Full wwPDB X-ray Structure Validation Report (i)

Jan 31, 2016 – 06:53 PM GMT

PDB ID	:	1CX2
Title	:	CYCLOOXYGENASE-2 (PROSTAGLANDIN SYNTHASE-2) COMPLEXED WITH A SELECTIVE INHIBITOR, SC-558
Authors	:	Kurumbail, R.; Stallings, W.
Deposited on	:	1996-12-17
Resolution	:	3.00 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
A user guide is available at
http://wwpdb.org/validation/2016/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

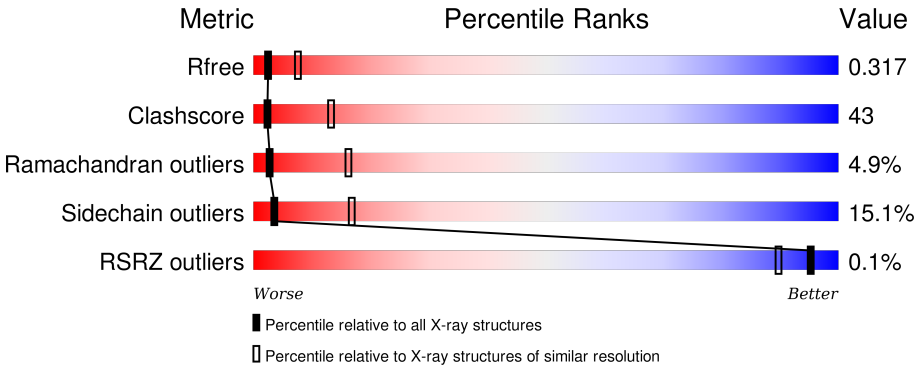
MolProbity	:	4.02b-467
Mogul	:	1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20026688
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0135
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk26865

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.00 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}	91344	1578 (3.00-3.00)
Clashscore	102246	1912 (3.00-3.00)
Ramachandran outliers	100387	1853 (3.00-3.00)
Sidechain outliers	100360	1856 (3.00-3.00)
RSRZ outliers	91569	1592 (3.00-3.00)

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 >=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 <=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	587	31% 52% 10% • 6%
1	B	587	30% 52% 11% • 6%
1	C	587	33% 51% 10% • 6%
1	D	587	31% 52% 11% • 6%

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

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	NAG	A	661	-	-	-	X
2	NAG	B	661	-	-	-	X
2	NAG	B	681	-	-	-	X
2	NAG	C	661	-	-	-	X
2	NAG	D	661	-	-	-	X
2	NAG	D	681	-	-	-	X
4	S58	A	701	-	-	X	-
4	S58	C	701	-	-	X	-
4	S58	D	701	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 22376 atoms, of which 4040 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.

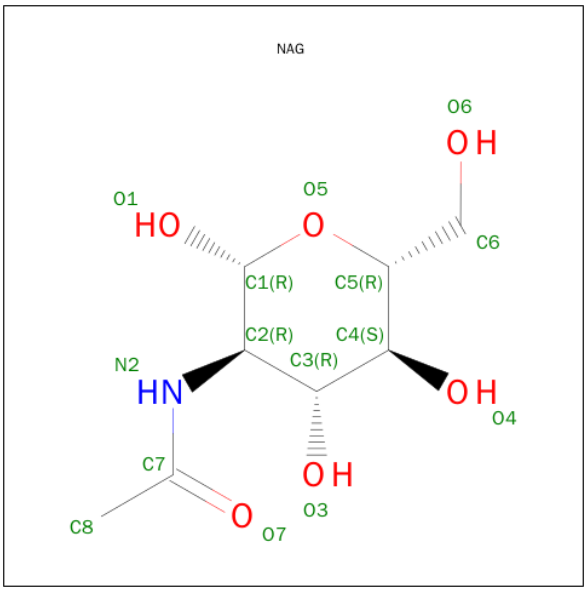
- Molecule 1 is a protein called CYCLOOXYGENASE-2.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	552	Total	C	H	N	O	S	0	0	0
			5439	2886	966	748	814	25			
1	B	552	Total	C	H	N	O	S	0	0	0
			5439	2886	966	748	814	25			
1	C	552	Total	C	H	N	O	S	0	0	0
			5439	2886	966	748	814	25			
1	D	552	Total	C	H	N	O	S	0	0	0
			5439	2886	966	748	814	25			

There are 8 discrepancies between the modelled and reference sequences:

