



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 15, 2017 – 04:50 am GMT

PDB ID : 2HTY  
Title : N1 neuraminidase  
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Deposited on : 2006-07-26  
Resolution : 2.50 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7.2 (RC1), CSD as538be (2017)  
Xtriage (Phenix) : 1.9-1692  
EDS : trunk28620  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : recalc28949

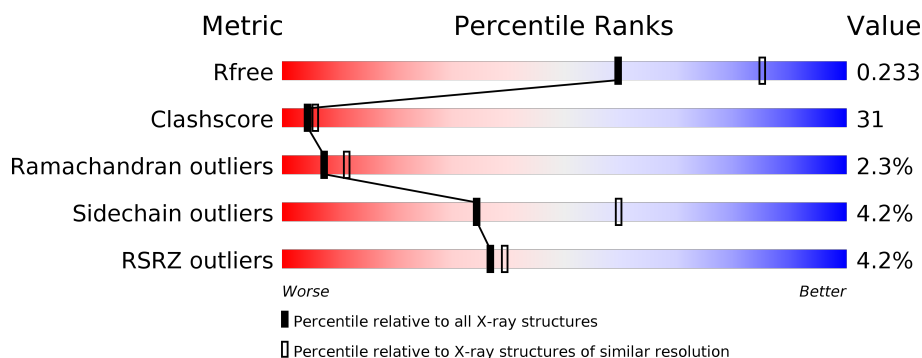
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	100719	3846 (2.50-2.50)
Clashscore	112137	4554 (2.50-2.50)
Ramachandran outliers	110173	4463 (2.50-2.50)
Sidechain outliers	110143	4465 (2.50-2.50)
RSRZ outliers	101464	3876 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	387	<div> <div>2%</div> <div> <div></div> <div>58%</div> <div>37%</div> <div>• •</div> </div> </div>
1	B	387	<div> <div>2%</div> <div> <div></div> <div>56%</div> <div>37%</div> <div>6%</div> <div>•</div> </div> </div>
1	C	387	<div> <div>4%</div> <div> <div></div> <div>57%</div> <div>36%</div> <div>6%</div> <div>•</div> </div> </div>
1	D	387	<div> <div>2%</div> <div> <div></div> <div>59%</div> <div>35%</div> <div>5%</div> <div>•</div> </div> </div>
1	E	387	<div> <div>5%</div> <div> <div></div> <div>55%</div> <div>40%</div> <div>• •</div> </div> </div>
1	F	387	<div> <div>5%</div> <div> <div></div> <div>57%</div> <div>37%</div> <div>5%</div> <div>•</div> </div> </div>

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Mol	Chain	Length	Quality of chain
1	G	387	<div><div>5%</div><div><div></div><div>56%</div><div>37%</div><div>5%</div></div><div></div></div>
1	H	387	<div><div>9%</div><div><div></div><div>54%</div><div>41%</div><div></div></div><div></div></div>

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 24458 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.

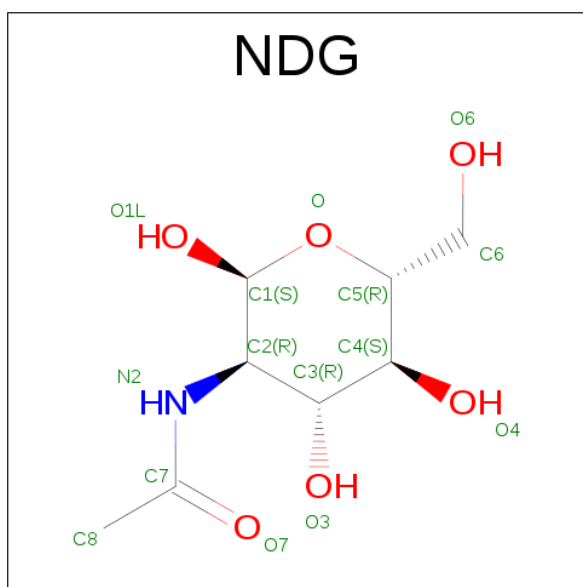
- Molecule 1 is a protein called Neuraminidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	B	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	C	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	D	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	E	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	F	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	G	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			
1	H	385	Total	C	N	O	S	0	0	0
			2962	1858	510	573	21			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
B	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
C	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
D	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
E	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
F	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
G	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2
H	169A	TYR	HIS	ENGINEERED	UNP Q6DPL2

- Molecule 2 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NDG) (formula:  $C_8H_{15}NO_6$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			15	8	1	6		
2	B	1	Total	C	N	O	0	0
			15	8	1	6		
2	C	1	Total	C	N	O	0	0
			15	8	1	6		
2	D	1	Total	C	N	O	0	0
			15	8	1	6		
2	F	1	Total	C	N	O	0	0
			15	8	1	6		
2	G	1	Total	C	N	O	0	0
			15	8	1	6		
2	H	1	Total	C	N	O	0	0
			15	8	1	6		

- Molecule 3 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula:  $C_8H_{15}NO_6$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	E	1	Total	C	N	O	0	0
			15	8	1	6		

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	G	1	Total	Ca	0	0
			1	1		
4	D	1	Total	Ca	0	0
			1	1		
4	E	1	Total	Ca	0	0
			1	1		
4	H	1	Total	Ca	0	0
			1	1		
4	B	1	Total	Ca	0	0
			1	1		
4	C	1	Total	Ca	0	0
			1	1		
4	A	1	Total	Ca	0	0
			1	1		
4	F	1	Total	Ca	0	0
			1	1		

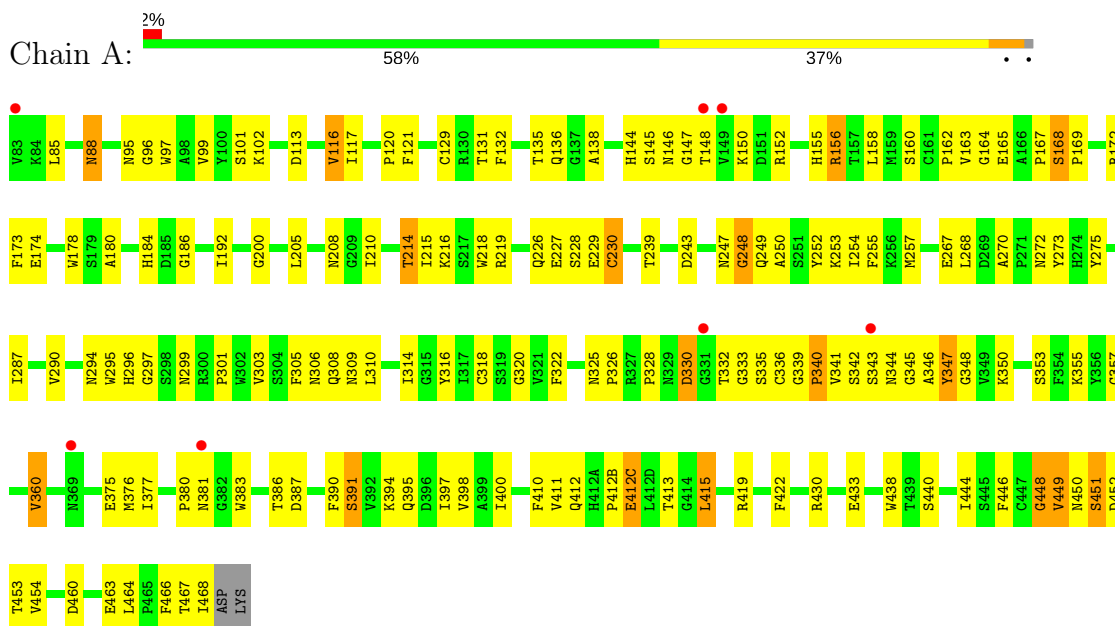
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	111	Total 111	O 111	0	0
5	B	91	Total 91	O 91	0	0
5	C	102	Total 102	O 102	0	0
5	D	104	Total 104	O 104	0	0
5	E	54	Total 54	O 54	0	0
5	F	46	Total 46	O 46	0	0
5	G	86	Total 86	O 86	0	0
5	H	40	Total 40	O 40	0	0

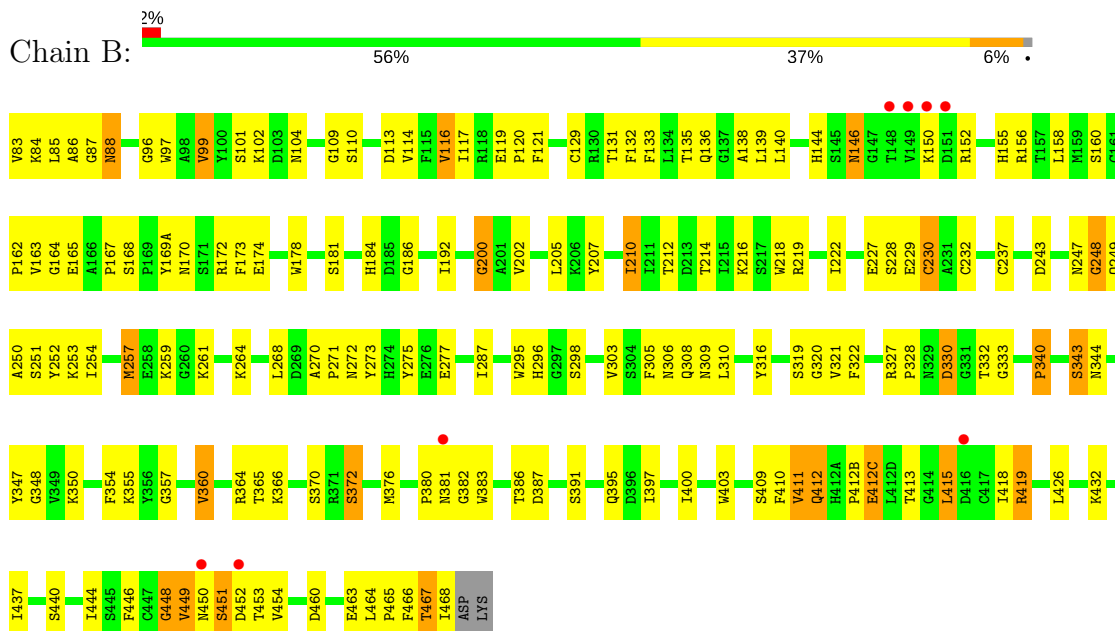
### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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: Neuraminidase

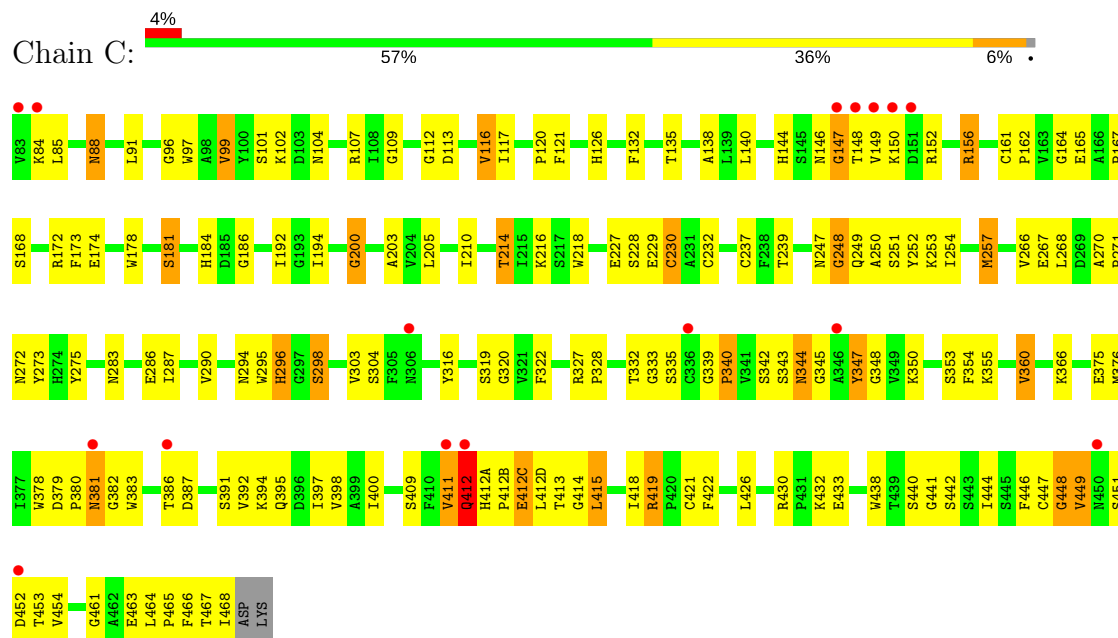


#### • Molecule 1: Neuraminidase

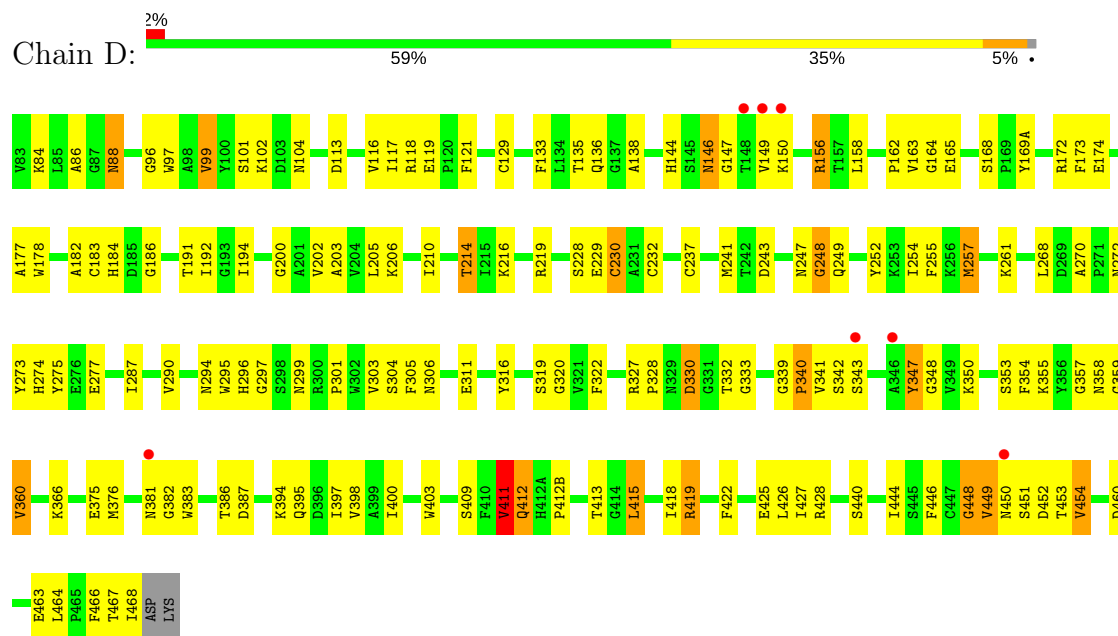




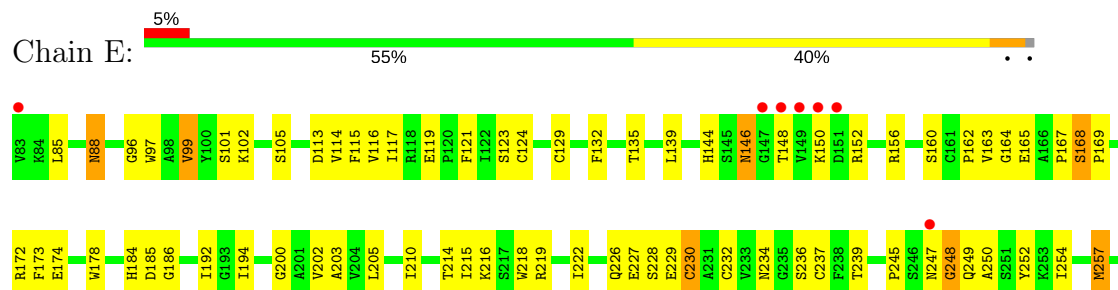
- Molecule 1: Neuraminidase

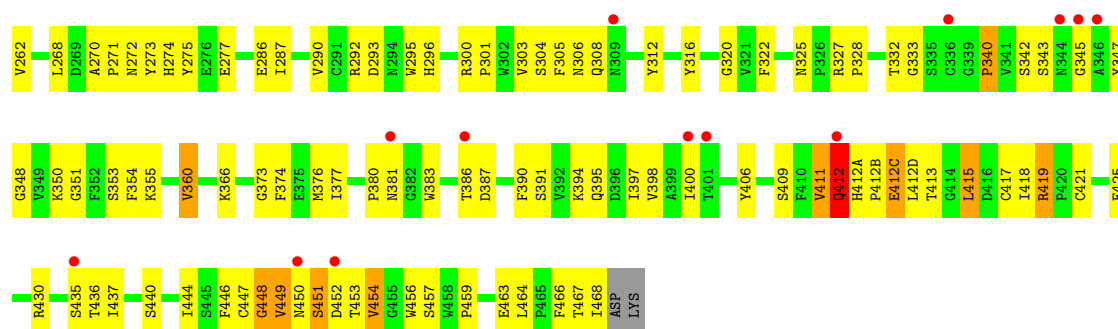


- Molecule 1: Neuraminidase

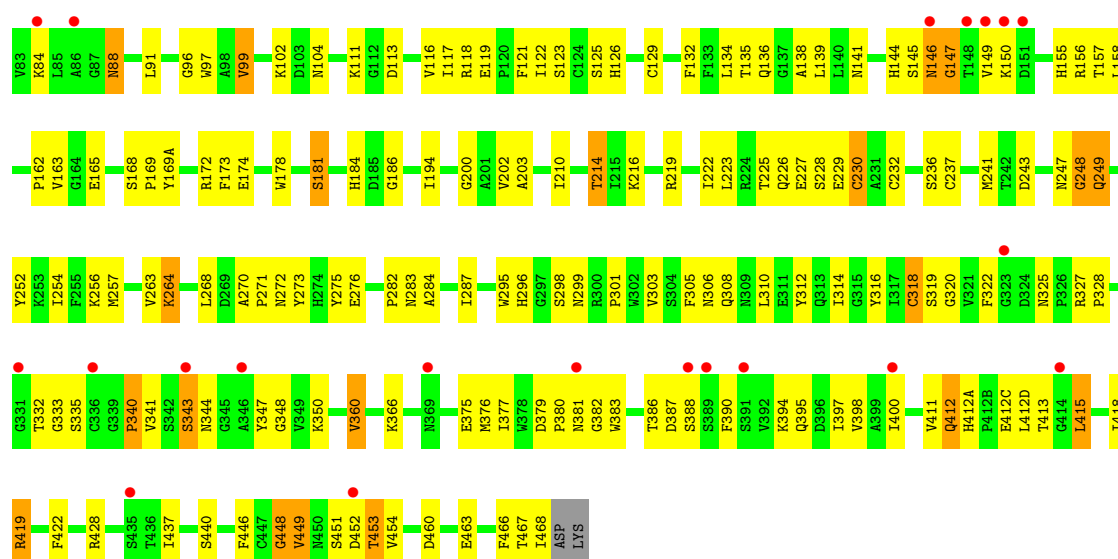


- Molecule 1: Neuraminidase

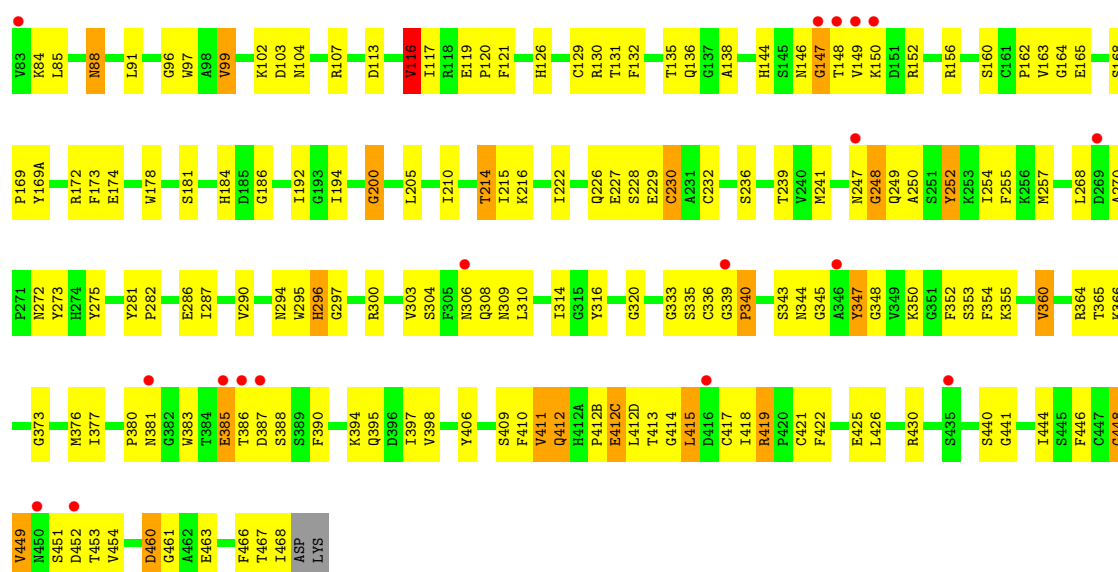




### • Molecule 1: Neuraminidase

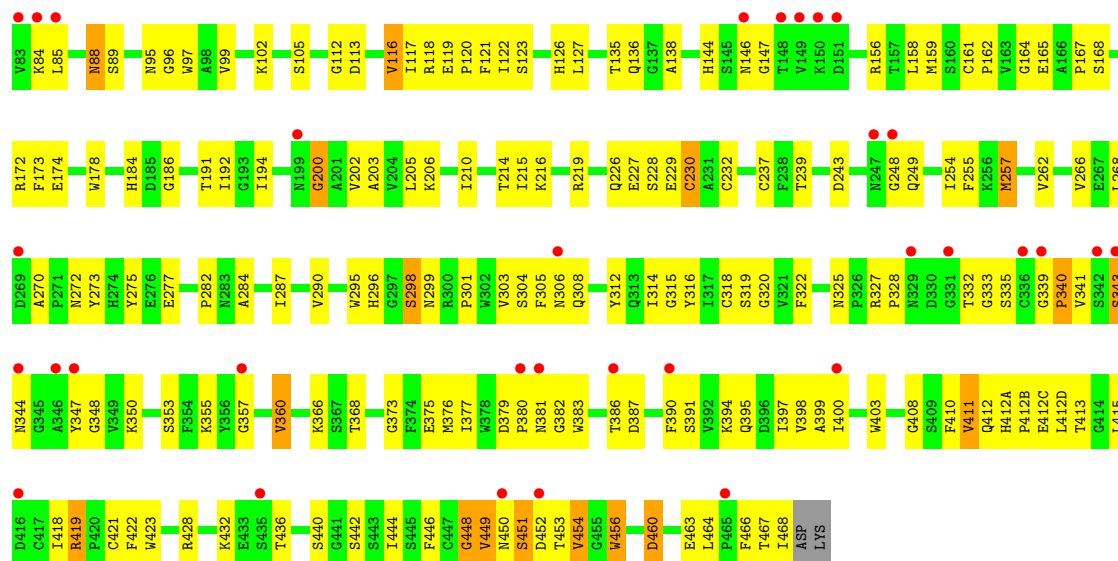


### • Molecule 1: Neuraminidase



● Molecule 1: Neuraminidase

Chain H: 



