	-10.78	1.41	1.54
2	H	403	ASN	C-O	10.75	1.36	1.23
1	A	161	ILE	CA-CB	-10.74	1.41	1.53
1	C	35	ILE	CA-CB	-10.68	1.41	1.53
2	B	327	SER	N-CA	-10.60	1.32	1.46
2	F	402	ALA	CA-CB	10.52	1.68	1.53
2	F	440	ARG	CD-NE	-10.48	1.31	1.46
1	I	15	PRO	C-O	-10.46	1.12	1.24
2	F	461	ILE	C-O	-10.45	1.12	1.24
2	D	458	PRO	CA-C	10.44	1.65	1.52
2	D	367	PHE	CA-C	10.42	1.61	1.52
1	C	98	THR	CA-C	10.10	1.66	1.52
2	B	510	MET	SD-CE	-10.07	1.54	1.79
2	J	537	ASN	N-CA	10.00	1.57	1.46
1	G	189	ILE	CA-C	-9.98	1.38	1.52
2	H	516	MET	CA-CB	9.94	1.67	1.53
2	D	440	ARG	CD-NE	-9.89	1.32	1.46
2	J	393	PRO	CA-C	-9.89	1.42	1.52
1	A	108	THR	CA-CB	9.78	1.66	1.54
2	H	534	HIS	C-O	9.71	1.35	1.23
1	K	180	LYS	CA-C	9.68	1.64	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	405	GLY	C-O	9.65	1.35	1.23
1	G	26	ALA	C-O	9.62	1.36	1.24
2	J	310	ILE	C-O	9.61	1.36	1.24
1	I	25	ALA	CA-CB	-9.54	1.37	1.53
2	F	403	ASN	C-O	9.51	1.34	1.23
2	B	320	LEU	C-O	-9.49	1.12	1.24
2	B	316	HIS	CA-C	9.47	1.65	1.53
2	F	486	ILE	CA-CB	9.47	1.59	1.54
2	L	488	MET	SD-CE	-9.44	1.55	1.79
2	F	532	LYS	CA-CB	9.44	1.69	1.53
2	B	440	ARG	CD-NE	-9.39	1.33	1.46
2	H	507	LYS	CE-NZ	9.38	1.77	1.49
2	B	365	LEU	C-O	-9.37	1.12	1.24
1	C	122	MET	SD-CE	-9.35	1.56	1.79
2	D	380	VAL	CA-CB	9.30	1.66	1.54
2	J	449	TRP	C-O	9.25	1.34	1.23
2	B	396	LEU	CA-C	9.20	1.64	1.52
1	I	98	THR	CA-C	9.18	1.65	1.53
2	D	390	LYS	CG-CD	9.17	1.79	1.52
1	K	173	LYS	CA-CB	9.14	1.64	1.53
2	F	488	MET	SD-CE	-9.05	1.56	1.79
1	I	50	LEU	CA-C	9.03	1.64	1.52
2	D	505	ILE	C-O	-9.02	1.14	1.24
2	L	327	SER	CA-C	9.01	1.65	1.52
2	L	310	ILE	CA-CB	8.98	1.63	1.54
2	J	309	VAL	CA-CB	8.96	1.65	1.54
1	C	137	ILE	CA-C	8.94	1.63	1.52
2	H	458	PRO	CA-C	8.93	1.63	1.52
1	C	168	GLU	CD-OE1	8.91	1.42	1.25
1	C	98	THR	N-CA	8.89	1.58	1.46
2	L	327	SER	N-CA	-8.87	1.34	1.46
2	H	446	PRO	C-O	8.84	1.34	1.23
2	D	537	ASN	N-CA	8.83	1.56	1.46
2	F	368	ASN	N-CA	8.80	1.57	1.46
2	B	495	ILE	C-O	-8.79	1.15	1.24
1	E	126	ILE	CA-CB	8.73	1.65	1.54
1	E	153	ALA	CA-CB	8.73	1.67	1.53
2	D	532	LYS	CA-CB	8.71	1.67	1.53
2	J	335	ALA	CA-CB	8.69	1.66	1.53
1	C	101	ALA	C-N	8.65	1.45	1.33
1	G	40	ALA	CA-CB	-8.65	1.40	1.53
1	I	64	ARG	CZ-NH1	8.63	1.44	1.32

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	101	ALA	CA-CB	8.62	1.68	1.53
2	H	461	ILE	CA-CB	-8.61	1.43	1.54
2	F	520	ALA	CA-CB	-8.60	1.36	1.53
1	A	158	LEU	CA-C	8.57	1.64	1.52
1	I	199	ASP	C-O	8.57	1.34	1.23
2	L	401	GLN	C-O	8.57	1.33	1.23
2	B	318	LYS	CE-NZ	8.55	1.75	1.49
1	C	13	ALA	N-CA	8.53	1.57	1.46
1	A	33	GLN	C-O	-8.52	1.13	1.24
1	A	192	GLU	CG-CD	8.52	1.73	1.52
1	I	103	GLU	CA-C	-8.50	1.42	1.52
1	G	154	LYS	CD-CE	8.47	1.77	1.52
2	D	368	ASN	N-CA	8.47	1.57	1.46
2	B	493	LYS	CG-CD	8.45	1.77	1.52
1	G	85	LEU	C-O	-8.43	1.13	1.24
1	K	110	LYS	CA-C	8.42	1.62	1.53
1	C	188	ARG	CZ-NH1	8.41	1.44	1.32
1	I	131	PHE	CA-C	8.41	1.63	1.52
1	K	109	VAL	CA-CB	8.41	1.66	1.54
1	K	144	TYR	CA-C	8.38	1.63	1.52
1	I	109	VAL	CA-C	8.37	1.63	1.52
2	D	461	ILE	CA-CB	-8.37	1.44	1.54
2	L	385	VAL	CA-C	8.33	1.63	1.52
1	A	171	ILE	C-O	-8.32	1.14	1.24
2	H	381	ALA	CA-CB	-8.30	1.39	1.54
2	J	440	ARG	C-O	8.29	1.34	1.24
1	A	141	THR	N-CA	-8.29	1.35	1.45
1	K	7	GLU	CA-C	8.29	1.63	1.52
1	K	189	ILE	CA-CB	-8.24	1.43	1.54
2	H	315	TRP	C-O	-8.23	1.14	1.24
1	K	122	MET	SD-CE	-8.23	1.58	1.79
2	J	381	ALA	CA-CB	-8.22	1.39	1.53
1	G	127	ASN	N-CA	8.21	1.56	1.46
2	H	379	ILE	CA-C	8.21	1.62	1.52
2	H	447	TYR	C-O	-8.21	1.14	1.24
1	A	95	THR	CA-C	8.20	1.62	1.52
2	F	365	LEU	C-O	-8.19	1.13	1.24
1	G	22	ALA	CA-C	8.18	1.63	1.53
1	A	173	LYS	CA-C	8.17	1.63	1.52
2	L	455	ASP	C-O	8.17	1.33	1.23
1	C	130	LEU	CA-C	8.14	1.62	1.52
2	L	522	ARG	CZ-NH1	8.14	1.44	1.32

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	526	VAL	CA-CB	-8.14	1.44	1.54
2	L	369	ASN	C-O	8.11	1.35	1.24
2	J	399	MET	C-O	-8.10	1.14	1.23
2	L	453	PRO	C-O	-8.09	1.13	1.24
1	I	161	ILE	CA-C	8.08	1.62	1.53
1	C	120	VAL	CA-CB	-8.06	1.43	1.54
2	F	303	GLN	CA-CB	8.06	1.67	1.53
2	F	310	ILE	C-O	8.06	1.32	1.24
2	F	437	TYR	C-O	8.06	1.33	1.23
2	J	497	ASN	C-O	-8.05	1.14	1.24
2	L	479	TYR	N-CA	8.05	1.56	1.45
1	K	114	VAL	CA-CB	8.05	1.67	1.54
2	B	326	THR	C-O	-8.04	1.13	1.24
2	J	477	GLN	C-O	-8.03	1.14	1.23
2	J	368	ASN	C-O	8.02	1.34	1.24
2	D	518	CYS	C-O	7.99	1.33	1.23
1	I	101	ALA	C-N	7.97	1.43	1.33
1	K	101	ALA	C-O	7.95	1.33	1.24
2	F	423	PHE	C-O	7.94	1.33	1.24
1	C	143	LEU	CA-C	7.91	1.62	1.52
2	J	334	GLN	N-CA	-7.90	1.36	1.45
1	E	137	ILE	CA-C	7.89	1.62	1.52
2	L	390	LYS	CG-CD	7.89	1.76	1.52
2	B	479	TYR	CA-C	7.88	1.62	1.52
2	L	520	ALA	C-O	7.88	1.33	1.23
2	H	367	PHE	CA-C	7.87	1.63	1.52
2	L	440	ARG	CD-NE	-7.87	1.35	1.46
1	I	55	VAL	C-O	7.86	1.32	1.24
2	B	461	ILE	C-O	7.84	1.32	1.24
2	D	368	ASN	CA-CB	7.83	1.66	1.53
2	H	309	VAL	CA-CB	7.83	1.62	1.54
2	B	344	SER	C-O	-7.83	1.14	1.24
2	L	537	ASN	N-CA	7.79	1.58	1.46
2	J	500	ALA	C-O	-7.79	1.14	1.24
2	L	530	GLN	C-O	7.79	1.33	1.24
1	C	106	LEU	CA-CB	-7.78	1.40	1.53
1	A	96	ALA	C-O	-7.78	1.14	1.23
2	F	486	ILE	C-O	-7.77	1.18	1.24
1	I	108	THR	CA-CB	7.77	1.63	1.54
2	B	454	ASN	C-O	7.77	1.34	1.23
2	J	494	SER	CA-C	7.76	1.63	1.52
2	J	368	ASN	N-CA	7.75	1.56	1.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	532	LYS	CA-C	7.75	1.62	1.52
1	A	191	GLY	C-O	7.74	1.34	1.23
2	D	497	ASN	CA-C	7.73	1.61	1.52
2	J	327	SER	CA-C	7.73	1.63	1.52
1	A	15	PRO	C-O	-7.72	1.14	1.24
1	A	126	ILE	CA-C	7.72	1.61	1.52
1	G	108	THR	CA-CB	7.71	1.63	1.54
2	H	339	ILE	CA-CB	7.71	1.63	1.55
2	J	421	PRO	CA-C	7.71	1.63	1.52
1	E	160	LEU	N-CA	-7.67	1.36	1.46
2	D	369	ASN	CB-CG	7.65	1.71	1.52
2	J	303	GLN	CA-CB	7.64	1.73	1.54
2	D	449	TRP	CG-CD1	7.63	1.56	1.36
2	L	450	ARG	CZ-NH1	7.62	1.43	1.32
1	A	188	ARG	CZ-NH2	7.62	1.43	1.33
2	B	505	ILE	C-O	-7.61	1.15	1.24
2	L	468	PRO	C-O	-7.61	1.15	1.24
2	B	493	LYS	CA-C	7.61	1.63	1.52
2	F	324	TYR	C-O	7.61	1.32	1.23
1	C	165	GLN	CG-CD	7.60	1.71	1.52
1	E	151	ALA	CA-C	7.59	1.62	1.52
2	F	333	ARG	CZ-NH2	7.59	1.43	1.33
1	I	149	ALA	CA-CB	7.56	1.65	1.53
2	J	310	ILE	CA-CB	7.55	1.61	1.54
2	F	533	THR	CA-CB	7.54	1.65	1.53
2	D	441	THR	N-CA	-7.54	1.37	1.46
1	E	163	GLN	CG-CD	7.53	1.70	1.52
2	H	326	THR	C-O	-7.52	1.14	1.24
1	A	173	LYS	CA-CB	7.51	1.62	1.53
1	E	157	VAL	CA-C	-7.51	1.42	1.52
2	F	374	ILE	CA-CB	7.50	1.64	1.54
1	I	128	ILE	C-O	7.49	1.31	1.24
1	K	67	PHE	CA-C	7.49	1.61	1.52
1	A	50	LEU	CA-C	7.48	1.61	1.52
1	I	54	GLN	C-O	7.44	1.33	1.23
2	B	319	ALA	CA-C	7.44	1.62	1.52
2	B	367	PHE	CA-C	7.43	1.58	1.52
2	L	487	PRO	C-O	-7.43	1.14	1.24
2	B	486	ILE	C-O	-7.41	1.18	1.24
1	G	183	TYR	C-O	-7.41	1.14	1.23
1	A	146	ASP	C-O	-7.40	1.14	1.24
2	J	505	ILE	C-O	-7.40	1.16	1.24

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	89	PHE	C-O	7.40	1.32	1.23
1	I	101	ALA	C-O	7.39	1.32	1.24
2	H	358	ALA	CA-CB	7.39	1.65	1.53
2	B	420	ASP	C-O	7.38	1.32	1.24
1	C	176	GLU	C-O	-7.37	1.15	1.23
2	D	384	VAL	C-O	7.37	1.32	1.24
1	C	7	GLU	CA-C	7.36	1.62	1.52
2	B	324	TYR	CA-C	7.36	1.61	1.52
2	F	316	HIS	CA-C	7.36	1.62	1.53
2	L	390	LYS	CA-C	7.36	1.61	1.53
1	K	121	PRO	CA-CB	7.35	1.63	1.53
2	L	379	ILE	CA-C	7.35	1.61	1.52
2	B	370	GLY	C-O	7.34	1.33	1.23
1	K	33	GLN	CA-C	7.33	1.61	1.52
1	E	90	ASN	N-CA	7.32	1.54	1.46
2	J	387	GLN	N-CA	7.32	1.56	1.46
2	H	450	ARG	CZ-NH2	7.31	1.43	1.33
2	F	383	ARG	N-CA	-7.29	1.36	1.45
1	E	68	LEU	C-O	-7.29	1.15	1.23
2	D	399	MET	N-CA	-7.28	1.36	1.45
2	F	344	SER	CA-C	7.27	1.62	1.52
2	H	384	VAL	CA-CB	-7.27	1.45	1.53
1	C	2	ILE	CA-C	7.27	1.61	1.52
1	I	165	GLN	CG-CD	7.26	1.70	1.52
1	G	135	ILE	CA-CB	7.25	1.62	1.53
2	J	306	SER	CA-C	-7.25	1.43	1.52
2	L	403	ASN	N-CA	7.25	1.54	1.45
1	C	132	ALA	C-O	7.24	1.31	1.23
1	G	50	LEU	N-CA	-7.24	1.37	1.46
1	A	121	PRO	CA-C	7.23	1.61	1.52
1	I	121	PRO	CA-C	7.23	1.61	1.52
2	L	516	MET	CG-SD	7.21	1.98	1.80
2	H	303	GLN	CA-CB	7.21	1.70	1.53
2	F	390	LYS	CD-CE	7.20	1.74	1.52
2	D	497	ASN	C-O	-7.19	1.15	1.24
1	I	165	GLN	CA-C	7.19	1.62	1.52
2	H	353	HIS	CA-C	-7.19	1.43	1.52
1	K	26	ALA	C-O	7.19	1.33	1.24
2	H	507	LYS	CD-CE	7.18	1.74	1.52
2	L	500	ALA	C-O	-7.18	1.15	1.24
2	D	505	ILE	CA-CB	-7.17	1.45	1.53
2	H	339	ILE	C-O	7.17	1.32	1.24

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	63	VAL	CA-CB	7.17	1.61	1.53
1	C	131	PHE	CA-C	7.17	1.61	1.52
1	C	57	ASP	N-CA	-7.16	1.36	1.45
2	L	486	ILE	C-O	-7.16	1.18	1.24
2	B	537	ASN	N-CA	7.15	1.56	1.46
1	C	121	PRO	CA-CB	7.15	1.63	1.53
1	E	173	LYS	N-CA	7.15	1.54	1.46
1	E	168	GLU	CD-OE1	7.14	1.39	1.25
2	D	309	VAL	CA-CB	7.14	1.62	1.54
2	H	323	ASP	C-O	-7.14	1.15	1.24
1	K	98	THR	N-CA	7.14	1.55	1.46
2	F	368	ASN	CA-CB	7.14	1.65	1.53
2	F	532	LYS	CA-C	7.13	1.62	1.52
1	I	128	ILE	CA-C	7.13	1.61	1.52
2	L	324	TYR	CA-C	7.13	1.61	1.53
2	B	428	ARG	CD-NE	-7.13	1.36	1.46
2	F	507	LYS	CE-NZ	7.12	1.70	1.49
1	G	97	THR	C-O	7.12	1.32	1.24
2	H	468	PRO	CA-C	-7.11	1.44	1.52
1	G	131	PHE	CA-C	7.11	1.61	1.52
2	B	488	MET	SD-CE	-7.11	1.61	1.79
1	A	184	ARG	CA-C	7.10	1.61	1.52
1	E	94	ARG	C-O	-7.10	1.15	1.23
1	C	45	PRO	CA-C	7.09	1.61	1.52
2	B	480	PHE	CA-C	7.09	1.61	1.52
2	J	448	PRO	C-O	-7.09	1.15	1.23
1	K	45	PRO	CA-C	7.07	1.61	1.52
1	K	155	CYS	C-O	7.06	1.33	1.24
2	D	478	LEU	C-O	7.04	1.32	1.23
2	H	390	LYS	CD-CE	7.04	1.73	1.52
1	A	94	ARG	CD-NE	-7.03	1.36	1.46
1	C	88	ALA	CA-C	7.03	1.62	1.52
2	L	533	THR	CA-C	7.03	1.62	1.52
2	L	368	ASN	C-O	7.03	1.32	1.24
2	B	369	ASN	C-O	7.03	1.33	1.24
2	B	328	ILE	CA-CB	7.03	1.62	1.54
1	G	50	LEU	C-O	7.02	1.32	1.24
1	K	25	ALA	CA-CB	-7.02	1.41	1.53
2	J	367	PHE	C-O	7.02	1.33	1.23
1	C	53	GLY	N-CA	-7.01	1.38	1.45
1	C	100	ASP	N-CA	7.01	1.54	1.46
2	D	390	LYS	CD-CE	7.01	1.73	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	397	VAL	CA-C	6.99	1.61	1.52
2	B	502	GLN	CD-OE1	6.99	1.36	1.23
2	H	486	ILE	C-O	-6.99	1.18	1.24
2	L	438	SER	CA-C	-6.98	1.43	1.52
1	I	135	ILE	CA-CB	6.97	1.62	1.53
2	H	532	LYS	CA-C	6.97	1.62	1.53
1	A	178	ASP	N-CA	6.97	1.55	1.46
2	F	431	THR	CA-CB	6.96	1.64	1.53
2	L	340	PRO	C-O	6.93	1.31	1.23
1	I	99	PHE	C-O	6.93	1.32	1.24
2	J	417	ALA	CA-C	6.93	1.60	1.52
1	A	192	GLU	CB-CG	6.92	1.73	1.52
2	H	439	PHE	C-O	6.92	1.32	1.23
1	A	194	GLU	C-O	-6.92	1.15	1.23
1	C	150	GLN	CD-OE1	6.91	1.36	1.23
1	K	144	TYR	C-O	6.90	1.33	1.23
2	L	381	ALA	CA-C	-6.89	1.44	1.52
1	K	128	ILE	CA-C	6.89	1.60	1.52
2	J	431	THR	CA-CB	6.88	1.64	1.53
1	E	98	THR	C-O	6.88	1.33	1.23
1	I	151	ALA	CA-CB	-6.88	1.42	1.53
1	A	97	THR	C-O	6.88	1.31	1.23
2	B	526	VAL	CA-CB	6.88	1.62	1.54
2	B	458	PRO	CA-C	6.87	1.61	1.52
1	K	129	SER	CA-C	6.87	1.60	1.52
2	B	391	PRO	C-O	6.87	1.32	1.23
1	K	76	ASN	N-CA	6.86	1.55	1.46
1	E	176	GLU	CD-OE2	6.85	1.38	1.25
2	H	390	LYS	CG-CD	6.85	1.73	1.52
2	J	501	VAL	CA-CB	-6.84	1.46	1.54
1	E	47	GLU	N-CA	-6.83	1.38	1.46
2	F	471	ALA	CA-C	6.82	1.61	1.52
1	C	120	VAL	CA-C	6.82	1.60	1.52
2	D	400	TRP	C-O	6.82	1.32	1.23
2	F	308	PHE	N-CA	6.82	1.54	1.46
1	A	47	GLU	CG-CD	6.81	1.69	1.52
1	E	150	GLN	CD-OE1	6.81	1.36	1.23
2	L	442	ILE	CA-C	6.80	1.60	1.52
2	H	321	THR	CA-C	6.80	1.59	1.52
1	I	188	ARG	C-O	6.79	1.31	1.24
1	I	123	ALA	C-O	-6.79	1.15	1.23
1	C	62	LEU	CA-C	6.78	1.61	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	81	ASP	CA-CB	-6.78	1.42	1.53
2	H	506	ALA	CA-CB	-6.78	1.43	1.53
1	C	172	ALA	CA-C	6.77	1.61	1.52
2	F	479	TYR	CZ-OH	-6.77	1.23	1.38
1	C	139	LEU	N-CA	6.77	1.54	1.46
2	H	502	GLN	CD-OE1	6.77	1.36	1.23
1	A	5	LEU	CA-C	6.76	1.60	1.53
2	L	431	THR	CA-C	6.75	1.62	1.53
1	K	47	GLU	CD-OE1	6.74	1.38	1.25
2	B	330	ARG	CA-CB	6.74	1.62	1.53
1	E	90	ASN	CA-C	6.74	1.60	1.52
2	H	501	VAL	C-O	-6.74	1.16	1.24
1	I	177	VAL	C-O	6.74	1.31	1.24
2	L	492	VAL	CA-C	6.74	1.61	1.52
1	G	14	GLY	C-O	6.74	1.33	1.24
2	D	310	ILE	CA-CB	6.73	1.61	1.54
2	D	362	ASP	CA-C	-6.73	1.45	1.53
1	G	2	ILE	CA-C	6.73	1.60	1.52
1	E	96	ALA	CA-CB	6.72	1.65	1.53
2	L	368	ASN	N-CA	6.72	1.54	1.46
1	A	128	ILE	CA-CB	-6.72	1.46	1.54
2	D	338	SER	N-CA	6.72	1.54	1.46
1	G	38	ARG	C-O	-6.72	1.16	1.23
2	B	414	ARG	NE-CZ	6.72	1.40	1.33
1	I	69	GLU	C-O	6.71	1.32	1.24
2	H	385	VAL	N-CA	6.71	1.53	1.46
2	B	451	ASN	N-CA	-6.70	1.37	1.45
1	G	15	PRO	CA-C	-6.70	1.41	1.52
2	F	320	LEU	C-O	-6.69	1.16	1.24
1	G	49	ILE	N-CA	-6.69	1.38	1.46
1	A	163	GLN	CG-CD	6.68	1.68	1.52
2	L	352	SER	C-O	6.68	1.32	1.24
2	L	333	ARG	CZ-NH1	6.68	1.42	1.32
2	F	533	THR	CA-C	6.68	1.61	1.52
1	G	64	ARG	CZ-NH1	6.68	1.42	1.32
2	J	333	ARG	CZ-NH1	6.67	1.42	1.32
2	F	389	GLY	C-O	-6.67	1.15	1.24
2	H	443	LYS	CA-C	-6.67	1.44	1.52
2	D	476	THR	N-CA	-6.67	1.35	1.46
2	J	374	ILE	CA-C	6.67	1.61	1.52
1	K	64	ARG	CZ-NH1	6.67	1.42	1.32
1	A	101	ALA	C-N	6.67	1.42	1.33