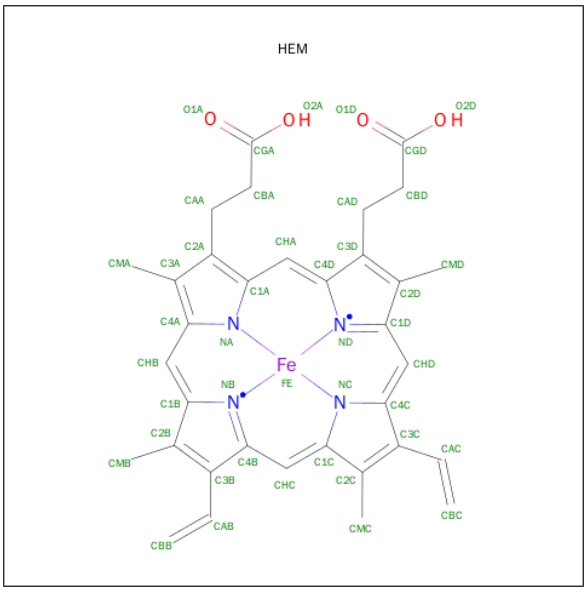
Chain	Residue	Modelled	Actual	Comment	Reference
A	310	GLN	ASN	CONFLICT	UNP Q05769
A	333	LYS	ARG	CONFLICT	UNP Q05769
B	310	GLN	ASN	CONFLICT	UNP Q05769
B	333	LYS	ARG	CONFLICT	UNP Q05769
C	310	GLN	ASN	CONFLICT	UNP Q05769
C	333	LYS	ARG	CONFLICT	UNP Q05769
D	310	GLN	ASN	CONFLICT	UNP Q05769
D	333	LYS	ARG	CONFLICT	UNP Q05769

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



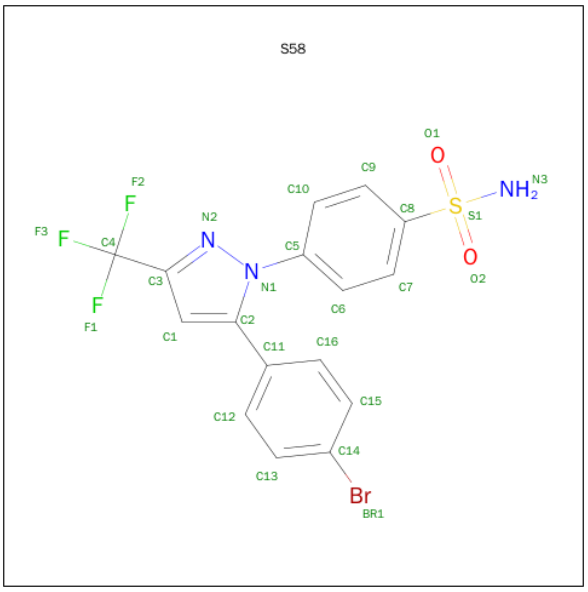
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	A	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	A	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	B	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	B	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	B	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	C	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	C	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	C	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	D	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	D	1	Total	C	H	N	O	0	0
			28	8	14	1	5		
2	D	1	Total	C	H	N	O	0	0
			28	8	14	1	5		

- Molecule 3 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
3	B	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
3	C	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
3	D	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 4 is 1-PHENYLSULFONAMIDE-3-TRIFLUOROMETHYL-5-PARABROMOPH ENYLPYRAZOLE (three-letter code: S58) (formula: $C_{16}H_{11}BrF_3N_3O_2S$).



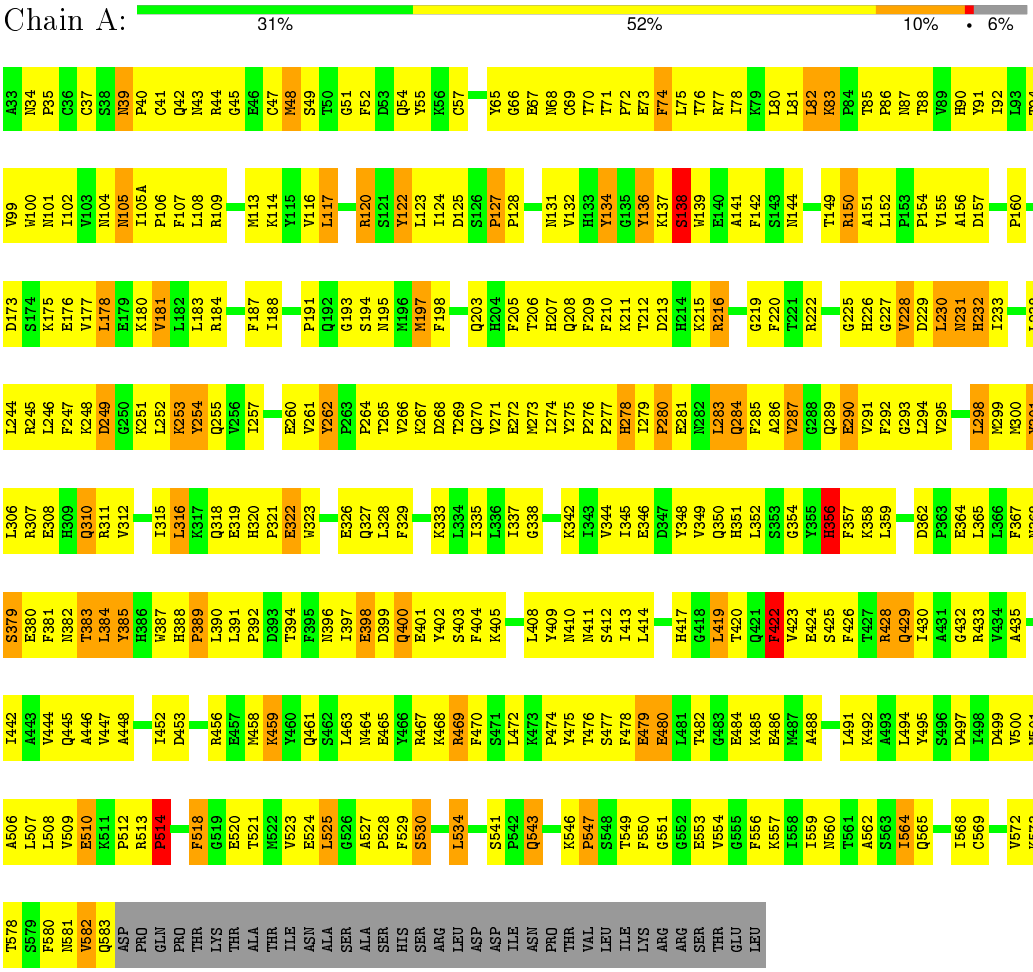
Mol	Chain	Residues	Atoms								ZeroOcc	AltConf
4	A	1	Total	Br	C	F	H	N	O	S	0	0
			28	1	16	3	2	3	2	1		
4	B	1	Total	Br	C	F	H	N	O	S	0	0
			28	1	16	3	2	3	2	1		
4	C	1	Total	Br	C	F	H	N	O	S	0	0
			28	1	16	3	2	3	2	1		
4	D	1	Total	Br	C	F	H	N	O	S	0	0
			28	1	16	3	2	3	2	1		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