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	200.21Å 200.77Å 211.68Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 2.50 19.99 – 2.50	Depositor EDS
% Data completeness (in resolution range)	(Not available) (30.00-2.50) 98.0 (19.99-2.50)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.12	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.59 (at 2.50Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.232 , 0.262 0.235 , 0.233	Depositor DCC
$R_{free}$ test set	7196 reflections (5.29%)	DCC
Wilson B-factor (Å <sup>2</sup> )	29.9	Xtriage
Anisotropy	0.341	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 35.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.46$ , $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	0.054 for -k,-h,-l	Xtriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	24458	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 22.02 % of the origin peak, indicating pseudo translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo translational symmetry is equal to 6.2128e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CA, NAG, NDG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z  > 5$	RMSZ	# $ Z  > 5$
1	A	0.45	0/3045	0.74	0/4141
1	B	0.65	4/3045 (0.1%)	0.82	4/4141 (0.1%)
1	C	0.64	2/3045 (0.1%)	0.92	7/4141 (0.2%)
1	D	0.60	3/3045 (0.1%)	0.81	3/4141 (0.1%)
1	E	0.58	3/3045 (0.1%)	0.87	6/4141 (0.1%)
1	F	0.40	0/3045	0.71	0/4141
1	G	0.47	1/3045 (0.0%)	0.77	4/4141 (0.1%)
1	H	0.39	0/3045	0.71	1/4141 (0.0%)
All	All	0.53	13/24360 (0.1%)	0.80	25/33128 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2
1	D	0	1
1	E	0	2
1	F	0	1
All	All	0	6

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	411	VAL	CB-CG2	21.65	1.98	1.52
1	C	411	VAL	CB-CG2	20.64	1.96	1.52
1	B	411	VAL	CB-CG2	20.57	1.96	1.52
1	E	411	VAL	CB-CG2	19.57	1.94	1.52
1	B	411	VAL	CB-CG1	-14.30	1.22	1.52
1	C	412	GLN	C-N	-13.57	1.02	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	412	GLN	C-N	-11.05	1.08	1.34
1	G	412	GLN	CB-CG	10.03	1.79	1.52
1	D	411	VAL	CB-CG1	-6.97	1.38	1.52
1	E	411	VAL	CB-CG1	6.90	1.67	1.52
1	D	412	GLN	CB-CG	6.41	1.69	1.52
1	B	412	GLN	C-N	-6.36	1.19	1.34
1	B	412	GLN	CB-CG	6.12	1.69	1.52

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	412	GLN	O-C-N	-19.52	91.47	122.70
1	B	411	VAL	CA-CB-CG2	-17.61	84.48	110.90
1	E	411	VAL	CA-CB-CG2	-16.36	86.37	110.90
1	E	412	GLN	O-C-N	-16.21	96.76	122.70
1	D	411	VAL	CA-CB-CG2	-15.69	87.36	110.90
1	E	411	VAL	CG1-CB-CG2	-15.08	86.78	110.90
1	C	411	VAL	CA-CB-CG2	-15.04	88.34	110.90
1	C	411	VAL	CG1-CB-CG2	-13.75	88.90	110.90
1	C	412	GLN	CA-C-N	13.04	145.88	117.20
1	C	412	GLN	C-N-CA	11.54	150.54	121.70
1	D	411	VAL	CG1-CB-CG2	-11.18	93.02	110.90
1	E	412	GLN	CA-C-N	10.35	139.97	117.20
1	E	411	VAL	CA-CB-CG1	-9.18	97.13	110.90
1	B	411	VAL	CA-CB-CG1	8.92	124.28	110.90
1	G	412	GLN	CA-CB-CG	-8.87	93.89	113.40
1	E	412	GLN	C-N-CA	8.35	142.57	121.70
1	C	411	VAL	CA-CB-CG1	-6.93	100.50	110.90
1	B	411	VAL	CG1-CB-CG2	-6.62	100.32	110.90
1	G	412	GLN	N-CA-CB	6.53	122.35	110.60
1	H	411	VAL	CB-CA-C	-6.25	99.53	111.40
1	B	412	GLN	CA-CB-CG	-5.77	100.71	113.40
1	C	116	VAL	N-CA-C	-5.57	95.95	111.00
1	G	411	VAL	CB-CA-C	-5.49	100.97	111.40
1	D	412	GLN	CA-CB-CG	-5.37	101.58	113.40
1	G	116	VAL	N-CA-C	-5.22	96.91	111.00

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	412	GLN	Mainchain,Peptide

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Mol	Chain	Res	Type	Group
1	D	411	VAL	Mainchain
1	E	412	GLN	Mainchain,Peptide
1	F	412	GLN	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	2962	0	2783	187	0
1	B	2962	0	2783	197	0
1	C	2962	0	2782	219	1
1	D	2962	0	2783	199	0
1	E	2962	0	2781	200	0
1	F	2962	0	2783	182	0
1	G	2962	0	2783	200	0
1	H	2962	0	2783	200	0
2	A	15	0	15	3	0
2	B	15	0	15	3	0
2	C	15	0	15	6	0
2	D	15	0	15	6	0
2	F	15	0	15	4	0
2	G	15	0	15	4	0
2	H	15	0	15	5	0
3	E	15	0	15	2	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	F	1	0	0	0	0
4	G	1	0	0	0	0
4	H	1	0	0	0	0
5	A	111	0	0	24	0
5	B	91	0	0	29	0
5	C	102	0	0	41	0
5	D	104	0	0	25	1
5	E	54	0	0	16	0
5	F	46	0	0	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	G	86	0	0	26	0
5	H	40	0	0	27	0
All	All	24458	0	22381	1452	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 31.