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	135	ILE	C-O	6.66	1.31	1.24
2	B	499	GLU	C-O	-6.66	1.15	1.24
1	I	109	VAL	C-O	6.66	1.31	1.23
1	I	98	THR	N-CA	6.66	1.56	1.46
1	G	146	ASP	N-CA	6.66	1.54	1.46
1	K	193	GLY	CA-C	6.66	1.60	1.51
2	L	333	ARG	CZ-NH2	6.64	1.42	1.33
2	H	349	PRO	CA-C	-6.63	1.43	1.52
1	I	52	LEU	C-O	6.62	1.32	1.23
1	I	168	GLU	CB-CG	6.62	1.72	1.52
1	E	180	LYS	CA-C	6.62	1.60	1.52
2	B	403	ASN	CG-ND2	6.62	1.47	1.33
2	D	513	ALA	CA-C	6.60	1.61	1.52
1	A	48	HIS	C-O	-6.60	1.16	1.24
1	E	189	ILE	CA-CB	-6.59	1.45	1.54
2	J	326	THR	C-O	-6.59	1.15	1.24
1	C	106	LEU	CA-C	6.58	1.60	1.52
2	J	458	PRO	CA-C	6.58	1.60	1.52
2	F	370	GLY	C-O	6.58	1.32	1.23
1	G	123	ALA	C-O	-6.58	1.15	1.23
2	J	504	LEU	C-O	6.58	1.33	1.23
2	B	475	ILE	CA-C	6.57	1.60	1.52
2	D	333	ARG	CZ-NH2	6.57	1.42	1.33
2	B	393	PRO	C-O	-6.57	1.16	1.23
2	B	532	LYS	CA-C	6.56	1.61	1.52
1	C	171	ILE	CG1-CD1	-6.56	1.26	1.51
1	E	162	GLU	C-O	-6.55	1.16	1.24
2	F	343	ILE	CA-C	6.55	1.61	1.52
1	K	162	GLU	C-O	-6.55	1.16	1.24
1	K	49	ILE	CA-C	-6.55	1.45	1.52
1	C	11	GLN	CA-C	6.55	1.60	1.52
1	I	171	ILE	CA-C	-6.55	1.44	1.52
1	A	47	GLU	CD-OE1	6.54	1.37	1.25
1	C	57	ASP	C-O	-6.54	1.15	1.23
1	G	171	ILE	CG1-CD1	-6.54	1.26	1.51
2	H	366	ASN	C-O	-6.54	1.15	1.24
2	J	368	ASN	CA-CB	6.54	1.64	1.53
1	K	51	LEU	N-CA	6.54	1.54	1.46
1	A	11	GLN	C-O	6.54	1.31	1.23
1	K	6	PRO	C-O	-6.53	1.16	1.23
2	H	502	GLN	CB-CG	6.53	1.72	1.52
2	D	304	ASP	CA-CB	6.52	1.61	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	163	GLN	CG-CD	6.52	1.68	1.52
1	A	3	GLU	N-CA	6.52	1.54	1.46
2	L	414	ARG	NE-CZ	6.52	1.40	1.33
1	K	171	ILE	N-CA	6.52	1.54	1.46
1	C	76	ASN	C-O	-6.52	1.15	1.23
1	E	163	GLN	CA-C	-6.51	1.44	1.52
2	B	479	TYR	N-CA	6.51	1.54	1.45
2	D	457	ARG	CZ-NH2	-6.51	1.25	1.33
2	L	532	LYS	N-CA	6.51	1.54	1.46
2	B	326	THR	CA-C	6.50	1.61	1.52
1	E	142	ARG	CZ-NH1	6.49	1.41	1.32
2	D	461	ILE	N-CA	-6.49	1.38	1.46
1	G	28	ASN	CA-C	6.48	1.60	1.52
1	C	12	THR	N-CA	-6.48	1.38	1.46
2	L	505	ILE	C-O	-6.47	1.16	1.23
1	A	6	PRO	C-O	-6.46	1.16	1.23
2	B	307	ARG	C-O	6.46	1.32	1.23
1	A	97	THR	CA-C	6.46	1.60	1.52
2	J	414	ARG	CD-NE	6.46	1.55	1.46
2	B	414	ARG	CB-CG	6.45	1.71	1.52
1	E	172	ALA	CA-CB	-6.45	1.44	1.53
1	A	26	ALA	C-O	6.44	1.32	1.24
1	I	198	PHE	CA-C	-6.44	1.44	1.52
1	E	199	ASP	C-O	6.43	1.31	1.23
1	K	41	LYS	CA-C	6.43	1.60	1.53
2	B	442	ILE	CA-C	6.42	1.60	1.52
1	A	143	LEU	N-CA	6.42	1.54	1.46
2	D	302	ALA	CA-CB	-6.41	1.43	1.53
2	H	312	ASP	CA-CB	-6.41	1.45	1.53
1	E	44	ALA	CA-C	6.41	1.60	1.53
1	C	49	ILE	C-O	6.40	1.30	1.23
1	E	49	ILE	CA-C	-6.40	1.45	1.52
2	J	502	GLN	CD-OE1	6.39	1.35	1.23
1	K	108	THR	C-O	6.39	1.29	1.24
2	B	503	GLN	CD-OE1	6.39	1.35	1.23
1	I	185	PHE	CA-C	-6.38	1.46	1.53
2	D	480	PHE	N-CA	-6.37	1.38	1.46
1	E	192	GLU	C-O	6.37	1.31	1.23
2	D	493	LYS	CE-NZ	6.36	1.68	1.49
1	I	180	LYS	CA-C	6.36	1.61	1.52
1	K	150	GLN	CD-OE1	6.35	1.35	1.23
1	G	135	ILE	C-O	6.35	1.31	1.24

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	7	GLU	CB-CG	6.35	1.71	1.52
1	C	60	GLY	C-O	-6.35	1.16	1.24
2	D	476	THR	C-O	6.35	1.30	1.23
1	E	186	ASP	N-CA	-6.34	1.37	1.45
2	H	450	ARG	CZ-NH1	6.34	1.41	1.32
2	D	314	ASN	CA-C	6.34	1.60	1.52
2	F	395	THR	CA-CB	6.33	1.63	1.53
2	D	437	TYR	CA-C	-6.33	1.44	1.52
1	A	6	PRO	CA-C	6.33	1.60	1.52
2	D	343	ILE	CA-C	6.33	1.61	1.52
1	G	110	LYS	CA-C	6.33	1.60	1.52
1	E	119	GLY	CA-C	6.32	1.60	1.51
1	I	3	GLU	CA-C	6.31	1.60	1.52
2	L	430	LEU	CG-CD2	6.31	1.73	1.52
2	D	364	LEU	CA-C	6.31	1.61	1.52
2	B	314	ASN	C-O	-6.30	1.15	1.24
1	C	100	ASP	CA-CB	6.30	1.63	1.53
1	I	146	ASP	C-O	-6.30	1.15	1.24
1	K	163	GLN	CG-CD	6.30	1.67	1.52
1	I	66	SER	CA-C	-6.30	1.44	1.53
2	J	520	ALA	C-O	6.29	1.31	1.23
1	K	38	ARG	CG-CD	6.29	1.71	1.52
1	A	186	ASP	CA-CB	-6.29	1.44	1.53
2	F	318	LYS	CE-NZ	6.29	1.68	1.49
1	E	186	ASP	C-O	-6.29	1.16	1.23
2	D	450	ARG	CZ-NH1	6.28	1.41	1.32
1	G	150	GLN	CA-C	-6.28	1.45	1.52
1	K	98	THR	CA-C	6.27	1.61	1.52
2	H	372	LEU	CA-C	6.27	1.61	1.52
2	H	500	ALA	C-O	-6.27	1.16	1.24
1	E	200	PHE	CB-CG	6.27	1.65	1.50
2	D	389	GLY	C-O	-6.27	1.16	1.24
1	I	158	LEU	CA-C	6.27	1.61	1.52
1	E	122	MET	CA-C	6.26	1.60	1.52
2	J	530	GLN	CA-CB	-6.25	1.44	1.53
1	G	196	VAL	C-O	6.25	1.31	1.24
2	H	456	TRP	N-CA	-6.25	1.38	1.46
1	A	130	LEU	N-CA	-6.25	1.38	1.46
2	L	494	SER	CA-C	6.24	1.61	1.52
2	F	378	ILE	C-O	6.24	1.31	1.23
1	A	104	TRP	C-O	6.24	1.31	1.23
2	H	426	VAL	N-CA	-6.24	1.39	1.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	491	ILE	CA-C	6.24	1.60	1.52
2	J	381	ALA	CA-C	-6.24	1.44	1.52
2	F	305	ASN	CA-C	6.23	1.61	1.52
2	H	493	LYS	C-O	-6.22	1.15	1.24
1	K	157	VAL	CA-CB	6.22	1.63	1.54
2	D	335	ALA	CA-CB	6.22	1.63	1.53
2	H	441	THR	N-CA	-6.22	1.39	1.46
1	G	125	HIS	C-O	6.22	1.31	1.23
2	H	315	TRP	CB-CG	-6.22	1.30	1.50
2	D	316	HIS	CA-C	6.21	1.61	1.53
2	D	527	LEU	C-O	6.21	1.31	1.23
1	C	97	THR	C-O	6.20	1.31	1.23
1	I	8	THR	CA-CB	-6.20	1.42	1.53
1	A	168	GLU	CD-OE1	6.20	1.37	1.25
1	C	25	ALA	CA-CB	-6.20	1.43	1.53
1	I	190	GLN	CA-C	-6.20	1.45	1.52
1	G	65	ASP	CA-CB	-6.19	1.44	1.53
2	D	534	HIS	C-O	6.19	1.31	1.23
2	D	441	THR	CB-CG2	6.18	1.73	1.52
1	E	135	ILE	CA-CB	6.18	1.61	1.53
2	B	381	ALA	CA-CB	-6.18	1.43	1.53
1	G	35	ILE	CA-CB	-6.18	1.46	1.53
1	A	154	LYS	CD-CE	6.17	1.71	1.52
1	I	75	ALA	CA-CB	-6.17	1.42	1.53
2	J	414	ARG	NE-CZ	6.17	1.39	1.33
2	L	402	ALA	CA-CB	6.17	1.62	1.53
1	A	111	PRO	C-O	-6.16	1.16	1.23
1	G	9	PRO	CA-C	6.16	1.60	1.52
1	A	165	GLN	CG-CD	6.16	1.67	1.52
1	C	102	GLY	N-CA	6.16	1.55	1.45
2	J	493	LYS	CA-C	6.16	1.61	1.52
1	C	170	LEU	C-O	-6.15	1.15	1.24
2	F	441	THR	N-CA	-6.15	1.36	1.46
1	A	184	ARG	CA-CB	-6.15	1.44	1.53
2	H	493	LYS	CG-CD	6.15	1.70	1.52
2	J	388	TYR	CE1-CZ	6.15	1.53	1.38
2	F	473	LYS	CG-CD	-6.15	1.34	1.52
2	J	465	ILE	C-O	6.14	1.30	1.24
1	K	38	ARG	CD-NE	6.14	1.54	1.46
2	B	507	LYS	CA-C	6.14	1.60	1.52
1	K	179	GLY	C-O	6.14	1.33	1.24
2	D	450	ARG	CZ-NH2	6.14	1.41	1.33

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	396	LEU	CA-C	6.14	1.60	1.52
2	B	440	ARG	C-O	6.14	1.31	1.23
2	D	493	LYS	C-O	-6.13	1.15	1.24
2	F	475	ILE	CA-C	6.13	1.60	1.52
1	C	70	VAL	N-CA	-6.11	1.39	1.46
1	A	112	GLY	C-O	-6.11	1.16	1.23
1	G	71	TRP	C-O	6.11	1.30	1.23
1	E	95	THR	CA-CB	6.10	1.62	1.53
2	F	313	ARG	C-O	-6.10	1.15	1.24
1	I	35	ILE	CB-CG2	-6.10	1.32	1.52
1	E	128	ILE	C-O	6.09	1.30	1.24
1	G	163	GLN	CD-OE1	6.09	1.35	1.23
2	F	500	ALA	CA-CB	-6.09	1.43	1.53
2	B	366	ASN	C-O	-6.09	1.15	1.24
1	I	12	THR	N-CA	-6.09	1.38	1.46
2	L	357	GLY	CA-C	6.08	1.60	1.51
2	F	502	GLN	CD-OE1	6.08	1.35	1.23
2	J	503	GLN	C-O	-6.08	1.16	1.24
2	F	517	ASP	N-CA	-6.08	1.38	1.46
1	K	97	THR	C-O	6.08	1.31	1.23
1	K	192	GLU	C-O	6.08	1.31	1.23
2	J	537	ASN	CA-C	6.08	1.61	1.52
1	K	108	THR	CA-CB	6.08	1.62	1.54
1	I	120	VAL	CA-CB	-6.07	1.46	1.54
1	C	183	TYR	CB-CG	-6.07	1.38	1.51
1	A	108	THR	CA-C	6.07	1.60	1.53
1	E	192	GLU	CG-CD	6.07	1.67	1.52
1	E	110	LYS	CA-C	6.07	1.59	1.52
2	H	441	THR	CA-CB	6.07	1.62	1.53
1	A	95	THR	C-O	6.05	1.30	1.23
1	G	30	THR	CB-CG2	6.05	1.72	1.52
1	A	160	LEU	C-O	-6.04	1.16	1.24
2	L	426	VAL	C-O	-6.04	1.18	1.24
2	D	313	ARG	NE-CZ	6.04	1.39	1.33
1	E	171	ILE	CG1-CD1	-6.04	1.28	1.51
2	L	316	HIS	C-N	6.03	1.41	1.33
1	A	110	LYS	N-CA	-6.03	1.36	1.46
1	A	166	ARG	C-O	-6.03	1.16	1.24
1	C	198	PHE	CD1-CE1	6.02	1.56	1.38
2	H	531	ARG	CA-C	6.02	1.60	1.52
1	A	47	GLU	N-CA	-6.01	1.39	1.46
2	L	456	TRP	CA-C	-6.01	1.45	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	149	ALA	C-O	6.01	1.31	1.24
1	K	194	GLU	C-O	6.01	1.31	1.23
1	C	108	THR	CA-C	6.00	1.60	1.53
2	J	439	PHE	N-CA	-6.00	1.38	1.45
2	L	499	GLU	C-O	-6.00	1.16	1.24
1	A	71	TRP	N-CA	-6.00	1.38	1.46
1	E	75	ALA	C-O	-6.00	1.16	1.24
1	A	196	VAL	CA-CB	6.00	1.61	1.54
2	D	303	GLN	CA-CB	6.00	1.69	1.54
1	I	167	ARG	NE-CZ	6.00	1.39	1.33
1	A	47	GLU	CD-OE2	5.99	1.36	1.25
1	A	98	THR	CA-CB	5.99	1.63	1.53
2	D	520	ALA	C-O	5.99	1.31	1.23
2	J	471	ALA	C-O	-5.99	1.16	1.24
1	K	155	CYS	N-CA	5.99	1.53	1.45
2	L	326	THR	CA-C	5.99	1.61	1.52
2	F	482	GLY	CA-C	5.98	1.60	1.51
2	L	352	SER	N-CA	5.98	1.53	1.46
2	H	431	THR	CA-CB	5.98	1.63	1.53
2	F	522	ARG	CZ-NH2	5.98	1.41	1.33
2	F	433	SER	CA-CB	5.98	1.63	1.53
1	E	31	ARG	C-O	5.97	1.31	1.23
2	J	438	SER	CB-OG	-5.97	1.30	1.42
1	K	153	ALA	CA-CB	5.97	1.63	1.53
1	I	179	GLY	C-O	5.97	1.31	1.23
1	I	150	GLN	CD-OE1	5.96	1.34	1.23
2	H	320	LEU	C-O	-5.96	1.16	1.24
1	K	199	ASP	C-O	5.96	1.30	1.23
2	H	377	ARG	C-O	-5.96	1.16	1.24
2	F	528	ARG	CZ-NH1	5.96	1.41	1.32
1	G	172	ALA	CA-C	5.96	1.60	1.52
2	H	434	ASP	N-CA	-5.96	1.38	1.46
2	J	344	SER	C-O	-5.96	1.16	1.24
2	B	470	ILE	C-O	-5.95	1.16	1.24
2	J	396	LEU	C-O	5.95	1.31	1.24
2	L	330	ARG	N-CA	5.95	1.53	1.46
1	A	66	SER	CA-C	-5.95	1.44	1.53
1	K	118	ALA	CA-CB	-5.95	1.43	1.53
1	C	192	GLU	CG-CD	5.94	1.67	1.52
2	B	368	ASN	CG-OD1	5.94	1.34	1.23
1	C	12	THR	CA-C	-5.94	1.45	1.52
2	D	479	TYR	CA-C	5.94	1.60	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	486	ILE	N-CA	5.94	1.53	1.46
1	G	70	VAL	CA-C	-5.93	1.45	1.52
1	E	192	GLU	CD-OE1	5.93	1.36	1.25
2	B	511	ASN	CA-C	5.93	1.60	1.52
1	C	56	TYR	N-CA	-5.93	1.38	1.45
2	D	356	PHE	C-O	-5.93	1.16	1.23
2	J	438	SER	C-O	5.93	1.31	1.23
2	H	333	ARG	CB-CG	5.92	1.70	1.52
2	L	475	ILE	CA-C	5.92	1.59	1.52
2	B	501	VAL	C-O	-5.92	1.17	1.24
1	A	72	GLN	N-CA	5.92	1.53	1.45
2	D	414	ARG	NE-CZ	5.91	1.39	1.33
2	D	319	ALA	CA-C	5.91	1.60	1.52
2	D	481	GLU	N-CA	5.91	1.53	1.46
1	C	192	GLU	CD-OE2	5.90	1.36	1.25
2	L	414	ARG	CB-CG	5.90	1.70	1.52
1	C	24	GLU	CG-CD	5.90	1.66	1.52
2	J	488	MET	SD-CE	-5.89	1.64	1.79
1	C	51	LEU	C-O	5.89	1.31	1.23
2	L	397	VAL	CA-CB	5.89	1.61	1.54
1	I	174	ARG	CZ-NH2	5.89	1.41	1.33
2	J	368	ASN	CB-CG	5.88	1.66	1.52
2	J	528	ARG	CA-C	-5.88	1.45	1.52
1	K	142	ARG	CZ-NH1	5.88	1.41	1.32
1	K	184	ARG	CZ-NH2	5.88	1.41	1.33
2	D	367	PHE	C-O	5.88	1.31	1.23
2	B	461	ILE	CA-C	5.87	1.60	1.52
1	E	188	ARG	CA-C	5.87	1.60	1.53
2	J	343	ILE	CG1-CD1	5.87	1.74	1.51
2	D	421	PRO	CA-CB	5.87	1.62	1.53
1	C	162	GLU	CA-C	-5.86	1.45	1.52
1	I	189	ILE	C-O	5.86	1.31	1.24
1	K	117	ALA	N-CA	-5.86	1.39	1.46
1	E	38	ARG	N-CA	-5.86	1.38	1.46
1	C	15	PRO	C-O	-5.85	1.17	1.24
2	J	483	ASP	CA-C	5.85	1.60	1.52
1	G	143	LEU	C-O	5.85	1.31	1.24
2	L	376	GLU	CB-CG	-5.85	1.34	1.52
1	A	128	ILE	CA-C	5.85	1.59	1.52
2	D	376	GLU	CD-OE1	5.85	1.36	1.25
2	F	303	GLN	CA-C	5.85	1.59	1.52
1	A	29	PRO	CA-C	5.84	1.59	1.52