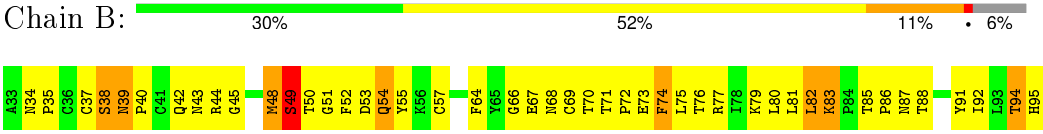
- Molecule 1: CYCLOOXYGENASE-2

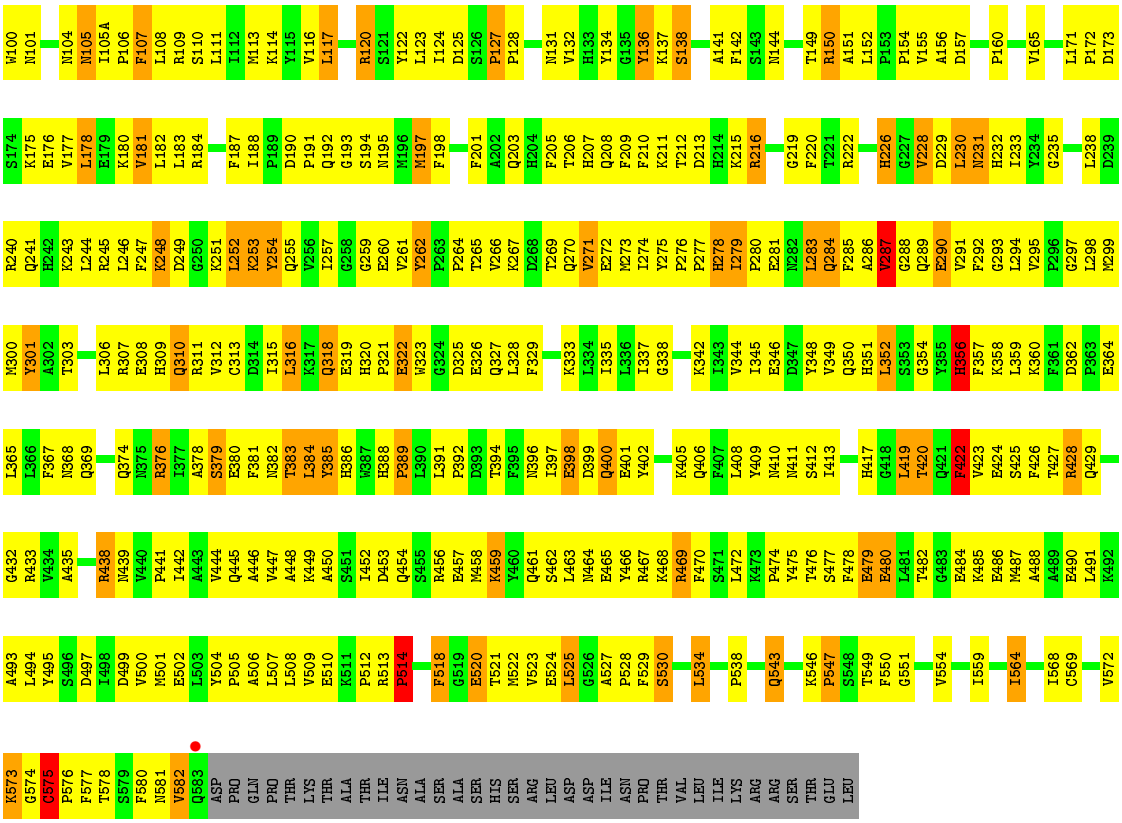
Chain A:



- Molecule 1: CYCLOOXYGENASE-2

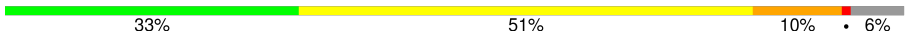
Chain B:

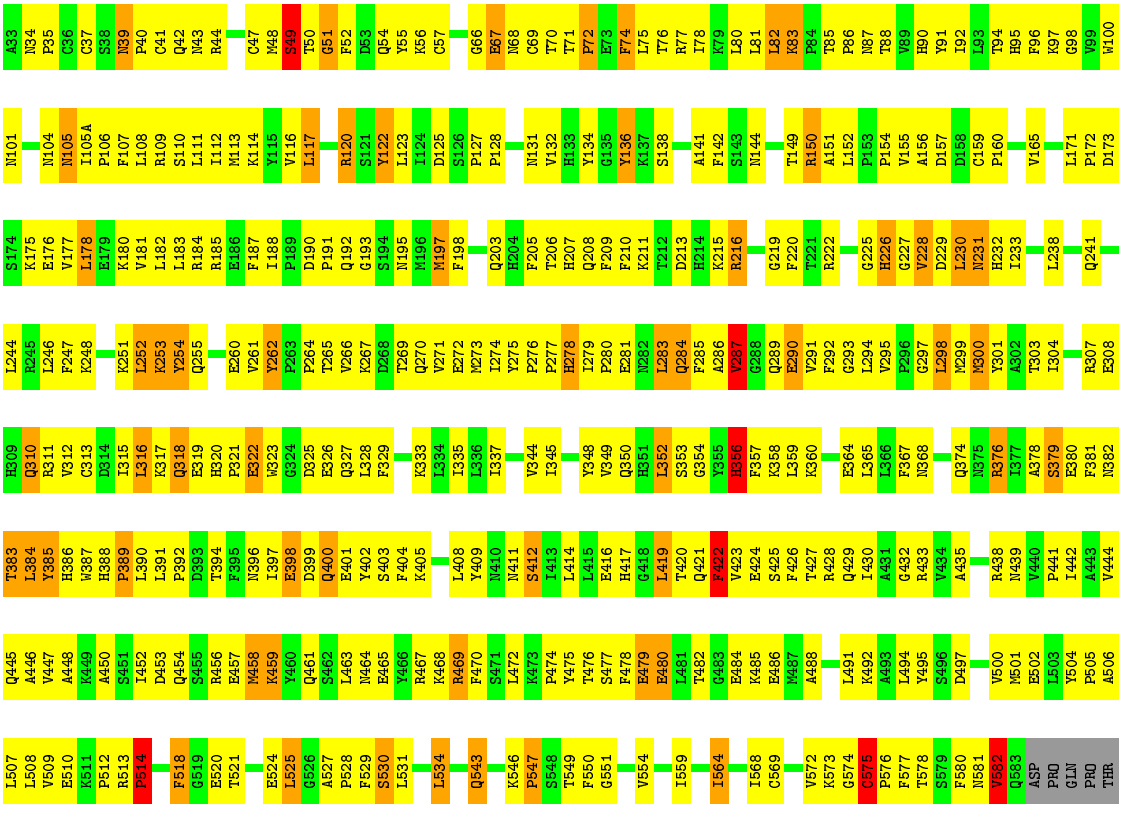




• Molecule 1: CYCLOOXYGENASE-2

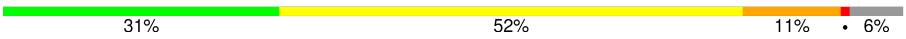
Chain C:

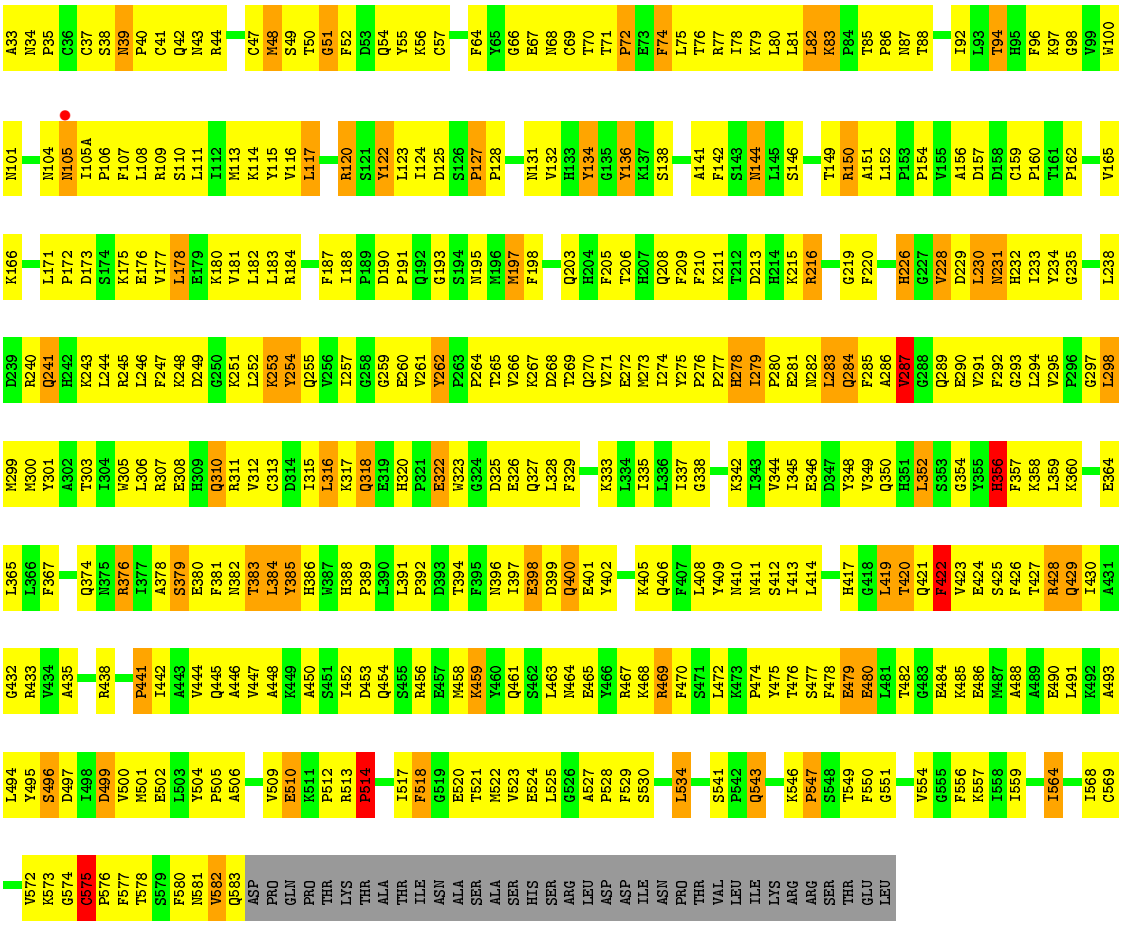




- Molecule 1: CYCLOOXYGENASE-2

Chain D:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	180.34Å 133.92Å 121.14Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	8.00 – 3.00 20.00 – 3.00	Depositor EDS
% Data completeness (in resolution range)	54.0 (8.00-3.00) 61.9 (20.00-3.00)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	0.12	Depositor
$< I/\sigma(I) >$ [1]	1.66 (at 2.98Å)	Xtriage
Refinement program	X-PLOR 3.1	Depositor
R, R_{free}	0.216 , 0.218 0.226 , 0.317	Depositor DCC
R_{free} test set	3411 reflections (11.13%)	DCC
Wilson B-factor (Å^2)	28.9	Xtriage
Anisotropy	0.960	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 62.1	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.38$, $< L^2 > = 0.20$	Xtriage
Outliers	0 of 36581 reflections	Xtriage
F_o,F_c correlation	0.84	EDS
Total number of atoms	22376	wwPDB-VP
Average B, all atoms (Å^2)	9.0	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 39.14 % 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 3.3164e-04.The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: HEM, NAG, S58

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	0.71	0/4600	0.88	4/6237 (0.1%)
1	B	0.71	0/4600	0.88	4/6237 (0.1%)
1	C	0.69	0/4600	0.88	3/6237 (0.0%)
1	D	0.72	0/4600	0.89	3/6237 (0.0%)
All	All	0.71	0/18400	0.88	14/24948 (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	A	0	3
1	B	0	2
1	C	0	2
1	D	0	4
All	All	0	11

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	575	CYS	N-CA-C	-6.66	93.02	111.00
1	D	575	CYS	N-CA-C	-6.47	93.54	111.00
1	C	575	CYS	N-CA-C	-6.38	93.78	111.00
1	B	575	CYS	N-CA-C	-6.35	93.85	111.00
1	D	287	VAL	N-CA-C	5.94	127.03	111.00
1	B	287	VAL	N-CA-C	5.87	126.86	111.00
1	C	287	VAL	N-CA-C	5.81	126.69	111.00
1	A	287	VAL	N-CA-C	5.60	126.12	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	525	LEU	CA-CB-CG	5.46	127.85	115.30
1	A	73	GLU	N-CA-C	-5.23	96.88	111.00
1	B	525	LEU	CA-CB-CG	5.18	127.22	115.30
1	A	525	LEU	CA-CB-CG	5.15	127.15	115.30
1	D	234	TYR	N-CA-C	5.10	124.76	111.00
1	B	73	GLU	N-CA-C	-5.03	97.42	111.00

There are no chirality outliers.