All (1452) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:412:GLN:CG	1:G:412:GLN:CB	1.79	1.51
1:C:411:VAL:CG2	1:C:411:VAL:CB	1.96	1.44
1:E:411:VAL:CG2	1:E:411:VAL:CB	1.94	1.43
1:B:411:VAL:CB	1:B:411:VAL:CG2	1.96	1.42
1:D:411:VAL:CG2	1:D:411:VAL:CB	1.98	1.42
1:E:412:GLN:NE2	1:E:421:CYS:SG	1.97	1.37
1:B:412(C):GLU:HG2	5:B:1151:HOH:O	1.37	1.20
1:E:412:GLN:HG3	1:E:419:ARG:CB	1.78	1.14
1:C:412:GLN:NE2	1:C:421:CYS:SG	2.20	1.14
1:H:328:PRO:HD3	5:H:1154:HOH:O	1.46	1.13
1:E:412:GLN:CG	1:E:419:ARG:HB3	1.78	1.13
1:E:412:GLN:HG3	1:E:419:ARG:HB3	1.24	1.12
1:G:146:ASN:HD21	2:G:1146:NDG:H1	1.09	1.12
1:A:216:LYS:HD3	1:D:452:ASP:HB3	1.30	1.10
1:G:85:LEU:HD12	1:G:412(C):GLU:HG3	1.32	1.07
1:E:413:THR:HG21	1:E:415:LEU:HD22	1.34	1.05
1:H:376:MET:HG2	1:H:397:ILE:HD11	1.37	1.05
1:F:216:LYS:HD3	1:G:452:ASP:HB3	1.38	1.05
1:E:412(D):LEU:HA	5:E:1154:HOH:O	1.56	1.04
1:H:146:ASN:HD21	2:H:1146:NDG:H1	1.18	1.04
1:A:413:THR:HG21	1:A:415:LEU:HD22	1.36	1.03
1:E:452:ASP:HB3	1:G:216:LYS:HD3	1.40	1.03
1:E:412:GLN:HB2	1:E:419:ARG:HB2	1.37	1.03
1:D:97:TRP:O	1:D:453:THR:HG21	1.57	1.02
1:B:146:ASN:HD21	2:B:1146:NDG:H1	1.22	1.02
1:E:412:GLN:CG	1:E:419:ARG:CB	2.35	1.02
1:B:413:THR:HG21	1:B:415:LEU:HD22	1.38	1.02
1:C:412:GLN:CG	1:C:419:ARG:HB3	1.90	1.02
1:D:453:THR:HG22	1:D:454:VAL:H	1.26	1.01
1:A:453:THR:HG22	1:A:454:VAL:H	1.26	1.01
1:B:411:VAL:CA	1:B:411:VAL:CG2	2.39	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:328:PRO:HD3	5:C:1147:HOH:O	1.58	1.00
1:A:97:TRP:O	1:A:453:THR:HG21	1.59	1.00
1:D:413:THR:HG21	1:D:415:LEU:HD22	1.41	0.99
1:A:146:ASN:HD21	2:A:1146:NDG:H1	1.28	0.99
1:E:411:VAL:CA	1:E:411:VAL:CG2	2.40	0.98
1:E:412:GLN:CB	1:E:419:ARG:HB2	1.93	0.98
1:G:412(B):PRO:HA	5:G:1148:HOH:O	1.62	0.98
1:G:85:LEU:CD1	1:G:412(C):GLU:HG3	1.92	0.98
1:C:412:GLN:HG3	1:C:419:ARG:HB3	1.46	0.97
1:B:85:LEU:HD12	1:B:412(C):GLU:HG3	1.45	0.97
1:G:84:LYS:HG2	5:G:1163:HOH:O	1.61	0.97
1:E:88:ASN:HD22	1:E:88:ASN:H	1.06	0.97
1:E:249:GLN:NE2	1:E:272:ASN:H	1.62	0.97
1:B:97:TRP:O	1:B:453:THR:HG21	1.65	0.96
1:C:413:THR:HG21	1:C:415:LEU:HD22	1.47	0.96
1:A:144:HIS:HE1	1:D:463:GLU:H	1.01	0.96
1:C:249:GLN:NE2	1:C:272:ASN:H	1.63	0.95
1:G:412:GLN:CG	1:G:412:GLN:CA	2.44	0.95
1:G:453:THR:HG22	1:G:454:VAL:H	1.30	0.95
1:E:85:LEU:HD12	1:E:412(C):GLU:HG3	1.48	0.95
1:D:411:VAL:CG2	1:D:411:VAL:CA	2.45	0.94
1:F:376:MET:HG2	1:F:397:ILE:HD11	1.49	0.94
1:C:146:ASN:HD21	2:C:1146:NDG:H1	1.32	0.94
1:B:144:HIS:HE1	1:C:463:GLU:H	1.01	0.94
1:C:411:VAL:CG2	1:C:411:VAL:CA	2.46	0.93
1:F:463:GLU:H	1:H:144:HIS:HE1	1.11	0.93
1:G:412:GLN:HB2	1:G:419:ARG:CB	1.98	0.93
1:H:320:GLY:HA3	1:H:387:ASP:O	1.68	0.93
1:G:146:ASN:ND2	2:G:1146:NDG:H1	1.82	0.93
1:C:412:GLN:HB2	1:C:419:ARG:HB2	1.50	0.93
1:C:249:GLN:HE21	1:C:272:ASN:H	0.99	0.92
1:G:282:PRO:HD2	1:G:411:VAL:HG21	1.49	0.92
1:C:343:SER:HB2	5:C:1151:HOH:O	1.70	0.92
1:B:463:GLU:H	1:D:144:HIS:HE1	1.10	0.92
1:A:463:GLU:H	1:C:144:HIS:HE1	0.99	0.91
1:B:452:ASP:HB3	1:D:216:LYS:HD3	1.50	0.91
1:D:411:VAL:CG2	1:D:411:VAL:CG1	2.47	0.91
1:E:411:VAL:CG2	1:E:411:VAL:CG1	2.48	0.91
1:F:413:THR:HG21	1:F:415:LEU:HD22	1.50	0.91
1:H:146:ASN:ND2	2:H:1146:NDG:H1	1.84	0.91
1:C:84:LYS:HG2	5:C:1159:HOH:O	1.71	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:411:VAL:CG1	1:B:411:VAL:CG2	2.49	0.90
1:D:249:GLN:HE21	1:D:272:ASN:H	1.15	0.89
1:D:358:ASN:O	1:D:381:ASN:HA	1.72	0.89
1:F:184:HIS:HD2	1:F:186:GLY:H	1.17	0.89
1:E:113:ASP:O	1:E:168:SER:HB2	1.72	0.89
1:H:97:TRP:O	1:H:453:THR:HG21	1.71	0.89
1:D:320:GLY:HA3	1:D:387:ASP:O	1.73	0.89
1:G:320:GLY:HA3	1:G:387:ASP:O	1.73	0.88
1:B:146:ASN:ND2	2:B:1146:NDG:H1	1.87	0.88
1:A:309:ASN:HB3	5:A:1160:HOH:O	1.71	0.88
1:C:97:TRP:O	1:C:453:THR:HG21	1.73	0.88
1:G:412(B):PRO:O	5:G:1171:HOH:O	1.90	0.88
1:C:146:ASN:HD21	2:C:1146:NDG:C1	1.86	0.87
1:F:144:HIS:HE1	1:G:463:GLU:H	1.19	0.87
1:G:97:TRP:O	1:G:453:THR:HG21	1.73	0.87
1:A:463:GLU:H	1:C:144:HIS:CE1	1.91	0.87
1:D:376:MET:HG2	1:D:397:ILE:HD11	1.56	0.87
1:F:452:ASP:HB3	1:H:216:LYS:HD3	1.53	0.87
1:G:413:THR:HB	5:G:1148:HOH:O	1.73	0.87
1:B:249:GLN:HE21	1:B:272:ASN:H	1.16	0.86
1:C:411:VAL:CG2	1:C:411:VAL:CG1	2.52	0.86
1:E:306:ASN:HB3	5:E:1152:HOH:O	1.74	0.86
1:E:463:GLU:H	1:G:144:HIS:HE1	1.23	0.86
1:C:146:ASN:ND2	2:C:1146:NDG:H1	1.90	0.86
1:G:306:ASN:HB3	5:G:1158:HOH:O	1.74	0.86
1:G:412(D):LEU:HD13	5:G:1173:HOH:O	1.76	0.86
1:B:360:VAL:HG22	1:B:383:TRP:HB2	1.56	0.86
1:F:214:THR:HB	1:G:451:SER:OG	1.76	0.86
1:A:146:ASN:ND2	2:A:1146:NDG:H1	1.91	0.86
1:D:146:ASN:ND2	2:D:1146:NDG:H1	1.90	0.85
1:E:453:THR:HG22	1:E:454:VAL:H	1.40	0.85
1:H:146:ASN:HD21	2:H:1146:NDG:C1	1.89	0.85
1:B:452:ASP:O	1:D:214:THR:HG21	1.76	0.85
1:E:376:MET:HG2	1:E:397:ILE:HD11	1.59	0.85
1:H:306:ASN:HB3	5:H:1147:HOH:O	1.75	0.85
1:H:412(B):PRO:HA	5:H:1148:HOH:O	1.76	0.85
1:A:88:ASN:HD22	1:A:88:ASN:H	1.19	0.84
1:A:216:LYS:CD	1:D:452:ASP:HB3	2.05	0.84
1:D:248:GLY:HA2	1:D:295:TRP:CE2	2.11	0.84
1:B:411:VAL:HA	1:B:411:VAL:CG2	2.06	0.84
1:E:411:VAL:CG2	1:E:411:VAL:HA	2.06	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:146:ASN:HD21	2:D:1146:NDG:H1	1.43	0.84
1:B:249:GLN:NE2	1:B:272:ASN:H	1.75	0.84
1:D:146:ASN:HD21	2:D:1146:NDG:C1	1.90	0.84
1:G:169(A):TYR:HB2	5:G:1151:HOH:O	1.77	0.84
1:F:97:TRP:O	1:F:453:THR:HG21	1.77	0.83
1:E:452:ASP:HB3	1:G:216:LYS:CD	2.07	0.83
1:D:249:GLN:NE2	1:D:272:ASN:H	1.76	0.83
1:C:453:THR:HG22	1:C:454:VAL:H	1.43	0.83
1:G:412:GLN:HB2	1:G:419:ARG:HB2	1.57	0.83
1:A:249:GLN:NE2	1:A:272:ASN:H	1.75	0.83
1:H:126:HIS:HA	5:H:1149:HOH:O	1.78	0.83
1:D:306:ASN:HB3	5:D:1156:HOH:O	1.75	0.83
1:E:144:HIS:HE1	1:H:463:GLU:H	1.25	0.83
1:D:316:TYR:CE1	1:D:340:PRO:HD3	2.14	0.83
1:A:210:ILE:HD11	5:D:1160:HOH:O	1.77	0.82
1:D:343:SER:C	5:D:1150:HOH:O	2.15	0.82
1:B:343:SER:C	5:B:1150:HOH:O	2.18	0.82
1:A:214:THR:HG21	1:D:452:ASP:O	1.78	0.82
1:E:184:HIS:HD2	1:E:186:GLY:H	1.26	0.82
1:B:170:ASN:HB3	5:B:1147:HOH:O	1.80	0.82
1:E:192:ILE:HG12	1:E:205:LEU:HD22	1.62	0.82
1:B:333:GLY:H	1:B:386:THR:HG23	1.45	0.82
1:F:117:ILE:HG22	1:F:135:THR:HG22	1.61	0.82
1:E:254:ILE:HD11	1:E:268:LEU:HD21	1.61	0.81
1:H:413:THR:HG21	1:H:415:LEU:HD22	1.59	0.81
1:A:452:ASP:HB3	1:C:216:LYS:HD3	1.59	0.81
1:B:146:ASN:HD21	2:B:1146:NDG:C1	1.91	0.81
1:F:146:ASN:HD21	2:F:1146:NDG:H1	1.46	0.81
1:B:216:LYS:HD3	1:C:452:ASP:HB3	1.61	0.81
1:A:320:GLY:HA3	1:A:387:ASP:O	1.81	0.81
1:G:343:SER:O	5:G:1152:HOH:O	1.99	0.80
1:H:84:LYS:HG2	5:H:1176:HOH:O	1.81	0.80
1:C:112:GLY:HA3	5:C:1149:HOH:O	1.81	0.80
1:E:169:PRO:HG3	5:E:1153:HOH:O	1.81	0.80
1:C:411:VAL:CG2	1:C:411:VAL:HA	2.11	0.80
1:B:85:LEU:CD1	1:B:412(C):GLU:HG3	2.12	0.80
1:H:376:MET:HG2	1:H:397:ILE:CD1	2.11	0.80
1:A:249:GLN:HE21	1:A:272:ASN:H	1.29	0.80
1:B:448:GLY:O	1:B:449:VAL:HB	1.80	0.80
1:D:412:GLN:HB2	1:D:419:ARG:HB2	1.64	0.79
1:A:144:HIS:CE1	1:D:463:GLU:H	1.94	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:412(C):GLU:OE2	5:E:1155:HOH:O	1.99	0.79
1:G:146:ASN:HD21	2:G:1146:NDG:C1	1.94	0.79
1:F:184:HIS:CD2	1:F:186:GLY:H	1.98	0.79
1:B:144:HIS:CE1	1:C:463:GLU:H	1.94	0.79
1:G:275:TYR:CE2	1:G:303:VAL:HG23	2.18	0.79
1:E:249:GLN:HE21	1:E:272:ASN:H	1.31	0.79
1:F:216:LYS:CD	1:G:452:ASP:HB3	2.12	0.79
1:D:359:GLY:CA	1:D:381:ASN:H	1.95	0.79
1:H:412:GLN:HB2	1:H:419:ARG:CB	2.12	0.79
1:A:386:THR:HB	5:A:1216:HOH:O	1.82	0.79
1:A:216:LYS:NZ	1:D:452:ASP:HB2	1.98	0.78
1:B:135:THR:HB	5:B:1202:HOH:O	1.82	0.78
1:E:214:THR:HG21	1:H:452:ASP:O	1.84	0.78
1:E:88:ASN:HD22	1:E:88:ASN:N	1.77	0.78
1:G:117:ILE:HG22	1:G:135:THR:HG22	1.65	0.78
1:B:376:MET:HG2	1:B:397:ILE:HD11	1.65	0.78
1:G:412(C):GLU:OE2	5:G:1154:HOH:O	2.02	0.78
1:H:228:SER:HB3	1:H:350:LYS:HE2	1.64	0.78
1:C:249:GLN:NE2	1:C:272:ASN:N	2.31	0.78
1:E:97:TRP:O	1:E:453:THR:HG21	1.83	0.78
1:G:228:SER:HB3	1:G:350:LYS:HE2	1.65	0.78
1:E:85:LEU:CD1	1:E:412(C):GLU:HG3	2.13	0.77
1:F:453:THR:HG22	1:F:454:VAL:H	1.49	0.77
1:B:306:ASN:HB3	5:B:1158:HOH:O	1.84	0.77
1:C:426:LEU:HB2	5:C:1228:HOH:O	1.84	0.77
1:D:333:GLY:H	1:D:386:THR:HG23	1.48	0.77
1:G:249:GLN:NE2	1:G:272:ASN:H	1.82	0.77
1:F:214:THR:HG21	1:G:452:ASP:O	1.84	0.77
1:C:413:THR:HB	5:C:1152:HOH:O	1.85	0.77
1:A:146:ASN:HD21	2:A:1146:NDG:C1	1.98	0.76
1:A:248:GLY:HA2	1:A:295:TRP:CE2	2.20	0.76
1:B:156:ARG:HG2	1:B:178:TRP:HA	1.68	0.76
1:C:228:SER:HB3	1:C:350:LYS:HE2	1.67	0.76
1:D:97:TRP:H	1:D:395:GLN:HE22	1.33	0.76
1:F:249:GLN:NE2	1:F:272:ASN:H	1.84	0.76
1:C:88:ASN:HD22	1:C:88:ASN:H	1.32	0.76
1:G:412:GLN:HB2	1:G:419:ARG:HB3	1.67	0.76
1:G:248:GLY:HA2	1:G:295:TRP:CE2	2.21	0.76
1:A:452:ASP:O	1:C:214:THR:HG21	1.84	0.76
1:C:184:HIS:CD2	1:C:186:GLY:H	2.03	0.76
1:D:192:ILE:HG12	1:D:205:LEU:HD22	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:412:GLN:CG	1:E:419:ARG:HB2	2.11	0.76
1:D:343:SER:O	5:D:1150:HOH:O	2.01	0.76
1:A:116:VAL:HG23	1:A:440:SER:HB2	1.66	0.76
1:E:184:HIS:CD2	1:E:186:GLY:H	2.03	0.76
1:F:320:GLY:HA3	1:F:387:ASP:O	1.86	0.75
1:H:442:SER:HB3	5:H:1173:HOH:O	1.87	0.75
1:F:146:ASN:ND2	2:F:1146:NDG:H1	2.01	0.75
1:H:343:SER:O	5:H:1154:HOH:O	2.04	0.75
1:A:451:SER:OG	1:C:214:THR:HB	1.85	0.75
1:G:88:ASN:HD22	1:G:88:ASN:H	1.32	0.75
1:E:412:GLN:NE2	1:E:447:CYS:SG	2.58	0.75
1:G:376:MET:HG2	1:G:397:ILE:HD11	1.69	0.75
1:E:400:ILE:HG13	5:E:1174:HOH:O	1.84	0.75
1:E:412:GLN:HG2	1:E:419:ARG:HB3	1.69	0.75
1:B:466:PHE:C	1:B:468:ILE:H	1.88	0.75
1:F:412(C):GLU:HG3	5:F:1148:HOH:O	1.87	0.75
1:F:452:ASP:O	1:H:214:THR:HG21	1.86	0.75
1:H:387:ASP:HB2	5:H:1150:HOH:O	1.86	0.75
1:H:411:VAL:CG1	1:H:418:ILE:HG23	2.17	0.75
1:C:412:GLN:CG	1:C:419:ARG:CB	2.65	0.74
1:H:316:TYR:CE1	1:H:340:PRO:HD3	2.22	0.74
1:C:275:TYR:CE2	1:C:303:VAL:HG23	2.22	0.74
1:H:290:VAL:HG21	1:H:353:SER:HB2	1.70	0.74
1:H:412:GLN:HB2	1:H:419:ARG:HB3	1.69	0.74
1:A:192:ILE:HG12	1:A:205:LEU:HD22	1.69	0.74
1:B:192:ILE:HG12	1:B:205:LEU:HD22	1.69	0.74
1:B:248:GLY:HA2	1:B:295:TRP:CE2	2.22	0.74
1:C:412:GLN:HG3	1:C:419:ARG:CB	2.17	0.74
1:E:121:PHE:CG	1:E:228:SER:HA	2.22	0.74
1:E:316:TYR:CE1	1:E:340:PRO:HD3	2.23	0.74
1:F:144:HIS:CE1	1:G:463:GLU:H	2.04	0.74
1:F:84:LYS:HG2	5:F:1169:HOH:O	1.87	0.74
1:B:214:THR:HG21	1:C:452:ASP:O	1.87	0.74
1:D:216:LYS:HE3	5:D:1220:HOH:O	1.86	0.74
1:D:359:GLY:HA2	1:D:381:ASN:N	2.02	0.74
1:F:88:ASN:H	1:F:88:ASN:HD22	1.35	0.74
1:F:412:GLN:HB2	1:F:419:ARG:CB	2.17	0.73
1:H:116:VAL:HG23	1:H:440:SER:HB2	1.70	0.73
1:H:184:HIS:CD2	1:H:186:GLY:H	2.06	0.73
1:H:184:HIS:HD2	1:H:186:GLY:H	1.35	0.73
1:C:228:SER:HB3	1:C:350:LYS:CE	2.18	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:316:TYR:CE1	1:F:340:PRO:HD3	2.24	0.73
1:H:248:GLY:HA2	1:H:295:TRP:CE2	2.22	0.73
1:D:184:HIS:CD2	1:D:186:GLY:H	2.06	0.73
1:G:316:TYR:CE1	1:G:340:PRO:HD3	2.23	0.73
5:F:1154:HOH:O	1:G:451:SER:HB2	1.88	0.73
1:B:109:GLY:HA3	1:B:140:LEU:HD12	1.69	0.73
1:E:88:ASN:ND2	1:E:88:ASN:H	1.83	0.73
1:F:463:GLU:H	1:H:144:HIS:CE1	2.01	0.73
1:A:184:HIS:CD2	1:A:186:GLY:H	2.07	0.73
1:F:412:GLN:HB2	1:F:419:ARG:HB3	1.71	0.73
1:F:126:HIS:HA	5:F:1149:HOH:O	1.88	0.73
1:G:88:ASN:HD22	1:G:88:ASN:N	1.86	0.73
1:C:162:PRO:HG2	1:C:165:GLU:CD	2.10	0.73
1:A:184:HIS:HD2	1:A:186:GLY:H	1.36	0.72
1:E:452:ASP:O	1:G:214:THR:HG21	1.87	0.72
1:F:248:GLY:HA2	1:F:295:TRP:CE2	2.23	0.72
1:G:412:GLN:CG	1:G:412:GLN:HA	2.19	0.72
1:A:228:SER:HB3	1:A:350:LYS:HE2	1.69	0.72
1:B:452:ASP:HB3	1:D:216:LYS:CD	2.18	0.72
1:G:412(D):LEU:HB2	5:G:1173:HOH:O	1.89	0.72
1:B:117:ILE:HG22	1:B:135:THR:HG22	1.70	0.72
1:D:116:VAL:HG12	1:D:138:ALA:O	1.88	0.72
1:B:113:ASP:O	1:B:168:SER:HB2	1.90	0.72
1:A:168:SER:HB2	5:A:1147:HOH:O	1.90	0.72
1:B:453:THR:HG22	1:B:454:VAL:H	1.53	0.72
1:G:121:PHE:CG	1:G:228:SER:HA	2.24	0.72
1:H:453:THR:HG22	1:H:454:VAL:H	1.54	0.72
1:A:376:MET:HG2	1:A:397:ILE:HD11	1.72	0.72
1:G:184:HIS:CD2	1:G:186:GLY:H	2.08	0.72
1:C:327:ARG:HA	5:C:1147:HOH:O	1.89	0.72
1:D:228:SER:HB3	1:D:350:LYS:HE2	1.72	0.71
1:E:116:VAL:HG23	1:E:440:SER:HB2	1.72	0.71
1:G:413:THR:HG21	1:G:415:LEU:HD22	1.71	0.71
1:C:113:ASP:O	1:C:168:SER:HB2	1.90	0.71
1:C:412(B):PRO:C	5:C:1150:HOH:O	2.28	0.71
1:A:463:GLU:N	1:C:144:HIS:HE1	1.83	0.71
1:D:113:ASP:O	1:D:168:SER:HB2	1.91	0.71
1:F:210:ILE:HD12	1:G:413:THR:HG23	1.73	0.71
1:G:453:THR:HG22	1:G:454:VAL:N	2.06	0.71
1:A:121:PHE:CG	1:A:228:SER:HA	2.26	0.71
1:B:376:MET:HG2	1:B:397:ILE:CD1	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:412(C):GLU:O	5:C:1148:HOH:O	2.08	0.71
1:E:228:SER:HB3	1:E:350:LYS:HE2	1.71	0.71
1:F:113:ASP:HB3	1:F:139:LEU:HD13	1.73	0.71
1:B:214:THR:HB	1:C:451:SER:OG	1.91	0.71
1:D:411:VAL:CG2	1:D:411:VAL:HG13	2.19	0.71
1:E:248:GLY:HA2	1:E:295:TRP:CE2	2.25	0.71
1:A:168:SER:CB	5:A:1147:HOH:O	2.39	0.70
1:G:448:GLY:O	1:G:449:VAL:HB	1.91	0.70
1:A:448:GLY:O	1:A:449:VAL:HB	1.90	0.70
1:A:452:ASP:HB2	1:C:216:LYS:NZ	2.06	0.70
1:C:298:SER:HB3	5:C:1147:HOH:O	1.91	0.70
1:F:156:ARG:HG2	1:F:178:TRP:HA	1.73	0.70
1:F:282:PRO:HD2	1:F:411:VAL:HG21	1.73	0.70
1:F:275:TYR:CE2	1:F:303:VAL:HG23	2.26	0.70
1:E:454:VAL:HG21	1:G:200:GLY:O	1.92	0.70
1:H:156:ARG:HG2	1:H:178:TRP:HA	1.74	0.70
1:B:116:VAL:HG23	1:B:440:SER:HB2	1.72	0.70
1:F:299:ASN:ND2	1:F:316:TYR:HB3	2.06	0.70
1:F:454:VAL:HG21	1:H:200:GLY:O	1.91	0.70
1:B:264:LYS:HG2	1:B:310:LEU:HD22	1.74	0.70
1:D:411:VAL:CG2	1:D:411:VAL:HA	2.20	0.70
1:C:248:GLY:HA2	1:C:295:TRP:CE2	2.26	0.70
1:A:290:VAL:HG21	1:A:353:SER:HB2	1.73	0.70
1:A:229:GLU:OE1	1:A:410:PHE:HA	1.92	0.70
1:D:376:MET:HG2	1:D:397:ILE:CD1	2.22	0.70
1:E:412(B):PRO:HB3	1:E:415:LEU:O	1.91	0.69
1:C:412:GLN:HB2	1:C:419:ARG:CB	2.21	0.69
1:H:448:GLY:O	1:H:449:VAL:HB	1.91	0.69
1:D:448:GLY:O	1:D:449:VAL:HB	1.91	0.69
1:F:341:VAL:CG1	5:F:1156:HOH:O	2.40	0.69
1:C:376:MET:HG2	1:C:397:ILE:CD1	2.22	0.69
1:B:320:GLY:HA3	1:B:387:ASP:O	1.93	0.69
1:D:466:PHE:C	1:D:468:ILE:H	1.96	0.69
1:E:320:GLY:HA3	1:E:387:ASP:O	1.93	0.69
1:E:117:ILE:HG22	1:E:135:THR:HG22	1.74	0.69
1:H:85:LEU:HA	1:H:412(C):GLU:OE1	1.92	0.69
1:E:210:ILE:HD12	1:H:413:THR:HG23	1.72	0.69
1:F:228:SER:HB3	1:F:350:LYS:HE2	1.72	0.69
1:E:411:VAL:HG12	1:E:412:GLN:N	2.08	0.69
1:F:254:ILE:HD11	1:F:268:LEU:HD21	1.74	0.69
1:B:228:SER:HB3	1:B:350:LYS:HE2	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:412:GLN:CB	1:C:419:ARG:HB2	2.23	0.68
1:B:316:TYR:CE1	1:B:340:PRO:HD3	2.28	0.68
1:B:463:GLU:H	1:D:144:HIS:CE1	2.02	0.68
1:H:113:ASP:O	1:H:168:SER:HB2	1.92	0.68
1:A:135:THR:HB	5:A:1255:HOH:O	1.93	0.68
1:C:117:ILE:HG22	1:C:135:THR:HG22	1.74	0.68
1:B:249:GLN:HE21	1:B:272:ASN:N	1.91	0.68
1:F:88:ASN:N	1:F:88:ASN:HD22	1.90	0.67
1:E:290:VAL:HG21	1:E:353:SER:HB2	1.76	0.67
1:E:463:GLU:H	1:G:144:HIS:CE1	2.09	0.67
1:B:309:ASN:HB3	5:B:1224:HOH:O	1.93	0.67
1:B:343:SER:O	1:B:344:ASN:CB	2.41	0.67
1:D:254:ILE:HD11	1:D:268:LEU:HD21	1.77	0.67
1:E:411:VAL:HG13	1:E:411:VAL:CG2	2.22	0.67
1:G:156:ARG:HG2	1:G:178:TRP:HA	1.77	0.67
1:C:150:LYS:HD3	1:C:152:ARG:O	1.94	0.67
1:E:397:ILE:HG22	1:E:398:VAL:HG23	1.77	0.67
1:F:376:MET:HG2	1:F:397:ILE:CD1	2.23	0.67
1:A:88:ASN:H	1:A:88:ASN:ND2	1.91	0.67
1:D:254:ILE:CD1	1:D:268:LEU:HD21	2.24	0.67
1:D:249:GLN:NE2	1:D:272:ASN:N	2.42	0.67
1:H:97:TRP:H	1:H:395:GLN:HE22	1.43	0.67
1:H:412(D):LEU:HA	5:H:1149:HOH:O	1.95	0.67
1:F:463:GLU:N	1:H:144:HIS:HE1	1.89	0.67
1:A:294:ASN:HA	1:A:347:TYR:O	1.95	0.67
1:B:228:SER:HB3	1:B:350:LYS:CE	2.25	0.67
1:B:333:GLY:H	1:B:386:THR:CG2	2.07	0.67
1:H:299:ASN:ND2	1:H:316:TYR:HB3	2.10	0.67
1:B:83:VAL:N	5:B:1174:HOH:O	2.27	0.67
1:F:448:GLY:O	1:F:449:VAL:HB	1.94	0.67
1:G:270:ALA:HB1	1:G:273:TYR:HB2	1.77	0.67
1:H:275:TYR:CE2	1:H:303:VAL:HG23	2.30	0.67
1:C:184:HIS:HD2	1:C:186:GLY:H	1.43	0.66
1:F:146:ASN:HD21	2:F:1146:NDG:C1	2.08	0.66
1:B:116:VAL:HG12	1:B:138:ALA:O	1.96	0.66
1:A:216:LYS:HE3	5:A:1204:HOH:O	1.95	0.66
1:D:116:VAL:HG23	1:D:440:SER:HB2	1.76	0.66
1:E:325:ASN:O	1:E:348:GLY:HA2	1.96	0.66
1:E:376:MET:HG2	1:E:397:ILE:CD1	2.24	0.66
1:A:117:ILE:HG22	1:A:135:THR:HG22	1.76	0.66
1:B:380:PRO:O	1:B:381:ASN:C	2.33	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:116:VAL:HG23	1:G:440:SER:HB2	1.77	0.66
1:A:113:ASP:O	1:A:168:SER:HB2	1.95	0.66
1:A:156:ARG:HG2	1:A:178:TRP:HA	1.77	0.66
1:B:249:GLN:NE2	1:B:272:ASN:N	2.41	0.66
1:A:214:THR:HB	1:D:451:SER:OG	1.96	0.66
1:B:216:LYS:CD	1:C:452:ASP:HB3	2.24	0.66
1:A:249:GLN:NE2	1:A:272:ASN:N	2.43	0.66
1:B:466:PHE:C	1:B:468:ILE:N	2.47	0.66
1:F:375:GLU:OE1	1:F:394:LYS:HE3	1.96	0.66
1:G:229:GLU:HG2	1:G:230:CYS:O	1.95	0.66
1:E:332:THR:HG23	1:E:386:THR:HG21	1.77	0.66
1:B:270:ALA:HB1	1:B:273:TYR:HB2	1.75	0.65
1:B:287:ILE:N	1:B:287:ILE:HD12	2.11	0.65
1:C:320:GLY:HA3	1:C:387:ASP:O	1.97	0.65
1:D:210:ILE:O	1:D:210:ILE:HG13	1.94	0.65
1:D:453:THR:HG22	1:D:454:VAL:N	2.06	0.65
1:F:411:VAL:HG11	1:F:412(A):HIS:CD2	2.31	0.65
1:H:249:GLN:NE2	1:H:272:ASN:H	1.93	0.65
1:H:412(A):HIS:O	5:H:1148:HOH:O	2.12	0.65
1:A:316:TYR:CE1	1:A:340:PRO:HD3	2.31	0.65
1:B:162:PRO:HG2	1:B:165:GLU:CD	2.16	0.65
1:C:88:ASN:HD22	1:C:88:ASN:N	1.93	0.65
1:H:466:PHE:C	1:H:468:ILE:H	2.00	0.65
1:D:249:GLN:HE21	1:D:272:ASN:N	1.93	0.65
1:A:88:ASN:HD22	1:A:88:ASN:N	1.82	0.65
1:H:412(D):LEU:CA	5:H:1149:HOH:O	2.45	0.65
1:B:411:VAL:HG13	1:B:411:VAL:CG2	2.26	0.65
1:H:228:SER:HB3	1:H:350:LYS:CE	2.27	0.65
1:C:380:PRO:O	1:C:381:ASN:C	2.34	0.65
1:D:466:PHE:C	1:D:468:ILE:N	2.50	0.65
1:F:366:LYS:HB2	1:F:400:ILE:HG12	1.79	0.65
1:G:184:HIS:HD2	1:G:186:GLY:H	1.42	0.65
1:C:412:GLN:HG2	1:C:419:ARG:HB3	1.79	0.64
5:A:1168:HOH:O	1:C:210:ILE:HD11	1.97	0.64
1:D:261:LYS:HE3	5:D:1182:HOH:O	1.96	0.64
1:E:249:GLN:NE2	1:E:272:ASN:N	2.42	0.64
1:A:216:LYS:HZ2	1:D:452:ASP:HB2	1.61	0.64
1:B:360:VAL:CG2	1:B:383:TRP:HB2	2.24	0.64
1:C:411:VAL:CG2	1:C:411:VAL:HG13	2.27	0.64
1:D:375:GLU:OE1	1:D:394:LYS:HE3	1.97	0.64
1:E:144:HIS:CE1	1:H:463:GLU:H	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:333:GLY:N	1:B:386:THR:HG23	2.13	0.64
1:C:287:ILE:HD12	1:C:287:ILE:N	2.13	0.64
1:D:360:VAL:HG13	1:D:383:TRP:HE3	1.63	0.64
1:E:287:ILE:N	1:E:287:ILE:HD12	2.12	0.64
1:H:412(B):PRO:CA	5:H:1148:HOH:O	2.40	0.64
1:A:97:TRP:H	1:A:395:GLN:HE22	1.45	0.64
1:D:162:PRO:HG2	1:D:165:GLU:CD	2.17	0.64
1:D:333:GLY:N	1:D:386:THR:HG23	2.12	0.64
1:G:85:LEU:HD12	1:G:412(C):GLU:CG	2.20	0.64
1:E:448:GLY:O	1:E:449:VAL:HB	1.98	0.64
1:G:88:ASN:ND2	1:G:88:ASN:H	1.96	0.64
1:H:266:VAL:HB	5:H:1166:HOH:O	1.98	0.64
1:C:412:GLN:NE2	1:C:447:CYS:SG	2.71	0.64
1:G:113:ASP:O	1:G:168:SER:HB2	1.97	0.64
1:C:414:GLY:N	5:C:1150:HOH:O	2.02	0.63
1:F:169(A):TYR:OH	5:F:1147:HOH:O	2.13	0.63
1:F:451:SER:OG	1:H:214:THR:HB	1.98	0.63
1:E:216:LYS:HD3	1:H:452:ASP:HB3	1.80	0.63
1:A:376:MET:HG2	1:A:397:ILE:CD1	2.27	0.63
1:E:412(D):LEU:HD12	5:E:1154:HOH:O	1.98	0.63
1:F:249:GLN:HE21	1:F:272:ASN:H	1.46	0.63
1:G:287:ILE:N	1:G:287:ILE:HD12	2.14	0.63
1:C:413:THR:HG22	1:C:415:LEU:H	1.64	0.63
1:H:355:LYS:HD2	1:H:383:TRP:CE2	2.34	0.63
1:D:97:TRP:N	1:D:395:GLN:HE22	1.96	0.63
1:F:377:ILE:HG23	1:F:390:PHE:CD1	2.34	0.63
1:G:135:THR:O	1:G:156:ARG:HA	1.99	0.63
1:G:194:ILE:HD11	1:G:241:MET:HE2	1.79	0.63
1:E:216:LYS:NZ	1:H:452:ASP:HB3	2.13	0.63
1:H:282:PRO:HD2	1:H:411:VAL:HG21	1.81	0.63
1:D:299:ASN:ND2	5:D:1152:HOH:O	2.21	0.63
1:E:411:VAL:HG13	1:E:411:VAL:HG22	1.81	0.63
1:F:88:ASN:H	1:F:88:ASN:ND2	1.97	0.63
1:G:380:PRO:O	1:G:381:ASN:C	2.37	0.63
1:B:97:TRP:H	1:B:395:GLN:HE22	1.46	0.63
1:D:358:ASN:C	1:D:381:ASN:HA	2.20	0.63
1:F:316:TYR:CZ	1:F:340:PRO:HD3	2.34	0.63
1:G:412:GLN:HA	1:G:412:GLN:HG2	1.80	0.63
1:H:202:VAL:CG2	1:H:214:THR:HG23	2.28	0.63
1:B:214:THR:HB	1:C:451:SER:CB	2.28	0.62
1:B:454:VAL:HG21	1:D:200:GLY:O	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:LEU:HG	5:A:1209:HOH:O	1.99	0.62
1:D:411:VAL:HG13	1:D:418:ILE:HG23	1.81	0.62
1:E:322:PHE:HB2	1:E:327:ARG:HD2	1.81	0.62
1:A:102:LYS:HG3	1:A:444:ILE:HG22	1.81	0.62
1:B:247:ASN:O	1:B:248:GLY:O	2.17	0.62
1:F:202:VAL:HG23	1:F:214:THR:HG23	1.81	0.62
1:H:333:GLY:H	1:H:386:THR:HG23	1.64	0.62
1:H:88:ASN:N	1:H:88:ASN:HD22	1.97	0.62
1:C:360:VAL:HG22	1:C:383:TRP:HB2	1.81	0.62
1:H:412:GLN:HB2	1:H:419:ARG:HB2	1.79	0.62
1:C:333:GLY:H	1:C:386:THR:HG23	1.64	0.62
1:G:249:GLN:NE2	1:G:272:ASN:N	2.47	0.62
1:E:275:TYR:CE2	1:E:303:VAL:HG23	2.35	0.62
1:A:453:THR:CG2	5:A:1166:HOH:O	2.48	0.62
1:C:192:ILE:HG23	1:C:205:LEU:CD2	2.30	0.62
1:D:84:LYS:HG2	5:D:1159:HOH:O	2.00	0.62
1:D:366:LYS:HD2	1:D:398:VAL:O	2.00	0.62
1:G:466:PHE:C	1:G:468:ILE:H	2.03	0.62
1:A:380:PRO:O	1:A:381:ASN:C	2.37	0.61
1:F:228:SER:HB3	1:F:350:LYS:CE	2.28	0.61
1:E:332:THR:HG23	1:E:386:THR:CG2	2.28	0.61
1:A:116:VAL:HG12	1:A:138:ALA:O	2.00	0.61
1:C:266:VAL:HB	5:C:1247:HOH:O	1.98	0.61
1:G:333:GLY:H	1:G:386:THR:HG23	1.63	0.61
1:H:254:ILE:HD11	1:H:268:LEU:HD21	1.82	0.61
1:A:162:PRO:HG2	1:A:165:GLU:CD	2.21	0.61
1:F:113:ASP:O	1:F:168:SER:HB2	2.00	0.61
1:G:168:SER:HB2	1:G:169:PRO:HD2	1.83	0.61
1:D:332:THR:HG22	1:D:386:THR:HG21	1.80	0.61
1:E:328:PRO:HD3	1:E:343:SER:O	1.99	0.61
1:F:413:THR:HG23	1:H:210:ILE:HD12	1.82	0.61
1:D:387:ASP:HB2	5:D:1236:HOH:O	1.99	0.61
1:G:309:ASN:HB3	5:G:1156:HOH:O	2.00	0.61
1:G:290:VAL:HG21	1:G:353:SER:HB2	1.82	0.61
1:F:91:LEU:HG	1:F:283:ASN:ND2	2.16	0.61
1:G:360:VAL:HG13	1:G:383:TRP:HE3	1.65	0.61
1:A:216:LYS:NZ	1:D:452:ASP:CB	2.63	0.61
1:H:344:ASN:HB3	5:H:1154:HOH:O	2.01	0.61
1:C:230:CYS:N	5:C:1178:HOH:O	2.34	0.60
1:C:344:ASN:HB3	5:C:1147:HOH:O	2.00	0.60
1:D:467:THR:O	1:D:468:ILE:HB	1.98	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:322:PHE:HB2	1:F:327:ARG:HD2	1.82	0.60