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	125	HIS	CA-C	-5.84	1.45	1.52
1	G	188	ARG	CZ-NH2	5.84	1.41	1.33
2	D	364	LEU	CB-CG	-5.84	1.41	1.53
2	D	414	ARG	CZ-NH1	5.83	1.41	1.32
1	A	126	ILE	CA-CB	-5.83	1.47	1.54
1	K	173	LYS	N-CA	5.83	1.53	1.46
2	B	310	ILE	CA-C	5.83	1.59	1.52
1	G	154	LYS	CE-NZ	5.82	1.66	1.49
2	L	478	LEU	CA-C	5.82	1.60	1.52
2	B	410	HIS	C-O	-5.82	1.16	1.23
2	D	414	ARG	CB-CG	5.82	1.69	1.52
2	F	324	TYR	CE2-CZ	5.82	1.52	1.38
1	K	200	PHE	CG-CD2	5.81	1.51	1.38
2	L	523	PHE	CD2-CE2	5.81	1.56	1.38
1	C	156	PRO	C-O	5.81	1.32	1.24
2	J	450	ARG	CZ-NH2	5.81	1.41	1.33
1	A	162	GLU	C-O	-5.80	1.17	1.24
1	E	20	GLY	CA-C	-5.80	1.43	1.51
1	E	122	MET	C-O	-5.80	1.17	1.23
1	K	135	ILE	CA-CB	5.80	1.61	1.53
1	E	18	HIS	C-O	-5.79	1.17	1.24
2	L	507	LYS	CE-NZ	5.79	1.66	1.49
1	E	85	LEU	C-O	-5.78	1.16	1.24
1	C	76	ASN	CA-C	-5.78	1.44	1.52
1	I	43	ASP	CA-CB	5.78	1.61	1.53
2	F	529	GLY	C-O	-5.78	1.17	1.23
2	L	454	ASN	CA-CB	5.78	1.57	1.53
2	L	447	TYR	CA-C	5.77	1.57	1.52
1	G	199	ASP	N-CA	-5.77	1.39	1.46
1	A	188	ARG	CZ-NH1	5.77	1.40	1.32
2	L	497	ASN	C-O	-5.76	1.17	1.24
1	E	160	LEU	CA-C	5.76	1.60	1.52
2	H	537	ASN	N-CA	5.76	1.53	1.46
1	G	47	GLU	CD-OE2	5.75	1.36	1.25
2	J	322	PRO	C-O	-5.75	1.16	1.24
2	F	361	HIS	C-O	-5.75	1.16	1.24
2	F	449	TRP	C-O	-5.75	1.16	1.23
2	B	382	GLY	C-O	5.75	1.30	1.23
2	D	344	SER	CA-C	5.75	1.60	1.52
2	F	518	CYS	C-O	5.75	1.30	1.23
1	G	163	GLN	CG-CD	5.74	1.66	1.52
2	J	434	ASP	CG-OD1	5.74	1.36	1.25

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	151	ALA	C-O	5.74	1.30	1.24
1	E	142	ARG	CZ-NH2	5.74	1.41	1.33
2	B	305	ASN	CB-CG	5.74	1.66	1.52
2	D	525	ILE	CA-CB	-5.74	1.47	1.54
2	F	493	LYS	CA-C	5.74	1.62	1.52
2	B	423	PHE	CA-C	-5.74	1.45	1.52
2	D	344	SER	C-O	-5.74	1.17	1.24
2	F	337	VAL	CA-CB	-5.74	1.47	1.53
1	C	99	PHE	CD1-CE1	5.74	1.55	1.38
2	L	449	TRP	CZ2-CH2	5.73	1.48	1.37
2	H	440	ARG	CD-NE	-5.73	1.38	1.46
1	I	156	PRO	C-O	5.73	1.32	1.24
1	G	28	ASN	C-N	5.73	1.41	1.33
2	L	379	ILE	N-CA	-5.72	1.39	1.46
1	G	158	LEU	CA-C	5.72	1.60	1.52
2	L	363	LEU	C-O	-5.72	1.16	1.24
2	H	511	ASN	C-O	-5.72	1.16	1.24
1	E	165	GLN	CG-CD	5.71	1.66	1.52
1	G	199	ASP	CG-OD2	5.71	1.36	1.25
2	J	339	ILE	N-CA	5.71	1.53	1.46
2	D	366	ASN	C-O	-5.71	1.16	1.24
2	H	507	LYS	C-O	5.71	1.30	1.23
2	H	351	PHE	C-O	-5.71	1.16	1.24
2	J	335	ALA	C-O	5.70	1.30	1.23
1	A	153	ALA	CA-CB	5.70	1.62	1.53
1	C	20	GLY	C-O	-5.70	1.16	1.23
2	H	461	ILE	CA-C	5.70	1.59	1.52
1	G	79	TYR	CA-C	5.69	1.60	1.52
2	J	481	GLU	CA-C	5.69	1.59	1.52
1	E	47	GLU	CD-OE1	5.69	1.36	1.25
2	H	374	ILE	CA-C	5.69	1.59	1.52
2	H	383	ARG	CB-CG	-5.69	1.35	1.52
1	K	47	GLU	CD-OE2	5.69	1.36	1.25
1	K	144	TYR	CD2-CE2	5.68	1.55	1.38
1	A	167	ARG	C-O	-5.68	1.17	1.24
2	F	456	TRP	N-CA	-5.68	1.39	1.46
1	K	153	ALA	CA-C	5.68	1.60	1.52
1	A	7	GLU	C-O	5.68	1.30	1.23
1	A	38	ARG	N-CA	-5.68	1.38	1.46
2	J	376	GLU	CD-OE1	5.68	1.36	1.25
2	L	460	HIS	N-CA	5.68	1.53	1.45
2	L	358	ALA	CA-CB	5.67	1.63	1.53

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	176	GLU	CD-OE2	5.67	1.36	1.25
1	I	149	ALA	C-O	5.67	1.30	1.24
2	F	525	ILE	CA-C	5.66	1.59	1.52
2	L	409	ARG	CZ-NH2	5.66	1.40	1.33
2	J	518	CYS	CA-C	5.65	1.59	1.52
1	A	137	ILE	CA-CB	-5.65	1.47	1.54
1	G	25	ALA	CA-C	5.65	1.60	1.52
2	J	374	ILE	N-CA	5.65	1.53	1.46
2	L	369	ASN	N-CA	-5.65	1.39	1.46
2	L	439	PHE	CD1-CE1	5.65	1.55	1.38
1	C	184	ARG	CA-CB	-5.65	1.45	1.53
2	H	338	SER	N-CA	5.64	1.53	1.46
2	B	386	ASP	CA-C	5.64	1.61	1.53
1	C	8	THR	C-O	5.64	1.30	1.24
1	C	115	ASN	C-O	-5.64	1.17	1.23
2	J	499	GLU	C-O	-5.64	1.17	1.24
1	I	94	ARG	N-CA	-5.64	1.38	1.45
1	C	26	ALA	CA-CB	5.63	1.63	1.53
1	C	92	PHE	N-CA	-5.63	1.39	1.45
1	I	124	PRO	C-O	5.63	1.30	1.23
1	I	185	PHE	C-N	-5.63	1.25	1.33
2	B	397	VAL	CA-CB	5.63	1.61	1.54
1	I	118	ALA	CA-CB	-5.63	1.43	1.53
2	L	367	PHE	C-O	5.63	1.31	1.24
2	L	414	ARG	CZ-NH2	5.63	1.40	1.33
1	K	123	ALA	C-O	5.62	1.30	1.23
1	G	180	LYS	CA-C	5.62	1.59	1.52
2	F	338	SER	C-O	-5.62	1.17	1.23
2	F	368	ASN	CB-CG	5.62	1.66	1.52
2	D	378	ILE	CA-CB	5.61	1.64	1.55
1	E	53	GLY	C-O	5.61	1.30	1.24
1	G	188	ARG	NE-CZ	5.61	1.39	1.33
1	C	109	VAL	CA-CB	5.61	1.64	1.55
1	K	176	GLU	C-O	5.61	1.30	1.23
2	D	520	ALA	CA-CB	-5.60	1.43	1.54
1	I	177	VAL	CA-CB	5.60	1.61	1.54
1	C	195	THR	CA-C	5.60	1.59	1.52
2	F	522	ARG	CZ-NH1	5.60	1.40	1.32
2	B	528	ARG	CB-CG	5.60	1.69	1.52
2	J	377	ARG	CB-CG	5.60	1.69	1.52
2	H	367	PHE	C-O	5.60	1.31	1.24
1	K	87	ASN	CA-C	-5.59	1.45	1.52

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	180	LYS	C-O	5.59	1.30	1.24
2	D	435	GLY	C-O	-5.59	1.16	1.24
2	F	408	GLU	CD-OE2	5.59	1.35	1.25
1	E	15	PRO	CA-CB	5.59	1.61	1.53
2	F	441	THR	CA-C	5.59	1.59	1.52
2	B	457	ARG	CA-CB	5.59	1.61	1.53
2	H	403	ASN	CG-OD1	5.59	1.34	1.23
2	F	379	ILE	CA-C	5.59	1.59	1.52
1	K	113	VAL	CA-CB	5.59	1.61	1.54
1	C	192	GLU	C-O	5.58	1.30	1.23
1	G	55	VAL	CB-CG2	5.58	1.71	1.52
1	K	78	GLU	CD-OE1	5.58	1.35	1.25
1	K	90	ASN	CA-C	5.58	1.59	1.52
1	K	165	GLN	CG-CD	5.58	1.66	1.52
1	K	192	GLU	CG-CD	5.58	1.66	1.52
1	G	145	PHE	N-CA	5.58	1.52	1.45
2	H	452	GLY	CA-C	5.58	1.60	1.51
1	K	151	ALA	CA-C	5.57	1.60	1.52
2	L	511	ASN	C-O	-5.57	1.17	1.24
1	C	180	LYS	CG-CD	5.57	1.69	1.52
1	K	190	GLN	CA-C	-5.57	1.45	1.52
1	G	15	PRO	C-O	-5.57	1.17	1.24
1	I	64	ARG	CZ-NH2	5.57	1.40	1.33
1	K	175	CYS	C-O	5.56	1.29	1.23
2	L	384	VAL	CA-C	-5.56	1.45	1.52
2	F	357	GLY	C-O	5.56	1.30	1.23
1	C	172	ALA	CA-CB	-5.56	1.44	1.53
2	H	503	GLN	C-O	-5.56	1.17	1.24
1	E	50	LEU	CA-C	5.55	1.59	1.52
2	H	380	VAL	CB-CG2	-5.55	1.34	1.52
2	J	537	ASN	CA-CB	5.55	1.63	1.53
1	E	69	GLU	CA-C	5.55	1.59	1.52
1	I	161	ILE	CA-CB	5.55	1.60	1.53
1	I	176	GLU	C-O	5.55	1.30	1.23
2	F	367	PHE	C-O	5.54	1.30	1.24
2	H	532	LYS	N-CA	5.54	1.53	1.45
1	A	64	ARG	CZ-NH1	5.54	1.40	1.32
2	F	414	ARG	NE-CZ	5.54	1.39	1.33
1	K	167	ARG	C-O	5.54	1.31	1.24
2	J	343	ILE	CA-C	5.53	1.60	1.52
2	J	504	LEU	CB-CG	5.53	1.64	1.53
1	G	173	LYS	CA-CB	5.53	1.60	1.53

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	66	SER	CB-OG	-5.53	1.31	1.42
1	K	174	ARG	C-O	5.53	1.30	1.23
1	C	196	VAL	CA-C	5.52	1.59	1.52
2	H	494	SER	CA-C	5.52	1.60	1.52
2	H	363	LEU	N-CA	-5.52	1.38	1.46
1	I	117	ALA	CA-CB	-5.52	1.44	1.53
1	K	116	ASN	CA-C	5.52	1.60	1.53
1	G	178	ASP	C-O	5.52	1.30	1.23
1	K	114	VAL	N-CA	5.52	1.52	1.46
2	B	311	ARG	C-O	5.52	1.30	1.23
2	B	360	ASP	N-CA	5.51	1.53	1.46
2	L	420	ASP	C-O	5.51	1.30	1.24
1	A	172	ALA	CA-C	5.51	1.59	1.52
2	J	532	LYS	N-CA	5.51	1.52	1.45
1	K	126	ILE	CA-C	5.51	1.59	1.52
2	D	456	TRP	CZ3-CH2	5.50	1.54	1.40
1	I	10	SER	C-O	-5.50	1.17	1.23
1	I	182	ALA	C-O	-5.50	1.17	1.23
1	A	31	ARG	CZ-NH2	5.49	1.40	1.33
2	F	386	ASP	C-O	5.49	1.30	1.23
2	L	387	GLN	CB-CG	-5.49	1.35	1.52
2	B	468	PRO	C-O	-5.49	1.17	1.24
1	A	82	ALA	C-O	-5.49	1.16	1.23
1	C	168	GLU	CD-OE2	5.49	1.35	1.25
1	G	198	PHE	N-CA	-5.49	1.39	1.45
1	C	47	GLU	CD-OE1	5.49	1.35	1.25
1	I	155	CYS	CA-C	-5.49	1.46	1.53
1	E	26	ALA	C-O	5.49	1.31	1.24
1	K	188	ARG	CZ-NH1	5.48	1.40	1.32
2	L	336	LEU	CA-CB	5.48	1.62	1.53
1	E	101	ALA	C-N	5.48	1.40	1.33
1	C	159	ASN	C-O	5.48	1.32	1.24
2	H	378	ILE	CA-C	-5.48	1.46	1.52
1	G	168	GLU	CD-OE1	5.48	1.35	1.25
1	C	52	LEU	C-O	-5.47	1.17	1.23
2	H	468	PRO	C-O	-5.47	1.17	1.24
2	H	530	GLN	N-CA	-5.47	1.39	1.46
2	H	394	ASN	CA-C	-5.46	1.46	1.53
2	J	442	ILE	CA-C	5.46	1.59	1.52
2	L	414	ARG	CD-NE	5.46	1.53	1.46
2	H	476	THR	C-O	5.46	1.30	1.23
2	D	515	PRO	CA-CB	5.46	1.61	1.53

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	108	THR	CA-CB	5.46	1.61	1.54
1	I	143	LEU	CA-C	5.45	1.59	1.52
2	F	526	VAL	CB-CG2	5.45	1.70	1.52
1	G	3	GLU	CD-OE2	5.45	1.35	1.25
2	H	337	VAL	C-O	5.45	1.30	1.24
2	D	440	ARG	C-O	5.45	1.30	1.24
1	K	170	LEU	CG-CD2	5.45	1.70	1.52
2	L	331	SER	CA-C	5.45	1.59	1.52
2	H	455	ASP	C-O	5.45	1.30	1.23
2	J	390	LYS	CD-CE	5.45	1.68	1.52
1	A	80	GLN	CA-CB	5.44	1.61	1.53
2	F	506	ALA	C-O	5.44	1.30	1.24
2	L	321	THR	CA-CB	5.44	1.60	1.53
2	B	457	ARG	CA-C	5.44	1.59	1.53
1	K	93	GLY	N-CA	5.44	1.50	1.45
2	B	395	THR	C-O	5.44	1.30	1.23
2	B	499	GLU	CD-OE1	5.44	1.35	1.25
2	L	322	PRO	N-CA	-5.43	1.40	1.47
2	B	465	ILE	CA-C	5.43	1.59	1.52
2	B	507	LYS	CE-NZ	5.43	1.65	1.49
2	F	323	ASP	CG-OD2	-5.43	1.15	1.25
1	A	166	ARG	CZ-NH1	5.43	1.40	1.32
2	J	351	PHE	N-CA	-5.43	1.39	1.46
2	F	493	LYS	CG-CD	5.43	1.68	1.52
2	F	414	ARG	CA-CB	5.43	1.61	1.53
1	G	5	LEU	CB-CG	5.43	1.64	1.53
2	F	449	TRP	CG-CD1	5.42	1.50	1.36
1	K	97	THR	CA-C	5.42	1.59	1.52
1	I	7	GLU	CA-C	5.42	1.59	1.52
2	D	473	LYS	CA-C	5.42	1.59	1.52
2	H	313	ARG	NE-CZ	5.42	1.39	1.33
2	F	354	LEU	C-O	5.42	1.30	1.23
1	K	196	VAL	N-CA	-5.42	1.39	1.46
2	H	414	ARG	CZ-NH1	5.41	1.40	1.32
1	I	36	TRP	C-O	-5.41	1.17	1.24
2	J	473	LYS	CG-CD	-5.41	1.36	1.52
2	B	363	LEU	C-O	-5.41	1.16	1.24
2	F	480	PHE	CB-CG	-5.41	1.38	1.50
1	E	174	ARG	CZ-NH1	5.41	1.40	1.32
1	I	189	ILE	CA-CB	-5.41	1.47	1.54
1	A	55	VAL	CA-CB	5.41	1.61	1.54
2	F	474	LEU	C-O	-5.41	1.17	1.23

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	23	LEU	CG-CD1	5.41	1.70	1.52
1	G	68	LEU	C-O	-5.41	1.17	1.23
2	L	302	ALA	CA-C	5.41	1.59	1.52
1	G	91	SER	CA-C	5.40	1.60	1.52
1	C	183	TYR	C-O	-5.40	1.17	1.24
2	L	403	ASN	C-O	5.40	1.30	1.23
1	E	41	LYS	CA-C	5.40	1.60	1.53
1	C	64	ARG	CZ-NH1	5.40	1.40	1.32
1	E	67	PHE	CA-C	5.40	1.59	1.52
2	H	530	GLN	CG-CD	5.40	1.65	1.52
1	I	150	GLN	CD-NE2	5.39	1.44	1.33
1	A	177	VAL	C-O	5.39	1.30	1.24
2	H	476	THR	N-CA	-5.39	1.38	1.46
2	J	379	ILE	CA-CB	5.39	1.60	1.54
1	E	158	LEU	C-O	-5.39	1.17	1.24
1	K	161	ILE	CA-C	5.39	1.59	1.52
1	C	74	ASP	C-O	5.38	1.30	1.23
1	G	188	ARG	CA-C	5.38	1.59	1.52
2	J	326	THR	CA-CB	5.38	1.62	1.53
2	B	493	LYS	CE-NZ	5.38	1.65	1.49
1	G	185	PHE	C-O	-5.38	1.17	1.24
1	C	31	ARG	CA-C	5.38	1.60	1.53
1	I	72	GLN	CD-NE2	5.38	1.44	1.33
2	H	523	PHE	CA-C	5.37	1.59	1.52
2	H	469	SER	C-O	-5.37	1.17	1.23
1	K	94	ARG	CD-NE	-5.37	1.38	1.46
2	D	522	ARG	CZ-NH1	5.37	1.40	1.32
2	H	323	ASP	CG-OD2	-5.37	1.15	1.25
2	B	328	ILE	C-O	-5.37	1.18	1.24
2	B	320	LEU	CA-CB	5.36	1.60	1.53
2	F	466	SER	C-O	5.36	1.30	1.24
2	F	524	ASP	N-CA	-5.36	1.39	1.46
2	D	398	GLU	N-CA	5.35	1.52	1.45
1	E	137	ILE	N-CA	5.35	1.52	1.46
1	E	74	ASP	N-CA	5.35	1.52	1.46
2	B	403	ASN	C-O	5.35	1.30	1.23
1	I	137	ILE	C-O	5.35	1.29	1.24
2	J	491	ILE	CA-C	5.35	1.59	1.52
2	D	367	PHE	N-CA	-5.35	1.39	1.46
2	B	492	VAL	C-O	-5.34	1.17	1.24
1	G	151	ALA	CA-CB	5.34	1.62	1.53
1	A	192	GLU	C-O	5.34	1.30	1.24