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	134	TYR	Sidechain
1	A	262	TYR	Sidechain
1	A	348	TYR	Sidechain
1	B	262	TYR	Sidechain
1	B	348	TYR	Sidechain
1	C	262	TYR	Sidechain
1	C	348	TYR	Sidechain
1	D	115	TYR	Sidechain
1	D	134	TYR	Sidechain
1	D	262	TYR	Sidechain
1	D	348	TYR	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in 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	4473	966	4375	399	0
1	B	4473	966	4375	409	0
1	C	4473	966	4375	389	0
1	D	4473	966	4375	392	0
2	A	42	42	39	1	0
2	B	42	42	39	6	0
2	C	42	42	39	1	0
2	D	42	42	39	7	0
3	A	43	0	30	3	0
3	B	43	0	30	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	C	43	0	30	7	0
3	D	43	0	30	5	0
4	A	26	2	11	9	0
4	B	26	2	11	5	0
4	C	26	2	11	11	0
4	D	26	2	11	7	0
All	All	18336	4040	17820	1552	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 43.

All (1552) 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:C:52:PHE:N	1:D:322:GLU:HG2	1.80	0.96
1:C:322:GLU:HG2	1:D:52:PHE:N	1.83	0.93
1:A:275:TYR:CE2	1:A:284:GLN:HA	2.04	0.93
1:C:184:ARG:HA	1:C:438:ARG:O	1.71	0.89
1:C:275:TYR:CE2	1:C:284:GLN:HA	2.07	0.89
1:D:279:ILE:HG12	1:D:283:LEU:HD23	1.55	0.89
1:D:391:LEU:HD21	3:D:682:HEM:HAB	1.53	0.88
1:A:479:GLU:HG2	1:A:485:LYS:HE3	1.55	0.87
1:A:322:GLU:HG2	1:B:52:PHE:N	1.90	0.86
1:A:281:GLU:HA	1:A:284:GLN:HG3	1.55	0.86
1:C:453:ASP:HA	1:C:456:ARG:HD2	1.57	0.86
1:D:184:ARG:HA	1:D:438:ARG:O	1.75	0.85
1:C:322:GLU:HG2	1:D:52:PHE:H	1.40	0.84
1:D:342:LYS:HD2	1:D:346:GLU:HG3	1.57	0.84
1:B:396:ASN:HB2	1:B:401:GLU:HG2	1.59	0.83
1:B:134:TYR:HD1	1:B:136:TYR:HE1	1.24	0.83
1:B:275:TYR:CE2	1:B:284:GLN:HA	2.13	0.83
1:C:479:GLU:HG2	1:C:485:LYS:CE	2.08	0.83
1:D:275:TYR:CE2	1:D:284:GLN:HA	2.14	0.82
1:C:198:PHE:HZ	1:C:352:LEU:HD12	1.44	0.82
1:B:276:PRO:HD2	1:B:279:ILE:HD13	1.58	0.82
1:A:479:GLU:HG2	1:A:485:LYS:CE	2.09	0.82
1:C:52:PHE:H	1:D:322:GLU:HG2	1.43	0.82
1:B:206:THR:HG21	1:B:385:TYR:CE1	2.15	0.81
1:B:435:ALA:HB3	1:B:518:PHE:HA	1.62	0.81
1:B:184:ARG:HA	1:B:438:ARG:O	1.79	0.81
1:C:405:LYS:HD2	1:C:405:LYS:H	1.46	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:206:THR:HG21	1:D:385:TYR:CE1	2.15	0.81
1:B:435:ALA:O	1:B:512:PRO:HG3	1.80	0.81
1:B:323:TRP:HH2	1:B:551:GLY:HA2	1.46	0.81
1:D:134:TYR:HD1	1:D:136:TYR:HE1	1.28	0.81
1:D:208:GLN:HB3	1:D:232:HIS:CD2	2.16	0.81
1:B:345:ILE:HD11	1:B:534:LEU:HD23	1.62	0.80
1:D:276:PRO:HD2	1:D:279:ILE:HD13	1.62	0.80
1:C:279:ILE:HG23	1:C:283:LEU:HB3	1.60	0.80
1:C:206:THR:HG21	1:C:385:TYR:CE1	2.16	0.80
1:B:134:TYR:HD1	1:B:136:TYR:CE1	1.99	0.80
1:C:345:ILE:HD11	1:C:534:LEU:HD23	1.65	0.79