1:H:411:VAL:HG13	1:H:418:ILE:CG2	2.31	0.60
1:B:87:GLY:N	5:B:1156:HOH:O	2.23	0.60
1:H:411:VAL:CG1	1:H:418:ILE:CG2	2.79	0.60
1:C:96:GLY:O	1:C:448:GLY:O	2.20	0.60
1:A:136:GLN:HE21	1:A:156:ARG:CD	2.14	0.60
1:A:275:TYR:CE2	1:A:303:VAL:HG23	2.36	0.60
1:A:452:ASP:HB2	1:C:216:LYS:HZ3	1.65	0.60
1:E:360:VAL:HG22	1:E:383:TRP:HB2	1.82	0.60
1:A:162:PRO:HG2	1:A:165:GLU:OE1	2.00	0.60
1:A:287:ILE:N	1:A:287:ILE:HD12	2.17	0.60
1:B:202:VAL:CG2	1:B:214:THR:HG23	2.31	0.60
1:B:364:ARG:HG3	1:B:365:THR:O	2.02	0.60
1:H:333:GLY:N	1:H:386:THR:HG23	2.16	0.60
1:A:336:CYS:HB3	5:A:1224:HOH:O	2.00	0.60
1:A:95:ASN:ND2	1:A:450:ASN:O	2.34	0.60
1:B:355:LYS:HE3	5:B:1236:HOH:O	2.00	0.60
1:G:254:ILE:HD11	1:G:268:LEU:HD21	1.83	0.60
1:G:411:VAL:HG13	1:G:418:ILE:HG23	1.82	0.60
1:H:102:LYS:HG3	1:H:444:ILE:HG22	1.84	0.60
1:C:335:SER:OG	1:C:339:GLY:O	2.20	0.60
1:D:184:HIS:HD2	1:D:186:GLY:H	1.48	0.60
1:H:397:ILE:HG22	1:H:398:VAL:HG23	1.84	0.60
1:C:270:ALA:HB1	1:C:273:TYR:HB2	1.83	0.60
1:C:411:VAL:HG13	1:C:418:ILE:HG23	1.84	0.60
1:H:116:VAL:HG12	1:H:138:ALA:O	2.02	0.60
1:A:299:ASN:ND2	1:A:316:TYR:HB3	2.16	0.60
1:A:454:VAL:HG21	1:C:200:GLY:O	2.01	0.60
1:C:413:THR:N	5:C:1150:HOH:O	2.34	0.59
1:D:121:PHE:CG	1:D:228:SER:HA	2.36	0.59
1:E:342:SER:C	5:E:1148:HOH:O	2.41	0.59
1:B:330:ASP:O	5:B:1218:HOH:O	2.16	0.59
1:D:297:GLY:HA2	1:D:341:VAL:O	2.03	0.59
1:E:96:GLY:HA3	5:E:1178:HOH:O	2.01	0.59
1:F:254:ILE:CD1	1:F:268:LEU:HD21	2.31	0.59
1:H:411:VAL:HG13	1:H:418:ILE:HG23	1.84	0.59
1:E:214:THR:HB	1:H:451:SER:OG	2.02	0.59
1:C:333:GLY:N	1:C:386:THR:HG23	2.18	0.59
1:D:400:ILE:HG13	5:D:1200:HOH:O	2.02	0.59
1:E:320:GLY:CA	1:E:387:ASP:O	2.51	0.59
1:E:173:PHE:CG	1:H:164:GLY:HA3	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:116:VAL:HG23	1:C:440:SER:HB2	1.84	0.59
1:C:121:PHE:CG	1:C:228:SER:HA	2.37	0.59
1:E:162:PRO:HG2	1:E:165:GLU:CD	2.22	0.59
1:E:413:THR:HG23	1:G:210:ILE:HD12	1.84	0.59
1:F:428:ARG:NH2	1:F:460:ASP:OD1	2.35	0.59
1:A:150:LYS:HD3	1:A:152:ARG:O	2.02	0.59
1:A:228:SER:HB3	1:A:350:LYS:CE	2.33	0.59
1:D:322:PHE:HB2	1:D:327:ARG:HD2	1.84	0.59
1:E:146:ASN:ND2	3:E:1146:NAG:O1	2.36	0.59
1:B:84:LYS:HE3	5:B:1196:HOH:O	2.02	0.59
1:D:397:ILE:HD13	1:D:422:PHE:HZ	1.68	0.59
1:F:116:VAL:HG23	1:F:440:SER:HB2	1.84	0.59
1:H:411:VAL:HG11	1:H:418:ILE:HG23	1.85	0.59
1:A:180:ALA:HB1	1:A:192:ILE:O	2.03	0.59
1:C:192:ILE:HG12	1:C:205:LEU:HD22	1.85	0.59
1:E:466:PHE:C	1:E:468:ILE:H	2.06	0.59
1:F:173:PHE:CG	1:G:164:GLY:HA3	2.38	0.59
1:E:254:ILE:CD1	1:E:268:LEU:HD21	2.33	0.59
1:F:452:ASP:HA	5:F:1163:HOH:O	2.03	0.59
1:E:216:LYS:NZ	1:H:452:ASP:CB	2.66	0.59
1:A:452:ASP:CB	1:C:216:LYS:NZ	2.66	0.58
1:D:339:GLY:C	5:D:1152:HOH:O	2.40	0.58
1:F:347:TYR:CG	1:F:348:GLY:N	2.71	0.58
1:B:184:HIS:HD2	1:B:186:GLY:H	1.50	0.58
1:F:380:PRO:O	1:F:381:ASN:C	2.41	0.58
1:H:322:PHE:HB2	1:H:327:ARG:HD2	1.85	0.58
1:C:397:ILE:HD13	1:C:422:PHE:HZ	1.69	0.58
1:C:88:ASN:ND2	1:C:88:ASN:H	2.00	0.58
1:A:453:THR:HG22	1:A:454:VAL:N	2.06	0.58
1:G:333:GLY:N	1:G:386:THR:HG23	2.18	0.58
1:B:413:THR:HB	5:B:1149:HOH:O	2.03	0.58
1:E:194:ILE:HG12	1:E:203:ALA:HB2	1.85	0.58
1:F:412:GLN:HB2	1:F:419:ARG:HB2	1.85	0.58
1:G:192:ILE:HG23	1:G:205:LEU:CD2	2.34	0.58
1:H:379:ASP:OD2	1:H:382:GLY:HA3	2.03	0.58
1:C:156:ARG:HG2	1:C:178:TRP:HA	1.85	0.58
1:E:227:GLU:HA	1:E:227:GLU:OE1	2.03	0.58
1:E:466:PHE:C	1:E:468:ILE:N	2.57	0.58
1:G:303:VAL:HG22	1:G:314:ILE:HG22	1.84	0.58
1:H:316:TYR:CZ	1:H:340:PRO:HD3	2.37	0.58
1:H:254:ILE:CD1	1:H:268:LEU:HD21	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:270:ALA:HB1	1:A:273:TYR:HB2	1.85	0.58
1:B:184:HIS:CD2	1:B:186:GLY:H	2.21	0.58
1:B:86:ALA:HA	5:B:1156:HOH:O	2.04	0.58
1:B:466:PHE:O	1:B:468:ILE:N	2.37	0.58
1:F:162:PRO:HG2	1:F:165:GLU:CD	2.24	0.58
1:H:249:GLN:HE21	1:H:272:ASN:H	1.49	0.58
1:H:277:GLU:OE1	1:H:350:LYS:HB2	2.03	0.58
1:A:129:CYS:O	1:A:163:VAL:HG23	2.04	0.58
1:B:413:THR:CG2	1:B:415:LEU:HD22	2.23	0.58
1:D:287:ILE:O	1:D:304:SER:HA	2.04	0.58
1:H:162:PRO:HG2	1:H:165:GLU:CD	2.23	0.58
1:B:113:ASP:HB3	1:B:139:LEU:HD13	1.86	0.57
1:C:328:PRO:HB3	5:C:1151:HOH:O	2.03	0.57
1:F:319:SER:HB2	1:F:382:GLY:O	2.04	0.57
1:G:119:GLU:OE1	1:G:227:GLU:OE1	2.22	0.57
1:H:468:ILE:CG2	2:H:1146:NDG:H8C3	2.34	0.57
1:B:343:SER:O	1:B:344:ASN:HB2	2.02	0.57
5:B:1153:HOH:O	1:D:216:LYS:HG2	2.03	0.57
5:F:1147:HOH:O	1:G:113:ASP:N	2.34	0.57
1:H:88:ASN:HD22	1:H:88:ASN:H	1.52	0.57
1:A:344:ASN:CA	5:A:1149:HOH:O	2.52	0.57
1:B:411:VAL:HG13	1:B:418:ILE:HG23	1.85	0.57
1:C:376:MET:HG2	1:C:397:ILE:HD11	1.86	0.57
1:C:412:GLN:CB	1:C:419:ARG:CB	2.82	0.57
1:E:156:ARG:HG2	1:E:178:TRP:HA	1.85	0.57
1:E:210:ILE:HG13	1:E:210:ILE:O	2.03	0.57
1:H:229:GLU:OE1	1:H:410:PHE:HA	2.03	0.57
1:A:451:SER:HB2	5:C:1185:HOH:O	2.04	0.57
1:B:88:ASN:N	1:B:88:ASN:HD22	2.00	0.57
1:D:343:SER:N	5:D:1150:HOH:O	2.37	0.57
1:A:467:THR:O	1:A:468:ILE:HB	2.04	0.57
1:G:466:PHE:C	1:G:468:ILE:N	2.58	0.57
1:B:322:PHE:HB2	1:B:327:ARG:HD2	1.87	0.57
1:E:184:HIS:HD2	1:E:186:GLY:N	2.01	0.57
1:F:390:PHE:HE1	1:F:394:LYS:HB2	1.69	0.57
1:F:194:ILE:HG12	1:F:203:ALA:HB2	1.87	0.57
1:F:230:CYS:N	5:F:1153:HOH:O	2.37	0.57
1:F:366:LYS:CB	1:F:400:ILE:HG12	2.35	0.57
1:G:333:GLY:N	1:G:386:THR:CG2	2.68	0.57
1:G:366:LYS:HD2	1:G:398:VAL:O	2.04	0.57
1:A:216:LYS:CE	1:D:452:ASP:HB3	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:129:CYS:O	1:B:163:VAL:HG23	2.05	0.57
1:C:216:LYS:HE3	5:C:1208:HOH:O	2.03	0.57
1:C:249:GLN:NE2	1:C:271:PRO:HA	2.19	0.57
1:E:316:TYR:CZ	1:E:340:PRO:HD3	2.39	0.57
1:F:121:PHE:CG	1:F:228:SER:HA	2.40	0.57
1:G:99:VAL:HG22	5:G:1218:HOH:O	2.04	0.57
1:C:316:TYR:CE1	1:C:340:PRO:HD3	2.40	0.56
1:E:250:ALA:HB3	1:E:252:TYR:CE2	2.39	0.56
1:E:411:VAL:CG1	1:E:412:GLN:N	2.67	0.56
1:B:370:SER:HB2	1:B:372:SER:OG	2.05	0.56
5:A:1151:HOH:O	1:C:216:LYS:HG2	2.04	0.56
1:H:270:ALA:HB1	1:H:273:TYR:HB2	1.87	0.56
1:B:210:ILE:HD13	1:C:413:THR:HA	1.87	0.56
5:B:1147:HOH:O	1:D:169(A):TYR:HA	2.04	0.56
1:B:275:TYR:CE2	1:B:303:VAL:CG2	2.89	0.56
1:F:136:GLN:HE21	1:F:156:ARG:CD	2.18	0.56
1:F:282:PRO:HD2	1:F:411:VAL:CG2	2.34	0.56
1:E:452:ASP:HB3	1:G:216:LYS:CE	2.34	0.56
1:G:355:LYS:HD2	1:G:383:TRP:CE2	2.40	0.56
1:H:126:HIS:CA	5:H:1149:HOH:O	2.44	0.56
1:H:226:GLN:NE2	1:H:239:THR:OG1	2.30	0.56
1:H:88:ASN:H	1:H:88:ASN:ND2	2.03	0.56
1:A:249:GLN:HE21	1:A:272:ASN:N	2.01	0.56
1:F:419:ARG:HG3	1:F:419:ARG:HH11	1.69	0.56
1:F:216:LYS:NZ	1:G:452:ASP:HB2	2.21	0.56
1:H:298:SER:HB3	5:H:1154:HOH:O	2.03	0.56
1:C:468:ILE:CG2	2:C:1146:NDG:H8C3	2.36	0.56
1:C:467:THR:O	1:C:468:ILE:HB	2.05	0.56
1:B:333:GLY:N	1:B:386:THR:CG2	2.68	0.56
1:F:366:LYS:HD2	1:F:398:VAL:O	2.06	0.56
1:G:150:LYS:HD3	1:G:152:ARG:O	2.04	0.56
1:B:228:SER:HB3	1:B:350:LYS:NZ	2.20	0.56
1:B:355:LYS:NZ	1:B:357:GLY:O	2.39	0.56
1:C:275:TYR:CE2	1:C:303:VAL:CG2	2.88	0.56
1:D:117:ILE:HG22	1:D:135:THR:HG22	1.87	0.56
1:H:320:GLY:CA	1:H:387:ASP:O	2.49	0.56
1:C:466:PHE:C	1:C:468:ILE:H	2.08	0.56
1:D:247:ASN:O	1:D:248:GLY:O	2.24	0.56
1:D:102:LYS:HG3	1:D:444:ILE:HG22	1.87	0.56
1:E:377:ILE:HG23	1:E:390:PHE:CD1	2.41	0.56
1:H:318:CYS:HA	1:H:335:SER:O	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:339:GLY:C	5:H:1153:HOH:O	2.44	0.56
1:A:96:GLY:O	1:A:448:GLY:O	2.24	0.56
1:C:227:GLU:O	1:C:350:LYS:HE2	2.06	0.56
1:F:287:ILE:HD12	1:F:287:ILE:N	2.20	0.56
1:F:411:VAL:HG13	1:F:418:ILE:HG23	1.88	0.56
1:B:452:ASP:HB2	1:D:216:LYS:NZ	2.21	0.56
1:E:129:CYS:O	1:E:163:VAL:HG23	2.05	0.56
1:C:161:CYS:HB2	1:C:162:PRO:HD2	1.88	0.55
1:C:366:LYS:HD2	1:C:398:VAL:O	2.05	0.55
1:F:172:ARG:HD2	1:F:174:GLU:OE1	2.06	0.55
1:G:297:GLY:N	1:G:345:GLY:O	2.39	0.55
1:E:202:VAL:CG2	1:E:214:THR:HG23	2.37	0.55
1:E:354:PHE:CZ	1:E:409:SER:HB2	2.41	0.55
1:H:254:ILE:HB	5:H:1166:HOH:O	2.05	0.55
1:B:332:THR:HG23	1:B:386:THR:HG21	1.88	0.55
1:C:412(B):PRO:HA	5:C:1152:HOH:O	2.07	0.55
1:D:413:THR:HG22	1:D:415:LEU:HD13	1.89	0.55
1:E:411:VAL:HG13	1:E:418:ILE:CG2	2.36	0.55
1:F:379:ASP:OD2	1:F:382:GLY:HA3	2.07	0.55
1:B:88:ASN:H	1:B:88:ASN:HD22	1.55	0.55
1:E:216:LYS:HZ2	1:H:452:ASP:HB3	1.72	0.55
1:F:327:ARG:HB2	1:F:328:PRO:HD2	1.88	0.55
1:F:466:PHE:C	1:F:468:ILE:H	2.10	0.55
1:A:135:THR:O	1:A:156:ARG:HA	2.07	0.55
1:A:333:GLY:N	1:A:386:THR:HG23	2.22	0.55
1:G:247:ASN:HB2	5:G:1221:HOH:O	2.06	0.55
1:H:135:THR:O	1:H:156:ARG:HA	2.07	0.55
1:H:360:VAL:HG22	1:H:383:TRP:HB2	1.89	0.55
1:H:88:ASN:O	1:H:284:ALA:HA	2.07	0.55
1:D:182:ALA:O	1:D:229:GLU:HA	2.07	0.55
1:E:412:GLN:HB2	1:E:419:ARG:CB	2.24	0.55
1:A:400:ILE:HG13	5:A:1215:HOH:O	2.05	0.55
1:B:102:LYS:HZ2	1:B:104:ASN:HD21	1.54	0.55
1:D:118:ARG:HB3	5:D:1206:HOH:O	2.07	0.55
1:E:453:THR:HG22	1:E:454:VAL:N	2.18	0.55
1:A:413:THR:HG21	1:A:415:LEU:CD2	2.24	0.54
1:C:254:ILE:HD11	1:C:268:LEU:HD21	1.90	0.54
1:G:247:ASN:O	1:G:248:GLY:O	2.25	0.54
1:G:412(B):PRO:HD3	1:G:417:CYS:O	2.07	0.54
1:B:117:ILE:HG22	1:B:135:THR:CG2	2.36	0.54
1:B:343:SER:CA	5:B:1150:HOH:O	2.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:343:SER:N	5:B:1150:HOH:O	2.40	0.54
1:C:375:GLU:OE1	1:C:394:LYS:HE3	2.07	0.54
1:C:247:ASN:O	1:C:295:TRP:HB2	2.07	0.54
1:D:294:ASN:HA	1:D:347:TYR:O	2.07	0.54
1:E:146:ASN:O	1:E:437:ILE:O	2.24	0.54
1:H:97:TRP:N	1:H:395:GLN:HE22	2.05	0.54
1:A:413:THR:HA	1:C:210:ILE:HD13	1.90	0.54
1:D:468:ILE:HG21	2:D:1146:NDG:H8C3	1.89	0.54
1:F:299:ASN:OD1	1:F:341:VAL:HG23	2.08	0.54
1:G:336:CYS:HB2	5:G:1184:HOH:O	2.07	0.54
1:G:333:GLY:H	1:G:386:THR:CG2	2.20	0.54
1:H:355:LYS:NZ	1:H:357:GLY:O	2.38	0.54
1:A:333:GLY:H	1:A:386:THR:HG23	1.73	0.54
1:E:96:GLY:O	1:E:448:GLY:O	2.26	0.54
1:F:136:GLN:NE2	1:F:156:ARG:HD3	2.23	0.54
1:C:412(B):PRO:HA	5:C:1150:HOH:O	2.07	0.54
1:H:172:ARG:HD2	1:H:174:GLU:OE1	2.08	0.54
1:B:332:THR:CG2	1:B:386:THR:HG21	2.37	0.54
1:C:411:VAL:HG12	1:C:412:GLN:N	2.21	0.54
1:C:229:GLU:HG2	1:C:230:CYS:O	2.08	0.54
1:D:311:GLU:HG3	5:D:1156:HOH:O	2.08	0.54
1:E:229:GLU:HG2	1:E:230:CYS:O	2.08	0.54
1:F:466:PHE:C	1:F:468:ILE:N	2.60	0.54
1:C:411:VAL:HG22	1:C:411:VAL:HG13	1.91	0.54
1:D:328:PRO:HD3	1:D:343:SER:O	2.07	0.53
1:H:375:GLU:OE1	1:H:394:LYS:HE3	2.08	0.53
1:B:96:GLY:O	1:B:448:GLY:O	2.26	0.53
1:D:219:ARG:NH2	5:D:1246:HOH:O	2.41	0.53
1:F:467:THR:O	1:F:468:ILE:HB	2.08	0.53
1:H:436:THR:HG21	1:H:464:LEU:HD13	1.90	0.53
1:B:102:LYS:HG3	1:B:444:ILE:HG22	1.90	0.53
1:B:452:ASP:HB3	1:D:216:LYS:CE	2.39	0.53
1:G:172:ARG:HD2	1:G:174:GLU:OE1	2.08	0.53
1:B:119:GLU:O	1:B:119:GLU:HG3	2.07	0.53
1:H:229:GLU:HG2	1:H:230:CYS:O	2.07	0.53
1:F:97:TRP:H	1:F:395:GLN:HE22	1.56	0.53
1:C:379:ASP:OD2	1:C:382:GLY:HA3	2.09	0.53
1:F:249:GLN:NE2	1:F:272:ASN:N	2.56	0.53
1:B:219:ARG:HB2	1:B:243:ASP:CG	2.29	0.53
1:B:452:ASP:CB	1:D:216:LYS:NZ	2.71	0.53
1:D:412:GLN:HB2	1:D:419:ARG:CB	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:162:PRO:HG2	1:G:165:GLU:CD	2.29	0.53
1:G:397:ILE:HG22	1:G:398:VAL:HG23	1.90	0.53
1:H:390:PHE:HE1	1:H:394:LYS:HB2	1.73	0.53
1:E:412:GLN:O	1:E:412(D):LEU:HD23	2.09	0.53
1:A:216:LYS:HZ3	1:D:452:ASP:HB2	1.74	0.53
1:B:343:SER:O	5:B:1150:HOH:O	2.18	0.52
1:G:148:THR:HG22	1:G:430:ARG:HH22	1.72	0.52
1:D:156:ARG:HG2	1:D:178:TRP:HA	1.91	0.52
1:D:316:TYR:CZ	1:D:340:PRO:HD3	2.44	0.52
1:F:144:HIS:HE1	1:G:463:GLU:N	1.98	0.52
1:E:463:GLU:N	1:G:144:HIS:HE1	2.01	0.52
1:G:97:TRP:H	1:G:395:GLN:HE22	1.55	0.52
1:D:355:LYS:NZ	1:D:357:GLY:O	2.41	0.52
1:E:117:ILE:HD13	1:E:167:PRO:HG3	1.91	0.52
1:F:318:CYS:HA	1:F:335:SER:O	2.09	0.52
1:G:275:TYR:CE2	1:G:303:VAL:CG2	2.92	0.52
1:H:366:LYS:HD2	1:H:398:VAL:O	2.09	0.52
1:A:316:TYR:CZ	1:A:340:PRO:HD3	2.44	0.52
1:C:412(C):GLU:C	5:C:1148:HOH:O	2.46	0.52
1:D:319:SER:HB2	1:D:382:GLY:O	2.10	0.52
1:E:274:HIS:HB3	1:E:293:ASP:OD2	2.09	0.52
1:F:270:ALA:HB1	1:F:273:TYR:HB2	1.92	0.52
1:F:96:GLY:O	1:F:448:GLY:O	2.27	0.52
1:G:306:ASN:CG	1:G:308:GLN:N	2.63	0.52
1:A:120:PRO:HA	1:A:132:PHE:O	2.10	0.52
1:A:452:ASP:HB3	1:C:216:LYS:CD	2.34	0.52
1:C:254:ILE:CD1	1:C:268:LEU:HD21	2.40	0.52
1:C:468:ILE:HG21	2:C:1146:NDG:H8C3	1.92	0.52
1:D:290:VAL:HG21	1:D:353:SER:HB2	1.91	0.52
1:D:88:ASN:HD22	1:D:88:ASN:N	2.07	0.52
1:E:467:THR:O	1:E:468:ILE:HB	2.09	0.52
1:H:377:ILE:HG23	1:H:390:PHE:CD1	2.44	0.52
1:B:121:PHE:CG	1:B:228:SER:HA	2.45	0.52
1:D:342:SER:C	5:D:1150:HOH:O	2.48	0.52
1:F:412(C):GLU:CG	5:F:1148:HOH:O	2.53	0.52
1:F:419:ARG:HG3	1:F:419:ARG:NH1	2.25	0.52
1:F:452:ASP:HB3	1:H:216:LYS:CD	2.33	0.52
1:G:453:THR:CG2	1:G:454:VAL:N	2.71	0.52
1:C:397:ILE:HG22	1:C:398:VAL:HG23	1.91	0.52
1:A:144:HIS:HE1	1:D:463:GLU:N	1.86	0.52
1:A:215:ILE:HG13	5:A:1209:HOH:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:102:LYS:HZ2	1:B:104:ASN:ND2	2.08	0.52
1:C:102:LYS:HG3	1:C:444:ILE:HG22	1.90	0.52
1:A:332:THR:HG23	1:A:386:THR:HG21	1.92	0.51
1:B:214:THR:HB	1:C:451:SER:HB2	1.91	0.51
1:D:275:TYR:CE2	1:D:303:VAL:CG2	2.93	0.51
1:H:287:ILE:O	1:H:304:SER:HA	2.10	0.51
1:A:335:SER:OG	1:A:339:GLY:O	2.28	0.51
1:F:468:ILE:HG12	5:F:1151:HOH:O	2.10	0.51
1:B:229:GLU:OE1	1:B:410:PHE:HA	2.10	0.51
1:B:88:ASN:H	1:B:88:ASN:ND2	2.09	0.51
1:C:376:MET:HG2	1:C:397:ILE:HD12	1.92	0.51
1:D:101:SER:O	1:D:444:ILE:HA	2.10	0.51
1:F:216:LYS:NZ	1:G:452:ASP:CB	2.73	0.51
1:H:121:PHE:CG	1:H:228:SER:HA	2.46	0.51
1:H:333:GLY:N	1:H:386:THR:CG2	2.74	0.51
1:H:466:PHE:C	1:H:468:ILE:N	2.61	0.51
1:B:411:VAL:HG22	1:B:411:VAL:HA	1.92	0.51
1:C:135:THR:O	1:C:156:ARG:HA	2.11	0.51
1:E:347:TYR:CG	1:E:348:GLY:N	2.79	0.51
1:F:232:CYS:HA	1:F:237:CYS:HA	1.91	0.51
1:C:411:VAL:CG1	1:C:412:GLN:N	2.73	0.51
1:G:347:TYR:CG	1:G:348:GLY:N	2.79	0.51
1:G:96:GLY:O	1:G:448:GLY:O	2.29	0.51
1:F:451:SER:CB	1:H:214:THR:HB	2.41	0.51
1:F:184:HIS:HD2	1:F:186:GLY:N	1.96	0.51
1:G:249:GLN:HE21	1:G:272:ASN:H	1.56	0.51
1:A:466:PHE:C	1:A:468:ILE:N	2.61	0.51
1:C:333:GLY:H	1:C:386:THR:CG2	2.24	0.51
1:E:412(C):GLU:HG2	5:E:1155:HOH:O	2.10	0.51
1:F:116:VAL:HG12	1:F:138:ALA:O	2.10	0.51
1:F:360:VAL:HG22	1:F:383:TRP:HB2	1.93	0.51
1:A:342:SER:C	5:A:1148:HOH:O	2.49	0.51
1:F:263:VAL:O	1:F:264:LYS:HB2	2.10	0.51
1:G:169(A):TYR:O	5:G:1150:HOH:O	2.19	0.51
1:A:466:PHE:C	1:A:468:ILE:H	2.13	0.51
1:D:287:ILE:HD12	1:D:287:ILE:N	2.25	0.51
1:D:333:GLY:H	1:D:386:THR:CG2	2.20	0.51
1:G:414:GLY:N	5:G:1171:HOH:O	2.43	0.51
1:G:96:GLY:HA3	5:G:1188:HOH:O	2.10	0.51
1:H:428:ARG:NH2	1:H:460:ASP:OD1	2.44	0.51
1:A:254:ILE:HD11	1:A:268:LEU:HD21	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:101:SER:HA	1:D:173:PHE:CZ	2.45	0.51
1:C:366:LYS:HD3	1:C:400:ILE:HG12	1.93	0.51
5:E:1194:HOH:O	1:H:165:GLU:HG2	2.10	0.51
1:A:413:THR:HG22	1:A:415:LEU:HD13	1.93	0.50
1:C:250:ALA:HB3	1:C:252:TYR:CE2	2.46	0.50
1:F:136:GLN:O	1:G:107:ARG:NH1	2.44	0.50
1:A:164:GLY:HA3	1:C:173:PHE:CG	2.45	0.50
1:C:343:SER:O	1:C:345:GLY:N	2.44	0.50
1:B:261:LYS:HE3	5:B:1223:HOH:O	2.11	0.50
1:B:397:ILE:HG23	1:B:446:PHE:CZ	2.47	0.50
1:B:451:SER:OG	1:D:214:THR:HB	2.12	0.50
1:C:466:PHE:C	1:C:468:ILE:N	2.63	0.50
1:E:101:SER:HA	1:G:173:PHE:CZ	2.47	0.50
1:G:294:ASN:HA	1:G:347:TYR:O	2.11	0.50
1:C:249:GLN:HE21	1:C:272:ASN:N	1.82	0.50
1:C:448:GLY:O	1:C:449:VAL:HB	2.10	0.50
1:F:222:ILE:O	1:F:222:ILE:HG22	2.11	0.50
1:B:135:THR:O	1:B:156:ARG:HA	2.11	0.50
1:E:355:LYS:HD2	1:E:383:TRP:CE2	2.47	0.50
1:G:411:VAL:CG1	1:G:418:ILE:HG23	2.41	0.50
1:F:254:ILE:HD13	1:F:305:PHE:CD2	2.47	0.50
1:E:210:ILE:CD1	1:H:413:THR:HG23	2.42	0.50
1:B:347:TYR:CG	1:B:348:GLY:N	2.80	0.50
1:F:216:LYS:CE	1:G:452:ASP:HB3	2.41	0.50
1:G:184:HIS:HD2	1:G:186:GLY:N	2.10	0.50
1:H:332:THR:HG23	1:H:386:THR:HG21	1.93	0.50
1:B:366:LYS:CB	1:B:400:ILE:HG12	2.42	0.50
1:C:214:THR:HG22	5:C:1185:HOH:O	2.12	0.50
1:F:136:GLN:NE2	1:F:156:ARG:CD	2.74	0.50
1:F:298:SER:HB2	5:F:1156:HOH:O	2.12	0.50
1:E:452:ASP:CB	1:G:216:LYS:NZ	2.75	0.50
1:G:376:MET:HG2	1:G:397:ILE:CD1	2.41	0.50
1:A:360:VAL:HG13	1:A:383:TRP:HE3	1.75	0.50
1:B:332:THR:HG23	1:B:386:THR:CG2	2.42	0.50
1:C:397:ILE:HD13	1:C:422:PHE:CZ	2.47	0.50
1:D:412(B):PRO:HD2	5:D:1157:HOH:O	2.12	0.50
1:A:328:PRO:HD3	1:A:343:SER:O	2.12	0.49
1:B:216:LYS:CE	1:C:452:ASP:HB3	2.42	0.49
1:D:252:TYR:OH	1:D:274:HIS:HA	2.11	0.49
1:A:210:ILE:HD12	1:D:413:THR:HG23	1.93	0.49
1:E:216:LYS:CD	1:H:452:ASP:HB3	2.40	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:102:LYS:NZ	1:B:104:ASN:ND2	2.60	0.49
1:D:413:THR:CG2	1:D:415:LEU:HD13	2.41	0.49
1:F:129:CYS:O	1:F:163:VAL:HG23	2.12	0.49
1:F:194:ILE:HD11	1:F:241:MET:HE2	1.94	0.49
1:G:181:SER:OG	1:G:192:ILE:HD12	2.13	0.49
1:G:306:ASN:CG	1:G:308:GLN:H	2.14	0.49
1:B:366:LYS:HB3	1:B:400:ILE:HG12	1.95	0.49
1:C:228:SER:HB3	1:C:350:LYS:NZ	2.27	0.49
1:E:451:SER:OG	1:G:214:THR:HB	2.13	0.49
1:A:88:ASN:N	1:A:88:ASN:ND2	2.54	0.49
1:D:290:VAL:HG11	1:D:353:SER:HB2	1.94	0.49
1:D:450:ASN:ND2	5:D:1154:HOH:O	2.45	0.49
1:H:298:SER:OG	1:H:341:VAL:HB	2.12	0.49
1:C:322:PHE:CD1	1:C:328:PRO:HG2	2.48	0.49
1:E:406:TYR:HB2	1:E:425:GLU:OE1	2.12	0.49
1:E:300:ARG:CZ	1:E:351:GLY:HA3	2.42	0.49
1:F:229:GLU:HG2	1:F:230:CYS:O	2.12	0.49
1:B:173:PHE:CG	1:C:164:GLY:HA3	2.47	0.49
1:C:116:VAL:O	1:C:116:VAL:HG13	2.12	0.49
1:D:119:GLU:HG3	1:D:119:GLU:O	2.13	0.49
1:D:229:GLU:HG2	1:D:230:CYS:O	2.13	0.49
1:D:413:THR:HG21	1:D:415:LEU:CD2	2.28	0.49
1:F:360:VAL:HG13	1:F:383:TRP:HE3	1.78	0.49
1:B:85:LEU:HD12	1:B:412(C):GLU:CG	2.31	0.49
1:C:117:ILE:HD13	1:C:167:PRO:HG3	1.95	0.49
1:C:347:TYR:CG	1:C:348:GLY:N	2.77	0.49
1:E:216:LYS:HZ2	1:H:452:ASP:CB	2.25	0.49
1:F:341:VAL:HG12	5:F:1156:HOH:O	2.08	0.49
1:G:411:VAL:HG13	1:G:418:ILE:CG2	2.43	0.49
1:C:146:ASN:ND2	2:C:1146:NDG:C1	2.60	0.49
1:D:194:ILE:HG12	1:D:203:ALA:HB2	1.93	0.49
1:H:215:ILE:HD13	1:H:255:PHE:CE2	2.48	0.49
1:H:467:THR:HG22	1:H:467:THR:O	2.13	0.49
1:C:99:VAL:HG22	5:C:1172:HOH:O	2.12	0.49
1:F:275:TYR:CE2	1:F:303:VAL:CG2	2.96	0.49
1:F:299:ASN:HD22	1:F:316:TYR:HB3	1.76	0.49
1:A:172:ARG:HD2	1:A:174:GLU:OE1	2.13	0.48
1:B:400:ILE:HG13	5:B:1219:HOH:O	2.12	0.48
1:B:454:VAL:HG23	1:D:202:VAL:CG1	2.43	0.48
1:C:112:GLY:CA	5:C:1149:HOH:O	2.51	0.48
1:G:129:CYS:O	1:G:163:VAL:HG23	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:366:LYS:HE3	5:G:1199:HOH:O	2.12	0.48
1:H:316:TYR:CD1	1:H:340:PRO:HD3	2.48	0.48
1:A:344:ASN:C	5:A:1149:HOH:O	2.51	0.48
1:D:466:PHE:O	1:D:468:ILE:N	2.45	0.48
1:E:172:ARG:HD2	1:E:174:GLU:OE1	2.13	0.48
1:G:355:LYS:HB2	1:G:383:TRP:CZ3	2.48	0.48
1:H:126:HIS:O	1:H:127:LEU:HD23	2.13	0.48
1:H:306:ASN:CG	1:H:308:GLN:N	2.66	0.48
1:E:332:THR:CG2	1:E:386:THR:HG21	2.42	0.48
1:F:275:TYR:O	1:F:276:GLU:HG3	2.13	0.48
1:G:120:PRO:HA	1:G:132:PHE:O	2.13	0.48
1:B:173:PHE:CZ	1:C:101:SER:HA	2.49	0.48
1:C:294:ASN:HA	1:C:347:TYR:O	2.12	0.48
1:C:452:ASP:HA	5:C:1180:HOH:O	2.14	0.48
1:D:359:GLY:HA2	1:D:381:ASN:H	1.59	0.48
1:D:354:PHE:CZ	1:D:409:SER:HB2	2.49	0.48
1:D:96:GLY:O	1:D:448:GLY:O	2.30	0.48
1:E:226:GLN:O	1:E:227:GLU:HB2	2.14	0.48
1:G:406:TYR:HB2	1:G:425:GLU:OE1	2.14	0.48
1:C:109:GLY:HA3	1:C:140:LEU:HD12	1.94	0.48
1:C:411:VAL:HG13	1:C:418:ILE:CG2	2.43	0.48
1:C:442:SER:HB2	5:C:1228:HOH:O	2.13	0.48
1:E:228:SER:HB3	1:E:350:LYS:CE	2.41	0.48
1:E:226:GLN:HE22	1:E:230:CYS:HA	1.79	0.48
1:A:180:ALA:CB	1:A:192:ILE:O	2.62	0.48
1:B:218:TRP:CE2	1:B:253:LYS:HE3	2.49	0.48
1:A:451:SER:CB	1:C:214:THR:HB	2.42	0.48
1:C:413:THR:CA	5:C:1150:HOH:O	2.62	0.48
1:D:192:ILE:HD11	1:D:257:MET:HE1	1.96	0.48
1:E:287:ILE:O	1:E:304:SER:HA	2.14	0.48
1:F:303:VAL:HG22	1:F:314:ILE:HG22	1.94	0.48
1:C:412(D):LEU:HA	5:C:1148:HOH:O	2.13	0.48
1:E:210:ILE:HD13	1:H:413:THR:HA	1.95	0.48
1:E:373:GLY:HA2	1:E:398:VAL:O	2.14	0.48
1:G:412(B):PRO:CA	5:G:1148:HOH:O	2.39	0.48
1:E:320:GLY:N	1:E:387:ASP:O	2.47	0.48
1:H:219:ARG:HB2	1:H:243:ASP:CG	2.34	0.48
1:H:232:CYS:HA	1:H:237:CYS:HA	1.94	0.48
1:H:468:ILE:HG21	2:H:1146:NDG:H8C3	1.95	0.48
1:A:247:ASN:O	1:A:295:TRP:HB2	2.14	0.48
1:A:345:GLY:N	5:A:1149:HOH:O	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:85:LEU:HD12	1:A:412(C):GLU:HG3	1.95	0.48
1:B:227:GLU:HA	1:B:227:GLU:OE1	2.13	0.47
1:B:321:VAL:HG13	1:B:364:ARG:NH2	2.29	0.47
1:C:320:GLY:CA	1:C:387:ASP:O	2.62	0.47
1:B:216:LYS:NZ	1:C:452:ASP:HB3	2.29	0.47
1:D:425:GLU:OE1	1:D:427:ILE:HD11	2.13	0.47
1:E:333:GLY:N	1:E:386:THR:HG23	2.28	0.47
1:G:385:GLU:HB3	5:G:1165:HOH:O	2.13	0.47
1:H:412(D):LEU:HB2	5:H:1149:HOH:O	2.14	0.47
1:A:226:GLN:O	1:A:227:GLU:HB2	2.14	0.47
1:C:85:LEU:HD12	1:C:412(C):GLU:HG3	1.95	0.47
1:F:118:ARG:O	1:F:119:GLU:HG3	2.14	0.47
1:A:320:GLY:CA	1:A:387:ASP:O	2.57	0.47
1:A:433:GLU:OE2	1:A:464:LEU:HD12	2.13	0.47
1:D:248:GLY:HA2	1:D:295:TRP:CD2	2.49	0.47
1:D:452:ASP:HA	5:D:1186:HOH:O	2.14	0.47
1:E:271:PRO:O	1:E:272:ASN:CB	2.61	0.47
1:F:122:ILE:HG22	1:F:123:SER:N	2.29	0.47
1:F:412(D):LEU:HB2	5:F:1149:HOH:O	2.13	0.47
1:G:466:PHE:O	1:G:468:ILE:N	2.47	0.47
1:H:254:ILE:HD13	1:H:305:PHE:CD2	2.49	0.47
1:A:254:ILE:HD13	1:A:305:PHE:CD2	2.49	0.47
1:G:113:ASP:O	1:G:168:SER:CB	2.63	0.47
1:G:355:LYS:HB2	1:G:383:TRP:CE3	2.50	0.47
1:G:467:THR:O	1:G:468:ILE:HB	2.14	0.47
1:B:86:ALA:O	5:B:1160:HOH:O	2.20	0.47
1:D:270:ALA:HB1	1:D:273:TYR:HB2	1.95	0.47
1:A:210:ILE:HD13	1:D:413:THR:HA	1.97	0.47
1:H:299:ASN:ND2	5:H:1153:HOH:O	2.47	0.47
1:H:411:VAL:HG11	1:H:418:ILE:CG2	2.44	0.47
1:H:421:CYS:HB3	1:H:446:PHE:O	2.14	0.47
1:B:354:PHE:CZ	1:B:409:SER:HB2	2.50	0.47
1:B:448:GLY:O	1:B:449:VAL:CB	2.56	0.47
1:D:86:ALA:O	5:D:1157:HOH:O	2.20	0.47
1:E:301:PRO:HB3	1:E:316:TYR:CZ	2.50	0.47
1:G:215:ILE:HD13	1:G:255:PHE:CE2	2.49	0.47