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	109	VAL	CB-CG1	-5.34	1.34	1.52
1	I	81	ASP	CA-C	-5.34	1.45	1.52
2	L	310	ILE	CA-C	5.33	1.60	1.52
2	B	493	LYS	C-O	-5.33	1.16	1.24
1	I	43	ASP	CB-CG	5.33	1.65	1.52
1	I	129	SER	C-O	5.33	1.30	1.24
2	B	335	ALA	CA-C	5.32	1.59	1.52
1	G	43	ASP	CA-C	5.32	1.61	1.52
2	H	367	PHE	CG-CD1	5.32	1.50	1.38
1	K	46	GLY	C-O	-5.32	1.18	1.23
2	B	445	GLY	C-O	-5.32	1.16	1.24
1	C	102	GLY	C-O	-5.32	1.18	1.24
2	H	383	ARG	CZ-NH2	5.32	1.40	1.33
1	C	139	LEU	CA-C	5.32	1.59	1.52
1	K	167	ARG	CA-C	-5.32	1.45	1.52
1	K	78	GLU	CA-C	5.31	1.59	1.52
2	H	473	LYS	CG-CD	-5.31	1.36	1.52
1	K	143	LEU	N-CA	5.31	1.52	1.46
2	B	467	GLY	C-N	5.31	1.39	1.34
2	H	438	SER	CB-OG	-5.31	1.31	1.42
1	G	7	GLU	CA-C	5.31	1.59	1.52
2	H	361	HIS	C-O	-5.31	1.16	1.24
2	B	473	LYS	CG-CD	-5.30	1.36	1.52
2	D	354	LEU	CA-C	5.30	1.59	1.52
2	H	414	ARG	NE-CZ	5.30	1.38	1.33
2	B	496	ALA	C-O	-5.30	1.17	1.24
2	D	469	SER	C-N	5.30	1.39	1.34
1	G	171	ILE	C-O	-5.30	1.18	1.24
1	C	14	GLY	CA-C	5.30	1.59	1.51
2	F	523	PHE	CA-C	5.30	1.58	1.52
2	J	337	VAL	CA-C	5.30	1.59	1.52
1	K	78	GLU	CG-CD	5.30	1.65	1.52
1	K	162	GLU	CD-OE2	5.30	1.35	1.25
1	E	52	LEU	C-O	-5.30	1.17	1.23
2	B	533	THR	C-O	5.30	1.30	1.23
1	K	43	ASP	CG-OD2	5.30	1.35	1.25
1	K	40	ALA	CA-C	-5.29	1.46	1.52
1	C	47	GLU	CD-OE2	5.29	1.35	1.25
2	F	304	ASP	CA-C	5.29	1.59	1.53
2	B	499	GLU	CA-CB	-5.29	1.44	1.53
2	L	315	TRP	CZ3-CH2	5.28	1.53	1.40
2	L	414	ARG	CZ-NH1	5.28	1.40	1.32

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	J	311	ARG	C-O	5.28	1.30	1.23
2	F	339	ILE	CA-CB	5.28	1.63	1.54
2	J	499	GLU	CD-OE1	5.28	1.35	1.25
2	D	311	ARG	CA-C	-5.27	1.46	1.52
1	E	175	CYS	C-O	5.27	1.29	1.23
2	J	346	THR	CA-CB	-5.27	1.44	1.53
1	K	164	PRO	CA-C	5.27	1.60	1.52
1	G	138	HIS	N-CA	-5.26	1.39	1.46
1	E	33	GLN	CA-C	5.26	1.58	1.52
2	J	514	ASN	C-O	-5.26	1.17	1.24
2	L	451	ASN	N-CA	-5.26	1.39	1.45
2	B	311	ARG	N-CA	-5.26	1.39	1.46
2	H	497	ASN	N-CA	-5.26	1.38	1.46
2	J	428	ARG	CD-NE	-5.26	1.38	1.46
2	L	337	VAL	N-CA	5.26	1.52	1.46
2	B	483	ASP	CA-C	5.26	1.59	1.52
2	F	499	GLU	CD-OE1	5.26	1.35	1.25
2	B	414	ARG	CD-NE	5.26	1.53	1.46
2	D	499	GLU	C-O	-5.26	1.17	1.24
1	E	72	GLN	CA-C	-5.26	1.46	1.52
2	L	381	ALA	N-CA	5.25	1.52	1.45
1	G	106	LEU	CG-CD2	5.25	1.69	1.52
2	H	457	ARG	CA-CB	5.25	1.62	1.53
2	J	411	LYS	N-CA	5.25	1.52	1.46
2	L	416	LEU	CG-CD2	-5.25	1.35	1.52
2	L	510	MET	SD-CE	5.25	1.92	1.79
1	E	45	PRO	CA-C	5.25	1.59	1.52
2	D	337	VAL	C-N	5.25	1.40	1.33
2	B	390	LYS	CD-CE	5.24	1.68	1.52
2	D	508	LEU	N-CA	5.24	1.52	1.46
1	A	93	GLY	C-O	5.24	1.29	1.23
1	A	180	LYS	CA-C	5.24	1.59	1.52
1	A	106	LEU	CB-CG	-5.23	1.43	1.53
2	F	377	ARG	N-CA	-5.23	1.39	1.46
1	G	68	LEU	CG-CD2	-5.23	1.35	1.52
2	B	434	ASP	N-CA	-5.23	1.39	1.46
2	L	492	VAL	CA-CB	-5.23	1.48	1.54
1	G	64	ARG	NE-CZ	5.23	1.38	1.33
1	I	5	LEU	CA-C	5.22	1.58	1.53
2	L	507	LYS	CD-CE	5.22	1.68	1.52
1	C	99	PHE	C-O	5.22	1.30	1.24
1	G	83	TYR	C-O	5.22	1.30	1.23

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	J	399	MET	CA-C	5.22	1.58	1.52
1	K	101	ALA	C-N	5.22	1.42	1.33
1	C	184	ARG	CD-NE	-5.22	1.39	1.46
1	K	196	VAL	CB-CG1	5.22	1.69	1.52
1	E	189	ILE	CA-C	-5.22	1.45	1.52
1	A	107	HIS	CA-CB	-5.22	1.46	1.53
2	J	337	VAL	CB-CG2	5.22	1.69	1.52
2	L	319	ALA	CA-C	5.21	1.59	1.52
2	J	360	ASP	C-O	-5.21	1.17	1.24
1	A	90	ASN	CA-C	5.21	1.58	1.52
1	A	104	TRP	CA-C	-5.21	1.46	1.52
1	C	197	PHE	CA-C	5.21	1.58	1.52
2	F	345	GLU	N-CA	-5.20	1.39	1.46
2	L	356	PHE	CA-C	-5.20	1.46	1.52
2	J	533	THR	CA-CB	5.20	1.61	1.53
2	F	529	GLY	N-CA	-5.19	1.40	1.45
2	B	531	ARG	CA-C	-5.19	1.46	1.52
1	G	176	GLU	CD-OE1	5.19	1.35	1.25
2	L	329	ALA	C-O	-5.19	1.17	1.24
1	A	135	ILE	N-CA	5.19	1.52	1.46
2	B	421	PRO	C-O	5.18	1.31	1.24
1	E	180	LYS	CE-NZ	5.18	1.64	1.49
2	H	460	HIS	N-CA	5.18	1.52	1.46
2	L	366	ASN	C-O	-5.18	1.17	1.24
2	D	455	ASP	C-O	5.17	1.30	1.23
1	K	5	LEU	CA-C	5.17	1.58	1.53
1	A	89	PHE	C-O	5.17	1.29	1.24
2	D	452	GLY	CA-C	5.17	1.59	1.51
2	D	309	VAL	C-O	-5.17	1.18	1.24
1	C	71	TRP	N-CA	-5.17	1.40	1.46
2	L	368	ASN	CA-CB	5.17	1.62	1.53
2	B	411	LYS	N-CA	5.17	1.52	1.46
1	G	185	PHE	CA-C	-5.17	1.46	1.52
1	I	40	ALA	N-CA	5.17	1.52	1.46
2	J	463	PHE	C-O	5.16	1.29	1.23
1	I	99	PHE	CA-C	5.16	1.59	1.52
2	J	334	GLN	C-N	-5.16	1.26	1.33
2	L	341	GLN	C-O	-5.16	1.17	1.23
1	C	36	TRP	CZ2-CH2	5.16	1.47	1.37
1	I	185	PHE	N-CA	5.16	1.53	1.46
2	L	533	THR	C-O	5.16	1.30	1.23
1	G	84	ASN	N-CA	5.16	1.52	1.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	336	LEU	CA-C	5.16	1.59	1.52
2	F	317	PRO	C-O	-5.16	1.18	1.23
1	A	14	GLY	CA-C	5.15	1.59	1.51
1	A	64	ARG	CZ-NH2	5.15	1.40	1.33
2	F	428	ARG	CD-NE	-5.15	1.39	1.46
1	E	25	ALA	C-O	-5.15	1.17	1.24
2	H	449	TRP	N-CA	5.15	1.52	1.46
2	F	441	THR	C-O	-5.15	1.18	1.23
2	F	531	ARG	C-O	5.15	1.30	1.23
2	H	442	ILE	CA-C	5.15	1.58	1.52
1	K	122	MET	N-CA	5.15	1.51	1.45
1	E	176	GLU	N-CA	5.14	1.52	1.46
2	L	538	CYS	CB-SG	-5.14	1.64	1.81
2	B	476	THR	CB-CG2	5.14	1.69	1.52
1	I	196	VAL	CA-CB	5.14	1.60	1.54
1	E	176	GLU	CG-CD	5.14	1.64	1.52
1	A	200	PHE	CG-CD1	5.13	1.49	1.38
1	E	36	TRP	CD2-CE3	5.13	1.48	1.40
1	K	62	LEU	C-O	5.13	1.30	1.23
1	E	35	ILE	CB-CG2	-5.13	1.35	1.52
1	I	99	PHE	N-CA	5.13	1.52	1.46
1	I	167	ARG	C-O	-5.13	1.18	1.24
1	G	170	LEU	C-O	-5.13	1.17	1.24
2	H	374	ILE	C-O	5.13	1.31	1.24
1	A	43	ASP	CG-OD2	5.13	1.35	1.25
2	B	515	PRO	C-O	-5.13	1.17	1.23
2	J	403	ASN	C-O	5.12	1.29	1.23
1	C	34	GLU	C-O	5.12	1.30	1.24
2	B	444	PRO	CA-CB	-5.12	1.46	1.53
1	C	165	GLN	CA-C	5.12	1.59	1.52
2	J	401	GLN	CA-C	5.12	1.59	1.52
2	D	537	ASN	CB-CG	5.12	1.64	1.52
2	F	303	GLN	N-CA	5.12	1.51	1.45
1	A	165	GLN	CA-C	5.11	1.59	1.52
2	L	396	LEU	CA-C	5.11	1.59	1.52
2	F	310	ILE	CA-CB	5.11	1.59	1.54
2	F	522	ARG	CA-C	5.11	1.58	1.52
2	H	406	GLY	CA-C	5.11	1.59	1.51
2	D	318	LYS	C-O	5.11	1.30	1.23
2	D	467	GLY	CA-C	5.11	1.59	1.51
2	J	422	ASN	CG-OD1	5.10	1.33	1.23
2	D	337	VAL	C-O	5.10	1.30	1.24

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	165	GLN	CG-CD	5.10	1.64	1.52
1	G	130	LEU	CA-C	5.10	1.59	1.52
2	B	415	TYR	CA-C	5.10	1.59	1.52
2	D	368	ASN	C-O	5.10	1.30	1.24
2	B	368	ASN	C-O	5.09	1.30	1.24
1	G	52	LEU	CG-CD2	-5.09	1.35	1.52
1	G	98	THR	N-CA	5.09	1.53	1.46
1	C	101	ALA	C-O	5.09	1.29	1.23
1	I	15	PRO	CA-C	-5.09	1.44	1.52
1	K	76	ASN	CA-C	-5.09	1.44	1.52
2	L	471	ALA	CA-CB	5.09	1.61	1.53
1	A	64	ARG	C-O	-5.08	1.17	1.24
2	B	303	GLN	CA-C	5.08	1.58	1.52
2	F	324	TYR	CG-CD1	5.08	1.50	1.39
1	E	120	VAL	CA-C	5.08	1.58	1.52
2	F	531	ARG	CZ-NH2	-5.08	1.26	1.33
2	L	301	PRO	CB-CG	5.08	1.75	1.49
1	C	133	ARG	CA-C	5.07	1.59	1.52
1	K	38	ARG	NE-CZ	5.07	1.38	1.33
1	E	163	GLN	CD-OE1	5.07	1.33	1.23
2	H	497	ASN	CA-C	5.07	1.58	1.52
1	C	88	ALA	N-CA	-5.06	1.40	1.46
1	E	174	ARG	CA-C	5.06	1.59	1.52
1	G	174	ARG	CZ-NH1	5.06	1.39	1.32
2	J	346	THR	N-CA	-5.06	1.39	1.46
1	G	100	ASP	C-O	5.06	1.29	1.24
1	C	136	ASN	N-CA	5.05	1.52	1.46
1	G	77	GLY	C-O	-5.05	1.16	1.24
1	I	47	GLU	CD-OE2	5.05	1.34	1.25
1	I	107	HIS	C-O	5.05	1.30	1.24
1	I	188	ARG	CZ-NH1	5.05	1.39	1.32
1	C	45	PRO	N-CA	5.04	1.52	1.47
2	J	452	GLY	CA-C	5.04	1.58	1.51
2	J	498	PRO	CA-CB	5.04	1.61	1.53
1	G	16	TYR	C-O	5.04	1.31	1.23
2	B	383	ARG	N-CA	-5.03	1.39	1.46
2	H	396	LEU	N-CA	-5.03	1.39	1.46
2	H	488	MET	SD-CE	-5.03	1.67	1.79
1	I	160	LEU	N-CA	-5.03	1.39	1.46
2	B	390	LYS	CG-CD	5.03	1.67	1.52
1	G	92	PHE	CE2-CZ	5.03	1.53	1.38
1	G	162	GLU	C-O	-5.03	1.18	1.24

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	K	59	ASN	CA-C	5.03	1.60	1.52
2	J	385	VAL	N-CA	-5.02	1.40	1.46
2	L	326	THR	C-O	-5.02	1.17	1.24
2	D	323	ASP	C-O	-5.02	1.17	1.24
2	J	459	ALA	N-CA	-5.02	1.39	1.46
1	A	98	THR	N-CA	5.02	1.53	1.46
2	D	501	VAL	N-CA	5.02	1.52	1.46
1	G	19	ILE	CA-CB	5.02	1.60	1.54
1	G	59	ASN	CA-C	5.02	1.59	1.52
2	F	504	LEU	C-O	-5.02	1.17	1.24
1	G	104	TRP	CA-C	-5.02	1.45	1.53
2	H	305	ASN	CA-C	5.02	1.59	1.52
2	L	534	HIS	CA-C	5.02	1.58	1.52
1	A	120	VAL	CA-C	5.01	1.57	1.53
2	F	411	LYS	CD-CE	5.01	1.67	1.52
1	A	114	VAL	CB-CG2	-5.01	1.36	1.52
1	A	143	LEU	CG-CD2	5.01	1.69	1.52
2	B	368	ASN	N-CA	5.01	1.52	1.46
1	G	134	GLY	C-O	-5.01	1.17	1.24
2	H	430	LEU	CA-CB	-5.01	1.43	1.53
1	C	53	GLY	C-O	5.01	1.29	1.23
2	H	359	HIS	CA-C	5.01	1.59	1.52
2	J	372	LEU	CA-C	5.01	1.59	1.53
1	C	1	PRO	CA-C	5.00	1.63	1.52
1	G	170	LEU	CA-C	5.00	1.59	1.52
1	I	13	ALA	CA-C	-5.00	1.45	1.52

All (561) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	538	CYS	CA-CB-SG	-13.31	83.78	114.40
2	H	538	CYS	CA-CB-SG	-12.13	86.50	114.40
2	J	538	CYS	CA-CB-SG	-11.94	86.95	114.40
1	K	94	ARG	NE-CZ-NH2	-11.40	108.94	119.20
1	C	184	ARG	NE-CZ-NH2	-11.05	109.26	119.20
2	J	440	ARG	CB-CG-CD	-10.87	86.30	111.30
1	G	37	ASN	N-CA-C	10.79	125.02	112.93
2	L	538	CYS	CA-CB-SG	-10.78	89.60	114.40
2	L	440	ARG	NE-CZ-NH1	10.69	132.19	121.50
2	H	458	PRO	CB-CA-C	-10.66	96.98	110.95
2	D	538	CYS	CA-CB-SG	-10.54	90.17	114.40
2	H	440	ARG	NE-CZ-NH2	-10.49	109.76	119.20

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	451	ASN	CA-C-O	10.43	125.72	119.77
1	C	37	ASN	N-CA-C	10.31	124.48	112.72
1	K	94	ARG	NE-CZ-NH1	10.22	131.72	121.50
2	D	440	ARG	CB-CG-CD	-9.96	88.39	111.30
2	F	452	GLY	N-CA-C	-9.87	100.29	112.23
1	C	99	PHE	CA-C-N	9.75	133.52	120.65
1	C	99	PHE	C-N-CA	9.75	133.52	120.65
1	I	94	ARG	NE-CZ-NH2	-9.55	110.61	119.20
2	B	494	SER	N-CA-C	-9.31	101.19	112.54
2	H	440	ARG	CB-CG-CD	-9.27	89.98	111.30
2	F	538	CYS	CA-CB-SG	-9.19	93.26	114.40
1	I	81	ASP	N-CA-C	9.15	124.26	113.18
1	I	94	ARG	NE-CZ-NH1	9.03	130.53	121.50
2	F	440	ARG	CB-CG-CD	-9.00	90.59	111.30
1	C	94	ARG	NE-CZ-NH2	-8.95	111.14	119.20
1	A	94	ARG	NE-CZ-NH2	-8.84	111.24	119.20
2	B	452	GLY	N-CA-C	-8.84	101.53	112.23
2	F	440	ARG	NE-CZ-NH1	8.78	130.28	121.50
2	B	428	ARG	NE-CZ-NH2	-8.69	111.38	119.20
1	G	94	ARG	NE-CZ-NH2	-8.62	111.44	119.20
2	B	507	LYS	CD-CE-NZ	8.53	139.21	111.90
2	L	440	ARG	CB-CG-CD	-8.49	91.77	111.30
2	D	452	GLY	CA-C-N	-8.46	111.01	119.56
2	D	452	GLY	C-N-CA	-8.46	111.01	119.56
2	F	443	LYS	CA-C-N	-8.45	112.03	120.31
2	F	443	LYS	C-N-CA	-8.45	112.03	120.31
2	B	428	ARG	CB-CG-CD	8.41	130.64	111.30
2	L	494	SER	N-CA-C	-8.39	102.31	112.54
1	A	23	LEU	N-CA-C	8.30	119.95	111.07
1	K	157	VAL	N-CA-C	-8.27	102.82	111.58
2	D	493	LYS	CD-CE-NZ	8.24	138.28	111.90
1	G	157	VAL	N-CA-C	-8.22	103.80	111.45
1	G	101	ALA	CA-C-O	-8.18	111.33	120.32
2	D	366	ASN	N-CA-C	8.16	123.05	113.18
1	C	94	ARG	NE-CZ-NH1	8.11	129.61	121.50
2	H	537	ASN	CA-C-N	8.08	136.24	121.70
2	H	537	ASN	C-N-CA	8.08	136.24	121.70
1	C	23	LEU	N-CA-C	8.07	119.70	111.07
2	H	352	SER	N-CA-C	8.00	121.01	111.33
2	J	486	ILE	CA-C-N	-7.99	111.56	119.87
2	J	486	ILE	C-N-CA	-7.99	111.56	119.87
2	J	458	PRO	CB-CA-C	-7.97	100.83	111.12