1:D:323:TRP:HH2	1:D:551:GLY:HA2	1.47	0.79
1:B:134:TYR:CD1	1:B:136:TYR:HE1	2.01	0.79
1:A:497:ASP:HB3	1:A:500:VAL:HG23	1.63	0.79
1:D:479:GLU:HG2	1:D:485:LYS:HE3	1.64	0.79
1:B:120:ARG:HD3	1:B:527:ALA:HB1	1.64	0.78
1:B:406:GLN:HG2	2:B:681:NAG:O7	1.83	0.78
1:C:134:TYR:HD1	1:C:136:TYR:HE1	1.31	0.78
1:D:396:ASN:HB2	1:D:401:GLU:HG2	1.65	0.78
1:A:453:ASP:HA	1:A:456:ARG:HD2	1.64	0.78
1:D:435:ALA:O	1:D:512:PRO:HG3	1.83	0.78
1:A:206:THR:HG21	1:A:385:TYR:CE1	2.19	0.78
1:D:318:GLN:HA	1:D:318:GLN:NE2	1.98	0.78
1:C:323:TRP:HH2	1:C:551:GLY:HA2	1.49	0.77
1:C:120:ARG:HD3	1:C:527:ALA:HB1	1.66	0.77
1:D:198:PHE:HZ	1:D:352:LEU:HD12	1.50	0.77
1:D:435:ALA:HB3	1:D:518:PHE:HA	1.66	0.77
1:A:279:ILE:HG23	1:A:283:LEU:HB3	1.64	0.77
1:A:345:ILE:HD11	1:A:534:LEU:HD23	1.66	0.77
1:A:184:ARG:HA	1:A:438:ARG:O	1.85	0.77
1:D:345:ILE:HD11	1:D:534:LEU:HD23	1.67	0.77
1:C:281:GLU:HA	1:C:284:GLN:HG3	1.66	0.76
1:A:120:ARG:HD3	1:A:527:ALA:HB1	1.67	0.76
1:D:453:ASP:HA	1:D:456:ARG:HD2	1.66	0.76
1:D:385:TYR:CE2	4:D:701:S58:BR1	2.94	0.76
1:A:208:GLN:HB3	1:A:232:HIS:CD2	2.21	0.76
1:D:120:ARG:HD3	1:D:527:ALA:HB1	1.66	0.76
1:A:323:TRP:HH2	1:A:551:GLY:HA2	1.50	0.75
1:D:40:PRO:HA	2:D:661:NAG:H61	1.66	0.75
1:A:52:PHE:N	1:B:322:GLU:HG2	2.00	0.75
1:C:134:TYR:HD1	1:C:136:TYR:CE1	2.04	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:208:GLN:HB3	1:B:232:HIS:CD2	2.20	0.75
1:C:479:GLU:HG2	1:C:485:LYS:HE3	1.67	0.75
1:B:198:PHE:HZ	1:B:352:LEU:HD12	1.49	0.75
1:C:497:ASP:HB3	1:C:500:VAL:HG23	1.69	0.75
1:A:435:ALA:O	1:A:512:PRO:HG3	1.87	0.75
1:C:109:ARG:HG3	1:C:357:PHE:CE1	2.22	0.74
1:A:405:LYS:HD2	1:A:405:LYS:H	1.52	0.74
1:B:405:LYS:H	1:B:405:LYS:HD2	1.52	0.74
1:D:210:PHE:CE1	1:D:382:ASN:HA	2.23	0.74
1:D:134:TYR:HD1	1:D:136:TYR:CE1	2.04	0.74
1:D:208:GLN:HB3	1:D:232:HIS:HD2	1.52	0.74
1:A:109:ARG:HG3	1:A:357:PHE:CE1	2.22	0.74
1:B:478:PHE:CZ	1:B:495:TYR:HB2	2.23	0.74
1:A:210:PHE:CE1	1:A:382:ASN:HA	2.22	0.74
1:C:424:GLU:HA	1:C:428:ARG:HH11	1.53	0.74
1:A:281:GLU:HG2	1:A:284:GLN:HE21	1.53	0.74
1:A:198:PHE:HZ	1:A:352:LEU:HD12	1.51	0.74
1:A:160:PRO:HG3	1:A:165:VAL:HG12	1.69	0.74
1:B:279:ILE:HG12	1:B:283:LEU:HD23	1.68	0.74
1:B:479:GLU:HG2	1:B:485:LYS:HE3	1.70	0.74
1:A:344:VAL:O	1:A:349:VAL:HG23	1.89	0.73
1:C:208:GLN:HB3	1:C:232:HIS:CD2	2.22	0.73
1:C:435:ALA:HB3	1:C:518:PHE:HA	1.68	0.73
1:D:134:TYR:CD1	1:D:136:TYR:HE1	2.05	0.73
1:B:479:GLU:HG2	1:B:485:LYS:CE	2.18	0.73
1:A:134:TYR:HD1	1:A:136:TYR:HE1	1.36	0.73
1:D:97:LYS:HB2	1:D:356:HIS:NE2	2.02	0.73
1:C:276:PRO:HD2	1:C:279:ILE:HD13	1.69	0.73