1:D:228:SER:HB3	1:D:350:LYS:CE	2.43	0.47
1:D:347:TYR:CG	1:D:348:GLY:N	2.75	0.47
1:E:380:PRO:O	1:E:381:ASN:C	2.52	0.47
1:E:411:VAL:HG13	1:E:418:ILE:HG23	1.96	0.47
1:H:105:SER:HB3	1:H:167:PRO:HD2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:250:ALA:HB3	1:A:252:TYR:CE2	2.49	0.47
1:A:343:SER:O	1:A:344:ASN:CB	2.62	0.47
1:A:355:LYS:HD2	1:A:383:TRP:CE2	2.50	0.47
1:C:254:ILE:HD12	5:C:1247:HOH:O	2.15	0.47
1:C:327:ARG:HB2	1:C:328:PRO:HD2	1.97	0.47
1:D:102:LYS:HZ2	1:D:104:ASN:HD21	1.62	0.47
1:D:156:ARG:HB3	1:D:177:ALA:O	2.14	0.47
1:D:301:PRO:HB3	1:D:316:TYR:CZ	2.50	0.47
1:E:245:PRO:HG2	1:E:249:GLN:O	2.15	0.47
1:G:131:THR:O	1:G:160:SER:HA	2.15	0.47
1:B:150:LYS:HD3	1:B:152:ARG:O	2.15	0.47
1:B:210:ILE:HD11	5:C:1213:HOH:O	2.15	0.47
1:D:232:CYS:HA	1:D:237:CYS:HA	1.96	0.47
1:E:85:LEU:HD12	1:E:412(C):GLU:CG	2.34	0.47
1:F:226:GLN:HE22	1:F:230:CYS:HB3	1.80	0.47
1:H:159:MET:HG2	1:H:173:PHE:HA	1.96	0.47
1:A:303:VAL:HG22	1:A:314:ILE:HG22	1.96	0.47
1:B:320:GLY:CA	1:B:387:ASP:O	2.62	0.47
1:C:239:THR:HG22	1:C:257:MET:CE	2.45	0.47
1:C:91:LEU:HG	1:C:283:ASN:ND2	2.30	0.47
1:D:97:TRP:HD1	1:D:395:GLN:NE2	2.13	0.47
1:E:390:PHE:HE1	1:E:394:LYS:HB2	1.80	0.47
1:E:99:VAL:HG13	1:E:446:PHE:CE2	2.49	0.47
1:F:216:LYS:HZ3	1:G:452:ASP:HB2	1.80	0.47
1:G:286:GLU:C	1:G:287:ILE:HD12	2.35	0.47
1:A:275:TYR:CE2	1:A:303:VAL:CG2	2.98	0.47
1:C:333:GLY:N	1:C:386:THR:CG2	2.78	0.47
1:D:468:ILE:CG2	2:D:1146:NDG:H8C3	2.44	0.47
1:A:466:PHE:O	1:A:468:ILE:N	2.48	0.46
1:B:413:THR:HG22	1:B:415:LEU:H	1.79	0.46
1:C:97:TRP:H	1:C:395:GLN:HE22	1.62	0.46
1:F:155:HIS:NE2	1:G:461:GLY:HA3	2.31	0.46
1:H:96:GLY:O	1:H:448:GLY:O	2.32	0.46
1:D:387:ASP:N	5:D:1236:HOH:O	2.47	0.46
1:E:345:GLY:N	5:E:1148:HOH:O	2.31	0.46
1:F:102:LYS:HZ2	1:F:104:ASN:ND2	2.13	0.46
1:H:343:SER:O	1:H:344:ASN:CB	2.63	0.46
1:C:120:PRO:HA	1:C:132:PHE:O	2.16	0.46
1:C:194:ILE:HG12	1:C:203:ALA:HB2	1.97	0.46
1:C:412(B):PRO:O	5:C:1150:HOH:O	2.20	0.46
1:D:102:LYS:NZ	1:D:104:ASN:ND2	2.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:202:VAL:CG2	1:F:214:THR:HG23	2.46	0.46
1:F:256:LYS:HB2	1:F:310:LEU:HD11	1.97	0.46
1:E:164:GLY:HA3	1:G:173:PHE:CG	2.50	0.46
1:G:226:GLN:O	1:G:227:GLU:HB2	2.16	0.46
1:G:228:SER:HB3	1:G:350:LYS:CE	2.41	0.46
1:H:117:ILE:HG22	1:H:135:THR:HG22	1.97	0.46
1:A:347:TYR:CG	1:A:348:GLY:N	2.83	0.46
1:D:299:ASN:ND2	1:D:316:TYR:HB3	2.31	0.46
1:H:158:LEU:O	1:H:174:GLU:HB2	2.15	0.46
1:A:332:THR:CG2	1:A:386:THR:HG21	2.46	0.46
1:B:131:THR:O	1:B:160:SER:HA	2.15	0.46
1:B:114:VAL:HG13	1:B:167:PRO:O	2.16	0.46
1:B:275:TYR:CE2	1:B:303:VAL:HG23	2.50	0.46
1:B:347:TYR:N	5:B:1157:HOH:O	2.48	0.46
1:F:219:ARG:HB2	1:F:243:ASP:CG	2.36	0.46
1:G:287:ILE:O	1:G:304:SER:HA	2.14	0.46
1:B:216:LYS:NZ	1:C:452:ASP:CB	2.79	0.46
1:C:126:HIS:HB2	5:C:1148:HOH:O	2.15	0.46
1:D:360:VAL:CG1	1:D:383:TRP:HE3	2.29	0.46
1:F:397:ILE:HG23	1:F:446:PHE:CZ	2.51	0.46
1:A:332:THR:HG23	1:A:386:THR:CG2	2.45	0.46
1:B:426:LEU:HD13	1:B:460:ASP:N	2.31	0.46
1:A:216:LYS:CE	1:D:452:ASP:CB	2.94	0.46
1:H:327:ARG:O	1:H:368:THR:HB	2.16	0.46
1:A:343:SER:O	1:A:344:ASN:HB3	2.16	0.46
1:A:413:THR:CG2	1:A:415:LEU:HB2	2.46	0.46
1:C:413:THR:HB	5:C:1150:HOH:O	2.16	0.46
1:D:332:THR:CG2	1:D:386:THR:HG21	2.44	0.46
1:H:339:GLY:O	1:H:340:PRO:C	2.53	0.46
1:H:360:VAL:HG13	1:H:383:TRP:HE3	1.80	0.46
1:A:184:HIS:HD2	1:A:186:GLY:N	2.08	0.46
1:B:192:ILE:HD11	1:B:257:MET:HE1	1.98	0.46
1:B:450:ASN:HA	5:B:1154:HOH:O	2.16	0.46
1:D:241:MET:HB2	1:D:255:PHE:HE1	1.80	0.46
1:D:397:ILE:CD1	1:D:422:PHE:HZ	2.29	0.46
1:G:102:LYS:HG3	1:G:444:ILE:HG22	1.96	0.46
1:G:377:ILE:HG23	1:G:390:PHE:CD1	2.50	0.46
1:E:200:GLY:O	1:H:454:VAL:HG21	2.15	0.46
1:B:322:PHE:CE1	1:B:328:PRO:HG2	2.50	0.45
1:D:339:GLY:O	5:D:1152:HOH:O	2.21	0.45
1:E:105:SER:HB3	1:E:167:PRO:HD2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:85:LEU:HB2	1:E:185:ASP:O	2.17	0.45
1:F:411:VAL:HG12	1:F:412:GLN:N	2.30	0.45
1:G:136:GLN:HE21	1:G:156:ARG:CD	2.29	0.45
1:H:97:TRP:HD1	1:H:395:GLN:NE2	2.14	0.45
1:C:116:VAL:HG12	1:C:138:ALA:O	2.17	0.45
1:D:333:GLY:N	1:D:386:THR:CG2	2.79	0.45
1:H:412(B):PRO:C	5:H:1148:HOH:O	2.51	0.45
1:E:216:LYS:CE	1:H:452:ASP:HB3	2.45	0.45
1:A:413:THR:HG23	1:C:210:ILE:CD1	2.46	0.45
1:E:222:ILE:HG22	1:E:222:ILE:O	2.15	0.45
1:E:305:PHE:HB3	1:E:312:TYR:HB3	1.98	0.45
1:F:136:GLN:HE21	1:F:156:ARG:HD3	1.80	0.45
1:H:305:PHE:HB3	1:H:312:TYR:HB3	1.99	0.45
1:A:247:ASN:O	1:A:248:GLY:O	2.34	0.45
1:B:232:CYS:HA	1:B:237:CYS:HA	1.97	0.45
1:C:232:CYS:HA	1:C:237:CYS:HA	1.97	0.45
1:C:319:SER:HB2	1:C:382:GLY:O	2.16	0.45
1:C:433:GLU:CD	1:C:464:LEU:HD12	2.36	0.45
1:D:322:PHE:CE1	1:D:328:PRO:HG2	2.51	0.45
1:G:116:VAL:HG12	1:G:138:ALA:O	2.15	0.45
1:A:136:GLN:HE21	1:A:156:ARG:HD2	1.80	0.45
1:A:397:ILE:CD1	1:A:422:PHE:HZ	2.28	0.45
1:D:133:PHE:O	1:D:158:LEU:HD12	2.17	0.45
1:E:218:TRP:CD1	1:E:219:ARG:HG2	2.52	0.45
1:G:130:ARG:HH21	1:G:130:ARG:HG2	1.81	0.45
1:A:113:ASP:O	5:A:1147:HOH:O	2.21	0.45
1:A:452:ASP:HB2	1:C:216:LYS:HZ2	1.80	0.45
1:C:412(B):PRO:CA	5:C:1150:HOH:O	2.61	0.45
1:C:148:THR:HG23	1:C:430:ARG:HH12	1.80	0.45
1:D:184:HIS:HD2	1:D:186:GLY:N	2.14	0.45
1:E:333:GLY:H	1:E:386:THR:HG23	1.80	0.45
1:F:325:ASN:O	1:F:348:GLY:HA2	2.17	0.45
1:H:226:GLN:O	1:H:227:GLU:HB2	2.15	0.45
1:A:117:ILE:HD13	1:A:167:PRO:HG3	1.98	0.45
1:B:169(A):TYR:CD2	1:B:169(A):TYR:N	2.84	0.45
1:B:412(C):GLU:CG	5:B:1151:HOH:O	2.23	0.45
1:D:403:TRP:HB3	5:D:1245:HOH:O	2.15	0.45
1:D:88:ASN:ND2	1:D:88:ASN:H	2.14	0.45
1:E:325:ASN:O	1:E:348:GLY:CA	2.64	0.45
1:G:103:ASP:O	1:G:104:ASN:HB2	2.17	0.45
1:H:254:ILE:HD11	1:H:303:VAL:HG11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:325:ASN:O	1:H:348:GLY:HA2	2.17	0.45
1:D:219:ARG:HB2	1:D:243:ASP:CG	2.37	0.45
1:E:286:GLU:C	1:E:287:ILE:HD12	2.37	0.45
1:G:91:LEU:HD11	1:G:281:TYR:CE2	2.52	0.45
1:H:192:ILE:HG23	1:H:205:LEU:CD2	2.47	0.45
1:A:413:THR:CG2	1:A:415:LEU:HD13	2.46	0.45
1:C:290:VAL:HG11	1:C:353:SER:HB2	1.99	0.45
1:D:397:ILE:HG23	1:D:446:PHE:CZ	2.52	0.45
1:H:273:TYR:OH	1:H:315:GLY:HA2	2.16	0.45
1:A:155:HIS:HD2	1:D:102:LYS:HZ2	1.64	0.45
1:A:101:SER:HA	1:C:173:PHE:CZ	2.52	0.45
1:E:135:THR:O	1:E:156:ARG:HA	2.16	0.45
1:E:300:ARG:NH1	1:E:351:GLY:HA3	2.32	0.45
1:E:366:LYS:HD2	1:E:398:VAL:O	2.17	0.45
1:F:316:TYR:CD1	1:F:340:PRO:HD3	2.52	0.45
1:H:136:GLN:NE2	1:H:156:ARG:HD3	2.32	0.45
1:B:316:TYR:CZ	1:B:340:PRO:HD3	2.51	0.44
1:B:413:THR:CG2	1:B:415:LEU:HB2	2.47	0.44
1:B:86:ALA:CA	5:B:1156:HOH:O	2.62	0.44
1:H:341:VAL:HG12	5:H:1155:HOH:O	2.16	0.44
1:H:343:SER:N	5:H:1155:HOH:O	2.49	0.44
1:H:355:LYS:HB2	1:H:383:TRP:CZ3	2.52	0.44
1:A:253:LYS:HG2	1:A:267:GLU:HA	1.99	0.44
1:A:391:SER:HB2	5:A:1247:HOH:O	2.18	0.44
1:A:397:ILE:HG22	1:A:398:VAL:HG23	1.97	0.44
1:G:412(D):LEU:CB	5:G:1173:HOH:O	2.58	0.44
1:H:161:CYS:HB2	1:H:162:PRO:HD2	2.00	0.44
1:H:380:PRO:O	1:H:381:ASN:C	2.55	0.44
1:B:467:THR:O	1:B:468:ILE:HB	2.17	0.44
1:C:290:VAL:HG21	1:C:353:SER:HB2	1.98	0.44
1:E:232:CYS:HA	1:E:236:SER:O	2.17	0.44
1:E:306:ASN:CG	1:E:308:GLN:N	2.71	0.44
1:G:354:PHE:CZ	1:G:409:SER:HB2	2.51	0.44
1:C:181:SER:CB	5:C:1178:HOH:O	2.65	0.44
1:C:453:THR:HG22	1:C:454:VAL:N	2.22	0.44
1:D:397:ILE:HD13	1:D:422:PHE:CZ	2.48	0.44
1:E:150:LYS:HD3	1:E:152:ARG:O	2.18	0.44
1:F:366:LYS:HD3	1:F:400:ILE:HG12	2.00	0.44
1:H:347:TYR:CG	1:H:348:GLY:N	2.86	0.44
1:A:229:GLU:HG2	1:A:230:CYS:O	2.18	0.44
1:B:117:ILE:HD11	5:B:1183:HOH:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:207:TYR:HB3	1:B:212:THR:HG21	2.00	0.44
1:B:412:GLN:HB2	1:B:419:ARG:CB	2.47	0.44
1:F:210:ILE:CD1	1:G:413:THR:HA	2.47	0.44
1:G:468:ILE:CG2	2:G:1146:NDG:H8C3	2.47	0.44
1:H:301:PRO:HB3	1:H:316:TYR:CZ	2.52	0.44
1:D:136:GLN:HE21	1:D:156:ARG:HD2	1.82	0.44
1:D:146:ASN:ND2	2:D:1146:NDG:C1	2.59	0.44
1:D:330:ASP:O	5:D:1214:HOH:O	2.21	0.44
1:E:115:PHE:O	1:E:117:ILE:HG23	2.17	0.44
1:E:270:ALA:HB1	1:E:273:TYR:HB2	2.00	0.44
1:E:277:GLU:OE1	1:E:292:ARG:NH2	2.50	0.44
1:F:247:ASN:O	1:F:248:GLY:O	2.36	0.44
1:G:316:TYR:CD1	1:G:340:PRO:HD3	2.53	0.44
1:G:390:PHE:HE1	1:G:394:LYS:HB2	1.83	0.44
1:H:117:ILE:HD12	1:H:120:PRO:HB3	1.99	0.44
1:A:131:THR:O	1:A:160:SER:HA	2.17	0.44
1:B:218:TRP:CD1	1:B:219:ARG:HG2	2.53	0.44
1:B:146:ASN:O	1:B:437:ILE:O	2.36	0.44
1:F:102:LYS:NZ	1:F:104:ASN:ND2	2.65	0.44
1:G:287:ILE:N	1:G:287:ILE:CD1	2.81	0.44
1:G:397:ILE:CD1	1:G:422:PHE:HZ	2.31	0.44
1:G:426:LEU:HD13	1:G:460:ASP:N	2.32	0.44
1:G:421:CYS:HB3	1:G:446:PHE:O	2.17	0.44
1:H:254:ILE:HD12	5:H:1166:HOH:O	2.16	0.44
1:A:397:ILE:HD13	1:A:422:PHE:HZ	1.83	0.44
1:A:99:VAL:HG12	1:A:446:PHE:CE2	2.53	0.44
1:E:102:LYS:HG3	1:E:444:ILE:HG22	1.99	0.44
1:E:387:ASP:HB2	5:E:1150:HOH:O	2.17	0.44
1:F:397:ILE:HD13	1:F:422:PHE:CZ	2.53	0.44
1:A:148:THR:HG22	1:A:430:ARG:HH22	1.83	0.44
1:D:102:LYS:HZ2	1:D:104:ASN:ND2	2.16	0.44
1:E:232:CYS:HA	1:E:237:CYS:HA	1.99	0.44
1:E:412(B):PRO:HD3	1:E:417:CYS:O	2.18	0.44
1:E:453:THR:CG2	1:E:454:VAL:H	2.13	0.44
1:F:88:ASN:O	1:F:284:ALA:HA	2.18	0.44
1:F:411:VAL:CG1	1:F:412:GLN:N	2.81	0.44
1:G:147:GLY:C	1:G:149:VAL:H	2.20	0.44
1:A:208:ASN:ND2	5:A:1157:HOH:O	2.51	0.43
1:B:172:ARG:HD2	1:B:174:GLU:OE1	2.17	0.43
1:F:102:LYS:HZ2	1:F:104:ASN:HD21	1.64	0.43
1:G:247:ASN:O	1:G:295:TRP:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:412:GLN:CB	1:G:419:ARG:HB2	2.40	0.43
1:A:413:THR:HG23	1:C:210:ILE:HD12	2.00	0.43
1:D:358:ASN:HB2	1:D:381:ASN:OD1	2.18	0.43
1:F:226:GLN:O	1:F:227:GLU:HB2	2.18	0.43
1:F:343:SER:O	1:F:344:ASN:CB	2.65	0.43
1:F:333:GLY:H	1:F:386:THR:HG23	1.83	0.43
1:G:296:HIS:HA	1:G:345:GLY:O	2.18	0.43
1:H:333:GLY:H	1:H:386:THR:CG2	2.28	0.43
1:H:390:PHE:CE1	1:H:394:LYS:HB2	2.53	0.43
1:A:330:ASP:C	5:A:1254:HOH:O	2.57	0.43
1:B:254:ILE:HD11	1:B:268:LEU:HD21	1.99	0.43
1:F:125:SER:HA	1:F:184:HIS:HB3	1.99	0.43
1:G:192:ILE:HG12	1:G:205:LEU:HD22	2.00	0.43
1:G:222:ILE:O	1:G:222:ILE:HG22	2.18	0.43
1:G:364:ARG:HG3	1:G:365:THR:O	2.19	0.43
1:H:118:ARG:O	1:H:119:GLU:HG3	2.19	0.43
1:H:397:ILE:HG23	1:H:446:PHE:CZ	2.53	0.43
1:B:99:VAL:HG13	1:B:446:PHE:CE2	2.53	0.43
1:B:464:LEU:HB3	1:B:465:PRO:HA	2.00	0.43
1:C:239:THR:HG22	1:C:257:MET:HE2	1.99	0.43
1:C:287:ILE:O	1:C:304:SER:HA	2.19	0.43
1:C:397:ILE:HG23	1:C:446:PHE:CZ	2.53	0.43
1:C:413:THR:HG22	1:C:415:LEU:N	2.31	0.43
1:F:225:THR:OG1	1:F:226:GLN:N	2.50	0.43
1:F:390:PHE:N	1:F:390:PHE:CD2	2.86	0.43
1:H:88:ASN:HD22	1:H:89:SER:H	1.65	0.43
1:A:375:GLU:OE1	1:A:394:LYS:HE3	2.17	0.43
1:D:136:GLN:HE21	1:D:156:ARG:CD	2.31	0.43
1:E:239:THR:CG2	1:E:257:MET:HE1	2.49	0.43
1:E:413:THR:CG2	1:E:415:LEU:HB2	2.47	0.43
1:E:97:TRP:H	1:E:395:GLN:HE22	1.66	0.43
1:A:169:PRO:HD2	5:A:1147:HOH:O	2.17	0.43
1:A:227:GLU:HA	1:A:227:GLU:OE1	2.19	0.43
1:A:360:VAL:HG22	1:A:383:TRP:HB2	2.00	0.43
1:B:412(B):PRO:HB3	1:B:415:LEU:O	2.18	0.43
1:H:339:GLY:HA2	1:H:340:PRO:HD2	1.79	0.43
1:H:413:THR:CB	5:H:1148:HOH:O	2.67	0.43
1:B:155:HIS:CE1	1:C:461:GLY:HA3	2.54	0.43
1:B:202:VAL:HG23	1:B:214:THR:HG23	2.01	0.43
1:B:365:THR:HG23	5:B:1189:HOH:O	2.19	0.43
1:C:113:ASP:N	5:C:1149:HOH:O	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:162:PRO:CG	1:C:165:GLU:CD	2.85	0.43
1:C:342:SER:O	1:C:343:SER:C	2.57	0.43
1:E:123:SER:OG	1:E:229:GLU:HG3	2.18	0.43
1:E:366:LYS:HG3	1:E:374:PHE:N	2.34	0.43
1:E:457:SER:OG	1:E:459:PRO:HD3	2.18	0.43
1:A:216:LYS:HZ2	1:D:452:ASP:CB	2.29	0.43
1:A:377:ILE:HG23	1:A:390:PHE:CD1	2.54	0.43
1:A:390:PHE:HE1	1:A:394:LYS:HB2	1.83	0.43
1:B:249:GLN:NE2	1:B:271:PRO:HA	2.33	0.43
1:D:88:ASN:ND2	1:D:88:ASN:N	2.66	0.43
1:E:146:ASN:HD21	3:E:1146:NAG:C1	2.32	0.43
1:H:122:ILE:HG22	1:H:123:SER:N	2.34	0.43
1:H:215:ILE:HD11	1:H:262:VAL:HG21	2.01	0.43
1:A:226:GLN:NE2	1:A:239:THR:OG1	2.46	0.43
1:C:147:GLY:C	1:C:149:VAL:N	2.72	0.43
1:E:254:ILE:HD13	1:E:305:PHE:CD2	2.53	0.43
1:F:202:VAL:CG1	1:G:454:VAL:HG23	2.48	0.43
1:H:413:THR:HB	5:H:1148:HOH:O	2.18	0.43
1:B:200:GLY:O	1:C:454:VAL:HG21	2.19	0.43
1:E:124:CYS:HA	1:E:129:CYS:HA	2.00	0.43
1:G:248:GLY:HA2	1:G:295:TRP:CD2	2.53	0.43
1:G:309:ASN:CB	5:G:1156:HOH:O	2.65	0.43
1:C:251:SER:OG	1:C:267:GLU:OE2	2.36	0.42
1:D:411:VAL:HG13	1:D:411:VAL:HG22	1.97	0.42
1:E:139:LEU:HD11	5:E:1153:HOH:O	2.19	0.42
1:E:436:THR:HG21	1:E:464:LEU:HD13	2.00	0.42
1:E:466:PHE:O	1:E:468:ILE:N	2.52	0.42
1:F:121:PHE:CZ	1:F:132:PHE:HB2	2.54	0.42
1:F:397:ILE:HD13	1:F:422:PHE:HZ	1.83	0.42
1:A:325:ASN:HA	1:A:326:PRO:C	2.39	0.42
1:A:397:ILE:HG23	1:A:446:PHE:CZ	2.55	0.42
1:B:132:PHE:HB3	1:B:158:LEU:HD11	2.01	0.42
1:B:259:LYS:HE3	5:B:1210:HOH:O	2.19	0.42
1:C:172:ARG:HD2	1:C:174:GLU:OE1	2.18	0.42
1:D:136:GLN:NE2	1:D:156:ARG:HD2	2.34	0.42
1:D:426:LEU:HD13	1:D:460:ASP:N	2.34	0.42
1:E:412(B):PRO:HD2	1:E:418:ILE:HG12	2.01	0.42
1:E:452:ASP:HB3	1:G:216:LYS:NZ	2.32	0.42
1:F:335:SER:HB2	5:F:1188:HOH:O	2.18	0.42
1:G:270:ALA:HB1	1:G:273:TYR:CB	2.49	0.42
1:A:136:GLN:HE21	1:A:156:ARG:HD3	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:413:THR:CG2	1:D:415:LEU:HB2	2.49	0.42
1:F:468:ILE:CG2	2:F:1146:NDG:H8C3	2.50	0.42
1:F:210:ILE:HD13	1:G:413:THR:HA	2.00	0.42
1:H:287:ILE:N	1:H:287:ILE:HD12	2.34	0.42
1:H:408:GLY:HA3	1:H:423:TRP:CZ2	2.54	0.42
1:B:403:TRP:CZ3	1:B:432:LYS:HG3	2.54	0.42
1:E:239:THR:HG22	1:E:257:MET:CE	2.49	0.42
1:F:135:THR:O	1:F:156:ARG:HA	2.19	0.42
1:A:301:PRO:HB3	1:A:316:TYR:CZ	2.54	0.42
1:B:113:ASP:N	5:D:1149:HOH:O	2.52	0.42
1:C:296:HIS:HB2	5:C:1173:HOH:O	2.19	0.42
1:C:343:SER:C	1:C:345:GLY:H	2.23	0.42
1:C:355:LYS:HD2	1:C:383:TRP:CE2	2.55	0.42
1:C:415:LEU:HD23	5:C:1227:HOH:O	2.20	0.42
1:C:442:SER:CB	5:C:1228:HOH:O	2.67	0.42
1:D:397:ILE:HG22	1:D:398:VAL:HG23	2.00	0.42
1:G:229:GLU:OE1	1:G:410:PHE:HA	2.20	0.42
1:G:397:ILE:HG23	1:G:446:PHE:CZ	2.55	0.42
1:H:248:GLY:HA2	1:H:295:TRP:NE1	2.33	0.42
1:B:319:SER:HB2	1:B:382:GLY:O	2.20	0.42
1:C:248:GLY:HA2	1:C:295:TRP:NE1	2.35	0.42
1:D:355:LYS:HD2	1:D:383:TRP:CE2	2.54	0.42
1:F:119:GLU:OE1	1:F:227:GLU:OE1	2.37	0.42
1:G:412(D):LEU:CD1	5:G:1173:HOH:O	2.51	0.42
1:G:97:TRP:N	1:G:395:GLN:HE22	2.16	0.42
1:A:173:PHE:CG	1:D:164:GLY:HA3	2.54	0.42
1:C:218:TRP:CE2	1:C:253:LYS:HE3	2.55	0.42
1:B:210:ILE:CD1	1:C:413:THR:HA	2.49	0.42
1:C:453:THR:CG2	1:C:454:VAL:H	2.17	0.42
1:C:464:LEU:HB3	1:C:465:PRO:HA	2.01	0.42
1:A:173:PHE:CZ	1:D:101:SER:HA	2.54	0.42
1:D:375:GLU:OE1	1:D:394:LYS:CE	2.66	0.42
1:E:306:ASN:CG	1:E:308:GLN:H	2.23	0.42
1:F:158:LEU:O	1:F:174:GLU:HB2	2.20	0.42
1:F:453:THR:CG2	1:F:454:VAL:H	2.20	0.42
1:G:300:ARG:HG2	1:G:300:ARG:NH2	2.34	0.42
1:G:387:ASP:HB3	1:G:388:SER:H	1.62	0.42
1:H:332:THR:CG2	1:H:386:THR:HG21	2.50	0.42
1:A:453:THR:HG22	5:A:1166:HOH:O	2.18	0.42
1:B:133:PHE:O	1:B:158:LEU:HD12	2.20	0.42
1:D:275:TYR:CE2	1:D:303:VAL:HG23	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:88:ASN:ND2	1:E:88:ASN:N	2.50	0.42
1:F:333:GLY:N	1:F:386:THR:HG23	2.34	0.42
1:F:411:VAL:HG13	1:F:418:ILE:CG2	2.49	0.42
1:G:192:ILE:HG23	1:G:205:LEU:HD22	2.01	0.42
1:E:105:SER:CB	1:E:167:PRO:HD2	2.50	0.42
1:E:450:ASN:HA	5:E:1185:HOH:O	2.19	0.42
1:G:413:THR:CB	5:G:1148:HOH:O	2.47	0.42
1:H:210:ILE:HG13	1:H:210:ILE:O	2.20	0.42
1:H:319:SER:HB2	1:H:382:GLY:O	2.20	0.42
1:A:97:TRP:N	1:A:395:GLN:HE22	2.16	0.42
1:A:412(B):PRO:HB3	1:A:415:LEU:O	2.20	0.42
1:B:229:GLU:HG2	1:B:230:CYS:O	2.19	0.42
1:C:354:PHE:CZ	1:C:409:SER:HB2	2.55	0.42
1:C:426:LEU:O	1:C:441:GLY:HA2	2.20	0.42
1:D:413:THR:HG22	1:D:415:LEU:H	1.84	0.42
1:E:271:PRO:O	1:E:272:ASN:HB3	2.19	0.42
1:E:412:GLN:HG3	1:E:419:ARG:CG	2.45	0.42
1:F:173:PHE:CB	1:G:164:GLY:HA3	2.50	0.42
1:F:332:THR:HG23	1:F:386:THR:CG2	2.50	0.42
1:H:303:VAL:HG22	1:H:314:ILE:HG22	2.02	0.42
1:A:158:LEU:O	1:A:174:GLU:HB2	2.20	0.41
1:A:397:ILE:HD13	1:A:422:PHE:CZ	2.54	0.41
1:C:102:LYS:NZ	1:C:104:ASN:ND2	2.68	0.41
1:C:322:PHE:HB2	1:C:327:ARG:HD2	2.01	0.41
1:C:432:LYS:HA	1:C:432:LYS:HD3	1.91	0.41
1:F:134:LEU:HA	1:F:157:THR:O	2.20	0.41
1:G:126:HIS:C	5:G:1173:HOH:O	2.59	0.41
1:G:365:THR:HA	1:G:373:GLY:O	2.20	0.41
1:G:320:GLY:CA	1:G:387:ASP:O	2.58	0.41
1:G:85:LEU:HD11	1:G:412(C):GLU:HG3	1.92	0.41
1:B:158:LEU:O	1:B:174:GLU:HB2	2.19	0.41
1:B:412:GLN:HB2	1:B:419:ARG:HB2	2.00	0.41
1:C:287:ILE:N	1:C:287:ILE:CD1	2.82	0.41
1:E:174:GLU:OE2	1:E:174:GLU:HA	2.19	0.41
1:E:412(D):LEU:CA	5:E:1154:HOH:O	2.37	0.41
1:E:148:THR:HG23	1:E:430:ARG:HH12	1.85	0.41
1:F:145:SER:O	1:F:147:GLY:N	2.54	0.41
1:F:194:ILE:HD13	1:F:223:LEU:HG	2.02	0.41
1:H:118:ARG:HB2	1:H:156:ARG:HH11	1.85	0.41
1:H:249:GLN:NE2	1:H:272:ASN:N	2.63	0.41
1:B:250:ALA:HB3	1:B:252:TYR:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:254:ILE:HD13	1:B:305:PHE:CD2	2.56	0.41
1:B:110:SER:CB	1:D:144:HIS:HD2	2.33	0.41
1:D:172:ARG:HD2	1:D:174:GLU:OE1	2.20	0.41
1:E:202:VAL:HG23	1:E:214:THR:HG23	2.01	0.41
1:G:232:CYS:HA	1:G:236:SER:O	2.21	0.41
1:G:226:GLN:NE2	1:G:239:THR:OG1	2.47	0.41
1:G:300:ARG:HG2	1:G:300:ARG:HH21	1.84	0.41
1:H:376:MET:CG	1:H:397:ILE:HD11	2.27	0.41
1:A:101:SER:O	1:A:444:ILE:HA	2.20	0.41
1:B:287:ILE:CD1	1:B:287:ILE:N	2.81	0.41
1:B:164:GLY:HA3	1:D:173:PHE:CG	2.55	0.41
1:D:99:VAL:HG13	1:D:446:PHE:CE2	2.55	0.41
1:E:411:VAL:CG1	1:E:418:ILE:HG23	2.50	0.41
1:F:360:VAL:CG1	1:F:383:TRP:HE3	2.33	0.41
1:H:397:ILE:HD13	1:H:422:PHE:CZ	2.55	0.41
1:B:181:SER:OG	1:B:192:ILE:HD12	2.20	0.41
1:D:149:VAL:HG12	1:D:150:LYS:N	2.35	0.41
1:D:191:THR:OG1	1:D:206:LYS:HB2	2.21	0.41
1:D:183:CYS:HB3	1:D:230:CYS:O	2.21	0.41
1:E:411:VAL:HA	1:E:411:VAL:HG22	1.92	0.41
1:F:146:ASN:O	1:F:437:ILE:O	2.39	0.41
1:H:403:TRP:CH2	1:H:432:LYS:HB3	2.56	0.41
1:A:306:ASN:CG	1:A:308:GLN:N	2.74	0.41
1:C:332:THR:CG2	1:C:386:THR:HG21	2.50	0.41
1:C:446:PHE:N	1:C:446:PHE:CD1	2.89	0.41
1:E:132:PHE:CD2	1:E:160:SER:HB3	2.56	0.41
1:F:275:TYR:OH	1:F:314:ILE:HB	2.21	0.41
1:H:332:THR:HG23	1:H:386:THR:CG2	2.50	0.41
1:H:95:ASN:ND2	1:H:450:ASN:O	2.50	0.41
1:A:297:GLY:HA2	1:A:341:VAL:O	2.20	0.41
1:A:299:ASN:HD22	1:A:316:TYR:HB3	1.83	0.41
1:A:85:LEU:CD1	1:A:412(C):GLU:HG3	2.50	0.41
1:B:219:ARG:HE	1:B:251:SER:HB2	1.86	0.41
1:D:129:CYS:O	1:D:163:VAL:HG23	2.20	0.41
1:D:254:ILE:HD13	1:D:305:PHE:CD2	2.55	0.41
1:E:316:TYR:CD1	1:E:340:PRO:HD3	2.55	0.41
1:F:149:VAL:HG12	1:F:150:LYS:N	2.36	0.41
1:F:232:CYS:HA	1:F:236:SER:O	2.20	0.41
1:H:184:HIS:HD2	1:H:186:GLY:N	2.10	0.41
1:H:466:PHE:O	1:H:468:ILE:N	2.54	0.41
1:A:322:PHE:CE2	1:A:341:VAL:HG21	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:136:GLN:N	5:B:1202:HOH:O	2.54	0.41
1:B:136:GLN:O	1:C:107:ARG:NH1	2.49	0.41
1:B:366:LYS:HD3	1:B:400:ILE:HG12	2.02	0.41
1:C:286:GLU:C	1:C:287:ILE:HD12	2.41	0.41
1:G:250:ALA:HB3	1:G:252:TYR:CE2	2.56	0.41
1:G:352:PHE:HB2	5:G:1157:HOH:O	2.21	0.41
1:G:426:LEU:O	1:G:441:GLY:HA2	2.19	0.41
1:H:453:THR:HG22	1:H:454:VAL:N	2.28	0.41
1:A:215:ILE:HD13	1:A:255:PHE:CE2	2.56	0.41
1:A:411:VAL:HG13	1:A:412:GLN:N	2.36	0.41
1:B:452:ASP:HB2	1:D:216:LYS:HZ2	1.85	0.41
1:F:181:SER:CB	5:F:1153:HOH:O	2.68	0.41
1:F:306:ASN:CG	1:F:308:GLN:N	2.74	0.41
1:G:335:SER:OG	1:G:339:GLY:O	2.37	0.41
1:H:194:ILE:HG12	1:H:203:ALA:HB2	2.03	0.41
1:H:227:GLU:HA	1:H:227:GLU:OE1	2.20	0.41
1:H:192:ILE:HD11	1:H:257:MET:HE1	2.02	0.41
1:A:218:TRP:CE2	1:A:253:LYS:HE3	2.56	0.41
1:A:297:GLY:N	1:A:345:GLY:O	2.54	0.41
1:A:452:ASP:HB3	1:C:216:LYS:CE	2.51	0.41
1:B:117:ILE:HD12	1:B:120:PRO:HB3	2.02	0.41
1:C:84:LYS:HG3	1:C:84:LYS:H	1.66	0.41
1:D:411:VAL:CG1	1:D:418:ILE:HG23	2.48	0.41
1:E:287:ILE:N	1:E:287:ILE:CD1	2.80	0.41
1:F:298:SER:CB	5:F:1156:HOH:O	2.69	0.41
1:H:373:GLY:HA2	1:H:399:ALA:O	2.21	0.41
1:A:219:ARG:HB2	1:A:243:ASP:CG	2.41	0.41
1:A:346:ALA:N	5:A:1152:HOH:O	2.49	0.41
1:B:218:TRP:CZ2	1:B:253:LYS:HG3	2.56	0.41
1:B:411:VAL:HG13	1:B:418:ILE:CG2	2.51	0.41
1:E:114:VAL:HG13	1:E:167:PRO:O	2.21	0.41
1:F:99:VAL:HG13	1:F:446:PHE:CE2	2.56	0.41
1:G:147:GLY:C	1:G:149:VAL:N	2.75	0.41
1:G:192:ILE:HD11	1:G:257:MET:HE1	2.02	0.41
1:D:184:HIS:CD2	1:D:186:GLY:N	2.83	0.40
1:F:168:SER:HB2	1:F:169:PRO:HD2	2.03	0.40
1:F:366:LYS:HD3	1:F:400:ILE:CG1	2.51	0.40
1:C:378:TRP:HB3	1:C:392:VAL:HB	2.03	0.40
1:E:119:GLU:OE1	1:E:227:GLU:OE1	2.38	0.40
1:F:271:PRO:O	1:F:272:ASN:HB3	2.22	0.40
1:H:126:HIS:C	5:H:1149:HOH:O	2.60	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:306:ASN:CG	1:B:308:GLN:N	2.74	0.40
1:C:438:TRP:CD1	1:C:438:TRP:N	2.89	0.40
1:D:428:ARG:HB3	1:D:464:LEU:HD11	2.02	0.40
1:G:152:ARG:CZ	1:G:222:ILE:HD13	2.50	0.40
1:G:121:PHE:CB	1:G:228:SER:HA	2.51	0.40
1:H:191:THR:OG1	1:H:206:LYS:HB2	2.22	0.40
1:H:366:LYS:CB	1:H:400:ILE:HG12	2.50	0.40
1:A:355:LYS:NZ	1:A:357:GLY:O	2.46	0.40
1:A:413:THR:HG22	1:A:415:LEU:H	1.86	0.40
1:A:145:SER:O	1:A:438:TRP:HB3	2.21	0.40
1:B:277:GLU:OE1	1:B:350:LYS:HB2	2.21	0.40
1:D:359:GLY:HA3	1:D:381:ASN:H	1.78	0.40
1:D:88:ASN:HD22	1:D:88:ASN:H	1.68	0.40
1:E:152:ARG:HH21	1:E:152:ARG:HG3	1.86	0.40
1:E:215:ILE:HD11	1:E:262:VAL:CG2	2.50	0.40
1:F:305:PHE:HB3	1:F:312:TYR:HB3	2.02	0.40
1:F:301:PRO:HB3	1:F:316:TYR:CZ	2.56	0.40
1:H:366:LYS:HB3	1:H:400:ILE:HG12	2.03	0.40
1:C:112:GLY:C	5:C:1149:HOH:O	2.59	0.40
1:C:254:ILE:HB	5:C:1247:HOH:O	2.22	0.40
1:B:463:GLU:N	1:D:144:HIS:HE1	1.94	0.40
1:D:277:GLU:OE1	1:D:350:LYS:HB2	2.21	0.40
1:E:247:ASN:O	1:E:295:TRP:HB2	2.22	0.40
1:E:300:ARG:HD2	5:E:1167:HOH:O	2.21	0.40
1:G:162:PRO:HG2	1:G:165:GLU:OE1	2.21	0.40
1:F:111:LYS:NZ	1:H:112:GLY:O	2.55	0.40
1:H:216:LYS:HB2	1:H:216:LYS:HE3	2.00	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:343:SER:OG	5:D:1242:HOH:O[8_456]	2.13	0.07