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	451	ASN	N-CA-C	-7.93	95.94	108.30
1	A	97	THR	N-CA-C	-7.92	97.42	110.17
2	B	440	ARG	CB-CG-CD	-7.91	93.12	111.30
2	L	458	PRO	CB-CA-C	-7.84	100.68	110.95
1	E	15	PRO	N-CA-C	7.83	124.23	113.65
1	E	124	PRO	CA-C-N	-7.82	109.94	122.53
1	E	124	PRO	C-N-CA	-7.82	109.94	122.53
2	F	486	ILE	N-CA-CB	7.76	116.51	110.45
1	G	94	ARG	NE-CZ-NH1	7.75	129.25	121.50
2	J	322	PRO	N-CA-C	7.75	128.43	112.47
1	C	100	ASP	O-C-N	7.74	130.08	122.03
2	F	458	PRO	CB-CA-C	-7.72	99.51	111.40
1	E	36	TRP	N-CA-C	7.72	118.72	108.07
2	H	428	ARG	NE-CZ-NH1	7.71	129.21	121.50
2	F	330	ARG	NE-CZ-NH2	-7.70	112.27	119.20
2	B	493	LYS	CD-CE-NZ	7.69	136.51	111.90
2	L	440	ARG	NE-CZ-NH2	-7.68	112.29	119.20
2	F	428	ARG	NE-CZ-NH2	-7.68	112.29	119.20
1	E	37	ASN	N-CA-C	7.66	121.45	112.72
1	I	9	PRO	CB-CA-C	-7.66	101.43	111.23
2	J	428	ARG	NE-CZ-NH2	-7.65	112.31	119.20
1	C	100	ASP	CA-C-N	7.65	135.24	123.23
1	C	100	ASP	C-N-CA	7.65	135.24	123.23
1	C	8	THR	CA-C-N	-7.64	112.04	120.14
1	C	8	THR	C-N-CA	-7.64	112.04	120.14
1	A	162	GLU	N-CA-C	7.62	120.55	111.33
2	F	535	PHE	N-CA-C	7.58	121.88	112.47
2	F	417	ALA	N-CA-C	-7.53	100.16	109.65
2	D	340	PRO	CB-CA-C	-7.48	101.15	110.95
1	A	21	LEU	N-CA-C	7.45	124.47	114.12
1	C	94	ARG	CD-NE-CZ	7.44	134.82	124.40
1	E	28	ASN	CA-C-N	-7.43	112.33	119.76
1	E	28	ASN	C-N-CA	-7.43	112.33	119.76
1	E	81	ASP	N-CA-C	7.42	121.58	112.23
2	J	452	GLY	N-CA-C	-7.42	102.97	112.10
2	D	440	ARG	NE-CZ-NH2	-7.39	112.55	119.20
1	K	167	ARG	N-CA-C	-7.38	103.26	111.82
2	D	428	ARG	NE-CZ-NH2	-7.36	112.58	119.20
1	K	150	GLN	CA-C-O	-7.36	113.12	120.70
1	C	180	LYS	CB-CA-C	7.34	122.60	109.38
2	L	450	ARG	NE-CZ-NH2	-7.34	112.59	119.20
2	F	452	GLY	CA-C-N	-7.34	112.15	119.56

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	452	GLY	C-N-CA	-7.34	112.15	119.56
2	F	537	ASN	CA-C-N	7.33	134.88	121.70
2	F	537	ASN	C-N-CA	7.33	134.88	121.70
2	B	418	PRO	N-CA-C	7.32	122.39	111.41
2	B	313	ARG	N-CA-C	7.32	121.66	112.87
1	A	94	ARG	CB-CG-CD	7.30	128.08	111.30
1	C	184	ARG	NE-CZ-NH1	7.27	128.77	121.50
2	H	450	ARG	NE-CZ-NH1	-7.24	114.26	121.50
2	F	507	LYS	CD-CE-NZ	7.23	135.05	111.90
1	C	94	ARG	CB-CG-CD	7.23	127.92	111.30
1	C	166	ARG	CG-CD-NE	-7.22	96.12	112.00
1	I	117	ALA	N-CA-C	7.22	120.01	111.71
2	D	492	VAL	N-CA-C	-7.21	103.27	110.62
2	F	333	ARG	NH1-CZ-NH2	7.19	128.65	119.30
2	H	428	ARG	CD-NE-CZ	7.19	134.47	124.40
1	C	160	LEU	N-CA-C	-7.18	104.52	113.28
1	C	81	ASP	N-CA-C	7.18	121.27	112.23
1	E	13	ALA	N-CA-C	-7.17	104.50	113.18
2	H	428	ARG	CB-CG-CD	7.13	127.71	111.30
1	A	94	ARG	CD-NE-CZ	7.12	134.36	124.40
2	D	497	ASN	CA-C-N	7.09	127.08	119.28
2	D	497	ASN	C-N-CA	7.09	127.08	119.28
2	B	467	GLY	CA-C-N	-7.09	112.38	120.04
2	B	467	GLY	C-N-CA	-7.09	112.38	120.04
2	D	458	PRO	CB-CA-C	-7.09	101.98	111.12
1	K	94	ARG	CD-NE-CZ	7.07	134.29	124.40
2	L	464	GLY	N-CA-C	-7.03	96.52	113.18
1	A	95	THR	N-CA-C	-7.03	98.89	108.38
1	E	44	ALA	CA-C-N	7.02	126.99	119.76
1	E	44	ALA	C-N-CA	7.02	126.99	119.76
2	B	445	GLY	CA-C-N	7.00	127.41	119.92
2	B	445	GLY	C-N-CA	7.00	127.41	119.92
1	A	4	LEU	N-CA-CB	-6.99	99.80	110.49
1	I	94	ARG	CD-NE-CZ	6.98	134.18	124.40
2	L	339	ILE	N-CA-C	-6.95	103.49	109.19
1	K	37	ASN	N-CA-C	6.93	121.45	112.92
2	B	330	ARG	NE-CZ-NH2	-6.92	112.97	119.20
2	J	468	PRO	N-CA-C	6.92	123.61	114.27
2	B	364	LEU	N-CA-C	-6.90	104.34	112.89
2	L	324	TYR	CA-C-N	6.89	129.82	120.38
2	L	324	TYR	C-N-CA	6.89	129.82	120.38
1	C	6	PRO	CB-CA-C	-6.87	101.98	110.98

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	390	LYS	CA-C-N	-6.84	112.94	119.85
2	L	390	LYS	C-N-CA	-6.84	112.94	119.85
2	D	420	ASP	N-CA-C	-6.82	97.76	109.15
1	G	106	LEU	CA-C-N	-6.81	113.39	122.99
1	G	106	LEU	C-N-CA	-6.81	113.39	122.99
2	L	380	VAL	N-CA-C	-6.81	97.81	107.75
1	K	184	ARG	NE-CZ-NH1	-6.79	114.71	121.50
1	C	69	GLU	N-CA-C	-6.77	98.88	109.72
2	J	492	VAL	N-CA-C	-6.76	104.17	110.53
2	D	325	LYS	N-CA-C	6.75	118.72	111.36
1	C	199	ASP	N-CA-C	-6.74	97.98	109.24
2	J	451	ASN	N-CA-C	-6.73	96.46	110.80
1	K	155	CYS	CA-C-N	-6.70	112.90	119.87
1	K	155	CYS	C-N-CA	-6.70	112.90	119.87
1	K	133	ARG	NE-CZ-NH2	-6.70	113.17	119.20
2	F	492	VAL	N-CA-C	-6.67	103.98	110.72
2	L	428	ARG	CB-CG-CD	6.67	126.64	111.30
2	D	428	ARG	CB-CG-CD	6.64	126.58	111.30
2	B	451	ASN	N-CA-C	-6.64	97.94	108.30
2	L	462	HIS	CA-C-O	-6.60	113.52	121.05
2	F	457	ARG	CB-CA-C	-6.60	99.56	109.26
2	D	426	VAL	N-CA-C	6.59	118.27	108.46
1	G	9	PRO	CB-CA-C	-6.58	102.81	111.23
2	H	322	PRO	N-CA-C	6.58	123.35	113.81
2	H	433	SER	CA-CB-OG	-6.55	97.99	111.10
2	F	451	ASN	N-CA-C	-6.55	96.86	110.80
2	F	322	PRO	N-CA-C	6.54	123.30	113.81
1	A	188	ARG	CB-CG-CD	6.54	126.34	111.30
1	C	102	GLY	CA-C-N	6.51	132.71	122.94
1	C	102	GLY	C-N-CA	6.51	132.71	122.94
1	G	41	LYS	CD-CE-NZ	-6.51	91.06	111.90
1	E	9	PRO	CB-CA-C	-6.50	102.46	110.98
2	H	416	LEU	N-CA-C	6.50	120.81	113.01
2	H	352	SER	CA-CB-OG	-6.50	98.10	111.10
1	E	180	LYS	CD-CE-NZ	6.49	132.68	111.90
2	L	483	ASP	CA-C-N	-6.49	112.91	120.12
2	L	483	ASP	C-N-CA	-6.49	112.91	120.12
1	C	133	ARG	NE-CZ-NH2	-6.49	113.36	119.20
1	K	41	LYS	CA-C-N	6.49	127.95	119.84
1	K	41	LYS	C-N-CA	6.49	127.95	119.84
2	J	467	GLY	CA-C-N	-6.47	113.05	120.04
2	J	467	GLY	C-N-CA	-6.47	113.05	120.04

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	451	ASN	N-CA-C	-6.47	98.21	108.30
2	L	428	ARG	NE-CZ-NH2	-6.47	113.38	119.20
1	I	129	SER	N-CA-C	-6.46	98.88	109.40
2	B	435	GLY	CA-C-O	-6.45	111.64	119.06
1	K	52	LEU	CA-CB-CG	6.45	138.86	116.30
2	B	440	ARG	N-CA-C	-6.43	98.49	109.24
2	L	434	ASP	N-CA-C	6.42	120.73	113.02
1	G	4	LEU	N-CA-CB	-6.41	100.85	110.60
1	C	101	ALA	CA-C-O	-6.41	113.23	121.11
2	D	450	ARG	CA-CB-CG	-6.40	101.30	114.10
2	L	532	LYS	N-CA-C	-6.40	100.09	110.20
2	J	324	TYR	N-CA-C	-6.40	96.73	107.99
1	K	97	THR	N-CA-C	-6.38	99.29	109.76
2	J	522	ARG	NE-CZ-NH1	-6.38	115.12	121.50
2	J	314	ASN	N-CA-C	-6.38	105.54	113.38
2	D	417	ALA	CA-C-N	-6.37	113.72	120.03
2	D	417	ALA	C-N-CA	-6.37	113.72	120.03
1	A	23	LEU	CA-C-N	6.37	129.06	120.65
1	A	23	LEU	C-N-CA	6.37	129.06	120.65
1	G	150	GLN	CA-C-O	-6.35	114.16	120.70
2	D	371	GLY	CA-C-O	6.34	127.34	121.38
1	G	150	GLN	N-CA-CB	6.33	119.25	110.07
2	B	337	VAL	N-CA-CB	-6.33	103.79	111.00
1	A	166	ARG	NE-CZ-NH2	-6.32	113.51	119.20
2	H	443	LYS	CA-C-N	-6.32	114.12	120.31
2	H	443	LYS	C-N-CA	-6.32	114.12	120.31
2	L	459	ALA	CA-C-N	-6.31	111.52	121.87
2	L	459	ALA	C-N-CA	-6.31	111.52	121.87
1	I	162	GLU	N-CA-C	6.30	118.67	111.11
1	E	101	ALA	CA-C-O	-6.29	113.78	121.58
2	F	457	ARG	NE-CZ-NH2	-6.28	113.54	119.20
2	F	439	PHE	CA-C-N	-6.28	114.14	122.99
2	F	439	PHE	C-N-CA	-6.28	114.14	122.99
1	G	97	THR	N-CA-C	-6.28	98.97	109.07
1	G	162	GLU	CB-CA-C	-6.28	101.03	110.88
2	J	494	SER	N-CA-C	-6.28	104.88	112.54
2	L	432	ASP	N-CA-C	-6.26	100.72	110.17
2	B	320	LEU	CA-C-O	-6.25	114.04	120.54
2	J	417	ALA	N-CA-C	-6.23	100.35	109.50
1	A	119	GLY	CA-C-N	6.21	129.48	123.02
1	A	119	GLY	C-N-CA	6.21	129.48	123.02
2	H	440	ARG	NE-CZ-NH1	6.21	127.71	121.50

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	350	ASN	N-CA-C	-6.19	98.81	108.90
2	L	533	THR	N-CA-C	-6.19	101.77	110.50
1	C	184	ARG	CD-NE-CZ	6.17	133.04	124.40
2	F	409	ARG	NE-CZ-NH1	-6.17	115.33	121.50
1	I	88	ALA	N-CA-C	-6.16	104.67	111.82
2	D	494	SER	N-CA-C	-6.16	105.03	112.54
2	L	339	ILE	CA-C-N	-6.16	114.28	120.31
2	L	339	ILE	C-N-CA	-6.16	114.28	120.31
1	E	102	GLY	CA-C-O	6.15	126.47	119.09
2	D	369	ASN	CB-CA-C	6.15	121.22	110.64
1	K	23	LEU	N-CA-C	6.15	117.98	111.28
2	L	432	ASP	CA-C-N	6.13	128.78	120.38
2	L	432	ASP	C-N-CA	6.13	128.78	120.38
2	H	336	LEU	CA-C-O	-6.10	115.09	121.55
1	K	72	GLN	N-CA-C	6.09	118.44	109.24
1	A	160	LEU	N-CA-C	-6.09	105.34	112.89
1	C	159	ASN	N-CA-C	6.09	120.43	113.19
2	F	450	ARG	NE-CZ-NH2	-6.08	113.73	119.20
2	F	388	TYR	N-CA-C	-6.07	105.63	113.16
1	I	108	THR	N-CA-C	6.07	116.61	108.23
2	F	440	ARG	NE-CZ-NH2	-6.07	113.74	119.20
2	H	427	GLY	CA-C-O	-6.06	114.40	121.61
2	H	457	ARG	CB-CA-C	-6.05	99.91	109.42
1	A	28	ASN	CA-C-N	-6.05	113.53	119.76
1	A	28	ASN	C-N-CA	-6.05	113.53	119.76
2	F	461	ILE	CA-C-O	-6.05	114.04	120.39
1	E	162	GLU	N-CA-C	6.04	117.87	111.28
2	B	367	PHE	N-CA-C	-6.03	101.86	111.02
2	D	443	LYS	CA-C-N	-6.02	114.41	120.31
2	D	443	LYS	C-N-CA	-6.02	114.41	120.31
2	L	375	GLY	CA-C-O	-6.02	115.82	122.14
1	K	62	LEU	CA-C-N	-6.01	114.86	122.37
1	K	62	LEU	C-N-CA	-6.01	114.86	122.37
2	J	440	ARG	NE-CZ-NH2	-6.00	113.80	119.20
2	L	333	ARG	N-CA-C	-6.00	105.80	113.23
2	J	433	SER	CA-CB-OG	-5.99	99.12	111.10
1	C	102	GLY	CA-C-O	5.98	126.79	119.01
2	B	352	SER	N-CA-C	5.97	118.56	111.33
1	K	162	GLU	N-CA-C	5.96	118.27	111.11
1	C	93	GLY	CA-C-O	-5.96	115.82	121.60
1	A	166	ARG	NE-CZ-NH1	5.96	127.46	121.50
2	D	333	ARG	N-CA-C	-5.93	105.13	112.90

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	428	ARG	NE-CZ-NH1	5.93	127.43	121.50
2	H	503	GLN	CB-CG-CD	-5.92	102.54	112.60
1	K	99	PHE	CA-C-N	5.91	128.12	120.44
1	K	99	PHE	C-N-CA	5.91	128.12	120.44
2	F	428	ARG	CB-CG-CD	5.91	124.90	111.30
1	K	105	THR	OG1-CB-CG2	-5.91	97.49	109.30
1	K	181	THR	CB-CA-C	-5.90	100.70	109.90
1	C	4	LEU	N-CA-CB	-5.89	101.47	110.49
2	L	418	PRO	N-CA-C	5.89	119.47	111.22
2	F	497	ASN	N-CA-CB	-5.89	102.51	110.23
2	L	416	LEU	N-CA-C	5.88	119.72	112.54
2	H	307	ARG	N-CA-C	-5.88	100.22	109.50
2	B	532	LYS	N-CA-C	-5.87	101.79	110.48
2	D	428	ARG	N-CA-CB	5.87	120.48	110.50
1	A	101	ALA	CA-C-O	-5.87	111.05	120.85
2	F	475	ILE	N-CA-C	-5.87	99.89	108.11
2	D	500	ALA	N-CA-C	-5.86	104.97	111.36
2	F	364	LEU	N-CA-C	-5.85	105.41	112.54
2	J	457	ARG	CB-CA-C	-5.84	99.95	109.41
2	F	505	ILE	N-CA-CB	-5.83	104.38	111.21
2	B	525	ILE	CB-CG1-CD1	-5.82	101.57	113.80
2	J	366	ASN	N-CA-C	5.82	120.22	113.18
2	J	486	ILE	N-CA-CB	5.82	114.99	110.45
2	F	366	ASN	N-CA-C	5.80	120.22	113.20
2	J	533	THR	OG1-CB-CG2	-5.79	97.72	109.30
1	A	94	ARG	NE-CZ-NH1	5.78	127.28	121.50
2	J	428	ARG	NE-CZ-NH1	5.78	127.28	121.50
1	C	184	ARG	CG-CD-NE	-5.78	99.28	112.00
1	G	124	PRO	CB-CA-C	-5.77	104.31	111.64
2	B	514	ASN	CA-C-N	5.75	125.75	119.89
2	B	514	ASN	C-N-CA	5.75	125.75	119.89
2	H	450	ARG	NH1-CZ-NH2	5.74	126.77	119.30
2	J	381	ALA	CA-C-O	-5.74	115.08	121.51
2	L	500	ALA	N-CA-C	-5.74	105.17	111.82
2	H	481	GLU	CG-CD-OE2	5.73	131.58	118.40
1	E	177	VAL	N-CA-C	-5.72	97.63	107.24
1	A	149	ALA	N-CA-C	5.71	117.97	111.11
2	J	500	ALA	N-CA-C	-5.71	105.03	112.23
1	G	36	TRP	N-CA-C	5.70	119.20	108.65
1	K	179	GLY	CA-C-N	5.70	129.99	122.30
1	K	179	GLY	C-N-CA	5.70	129.99	122.30
2	L	492	VAL	N-CA-C	-5.70	104.95	110.42

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	537	ASN	CA-C-N	5.69	131.95	121.70
2	D	537	ASN	C-N-CA	5.69	131.95	121.70
1	G	101	ALA	N-CA-C	-5.69	99.24	108.52
1	K	94	ARG	CA-CB-CG	5.69	125.49	114.10
1	G	41	LYS	CA-CB-CG	-5.69	102.72	114.10
2	F	497	ASN	N-CA-C	5.68	117.14	109.24
1	A	141	THR	CA-CB-OG1	-5.67	101.09	109.60
2	L	379	ILE	N-CA-C	-5.67	100.26	108.36
2	L	457	ARG	CB-CA-C	-5.66	100.94	109.26
1	E	156	PRO	N-CA-C	-5.65	107.08	114.03
2	J	377	ARG	NE-CZ-NH1	-5.65	115.85	121.50
1	A	36	TRP	N-CA-C	5.64	122.81	110.80
1	E	46	GLY	CA-C-O	-5.63	117.12	122.13
2	J	442	ILE	CB-CG1-CD1	-5.63	101.98	113.80
2	B	321	THR	N-CA-C	-5.62	96.27	108.81
2	B	440	ARG	NE-CZ-NH2	-5.62	114.14	119.20
2	D	326	THR	N-CA-C	-5.62	105.68	112.54
2	D	358	ALA	N-CA-C	5.62	119.40	112.54
2	B	396	LEU	CA-C-N	5.62	130.87	123.11
2	B	396	LEU	C-N-CA	5.62	130.87	123.11
2	D	376	GLU	CG-CD-OE2	-5.62	105.47	118.40
1	E	178	ASP	CB-CA-C	-5.62	104.33	111.86
1	K	9	PRO	CB-CA-C	-5.62	104.04	111.23
2	J	501	VAL	CA-CB-CG2	-5.62	100.86	110.40
2	H	420	ASP	CB-CA-C	5.61	116.61	110.15
1	G	59	ASN	N-CA-C	-5.61	106.10	113.17
2	H	451	ASN	N-CA-C	-5.61	98.85	110.80
2	D	418	PRO	N-CA-C	5.60	119.81	111.41
2	H	324	TYR	N-CA-C	-5.60	98.13	107.99
1	G	181	THR	CB-CA-C	-5.60	101.16	109.90
1	C	169	THR	N-CA-C	-5.59	105.72	112.54
2	F	411	LYS	N-CA-C	5.59	118.09	111.33
2	B	428	ARG	N-CA-CB	5.59	120.00	110.50
1	A	24	GLU	N-CA-C	-5.58	104.88	110.97
2	B	416	LEU	N-CA-C	5.58	119.35	112.54
2	B	483	ASP	CA-C-N	-5.58	114.06	119.87
2	B	483	ASP	C-N-CA	-5.58	114.06	119.87
2	F	326	THR	N-CA-CB	5.58	118.82	110.22
2	J	367	PHE	N-CA-C	-5.58	105.26	112.68
1	K	144	TYR	N-CA-C	-5.58	101.94	110.14
2	H	492	VAL	N-CA-C	-5.56	104.14	111.09
1	K	150	GLN	N-CA-CB	5.56	118.13	110.07