## 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	383/387 (99%)	342 (89%)	32 (8%)	9 (2%)	7	11
1	B	383/387 (99%)	341 (89%)	32 (8%)	10 (3%)	6	9
1	C	383/387 (99%)	338 (88%)	35 (9%)	10 (3%)	6	9
1	D	383/387 (99%)	344 (90%)	31 (8%)	8 (2%)	8	13
1	E	383/387 (99%)	342 (89%)	32 (8%)	9 (2%)	7	11
1	F	383/387 (99%)	335 (88%)	37 (10%)	11 (3%)	5	7
1	G	383/387 (99%)	346 (90%)	30 (8%)	7 (2%)	10	17
1	H	383/387 (99%)	344 (90%)	31 (8%)	8 (2%)	8	13
All	All	3064/3096 (99%)	2732 (89%)	260 (8%)	72 (2%)	7	11

All (72) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	343	SER
1	B	448	GLY
1	D	340	PRO
1	E	340	PRO
1	E	412(A)	HIS
1	F	340	PRO
1	G	340	PRO
1	H	340	PRO
1	A	248	GLY
1	A	340	PRO
1	A	448	GLY
1	A	449	VAL
1	B	146	ASN
1	B	248	GLY
1	B	449	VAL
1	C	147	GLY
1	C	248	GLY
1	C	448	GLY
1	D	146	ASN
1	D	248	GLY
1	D	448	GLY
1	D	449	VAL
1	E	234	ASN

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Mol	Chain	Res	Type
1	E	448	GLY
1	E	449	VAL
1	F	146	ASN
1	F	248	GLY
1	F	448	GLY
1	F	449	VAL
1	G	147	GLY
1	G	248	GLY
1	G	448	GLY
1	H	343	SER
1	H	448	GLY
1	A	330	ASP
1	B	330	ASP
1	B	340	PRO
1	C	340	PRO
1	C	449	VAL
1	D	347	TYR
1	F	343	SER
1	G	449	VAL
1	H	449	VAL
1	H	451	SER
1	H	456	TRP
1	A	451	SER
1	B	467	THR
1	C	381	ASN
1	C	412(A)	HIS
1	E	248	GLY
1	F	249	GLN
1	F	388	SER
1	H	147	GLY
1	A	147	GLY
1	A	347	TYR
1	B	200	GLY
1	D	330	ASP
1	E	146	ASN
1	E	456	TRP
1	F	264	LYS
1	G	347	TYR
1	C	344	ASN
1	C	347	TYR
1	E	435	SER
1	A	200	GLY

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Mol	Chain	Res	Type
1	D	147	GLY
1	B	222	ILE
1	H	200	GLY
1	G	200	GLY
1	C	200	GLY
1	F	147	GLY
1	F	200	GLY