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	19	ILE	N-CA-C	5.56	116.33	110.72
2	B	422	ASN	N-CA-C	5.55	119.75	112.92
1	E	97	THR	N-CA-C	-5.55	100.65	109.59
2	B	347	THR	OG1-CB-CG2	5.55	120.41	109.30
2	J	331	SER	CA-C-N	-5.55	114.88	120.21
2	J	331	SER	C-N-CA	-5.55	114.88	120.21
2	D	390	LYS	CB-CA-C	5.55	117.35	109.08
1	E	116	ASN	N-CA-C	-5.55	101.13	109.79
2	F	416	LEU	CD1-CG-CD2	-5.55	98.60	110.80
1	I	155	CYS	CA-C-N	-5.54	114.11	119.87
1	I	155	CYS	C-N-CA	-5.54	114.11	119.87
2	F	411	LYS	CB-CA-C	-5.53	101.27	110.68
1	A	71	TRP	CB-CA-C	5.52	119.31	109.65
1	C	99	PHE	O-C-N	5.52	127.97	122.12
2	F	522	ARG	NE-CZ-NH1	-5.52	115.98	121.50
2	F	525	ILE	CA-C-N	5.51	130.61	123.11
2	F	525	ILE	C-N-CA	5.51	130.61	123.11
1	C	19	ILE	CB-CG1-CD1	-5.51	102.23	113.80
2	J	507	LYS	CD-CE-NZ	5.51	129.52	111.90
1	I	199	ASP	N-CA-C	-5.50	100.05	109.24
1	I	31	ARG	N-CA-C	-5.50	102.61	110.59
2	B	496	ALA	N-CA-C	5.50	118.45	111.69
1	A	81	ASP	N-CA-C	5.50	119.70	112.89
2	F	501	VAL	CA-C-N	5.49	127.64	120.28
2	F	501	VAL	C-N-CA	5.49	127.64	120.28
2	F	505	ILE	N-CA-C	5.48	115.99	107.99
2	J	419	LEU	CA-C-O	5.47	127.52	121.56
2	B	512	ASN	N-CA-C	-5.47	106.66	113.38
2	B	504	LEU	N-CA-C	-5.46	106.38	113.16
1	E	8	THR	CA-C-N	-5.46	114.33	119.85
1	E	8	THR	C-N-CA	-5.46	114.33	119.85
2	H	417	ALA	N-CA-C	-5.46	101.62	109.48
2	B	482	GLY	CA-C-O	-5.46	113.55	118.95
2	D	447	TYR	CB-CA-C	5.46	117.91	108.91
2	F	367	PHE	CA-C-N	5.46	131.96	121.54
2	F	367	PHE	C-N-CA	5.46	131.96	121.54
2	B	380	VAL	N-CA-C	-5.46	99.89	107.80
1	C	11	GLN	N-CA-C	-5.45	101.01	109.24
2	F	462	HIS	CA-C-O	-5.45	115.06	121.16
2	F	400	TRP	N-CA-C	-5.44	100.80	109.07
1	K	51	LEU	CA-C-N	-5.43	113.41	122.21
1	K	51	LEU	C-N-CA	-5.43	113.41	122.21

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	333	ARG	NE-CZ-NH2	-5.43	114.31	119.20
2	D	496	ALA	N-CA-C	5.43	117.27	111.36
1	G	72	GLN	N-CA-C	5.43	117.51	108.99
1	I	50	LEU	CB-CG-CD1	-5.43	94.42	110.70
2	J	383	ARG	CG-CD-NE	-5.42	100.08	112.00
1	C	23	LEU	CA-C-N	5.42	127.48	120.44
1	C	23	LEU	C-N-CA	5.42	127.48	120.44
1	I	141	THR	CA-CB-OG1	-5.41	101.48	109.60
2	F	498	PRO	N-CA-C	5.41	120.87	113.84
2	J	464	GLY	N-CA-C	-5.41	102.00	111.46
2	B	420	ASP	N-CA-C	-5.40	100.13	109.15
2	B	319	ALA	N-CA-C	-5.40	105.05	111.69
2	H	467	GLY	CA-C-N	-5.40	114.36	120.89
2	H	467	GLY	C-N-CA	-5.40	114.36	120.89
1	I	101	ALA	CA-C-O	-5.40	113.77	120.57
2	D	348	GLY	CA-C-N	-5.39	114.69	120.03
2	D	348	GLY	C-N-CA	-5.39	114.69	120.03
1	A	23	LEU	O-C-N	5.38	127.62	122.07
2	H	538	CYS	N-CA-CB	5.38	119.66	110.50
1	E	52	LEU	N-CA-C	5.38	117.25	109.07
1	C	149	ALA	CA-C-O	-5.38	114.02	120.10
2	B	410	HIS	CA-C-N	5.38	127.48	120.28
2	B	410	HIS	C-N-CA	5.38	127.48	120.28
2	L	538	CYS	N-CA-C	5.37	126.02	111.00
1	C	64	ARG	NE-CZ-NH1	-5.36	116.14	121.50
2	F	469	SER	CA-C-O	-5.35	115.72	121.45
2	F	537	ASN	O-C-N	5.35	129.53	122.04
2	D	437	TYR	CA-C-N	-5.35	111.80	121.69
2	D	437	TYR	C-N-CA	-5.35	111.80	121.69
1	I	101	ALA	CA-C-N	5.34	130.30	120.79
1	I	101	ALA	C-N-CA	5.34	130.30	120.79
2	D	411	LYS	N-CA-C	5.34	117.79	111.33
2	H	329	ALA	CA-C-N	-5.34	114.09	122.79
2	H	329	ALA	C-N-CA	-5.34	114.09	122.79
1	K	102	GLY	N-CA-C	-5.33	108.33	115.32
2	L	378	ILE	CA-C-N	5.33	129.64	122.93
2	L	378	ILE	C-N-CA	5.33	129.64	122.93
2	B	450	ARG	CG-CD-NE	-5.33	100.28	112.00
2	F	532	LYS	N-CA-C	-5.33	102.99	110.50
2	F	386	ASP	N-CA-C	-5.32	102.14	110.17
2	F	441	THR	CA-C-O	-5.32	115.66	121.14
1	G	53	GLY	CA-C-N	-5.32	113.51	123.03

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	53	GLY	C-N-CA	-5.32	113.51	123.03
1	A	13	ALA	N-CA-C	-5.31	106.30	112.89
2	J	311	ARG	CA-C-N	-5.30	115.37	122.42
2	J	311	ARG	C-N-CA	-5.30	115.37	122.42
1	G	23	LEU	N-CA-C	5.30	117.47	111.11
2	H	413	ASP	CA-C-N	-5.30	114.20	122.73
2	H	413	ASP	C-N-CA	-5.30	114.20	122.73
2	B	333	ARG	N-CA-C	-5.29	106.88	113.38
2	H	425	GLY	N-CA-C	5.28	122.72	115.27
2	J	501	VAL	CB-CA-C	-5.28	105.01	112.14
2	D	389	GLY	N-CA-C	-5.28	107.99	115.43
2	B	391	PRO	N-CA-CB	5.27	107.75	103.32
1	G	162	GLU	N-CA-C	5.27	116.71	111.07
1	C	143	LEU	CB-CG-CD1	-5.27	94.89	110.70
2	H	486	ILE	CB-CA-C	-5.26	108.71	113.70
2	J	447	TYR	CA-C-N	5.25	125.46	120.31
2	J	447	TYR	C-N-CA	5.25	125.46	120.31
2	L	527	LEU	CA-C-O	-5.25	115.05	121.88
1	E	4	LEU	N-CA-CB	-5.25	102.46	110.49
2	J	448	PRO	CA-C-O	-5.25	115.61	122.12
2	H	525	ILE	N-CA-CB	-5.24	102.28	111.39
1	K	168	GLU	CB-CG-CD	-5.24	103.70	112.60
1	A	14	GLY	CA-C-N	5.23	124.84	119.56
1	A	14	GLY	C-N-CA	5.23	124.84	119.56
1	I	24	GLU	O-C-N	5.22	127.67	122.03
1	G	178	ASP	CB-CA-C	-5.22	104.86	111.86
2	D	352	SER	CB-CA-C	-5.21	101.82	110.68
2	F	464	GLY	N-CA-C	-5.21	100.82	113.18
1	C	41	LYS	CA-C-N	5.21	126.35	119.84
1	C	41	LYS	C-N-CA	5.21	126.35	119.84
2	D	331	SER	CA-C-N	-5.21	114.55	119.76
2	D	331	SER	C-N-CA	-5.21	114.55	119.76
1	E	10	SER	N-CA-C	5.21	117.84	110.50
1	K	72	GLN	CB-CG-CD	-5.21	103.75	112.60
2	J	326	THR	CA-C-O	-5.20	112.98	119.38
1	K	114	VAL	CA-C-N	-5.20	113.67	122.67
1	K	114	VAL	C-N-CA	-5.20	113.67	122.67
1	G	128	ILE	N-CA-C	5.20	115.39	108.11
2	D	428	ARG	NE-CZ-NH1	5.19	126.69	121.50
1	G	150	GLN	O-C-N	5.19	127.69	122.09
2	L	386	ASP	N-CA-C	-5.19	101.87	109.81
2	F	426	VAL	N-CA-C	5.19	116.13	108.45

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	113	VAL	N-CA-CB	-5.19	105.06	110.72
2	J	338	SER	CB-CA-C	-5.19	100.76	109.53
2	F	330	ARG	NE-CZ-NH1	5.18	126.68	121.50
2	H	495	ILE	N-CA-C	-5.18	100.94	108.36
2	D	337	VAL	CG1-CB-CG2	5.18	122.19	110.80
1	C	188	ARG	NE-CZ-NH2	-5.18	114.54	119.20
2	D	372	LEU	CA-C-N	5.18	125.08	119.85
2	D	372	LEU	C-N-CA	5.18	125.08	119.85
1	A	83	TYR	CA-C-O	-5.17	115.37	121.16
2	B	450	ARG	CB-CG-CD	5.17	123.19	111.30
1	E	52	LEU	CA-CB-CG	5.17	134.39	116.30
1	G	103	GLU	N-CA-CB	-5.17	102.00	110.68
2	H	375	GLY	CA-C-O	-5.16	116.49	121.86
1	A	47	GLU	CA-CB-CG	-5.15	103.80	114.10
2	J	427	GLY	CA-C-O	-5.15	115.76	121.37
2	B	505	ILE	N-CA-C	5.15	116.10	108.23
2	F	493	LYS	CD-CE-NZ	5.15	128.37	111.90
1	I	94	ARG	CA-CB-CG	5.14	124.39	114.10
1	E	133	ARG	N-CA-C	-5.14	103.36	110.35
1	K	113	VAL	N-CA-C	5.14	115.67	108.89
2	D	372	LEU	N-CA-CB	-5.13	101.58	110.10
2	F	383	ARG	N-CA-CB	-5.13	102.03	111.37
2	H	386	ASP	N-CA-C	-5.13	102.42	110.17
1	C	162	GLU	N-CA-C	5.12	116.55	111.07
1	G	23	LEU	CA-C-N	5.12	127.41	120.65
1	G	23	LEU	C-N-CA	5.12	127.41	120.65
2	H	426	VAL	CB-CA-C	-5.12	102.93	110.82
2	J	367	PHE	CA-C-N	5.12	131.32	121.54
2	J	367	PHE	C-N-CA	5.12	131.32	121.54
1	K	113	VAL	N-CA-CB	-5.12	104.95	110.53
2	J	533	THR	CA-CB-OG1	-5.11	101.94	109.60
1	C	133	ARG	NE-CZ-NH1	5.11	126.61	121.50
2	H	486	ILE	N-CA-CB	5.10	113.94	110.52
2	B	436	TYR	N-CA-C	5.10	118.25	110.20
2	B	450	ARG	CA-C-O	-5.10	116.24	122.41
2	J	459	ALA	N-CA-C	-5.10	102.75	110.24
2	B	365	LEU	CA-C-O	-5.09	113.30	118.90
2	B	439	PHE	CA-C-N	-5.09	114.48	122.73
2	B	439	PHE	C-N-CA	-5.09	114.48	122.73
1	A	37	ASN	N-CA-C	5.09	118.52	112.72
2	H	340	PRO	CB-CA-C	-5.09	104.28	110.95
2	H	383	ARG	CG-CD-NE	-5.09	100.80	112.00

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	184	ARG	CG-CD-NE	-5.08	100.82	112.00
1	C	117	ALA	O-C-N	5.08	127.94	122.15
2	B	416	LEU	CD1-CG-CD2	-5.08	99.63	110.80
2	F	373	PRO	CB-CA-C	-5.08	104.33	110.98
1	K	31	ARG	CA-C-O	-5.08	115.28	121.88
2	D	350	ASN	N-CA-C	-5.07	100.63	108.90
1	K	123	ALA	CA-C-N	-5.07	114.50	119.93
1	K	123	ALA	C-N-CA	-5.07	114.50	119.93
2	D	492	VAL	CA-C-O	-5.07	115.68	120.95
2	J	388	TYR	N-CA-C	-5.06	107.11	113.28
2	D	336	LEU	CA-C-N	-5.06	116.55	122.93
2	D	336	LEU	C-N-CA	-5.06	116.55	122.93
1	C	150	GLN	N-CA-CB	5.06	117.40	110.07
2	F	486	ILE	CA-C-N	-5.06	114.51	120.12
2	F	486	ILE	C-N-CA	-5.06	114.51	120.12
2	D	537	ASN	CB-CA-C	-5.06	102.99	111.23
1	C	168	GLU	CG-CD-OE2	-5.05	106.78	118.40
2	F	404	ALA	N-CA-C	5.05	118.54	112.38
1	K	93	GLY	CA-C-O	-5.05	115.65	121.46
2	H	313	ARG	CA-CB-CG	-5.04	104.01	114.10
1	K	133	ARG	NE-CZ-NH1	5.04	126.54	121.50
1	G	165	GLN	CB-CG-CD	5.04	121.17	112.60
2	H	444	PRO	CA-N-CD	5.04	119.06	112.00
1	G	102	GLY	N-CA-C	-5.04	108.72	115.32
2	L	368	ASN	N-CA-C	5.04	121.53	110.80
1	C	101	ALA	CA-C-N	5.03	132.41	121.19
1	C	101	ALA	C-N-CA	5.03	132.41	121.19
2	D	457	ARG	NE-CZ-NH2	-5.03	114.68	119.20
2	B	469	SER	CA-C-O	-5.03	115.90	121.33
1	G	68	LEU	CA-C-O	-5.03	114.88	120.66
2	H	497	ASN	CA-C-O	5.02	123.04	119.32
2	J	318	LYS	CB-CG-CD	-5.02	99.75	111.30
2	L	378	ILE	CA-CB-CG2	5.02	119.03	110.50
1	E	120	VAL	CA-C-N	5.02	124.78	119.76
1	E	120	VAL	C-N-CA	5.02	124.78	119.76
2	H	487	PRO	CA-C-N	-5.01	114.72	122.49
2	H	487	PRO	C-N-CA	-5.01	114.72	122.49
1	C	44	ALA	CA-C-N	-5.01	115.07	120.03
1	C	44	ALA	C-N-CA	-5.01	115.07	120.03
2	H	507	LYS	CD-CE-NZ	5.01	127.94	111.90
1	E	94	ARG	CA-C-O	-5.00	115.25	121.06
1	A	144	TYR	N-CA-C	-5.00	102.16	109.81

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	450	ARG	CD-NE-CZ	5.00	131.41	124.40
1	K	149	ALA	N-CA-C	5.00	118.15	111.75
1	A	64	ARG	N-CA-C	5.00	119.36	113.16

There are no chirality outliers.

All (52) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	115	ASN	Mainchain
1	A	144	TYR	Sidechain
1	A	188	ARG	Sidechain
1	A	64	ARG	Mainchain
2	B	318	LYS	Mainchain
2	B	324	TYR	Sidechain
2	B	436	TYR	Sidechain
2	B	533	THR	Mainchain
2	B	534	HIS	Sidechain
1	C	110	LYS	Mainchain
1	C	16	TYR	Sidechain
1	C	174	ARG	Mainchain
1	C	33	GLN	Mainchain
2	D	428	ARG	Sidechain
2	D	437	TYR	Sidechain
2	D	446	PRO	Mainchain
1	E	125	HIS	Mainchain
1	E	188	ARG	Mainchain
1	E	19	ILE	Mainchain
1	E	79	TYR	Sidechain
1	E	81	ASP	Mainchain
2	F	309	VAL	Mainchain
2	F	330	ARG	Mainchain
2	F	341	GLN	Mainchain
2	F	407	ARG	Sidechain
1	G	139	LEU	Mainchain
1	G	144	TYR	Sidechain
1	G	166	ARG	Mainchain
1	G	33	GLN	Mainchain
1	G	56	TYR	Sidechain
2	H	362	ASP	Mainchain
2	H	437	TYR	Sidechain
2	H	438	SER	Mainchain
2	H	440	ARG	Sidechain

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	Group
2	H	481	GLU	Mainchain
1	I	110	LYS	Mainchain
1	I	131	PHE	Mainchain
1	I	140	HIS	Mainchain
1	I	151	ALA	Mainchain
1	I	154	LYS	Mainchain
1	I	75	ALA	Mainchain
2	J	320	LEU	Mainchain
2	J	437	TYR	Sidechain
2	J	462	HIS	Mainchain
1	K	133	ARG	Mainchain
1	K	184	ARG	Mainchain
1	K	56	TYR	Sidechain
2	L	332	PRO	Mainchain
2	L	399	MET	Mainchain
2	L	421	PRO	Mainchain
2	L	478	LEU	Mainchain
2	L	529	GLY	Mainchain

## 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	A	1571	0	1499	21	0
1	C	1571	0	1499	22	0
1	E	1571	0	1499	27	0
1	G	1571	0	1499	22	0
1	I	1571	0	1499	24	0
1	K	1571	0	1499	21	0
2	B	1876	0	1822	40	0
2	D	1876	0	1822	28	0
2	F	1876	0	1821	33	0
2	H	1876	0	1822	29	0
2	J	1876	0	1822	33	0
2	L	1876	0	1822	33	0
3	B	1	0	0	0	0
3	D	1	0	0	0	0
3	F	1	0	0	0	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	H	1	0	0	0	0
3	J	1	0	0	0	0
3	L	1	0	0	0	0
4	B	11	0	4	4	0
4	D	11	0	3	3	0
4	F	11	0	4	8	0
4	H	11	0	4	5	0
4	J	11	0	3	3	0
4	L	11	0	3	4	0
5	A	88	0	0	1	0
5	B	162	0	0	2	0
5	C	88	0	0	2	0
5	D	168	0	0	1	0
5	E	86	0	0	1	0
5	F	163	0	0	2	0
5	G	92	0	0	0	0
5	H	157	0	0	6	0
5	I	87	0	0	1	0
5	J	172	0	0	3	0
5	K	81	0	0	1	0
5	L	168	0	0	3	0
All	All	22266	0	19946	312	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 8.