### 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	329/331 (99%)	313 (95%)	16 (5%)	29	52
1	B	329/331 (99%)	314 (95%)	15 (5%)	31	55
1	C	329/331 (99%)	315 (96%)	14 (4%)	33	58
1	D	329/331 (99%)	318 (97%)	11 (3%)	43	70
1	E	329/331 (99%)	316 (96%)	13 (4%)	36	62
1	F	329/331 (99%)	315 (96%)	14 (4%)	33	58
1	G	329/331 (99%)	314 (95%)	15 (5%)	31	55
1	H	329/331 (99%)	316 (96%)	13 (4%)	36	62
All	All	2632/2648 (99%)	2521 (96%)	111 (4%)	34	59

All (111) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	88	ASN
1	A	116	VAL
1	A	156	ARG
1	A	168	SER
1	A	214	THR
1	A	230	CYS
1	A	257	MET
1	A	296	HIS

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Mol	Chain	Res	Type
1	A	310	LEU
1	A	318	CYS
1	A	360	VAL
1	A	391	SER
1	A	412(C)	GLU
1	A	415	LEU
1	A	419	ARG
1	A	460	ASP
1	B	88	ASN
1	B	99	VAL
1	B	116	VAL
1	B	210	ILE
1	B	230	CYS
1	B	257	MET
1	B	296	HIS
1	B	298	SER
1	B	360	VAL
1	B	372	SER
1	B	391	SER
1	B	412(C)	GLU
1	B	415	LEU
1	B	419	ARG
1	B	451	SER
1	C	88	ASN
1	C	99	VAL
1	C	156	ARG
1	C	181	SER
1	C	214	THR
1	C	230	CYS
1	C	257	MET
1	C	296	HIS
1	C	298	SER
1	C	360	VAL
1	C	391	SER
1	C	412(C)	GLU
1	C	415	LEU
1	C	419	ARG
1	D	88	ASN
1	D	99	VAL
1	D	156	ARG
1	D	214	THR
1	D	230	CYS

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Mol	Chain	Res	Type
1	D	257	MET
1	D	296	HIS
1	D	360	VAL
1	D	415	LEU
1	D	419	ARG
1	D	454	VAL
1	E	88	ASN
1	E	99	VAL
1	E	168	SER
1	E	230	CYS
1	E	257	MET
1	E	296	HIS
1	E	360	VAL
1	E	391	SER
1	E	412(C)	GLU
1	E	415	LEU
1	E	419	ARG
1	E	451	SER
1	E	454	VAL
1	F	88	ASN
1	F	99	VAL
1	F	141	ASN
1	F	181	SER
1	F	214	THR
1	F	230	CYS
1	F	252	TYR
1	F	257	MET
1	F	296	HIS
1	F	318	CYS
1	F	360	VAL
1	F	415	LEU
1	F	419	ARG
1	F	453	THR
1	G	88	ASN
1	G	99	VAL
1	G	116	VAL
1	G	214	THR
1	G	230	CYS
1	G	252	TYR
1	G	296	HIS
1	G	310	LEU
1	G	344	ASN

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Mol	Chain	Res	Type
1	G	360	VAL
1	G	385	GLU
1	G	412(C)	GLU
1	G	415	LEU
1	G	419	ARG
1	G	460	ASP
1	H	88	ASN
1	H	99	VAL
1	H	116	VAL
1	H	230	CYS
1	H	257	MET
1	H	296	HIS
1	H	298	SER
1	H	360	VAL
1	H	391	SER
1	H	419	ARG
1	H	454	VAL
1	H	456	TRP
1	H	460	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	88	ASN
1	A	104	ASN
1	A	136	GLN
1	A	144	HIS
1	A	146	ASN
1	A	155	HIS
1	A	184	HIS
1	A	208	ASN
1	A	226	GLN
1	A	249	GLN
1	A	313	GLN
1	A	395	GLN
1	B	88	ASN
1	B	104	ASN
1	B	144	HIS
1	B	146	ASN
1	B	155	HIS
1	B	184	HIS
1	B	226	GLN

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Mol	Chain	Res	Type
1	B	249	GLN
1	B	313	GLN
1	B	344	ASN
1	B	395	GLN
1	C	88	ASN
1	C	104	ASN
1	C	136	GLN
1	C	144	HIS
1	C	146	ASN
1	C	155	HIS
1	C	184	HIS
1	C	208	ASN
1	C	226	GLN
1	C	249	GLN
1	C	313	GLN
1	C	395	GLN
1	D	88	ASN
1	D	104	ASN
1	D	136	GLN
1	D	144	HIS
1	D	146	ASN
1	D	184	HIS
1	D	208	ASN
1	D	226	GLN
1	D	249	GLN
1	D	313	GLN
1	D	325	ASN
1	D	395	GLN
1	E	88	ASN
1	E	104	ASN
1	E	136	GLN
1	E	144	HIS
1	E	146	ASN
1	E	184	HIS
1	E	208	ASN
1	E	226	GLN
1	E	234	ASN
1	E	249	GLN
1	E	313	GLN
1	E	395	GLN
1	F	88	ASN
1	F	104	ASN

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Mol	Chain	Res	Type
1	F	136	GLN
1	F	144	HIS
1	F	146	ASN
1	F	184	HIS
1	F	221	ASN
1	F	226	GLN
1	F	249	GLN
1	F	313	GLN
1	F	329	ASN
1	F	395	GLN
1	F	412(A)	HIS
1	G	88	ASN
1	G	104	ASN
1	G	136	GLN
1	G	144	HIS
1	G	146	ASN
1	G	184	HIS
1	G	226	GLN
1	G	249	GLN
1	G	313	GLN
1	G	395	GLN
1	H	88	ASN
1	H	104	ASN
1	H	144	HIS
1	H	146	ASN
1	H	155	HIS
1	H	184	HIS
1	H	226	GLN
1	H	249	GLN
1	H	313	GLN
1	H	395	GLN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 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	$\# Z  > 2$
2	NDG	A	1146	-	15,15,15	0.72	0	21,21,21	0.72	0
2	NDG	B	1146	-	15,15,15	0.67	0	21,21,21	0.72	0
2	NDG	C	1146	-	15,15,15	0.67	0	21,21,21	0.76	0
2	NDG	D	1146	-	15,15,15	0.60	0	21,21,21	0.87	1 (4%)
3	NAG	E	1146	-	15,15,15	0.89	1 (6%)	21,21,21	0.92	0
2	NDG	F	1146	-	15,15,15	0.69	0	21,21,21	0.58	0
2	NDG	G	1146	-	15,15,15	0.80	1 (6%)	21,21,21	0.67	0
2	NDG	H	1146	-	15,15,15	0.57	0	21,21,21	0.73	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
2	NDG	A	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	B	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	C	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	D	1146	-	-	0/6/26/26	0/1/1/1
3	NAG	E	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	F	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	G	1146	-	-	0/6/26/26	0/1/1/1
2	NDG	H	1146	-	-	0/6/26/26	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	1146	NDG	C1-C2	2.00	1.55	1.52
3	E	1146	NAG	C1-C2	2.68	1.56	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	1146	NDG	C1-C2-N2	-2.45	107.89	110.73

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

8 monomers are involved in 33 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1146	NDG	3	0
2	B	1146	NDG	3	0
2	C	1146	NDG	6	0
2	D	1146	NDG	6	0
3	E	1146	NAG	2	0
2	F	1146	NDG	4	0
2	G	1146	NDG	4	0
2	H	1146	NDG	5	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

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	385/387 (99%)	-0.20	7 (1%) 69 70	9, 20, 36, 50	0
1	B	385/387 (99%)	-0.13	8 (2%) 64 66	8, 22, 36, 59	0
1	C	385/387 (99%)	-0.17	16 (4%) 37 39	10, 21, 35, 58	0
1	D	385/387 (99%)	-0.25	7 (1%) 69 70	8, 20, 33, 55	0
1	E	385/387 (99%)	0.24	20 (5%) 28 29	17, 32, 44, 69	0
1	F	385/387 (99%)	0.28	21 (5%) 26 27	22, 35, 50, 64	0
1	G	385/387 (99%)	0.02	18 (4%) 32 34	14, 27, 41, 63	0
1	H	385/387 (99%)	0.42	33 (8%) 11 11	23, 37, 51, 68	0
All	All	3080/3096 (99%)	0.03	130 (4%) 37 39	8, 27, 45, 69	0

All (130) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	148	THR	8.3
1	F	381	ASN	5.8
1	D	381	ASN	5.8
1	G	148	THR	5.8
1	G	149	VAL	5.7
1	E	149	VAL	5.7
1	H	148	THR	5.6
1	D	148	THR	5.4
1	H	149	VAL	5.3
1	H	381	ASN	5.2
1	E	83	VAL	4.9
1	C	150	LYS	4.9
1	E	412	GLN	4.9
1	C	148	THR	4.9
1	H	343	SER	4.8
1	H	83	VAL	4.7

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Mol	Chain	Res	Type	RSRZ
1	A	149	VAL	4.6
1	E	147	GLY	4.5
1	B	148	THR	4.5
1	H	344	ASN	4.4
1	H	150	LYS	4.4
1	E	151	ASP	4.3
1	H	331	GLY	4.3
1	F	149	VAL	4.3
1	C	149	VAL	4.2
1	B	149	VAL	4.2
1	G	83	VAL	4.2
1	H	247	ASN	4.1
1	H	151	ASP	4.0
1	F	346	ALA	3.9
1	F	148	THR	3.9
1	F	336	CYS	3.6
1	E	435	SER	3.5
1	G	150	LYS	3.5
1	F	391	SER	3.5
1	C	412	GLN	3.5
1	E	247	ASN	3.4
1	E	381	ASN	3.3
1	H	346	ALA	3.3
1	F	331	GLY	3.3
1	B	381	ASN	3.2
1	F	343	SER	3.2
1	B	450	ASN	3.2
1	C	381	ASN	3.1
1	F	400	ILE	3.1
1	F	151	ASP	3.1
1	F	84	LYS	3.1
1	G	386	THR	3.1
1	H	452	ASP	3.1
1	A	381	ASN	3.1
1	A	369	ASN	3.1
1	H	450	ASN	3.1
1	A	343	SER	3.0
1	G	346	ALA	3.0
1	G	381	ASN	3.0
1	H	329	ASN	3.0
1	E	386	THR	3.0
1	B	452	ASP	2.9

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Mol	Chain	Res	Type	RSRZ
1	H	248	GLY	2.9
1	E	346	ALA	2.9
1	C	450	ASN	2.9
1	F	150	LYS	2.9
1	B	150	LYS	2.8
1	F	435	SER	2.8
1	D	149	VAL	2.8
1	C	452	ASP	2.8
1	F	414	GLY	2.8
1	C	151	ASP	2.8
1	D	450	ASN	2.7
1	H	199	ASN	2.7
1	C	346	ALA	2.7
1	E	150	LYS	2.7
1	H	84	LYS	2.7
1	F	452	ASP	2.7
1	H	339	GLY	2.7
1	G	416	ASP	2.7
1	A	148	THR	2.7
1	H	347	TYR	2.7
1	A	83	VAL	2.6
1	C	83	VAL	2.6
1	D	150	LYS	2.6
1	E	450	ASN	2.6
1	H	435	SER	2.6
1	A	331	GLY	2.5
1	G	452	ASP	2.5
1	G	306	ASN	2.5
1	G	339	GLY	2.5
1	H	306	ASN	2.5
1	F	369	ASN	2.5
1	B	151	ASP	2.4
1	D	343	SER	2.4
1	H	380	PRO	2.4
1	C	84	LYS	2.3
1	E	309	ASN	2.3
1	E	345	GLY	2.3
1	B	416	ASP	2.3
1	D	346	ALA	2.3
1	H	342	SER	2.3
1	H	357	GLY	2.3
1	C	336	CYS	2.3

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Mol	Chain	Res	Type	RSRZ
1	H	85	LEU	2.3
1	F	389	SER	2.2
1	H	400	ILE	2.2
1	C	386	THR	2.2
1	C	411	VAL	2.2
1	H	146	ASN	2.2
1	F	86	ALA	2.1
1	G	387	ASP	2.1
1	H	465	PRO	2.1
1	F	388	SER	2.1
1	E	336	CYS	2.1
1	C	147	GLY	2.1
1	H	386	THR	2.1
1	G	247	ASN	2.1
1	E	401	THR	2.1
1	G	385	GLU	2.1
1	C	306	ASN	2.1
1	E	452	ASP	2.1
1	H	269	ASP	2.1
1	G	435	SER	2.1
1	G	147	GLY	2.0
1	H	390	PHE	2.0
1	G	269	ASP	2.0
1	H	416	ASP	2.0
1	F	146	ASN	2.0
1	G	450	ASN	2.0
1	H	336	CYS	2.0
1	E	344	ASN	2.0
1	F	323	GLY	2.0
1	E	400	ILE	2.0

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

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

## 6.3 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 6.4 Ligands

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
4	CA	G	997	1/1	0.95	0.11	-0.65	29,29,29,29	0
4	CA	F	996	1/1	0.97	0.12	-0.76	46,46,46,46	0
4	CA	A	991	1/1	0.96	0.09	-1.29	21,21,21,21	0
4	CA	E	995	1/1	0.96	0.09	-1.48	28,28,28,28	0
4	CA	C	993	1/1	0.97	0.06	-1.52	22,22,22,22	0
4	CA	B	992	1/1	0.97	0.07	-1.66	21,21,21,21	0
4	CA	D	994	1/1	0.93	0.07	-1.76	23,23,23,23	0
4	CA	H	998	1/1	0.94	0.06	-2.29	40,40,40,40	0
2	NDG	D	1146	15/15	0.44	0.57	-	60,64,65,66	0
2	NDG	H	1146	15/15	0.34	0.68	-	64,68,71,72	0
3	NAG	E	1146	15/15	0.56	0.50	-	57,62,65,65	0
2	NDG	G	1146	15/15	0.42	0.57	-	65,67,68,69	0
2	NDG	C	1146	15/15	0.38	0.66	-	64,69,73,75	0
2	NDG	F	1146	15/15	0.21	0.75	-	74,77,79,80	0
2	NDG	B	1146	15/15	0.53	0.57	-	65,69,71,71	0
2	NDG	A	1146	15/15	0.34	0.71	-	66,69,73,74	0

## 6.5 Other polymers

There are no such residues in this entry.