All (312) 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:L:390:LYS:CG	2:L:390:LYS:CD	1.76	1.63
2:J:343:ILE:CD1	2:J:343:ILE:CG1	1.74	1.60
2:D:390:LYS:CD	2:D:390:LYS:CG	1.80	1.59
2:B:493:LYS:CG	2:B:493:LYS:CD	1.77	1.58
1:G:154:LYS:CE	1:G:154:LYS:CD	1.77	1.58
2:L:301:PRO:CG	2:L:301:PRO:CB	1.75	1.57
2:B:429:CME:CE	2:B:429:CME:CZ	1.76	1.56
2:F:429:CME:CZ	2:F:429:CME:CE	1.78	1.56
2:D:493:LYS:CE	2:D:493:LYS:NZ	1.68	1.55
2:F:507:LYS:CE	2:F:507:LYS:NZ	1.70	1.54
2:F:318:LYS:CE	2:F:318:LYS:NZ	1.68	1.53
2:H:429:CME:CE	2:H:429:CME:CZ	1.86	1.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:318:LYS:CE	2:B:318:LYS:NZ	1.75	1.49
2:L:532:LYS:CB	2:L:532:LYS:CA	1.84	1.49
2:H:507:LYS:CE	2:H:507:LYS:NZ	1.77	1.46
4:J:4550:DHB:O2	5:J:4678:HOH:O	1.67	1.13
4:H:3550:DHB:O2	5:H:3678:HOH:O	1.77	1.02
1:E:26:ALA:O	2:F:411:LYS:NZ	2.01	0.94
2:D:411:LYS:HB2	2:D:411:LYS:NZ	1.88	0.89
1:A:165:GLN:H	1:A:165:GLN:NE2	1.71	0.89
1:C:165:GLN:H	1:C:165:GLN:NE2	1.71	0.88
1:C:165:GLN:H	1:C:165:GLN:HE21	0.90	0.88
2:J:411:LYS:HZ2	2:J:411:LYS:H	1.21	0.84
1:C:165:GLN:HE21	1:C:165:GLN:N	1.75	0.83
1:I:165:GLN:H	1:I:165:GLN:NE2	1.74	0.83
4:B:550:DHB:O2	5:B:678:HOH:O	2.01	0.77
1:I:165:GLN:H	1:I:165:GLN:HE21	1.29	0.77
2:J:361:HIS:CD2	2:J:361:HIS:H	2.03	0.76
2:J:368:ASN:ND2	2:J:370:GLY:H	1.83	0.76
2:J:411:LYS:H	2:J:411:LYS:NZ	1.83	0.76
2:B:497:ASN:HD22	2:B:499:GLU:H	1.34	0.75
2:J:497:ASN:HD22	2:J:499:GLU:H	1.35	0.74
1:E:15:PRO:HD3	4:F:2550:DHB:C2	2.17	0.73
2:B:429:CME:CZ	2:B:429:CME:SD	2.77	0.72
2:D:411:LYS:HB2	2:D:411:LYS:HZ3	1.54	0.72
1:C:18:HIS:ND1	5:C:1648:HOH:O	2.24	0.71
2:B:361:HIS:CD2	2:B:361:HIS:H	2.07	0.70
1:G:15:PRO:HD3	4:H:3550:DHB:C1	2.21	0.70
4:F:2550:DHB:O2	5:F:2678:HOH:O	2.09	0.70
2:F:364:LEU:HD22	2:F:440:ARG:HD3	1.72	0.70
1:K:15:PRO:HD3	4:L:5550:DHB:C1	2.23	0.69
2:J:343:ILE:CD1	2:J:343:ILE:CB	2.67	0.69
2:H:493:LYS:HE3	5:H:3909:HOH:O	1.93	0.69
1:G:165:GLN:H	1:G:165:GLN:HE21	1.39	0.69
2:B:368:ASN:HD22	2:B:370:GLY:H	1.42	0.68
2:L:416:LEU:HD23	2:L:416:LEU:H	1.59	0.68
4:L:5550:DHB:O2	5:L:5678:HOH:O	2.11	0.68
2:L:361:HIS:CD2	2:L:361:HIS:H	2.12	0.67
1:G:165:GLN:H	1:G:165:GLN:NE2	1.93	0.67
1:C:98:THR:N	1:C:101:ALA:O	2.24	0.67
2:F:497:ASN:HD22	2:F:499:GLU:H	1.44	0.66
2:D:497:ASN:ND2	2:D:499:GLU:H	1.95	0.64
2:F:315:TRP:HZ2	2:F:503:GLN:HE21	1.46	0.64

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:376:GLU:OE1	5:H:3665:HOH:O	2.15	0.64
1:I:15:PRO:HD3	4:J:4550:DHB:C1	2.27	0.63
2:H:369:ASN:H	2:H:422:ASN:HD22	1.47	0.63
2:D:497:ASN:HD22	2:D:499:GLU:H	1.43	0.63
1:K:143:LEU:C	1:K:143:LEU:HD23	2.24	0.62
1:E:15:PRO:HD3	4:F:2550:DHB:C1	2.29	0.62
2:B:493:LYS:CG	2:B:493:LYS:CE	2.77	0.62
2:B:356:PHE:CD1	2:B:428:ARG:HD3	2.35	0.61
1:I:61:HIS:ND1	1:K:163:GLN:HG3	2.15	0.61
2:F:390:LYS:HD3	5:F:2677:HOH:O	2.00	0.61
1:E:25:ALA:HB1	1:E:98:THR:HG21	1.82	0.61
2:D:368:ASN:ND2	2:D:370:GLY:H	1.98	0.61
1:E:50:LEU:O	1:E:182:ALA:HA	2.01	0.61
2:D:411:LYS:HB2	2:D:411:LYS:HZ2	1.66	0.60
2:H:454:ASN:HB2	2:J:310:ILE:HG13	1.83	0.60
2:L:356:PHE:CD1	2:L:428:ARG:HD3	2.37	0.60
1:A:165:GLN:H	1:A:165:GLN:HE21	1.49	0.59
2:D:361:HIS:H	2:D:361:HIS:CD2	2.18	0.59
2:H:361:HIS:H	2:H:361:HIS:CD2	2.21	0.59
2:L:497:ASN:HD22	2:L:499:GLU:H	1.49	0.59
1:A:20:GLY:HA2	2:B:426:VAL:HG13	1.84	0.59
1:A:15:PRO:HD3	4:B:550:DHB:C1	2.32	0.58
1:C:67:PHE:HZ	1:C:94:ARG:HD2	1.67	0.58
1:A:67:PHE:HZ	1:A:94:ARG:HD2	1.69	0.58
2:B:318:LYS:NZ	2:B:318:LYS:CD	2.65	0.58
2:J:497:ASN:ND2	2:J:499:GLU:H	2.01	0.57
2:B:497:ASN:ND2	2:B:499:GLU:H	2.02	0.57
2:B:368:ASN:ND2	2:B:370:GLY:H	2.02	0.57
1:G:15:PRO:HD3	4:H:3550:DHB:C2	2.35	0.57
2:J:382:GLY:HA2	2:J:522:ARG:HE	1.70	0.57
1:A:65:ASP:OD2	1:A:133:ARG:HD3	2.05	0.56
1:K:39:LEU:N	1:K:39:LEU:HD12	2.19	0.56
2:B:360:ASP:OD2	2:B:428:ARG:HD2	2.04	0.56
2:B:364:LEU:HD22	2:B:440:ARG:HD3	1.87	0.56
1:G:67:PHE:CZ	1:G:94:ARG:HD2	2.41	0.56
1:E:17:VAL:HG13	1:E:18:HIS:N	2.20	0.56
1:A:67:PHE:CZ	1:A:94:ARG:HD2	2.41	0.55
2:F:315:TRP:HZ2	2:F:503:GLN:NE2	2.03	0.55
1:K:98:THR:N	1:K:101:ALA:O	2.27	0.55
2:B:390:LYS:HD2	5:B:677:HOH:O	2.05	0.55
1:E:15:PRO:HB3	1:E:133:ARG:HD2	1.88	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:400:TRP:HA	2:J:425:GLY:O	2.07	0.55
1:I:143:LEU:C	1:I:143:LEU:HD23	2.30	0.55
1:A:163:GLN:HB3	1:A:165:GLN:NE2	2.21	0.55
2:H:497:ASN:HD22	2:H:499:GLU:H	1.53	0.55
1:G:65:ASP:OD2	1:G:133:ARG:HD3	2.07	0.54
2:L:497:ASN:ND2	2:L:499:GLU:H	2.05	0.54
2:L:390:LYS:HE2	5:L:5838:HOH:O	2.07	0.54
2:F:356:PHE:CD1	2:F:428:ARG:HD3	2.43	0.54
2:L:361:HIS:H	2:L:361:HIS:HD2	1.54	0.54
2:J:368:ASN:HD22	2:J:370:GLY:H	1.55	0.54
2:F:497:ASN:ND2	2:F:499:GLU:H	2.05	0.53
1:K:67:PHE:HZ	1:K:94:ARG:HD2	1.73	0.53
2:L:315:TRP:HZ2	2:L:503:GLN:NE2	2.06	0.53
1:G:155:CYS:HB3	1:G:158:LEU:HB2	1.90	0.53
2:J:356:PHE:CE1	2:J:428:ARG:HD3	2.43	0.53
2:J:429:CME:HE2	2:J:438:SER:O	2.09	0.53
2:B:315:TRP:HZ2	2:B:503:GLN:NE2	2.06	0.53
2:D:478:LEU:C	2:D:478:LEU:HD23	2.33	0.53
2:F:361:HIS:H	2:F:361:HIS:CD2	2.27	0.53
1:G:133:ARG:HB2	4:H:3550:DHB:O1	2.09	0.53
1:K:15:PRO:HD3	4:L:5550:DHB:C2	2.37	0.53
2:F:368:ASN:HD22	2:F:370:GLY:H	1.57	0.53
1:G:67:PHE:HZ	1:G:94:ARG:HD2	1.74	0.53
1:C:67:PHE:CZ	1:C:94:ARG:HD2	2.42	0.53
1:I:162:GLU:O	1:I:164:PRO:HD3	2.09	0.53
2:H:453:PRO:HB2	2:J:310:ILE:HD12	1.91	0.52
2:B:400:TRP:HA	2:B:425:GLY:O	2.10	0.52
1:A:165:GLN:H	1:A:165:GLN:CD	2.17	0.52
1:K:31:ARG:NH1	2:L:428:ARG:HG2	2.25	0.52
2:D:400:TRP:HA	2:D:425:GLY:O	2.10	0.52
1:E:14:GLY:HA2	4:F:2550:DHB:H2	1.91	0.52
2:J:307:ARG:HG2	2:J:533:THR:HG22	1.92	0.52
2:L:368:ASN:ND2	2:L:370:GLY:H	2.09	0.51
1:G:25:ALA:HB1	1:G:98:THR:HG21	1.93	0.51
1:K:132:ALA:HB3	1:K:135:ILE:HD12	1.92	0.51
2:D:369:ASN:H	2:D:422:ASN:HD22	1.57	0.51
1:K:165:GLN:H	1:K:165:GLN:NE2	2.09	0.51
1:I:18:HIS:CG	5:I:4648:HOH:O	2.64	0.50
2:H:315:TRP:HZ2	2:H:503:GLN:NE2	2.09	0.50
1:I:6:PRO:HG2	2:J:503:GLN:NE2	2.26	0.50
2:L:416:LEU:HD23	2:L:416:LEU:N	2.26	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:361:HIS:H	2:J:361:HIS:HD2	1.57	0.50
1:G:143:LEU:C	1:G:143:LEU:HD23	2.36	0.50
1:K:65:ASP:OD2	1:K:133:ARG:HD3	2.12	0.50
2:B:493:LYS:CD	2:B:493:LYS:CB	2.81	0.49
1:K:70:VAL:HG21	1:K:106:LEU:HD21	1.94	0.49
2:B:468:PRO:HD2	2:B:472:THR:HG21	1.93	0.49
1:C:4:LEU:HD22	2:H:511:ASN:CG	2.38	0.49
2:F:368:ASN:ND2	2:F:370:GLY:H	2.11	0.49
2:L:356:PHE:CE1	2:L:428:ARG:HD3	2.47	0.49
1:E:131:PHE:CD2	2:F:475:ILE:HD12	2.47	0.49
2:D:429:CME:SG	2:D:437:TYR:HB2	2.53	0.49
1:A:24:GLU:O	1:A:27:GLY:N	2.37	0.49
1:A:51:LEU:HD12	1:A:106:LEU:HD23	1.95	0.49
1:A:114:VAL:HG23	1:A:122:MET:HE3	1.94	0.49
1:C:15:PRO:HD3	4:D:1550:DHB:C1	2.43	0.49
2:J:403:ASN:HB2	5:J:4620:HOH:O	2.13	0.49
2:J:538:CYS:C	5:J:951:HOH:O	2.56	0.49
1:G:50:LEU:O	1:G:182:ALA:HA	2.13	0.49
1:E:31:ARG:NH1	2:F:428:ARG:HG2	2.28	0.48
1:I:98:THR:N	1:I:101:ALA:O	2.39	0.48
2:J:376:GLU:O	2:J:442:ILE:HA	2.13	0.48
1:K:131:PHE:CD2	2:L:475:ILE:HD12	2.48	0.48
1:G:51:LEU:HD12	1:G:106:LEU:HD23	1.94	0.48
2:J:326:THR:HG22	2:J:330:ARG:HD2	1.95	0.48
2:L:390:LYS:CD	2:L:390:LYS:CB	2.80	0.48
2:B:416:LEU:HD23	2:B:416:LEU:H	1.78	0.48
2:L:324:TYR:OH	4:L:5550:DHB:O1	2.22	0.48
1:C:36:TRP:CG	1:C:37:ASN:H	2.31	0.48
2:J:315:TRP:HZ2	2:J:503:GLN:HE21	1.62	0.48
1:E:165:GLN:H	1:E:165:GLN:NE2	2.12	0.47
2:F:478:LEU:C	2:F:478:LEU:HD23	2.39	0.47
2:L:497:ASN:HD22	2:L:497:ASN:C	2.22	0.47
2:D:497:ASN:HD22	2:D:497:ASN:C	2.20	0.47
2:B:416:LEU:HD23	5:H:3907:HOH:O	2.14	0.47
2:B:369:ASN:N	2:B:369:ASN:HD22	2.12	0.47
1:G:14:GLY:HA2	4:H:3550:DHB:H2	1.95	0.47
2:H:451:ASN:ND2	2:H:490:PRO:HG2	2.29	0.47
2:L:315:TRP:HZ2	2:L:503:GLN:HE21	1.62	0.47
1:E:132:ALA:HB3	1:E:135:ILE:HD12	1.96	0.47
2:H:429:CME:CZ	2:H:429:CME:SD	3.01	0.47
2:H:497:ASN:ND2	2:H:499:GLU:H	2.13	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:133:ARG:HB2	4:D:1550:DHB:O1	2.15	0.47
2:D:359:HIS:O	2:D:366:ASN:HB3	2.15	0.47
1:E:92:PHE:CD1	2:F:349:PRO:HG3	2.50	0.47
1:I:123:ALA:HB3	1:I:144:TYR:CE2	2.50	0.47
2:J:399:MET:HA	2:J:462:HIS:O	2.15	0.47
2:L:411:LYS:HB2	2:L:411:LYS:NZ	2.29	0.47
2:F:497:ASN:HD22	2:F:497:ASN:C	2.23	0.47
2:B:356:PHE:CE1	2:B:428:ARG:HD3	2.51	0.46
1:K:67:PHE:CZ	1:K:94:ARG:HD2	2.49	0.46
1:E:200:PHE:CG	2:F:345:GLU:HG2	2.50	0.46
2:H:315:TRP:HZ2	2:H:503:GLN:HE21	1.64	0.46
2:J:447:TYR:OH	4:J:4550:DHB:O4	2.34	0.46
1:G:15:PRO:HB3	1:G:133:ARG:HD2	1.98	0.46
1:C:131:PHE:CD2	1:C:138:HIS:HB3	2.51	0.46
1:G:92:PHE:CG	2:H:349:PRO:HG3	2.50	0.46
2:D:429:CME:HE2	2:D:438:SER:O	2.16	0.46
2:J:497:ASN:HD21	2:J:499:GLU:HB2	1.81	0.46
2:D:372:LEU:HA	2:D:373:PRO:HD3	1.85	0.45
2:H:447:TYR:HB2	2:H:448:PRO:HD2	1.99	0.45
1:C:198:PHE:HA	2:D:337:VAL:O	2.16	0.45
1:E:39:LEU:HD11	1:E:93:GLY:HA3	1.97	0.45
1:E:143:LEU:HD23	1:E:143:LEU:C	2.42	0.45
2:L:403:ASN:HB2	5:L:5620:HOH:O	2.16	0.45
2:D:390:LYS:CD	2:D:390:LYS:CB	2.80	0.45
1:E:14:GLY:HA2	4:F:2550:DHB:C2	2.46	0.45
2:J:361:HIS:CD2	2:J:361:HIS:N	2.76	0.45
2:H:307:ARG:HA	2:H:307:ARG:HD3	1.77	0.45
2:H:400:TRP:HA	2:H:425:GLY:O	2.17	0.45
2:B:361:HIS:H	2:B:361:HIS:HD2	1.59	0.45
1:G:110:LYS:NZ	1:G:148:GLU:OE2	2.48	0.45
1:C:24:GLU:O	1:C:27:GLY:HA2	2.16	0.45
2:B:457:ARG:NH1	4:B:550:DHB:O4	2.48	0.45
2:B:369:ASN:N	2:B:369:ASN:ND2	2.65	0.45
2:D:516:MET:HE3	2:D:516:MET:HB3	1.78	0.45
1:E:133:ARG:HB2	4:F:2550:DHB:O1	2.17	0.45
1:I:17:VAL:HG13	1:I:18:HIS:CD2	2.52	0.45
1:A:70:VAL:HG12	1:A:128:ILE:HG12	1.99	0.44
2:L:400:TRP:HA	2:L:425:GLY:O	2.17	0.44
2:B:382:GLY:HA3	2:B:523:PHE:O	2.18	0.44
1:E:74:ASP:HB2	5:E:2690:HOH:O	2.18	0.44
2:F:386:ASP:C	2:F:386:ASP:OD2	2.61	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:536:GLU:C	2:H:538:CYS:H	2.26	0.44
2:B:364:LEU:HD22	2:B:440:ARG:CD	2.47	0.44
2:L:364:LEU:HD12	2:L:373:PRO:HG2	1.99	0.44
2:D:368:ASN:HD22	2:D:370:GLY:H	1.64	0.44
2:D:390:LYS:HD3	5:D:1677:HOH:O	2.17	0.44
2:B:356:PHE:HD1	2:B:428:ARG:HD3	1.81	0.43
1:C:143:LEU:HD23	1:C:143:LEU:C	2.43	0.43
2:F:324:TYR:OH	4:F:2550:DHB:O1	2.20	0.43
2:F:420:ASP:HA	2:F:421:PRO:HD2	1.83	0.43
2:F:369:ASN:H	2:F:422:ASN:HD22	1.66	0.43
1:G:36:TRP:CG	1:G:37:ASN:H	2.35	0.43
1:A:50:LEU:O	1:A:182:ALA:HA	2.18	0.43
2:H:478:LEU:HD23	2:H:478:LEU:C	2.42	0.43
2:F:484:PRO:O	2:F:488:MET:HE3	2.18	0.43
2:B:504:LEU:HD23	2:B:504:LEU:HA	1.82	0.43
2:B:511:ASN:CG	1:I:4:LEU:HD22	2.43	0.43
1:E:51:LEU:HD12	1:E:106:LEU:HD23	2.00	0.43
2:B:364:LEU:HD11	2:B:442:ILE:HG23	2.00	0.43
2:B:416:LEU:CD2	5:H:3907:HOH:O	2.66	0.43
2:D:364:LEU:HD12	2:D:364:LEU:HA	1.83	0.43
1:K:18:HIS:CG	5:K:5648:HOH:O	2.71	0.43
1:K:131:PHE:CE2	1:K:138:HIS:HB3	2.54	0.43
1:A:77:GLY:O	1:A:114:VAL:HG12	2.19	0.43
1:K:123:ALA:O	1:K:124:PRO:C	2.61	0.43
1:E:70:VAL:HG11	1:E:106:LEU:HD21	2.00	0.43
1:I:36:TRP:CG	1:I:37:ASN:H	2.36	0.43
1:I:191:GLY:O	1:I:194:GLU:HB2	2.19	0.42
2:J:472:THR:O	2:J:473:LYS:C	2.60	0.42
2:B:368:ASN:C	2:B:369:ASN:HD22	2.27	0.42
2:D:457:ARG:CD	2:D:491:ILE:HD12	2.49	0.42
1:C:57:ASP:C	1:C:57:ASP:OD1	2.61	0.42
2:F:411:LYS:NZ	2:F:411:LYS:H	2.18	0.42
1:I:131:PHE:CE2	1:I:138:HIS:HB3	2.54	0.42
2:L:376:GLU:O	2:L:442:ILE:HA	2.20	0.42
1:A:54:GLN:O	1:A:186:ASP:HA	2.19	0.42
1:C:4:LEU:HD22	2:H:511:ASN:OD1	2.19	0.42
1:C:36:TRP:CD1	1:C:37:ASN:H	2.37	0.42
2:F:429:CME:CZ	2:F:429:CME:SD	3.01	0.42
2:B:368:ASN:C	2:B:369:ASN:ND2	2.77	0.42
1:I:26:ALA:O	2:J:411:LYS:HE3	2.20	0.42
2:L:315:TRP:CZ2	2:L:503:GLN:NE2	2.87	0.42

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:476:THR:OG1	2:D:477:GLN:N	2.53	0.42
2:J:497:ASN:ND2	2:J:499:GLU:HB2	2.35	0.42
2:F:326:THR:O	2:F:326:THR:HG22	2.19	0.42
1:A:131:PHE:CD2	1:A:138:HIS:HB3	2.55	0.41
1:C:110:LYS:HA	1:C:111:PRO:HD2	1.93	0.41
1:G:3:GLU:OE2	1:G:3:GLU:HA	2.20	0.41
1:I:165:GLN:HE21	1:I:165:GLN:N	2.06	0.41
1:E:160:LEU:HD23	1:E:160:LEU:HA	1.89	0.41
2:H:392:VAL:HG21	2:H:527:LEU:HD12	2.02	0.41
2:H:451:ASN:HD22	2:H:490:PRO:HG2	1.85	0.41
1:I:160:LEU:HA	1:I:160:LEU:HD23	1.81	0.41
1:I:171:ILE:HD13	1:I:171:ILE:HG21	1.74	0.41
1:K:160:LEU:HD23	1:K:160:LEU:HA	1.83	0.41
1:E:15:PRO:CD	4:F:2550:DHB:C2	2.93	0.41
2:F:307:ARG:HA	2:F:307:ARG:HD3	1.85	0.41
2:F:318:LYS:NZ	2:F:318:LYS:CD	2.70	0.41
2:H:356:PHE:CE1	2:H:428:ARG:HD3	2.54	0.41
2:D:479:TYR:CZ	2:D:492:VAL:HG22	2.55	0.41
1:E:16:TYR:O	1:E:17:VAL:C	2.62	0.41
1:I:57:ASP:OD1	1:I:57:ASP:C	2.62	0.41
2:H:497:ASN:HD22	2:H:497:ASN:C	2.29	0.41
1:I:128:ILE:HD13	1:I:128:ILE:HG21	1.80	0.41
1:C:9:PRO:HD2	2:D:504:LEU:HD21	2.01	0.41
1:C:131:PHE:CE2	1:C:138:HIS:HB3	2.55	0.41
1:I:123:ALA:HB3	1:I:144:TYR:HE2	1.85	0.41
1:A:28:ASN:ND2	5:A:714:HOH:O	2.54	0.41
1:E:24:GLU:O	1:E:27:GLY:N	2.39	0.41
2:B:368:ASN:ND2	2:B:368:ASN:C	2.79	0.41
1:G:16:TYR:HE1	2:H:412:ASN:HB2	1.86	0.41
2:J:328:ILE:HD12	2:L:335:ALA:HB2	2.03	0.41
1:A:15:PRO:CD	4:B:550:DHB:C1	2.99	0.41
1:G:31:ARG:NH1	2:H:428:ARG:HG2	2.36	0.41
1:A:168:GLU:HA	1:A:171:ILE:HD12	2.02	0.41
2:B:307:ARG:HG2	2:B:533:THR:HG22	2.03	0.41
2:B:505:ILE:HD13	2:B:505:ILE:HG21	1.77	0.41
2:D:324:TYR:OH	4:D:1550:DHB:O1	2.26	0.41
1:K:165:GLN:H	1:K:165:GLN:HE21	1.68	0.41
2:L:361:HIS:CD2	2:L:361:HIS:N	2.81	0.41
1:E:190:GLN:HG3	2:F:333:ARG:HG2	2.03	0.40
2:H:417:ALA:HB1	5:H:3682:HOH:O	2.21	0.40
2:L:519:LEU:HD23	2:L:519:LEU:HA	1.89	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:335:ALA:HB2	2:F:328:ILE:HD12	2.03	0.40
1:C:18:HIS:CG	5:C:1648:HOH:O	2.72	0.40
1:E:17:VAL:CG1	1:E:18:HIS:N	2.85	0.40
1:I:23:LEU:CD1	1:I:23:LEU:N	2.84	0.40
1:I:26:ALA:O	2:J:411:LYS:NZ	2.54	0.40
1:K:31:ARG:HH12	2:L:428:ARG:HG2	1.83	0.40
2:L:356:PHE:HD1	2:L:428:ARG:HD3	1.85	0.40
2:F:411:LYS:HE2	2:F:411:LYS:HB2	1.95	0.40
2:J:522:ARG:HA	2:J:522:ARG:HD2	1.93	0.40
1:K:25:ALA:HB1	1:K:98:THR:HG21	2.03	0.40
1:A:129:SER:HA	1:A:139:LEU:O	2.22	0.40
2:L:403:ASN:C	2:L:403:ASN:OD1	2.65	0.40
2:L:429:CME:SG	2:L:437:TYR:HB2	2.61	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	A	198/200 (99%)	188 (95%)	10 (5%)	0	100	100
1	C	198/200 (99%)	189 (96%)	9 (4%)	0	100	100
1	E	198/200 (99%)	192 (97%)	6 (3%)	0	100	100
1	G	198/200 (99%)	190 (96%)	8 (4%)	0	100	100
1	I	198/200 (99%)	191 (96%)	6 (3%)	1 (0%)	24	17
1	K	198/200 (99%)	184 (93%)	14 (7%)	0	100	100
2	B	235/238 (99%)	227 (97%)	7 (3%)	1 (0%)	30	23
2	D	235/238 (99%)	227 (97%)	7 (3%)	1 (0%)	30	23
2	F	235/238 (99%)	227 (97%)	7 (3%)	1 (0%)	30	23
2	H	235/238 (99%)	227 (97%)	7 (3%)	1 (0%)	30	23

Continued on next page...

*Continued from previous page...*

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	J	235/238 (99%)	226 (96%)	8 (3%)	1 (0%)	30	23
2	L	235/238 (99%)	226 (96%)	8 (3%)	1 (0%)	30	23
All	All	2598/2628 (99%)	2494 (96%)	97 (4%)	7 (0%)	36	30

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	368	ASN
2	D	368	ASN
2	F	368	ASN
2	J	368	ASN
2	L	368	ASN
2	H	535	PHE
1	I	132	ALA

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	162/163 (99%)	156 (96%)	6 (4%)	30	24
1	C	162/163 (99%)	150 (93%)	12 (7%)	13	6
1	E	162/163 (99%)	154 (95%)	8 (5%)	22	15
1	G	162/163 (99%)	153 (94%)	9 (6%)	19	12
1	I	162/163 (99%)	157 (97%)	5 (3%)	35	30
1	K	162/163 (99%)	152 (94%)	10 (6%)	16	9
2	B	199/201 (99%)	188 (94%)	11 (6%)	19	12
2	D	199/201 (99%)	189 (95%)	10 (5%)	22	14
2	F	199/201 (99%)	187 (94%)	12 (6%)	17	10
2	H	199/201 (99%)	187 (94%)	12 (6%)	17	10
2	J	199/201 (99%)	187 (94%)	12 (6%)	17	10
2	L	199/201 (99%)	188 (94%)	11 (6%)	19	12

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	2166/2184 (99%)	2048 (95%)	118 (5%)	20	12

All (118) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	LEU
1	A	19	ILE
1	A	52	LEU
1	A	94	ARG
1	A	133	ARG
1	A	165	GLN
2	B	306	SER
2	B	364	LEU
2	B	372	LEU
2	B	395	THR
2	B	411	LYS
2	B	416	LEU
2	B	428	ARG
2	B	497	ASN
2	B	503	GLN
2	B	507	LYS
2	B	534	HIS
1	C	4	LEU
1	C	19	ILE
1	C	32	ASP
1	C	42	PRO
1	C	52	LEU
1	C	94	ARG
1	C	106	LEU
1	C	114	VAL
1	C	126	ILE
1	C	158	LEU
1	C	165	GLN
1	C	178	ASP
2	D	364	LEU
2	D	372	LEU
2	D	393	PRO
2	D	395	THR
2	D	411	LYS
2	D	428	ARG
2	D	442	ILE
2	D	473	LYS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	D	507	LYS
2	D	534	HIS
1	E	4	LEU
1	E	52	LEU
1	E	124	PRO
1	E	143	LEU
1	E	150	GLN
1	E	158	LEU
1	E	165	GLN
1	E	192	GLU
2	F	364	LEU
2	F	372	LEU
2	F	395	THR
2	F	399	MET
2	F	411	LYS
2	F	416	LEU
2	F	428	ARG
2	F	442	ILE
2	F	497	ASN
2	F	507	LYS
2	F	534	HIS
2	F	538	CYS
1	G	4	LEU
1	G	19	ILE
1	G	23	LEU
1	G	52	LEU
1	G	94	ARG
1	G	154	LYS
1	G	158	LEU
1	G	165	GLN
1	G	180	LYS
2	H	318	LYS
2	H	364	LEU
2	H	372	LEU
2	H	395	THR
2	H	411	LYS
2	H	428	ARG
2	H	434	ASP
2	H	442	ILE
2	H	499	GLU
2	H	507	LYS
2	H	534	HIS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	H	538	CYS
1	I	4	LEU
1	I	19	ILE
1	I	42	PRO
1	I	52	LEU
1	I	165	GLN
2	J	364	LEU
2	J	372	LEU
2	J	395	THR
2	J	399	MET
2	J	411	LYS
2	J	428	ARG
2	J	434	ASP
2	J	442	ILE
2	J	475	ILE
2	J	478	LEU
2	J	507	LYS
2	J	534	HIS
1	K	4	LEU
1	K	19	ILE
1	K	23	LEU
1	K	42	PRO
1	K	52	LEU
1	K	94	ARG
1	K	114	VAL
1	K	157	VAL
1	K	165	GLN
1	K	171	ILE
2	L	306	SER
2	L	364	LEU
2	L	372	LEU
2	L	393	PRO
2	L	395	THR
2	L	411	LYS
2	L	428	ARG
2	L	507	LYS
2	L	515	PRO
2	L	534	HIS
2	L	538	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (58) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	GLN
1	A	61	HIS
1	A	107	HIS
1	A	163	GLN
1	A	165	GLN
2	B	361	HIS
2	B	368	ASN
2	B	369	ASN
2	B	412	ASN
2	B	422	ASN
2	B	497	ASN
2	B	502	GLN
2	B	503	GLN
2	B	530	GLN
1	C	163	GLN
1	C	165	GLN
2	D	361	HIS
2	D	368	ASN
2	D	422	ASN
2	D	497	ASN
2	D	503	GLN
1	E	54	GLN
1	E	163	GLN
1	E	165	GLN
2	F	305	ASN
2	F	359	HIS
2	F	361	HIS
2	F	368	ASN
2	F	412	ASN
2	F	422	ASN
2	F	497	ASN
2	F	503	GLN
2	F	530	GLN
1	G	150	GLN
1	G	163	GLN
1	G	165	GLN
2	H	361	HIS
2	H	412	ASN
2	H	422	ASN
2	H	497	ASN
2	H	503	GLN
1	I	150	GLN
1	I	163	GLN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	I	165	GLN
2	J	305	ASN
2	J	361	HIS
2	J	368	ASN
2	J	497	ASN
2	J	503	GLN
2	J	511	ASN
2	J	537	ASN
1	K	163	GLN
1	K	165	GLN
2	L	361	HIS
2	L	368	ASN
2	L	369	ASN
2	L	422	ASN
2	L	497	ASN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

6 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	CME	D	429	2	8,9,10	2.77	3 (37%)	6,9,11	2.48	4 (66%)
2	CME	L	429	2	8,9,10	2.85	3 (37%)	6,9,11	2.85	3 (50%)
2	CME	B	429	2	8,9,10	3.34	3 (37%)	6,9,11	2.80	3 (50%)
2	CME	F	429	2	8,9,10	3.15	3 (37%)	6,9,11	1.74	2 (33%)
2	CME	H	429	2	8,9,10	3.58	4 (50%)	6,9,11	2.74	5 (83%)
2	CME	J	429	2	8,9,10	2.62	2 (25%)	6,9,11	1.64	2 (33%)



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
2	CME	D	429	2	-	3/5/8/10	-
2	CME	L	429	2	-	3/5/8/10	-
2	CME	B	429	2	-	3/5/8/10	-
2	CME	F	429	2	-	3/5/8/10	-
2	CME	H	429	2	-	3/5/8/10	-
2	CME	J	429	2	-	2/5/8/10	-

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	429	CME	CB-SG	-7.65	1.56	1.81
2	F	429	CME	CB-SG	-6.93	1.58	1.81
2	H	429	CME	CB-SG	-6.69	1.59	1.81
2	D	429	CME	CB-SG	-6.27	1.60	1.81
2	J	429	CME	CB-SG	-6.22	1.60	1.81
2	L	429	CME	CB-SG	-5.92	1.61	1.81
2	H	429	CME	CE-CZ	5.48	1.86	1.50
2	F	429	CME	CE-CZ	4.22	1.78	1.50
2	H	429	CME	CE-SD	4.04	1.98	1.82
2	B	429	CME	CE-CZ	3.98	1.76	1.50
2	L	429	CME	CE-SD	3.96	1.98	1.82
2	J	429	CME	CE-CZ	3.44	1.73	1.50
2	B	429	CME	CE-SD	3.25	1.95	1.82
2	D	429	CME	CE-CZ	3.10	1.71	1.50
2	F	429	CME	CE-SD	2.95	1.94	1.82
2	H	429	CME	O-C	2.69	1.30	1.20
2	D	429	CME	CE-SD	2.60	1.92	1.82
2	L	429	CME	CA-N	-2.38	1.41	1.48

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	429	CME	CZ-CE-SD	-5.10	96.32	113.39
2	L	429	CME	CB-SG-SD	-4.32	92.68	103.86
2	H	429	CME	CB-SG-SD	-4.09	93.29	103.86
2	D	429	CME	CE-SD-SG	3.48	118.72	103.46
2	L	429	CME	CE-SD-SG	3.38	118.30	103.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	429	CME	CZ-CE-SD	-3.36	102.15	113.39
2	H	429	CME	CZ-CE-SD	-3.18	102.74	113.39
2	B	429	CME	OH-CZ-CE	3.10	122.91	110.82
2	B	429	CME	CE-SD-SG	2.95	116.41	103.46
2	D	429	CME	CZ-CE-SD	-2.90	103.69	113.39
2	F	429	CME	CE-SD-SG	2.80	115.73	103.46
2	J	429	CME	OH-CZ-CE	2.75	121.56	110.82
2	D	429	CME	OH-CZ-CE	2.60	120.98	110.82
2	H	429	CME	CE-SD-SG	2.55	114.64	103.46
2	H	429	CME	CA-CB-SG	2.52	124.78	114.45
2	F	429	CME	OH-CZ-CE	2.40	120.19	110.82
2	H	429	CME	OH-CZ-CE	2.21	119.44	110.82
2	J	429	CME	CE-SD-SG	2.14	112.86	103.46
2	D	429	CME	CA-CB-SG	2.10	123.05	114.45

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	429	CME	N-CA-CB-SG
2	H	429	CME	N-CA-CB-SG
2	L	429	CME	N-CA-CB-SG
2	B	429	CME	SD-CE-CZ-OH
2	D	429	CME	SD-CE-CZ-OH
2	F	429	CME	SD-CE-CZ-OH
2	H	429	CME	SD-CE-CZ-OH
2	J	429	CME	SD-CE-CZ-OH
2	L	429	CME	SD-CE-CZ-OH
2	D	429	CME	N-CA-CB-SG
2	F	429	CME	N-CA-CB-SG
2	J	429	CME	N-CA-CB-SG
2	B	429	CME	CZ-CE-SD-SG
2	H	429	CME	CZ-CE-SD-SG
2	L	429	CME	CZ-CE-SD-SG
2	D	429	CME	CZ-CE-SD-SG
2	F	429	CME	CZ-CE-SD-SG

There are no ring outliers.

6 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	429	CME	2	0
2	L	429	CME	1	0
2	B	429	CME	2	0
2	F	429	CME	2	0
2	H	429	CME	2	0
2	J	429	CME	1	0

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 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	$\# Z  > 2$
4	DHB	L	5550	3	11,11,11	1.05	1 (9%)	15,15,15	0.84	0
4	DHB	B	550	3	11,11,11	1.45	1 (9%)	15,15,15	0.87	0
4	DHB	J	4550	3	11,11,11	1.19	1 (9%)	15,15,15	0.78	1 (6%)
4	DHB	H	3550	3	11,11,11	1.83	2 (18%)	15,15,15	0.91	0
4	DHB	F	2550	3	11,11,11	1.26	2 (18%)	15,15,15	0.84	0
4	DHB	D	1550	3	11,11,11	1.29	3 (27%)	15,15,15	0.78	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	DHB	L	5550	3	-	0/4/4/4	0/1/1/1
4	DHB	B	550	3	-	0/4/4/4	0/1/1/1
4	DHB	J	4550	3	-	0/4/4/4	0/1/1/1

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	DHB	H	3550	3	-	0/4/4/4	0/1/1/1
4	DHB	F	2550	3	-	0/4/4/4	0/1/1/1
4	DHB	D	1550	3	-	0/4/4/4	0/1/1/1

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	H	3550	DHB	C2-C3	-2.74	1.35	1.38
4	B	550	DHB	C4-C3	-2.69	1.35	1.40
4	H	3550	DHB	C5-C4	-2.62	1.35	1.39
4	J	4550	DHB	O2-C	-2.57	1.22	1.30
4	D	1550	DHB	O2-C	-2.45	1.23	1.30
4	F	2550	DHB	C4-C3	-2.44	1.36	1.40
4	L	5550	DHB	O2-C	-2.41	1.23	1.30
4	D	1550	DHB	C1-C	-2.30	1.44	1.49
4	D	1550	DHB	C4-C3	-2.21	1.36	1.40
4	F	2550	DHB	O2-C	-2.11	1.24	1.30

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	J	4550	DHB	O2-C-C1	2.00	119.98	114.84

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

6 monomers are involved in 27 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	L	5550	DHB	4	0
4	B	550	DHB	4	0
4	J	4550	DHB	3	0
4	H	3550	DHB	5	0
4	F	2550	DHB	8	0
4	D	1550	DHB	3	0

## 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 ⓘ

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	200/200 (100%)	-0.86	0 100 100	6, 18, 47, 61	0
1	C	200/200 (100%)	-0.80	3 (1%) 72 74	7, 19, 45, 62	0
1	E	200/200 (100%)	-0.82	0 100 100	7, 20, 48, 61	0
1	G	200/200 (100%)	-0.83	2 (1%) 79 82	7, 20, 49, 62	0
1	I	200/200 (100%)	-0.75	1 (0%) 87 89	8, 21, 49, 63	0
1	K	200/200 (100%)	-0.74	0 100 100	9, 23, 49, 62	0
2	B	237/238 (99%)	-1.03	2 (0%) 82 84	7, 13, 38, 58	0
2	D	237/238 (99%)	-1.04	1 (0%) 88 90	6, 13, 39, 60	0
2	F	237/238 (99%)	-1.03	0 100 100	5, 14, 38, 58	0
2	H	237/238 (99%)	-1.05	0 100 100	7, 14, 39, 54	0
2	J	237/238 (99%)	-1.01	2 (0%) 82 84	7, 15, 39, 59	0
2	L	237/238 (99%)	-1.02	1 (0%) 88 90	9, 15, 39, 59	0
All	All	2622/2628 (99%)	-0.92	12 (0%) 87 89	5, 17, 46, 63	0

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	101	ALA	4.0
2	B	370	GLY	3.3
2	D	369	ASN	3.2
1	I	101	ALA	2.9
2	L	369	ASN	2.4
1	C	98	THR	2.4
1	G	101	ALA	2.3
1	C	100	ASP	2.3
2	J	370	GLY	2.2
2	B	369	ASN	2.2
2	J	369	ASN	2.0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	G	26	ALA	2.0

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

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	CME	D	429	10/11	0.92	0.09	17,25,51,51	0
2	CME	F	429	10/11	0.93	0.08	16,23,49,50	0
2	CME	L	429	10/11	0.93	0.07	19,27,49,50	0
2	CME	H	429	10/11	0.95	0.08	14,23,49,49	0
2	CME	B	429	10/11	0.95	0.07	14,24,46,47	0
2	CME	J	429	10/11	0.96	0.06	20,26,50,51	0

## 6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	FE	H	3600	1/1	0.72	0.09	82,82,82,82	0
3	FE	L	5600	1/1	0.78	0.08	75,75,75,75	0
4	DHB	B	550	11/11	0.78	0.12	46,49,50,51	0
4	DHB	J	4550	11/11	0.78	0.12	50,51,52,53	0
4	DHB	D	1550	11/11	0.80	0.13	51,52,55,55	0
4	DHB	F	2550	11/11	0.82	0.14	55,57,59,60	0
4	DHB	L	5550	11/11	0.82	0.14	54,56,58,60	0
3	FE	F	2600	1/1	0.84	0.07	77,77,77,77	0
4	DHB	H	3550	11/11	0.90	0.11	54,55,57,57	0
3	FE	B	600	1/1	0.91	0.05	83,83,83,83	0
3	FE	J	4600	1/1	0.93	0.08	80,80,80,80	0

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	FE	D	1600	1/1	0.93	0.06	69,69,69,69	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.