1:C:424:GLU:HA	1:C:428:ARG:NH1	2.04	0.73
1:D:279:ILE:HG23	1:D:283:LEU:HB3	1.70	0.72
1:C:478:PHE:CZ	1:C:495:TYR:HB2	2.23	0.72
1:C:160:PRO:HG3	1:C:165:VAL:HG12	1.71	0.72
1:D:479:GLU:HG2	1:D:485:LYS:CE	2.20	0.72
1:A:478:PHE:CZ	1:A:495:TYR:HB2	2.25	0.72
1:B:206:THR:HB	1:B:210:PHE:CD2	2.25	0.72
1:D:279:ILE:CG1	1:D:283:LEU:HD23	2.19	0.72
1:D:344:VAL:O	1:D:349:VAL:HG23	1.90	0.72
1:C:344:VAL:O	1:C:349:VAL:HG23	1.89	0.72
1:C:352:LEU:HD23	4:C:701:S58:C10	2.20	0.71
1:D:206:THR:HB	1:D:210:PHE:CD2	2.24	0.71
1:C:134:TYR:CD1	1:C:136:TYR:HE1	2.08	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:453:ASP:HA	1:B:456:ARG:HD2	1.71	0.71
1:B:295:VAL:HG22	1:B:408:LEU:HD22	1.73	0.71
1:C:50:THR:HG21	1:C:56:LYS:HG3	1.72	0.71
1:A:364:GLU:HG2	1:A:367:PHE:CE2	2.26	0.71
1:A:197:MET:HE1	1:A:423:VAL:HA	1.71	0.70
1:A:396:ASN:HB2	1:A:401:GLU:HG2	1.73	0.70
1:D:109:ARG:HG3	1:D:357:PHE:CE1	2.26	0.70
1:A:318:GLN:HA	1:A:318:GLN:NE2	2.05	0.70
1:C:352:LEU:HD23	4:C:701:S58:H10	1.73	0.70
1:B:406:GLN:HA	2:B:681:NAG:C7	2.20	0.70
1:B:344:VAL:O	1:B:349:VAL:HG23	1.91	0.70
1:A:206:THR:HB	1:A:210:PHE:CD2	2.27	0.70
1:B:497:ASP:HB3	1:B:500:VAL:HG23	1.73	0.70
1:B:210:PHE:CE1	1:B:382:ASN:HA	2.26	0.70
1:A:134:TYR:HD1	1:A:136:TYR:CE1	2.09	0.69
1:D:264:PRO:HG2	1:D:286:ALA:HB3	1.73	0.69
1:D:464:ASN:ND2	1:D:475:TYR:H	1.89	0.69
1:A:295:VAL:HG22	1:A:408:LEU:HD22	1.74	0.69
1:D:527:ALA:HB3	1:D:528:PRO:HD3	1.74	0.69
1:A:435:ALA:HB3	1:A:518:PHE:HA	1.72	0.69
1:A:35:PRO:HD3	1:A:52:PHE:O	1.93	0.69
1:A:388:HIS:CE1	1:A:447:VAL:HG11	2.28	0.69
1:B:180:LYS:HD2	1:B:490:GLU:OE2	1.92	0.69
1:A:191:PRO:HG3	1:A:433:ARG:CZ	2.23	0.69
1:C:39:ASN:N	1:C:40:PRO:HD3	2.08	0.69
1:B:98:GLY:O	1:B:101:ASN:HB2	1.93	0.69
1:B:419:LEU:HB3	1:B:572:VAL:HG13	1.75	0.69
1:A:150:ARG:NH2	1:A:154:PRO:HB3	2.08	0.69
1:A:251:LYS:HG2	1:A:310:GLN:HG3	1.76	0.69
1:B:150:ARG:NH2	1:B:154:PRO:HB3	2.08	0.68
1:D:246:LEU:HG	1:D:248:LYS:HB2	1.74	0.68
1:C:97:LYS:HB2	1:C:356:HIS:NE2	2.07	0.68
1:A:113:MET:HE3	1:A:117:LEU:HD13	1.73	0.68
1:C:173:ASP:O	1:C:177:VAL:HG23	1.94	0.68
1:C:279:ILE:HG12	1:C:283:LEU:HD23	1.76	0.68
1:C:210:PHE:CE1	1:C:382:ASN:HA	2.29	0.68
1:A:564:ILE:HG13	1:A:580:PHE:CZ	2.28	0.68
1:B:113:MET:SD	1:B:360:LYS:N	2.64	0.68
1:D:333:LYS:O	1:D:337:ILE:HG13	1.93	0.68
1:A:419:LEU:HB3	1:A:572:VAL:HG13	1.74	0.68
1:C:295:VAL:HG22	1:C:408:LEU:HD22	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:564:ILE:HG13	1:C:580:PHE:CZ	2.29	0.68
1:B:68:ASN:H	2:B:661:NAG:H82	1.58	0.68
1:B:181:VAL:HG21	1:B:491:LEU:HG	1.76	0.68
1:A:134:TYR:CD1	1:A:136:TYR:HE1	2.12	0.67
1:C:198:PHE:CZ	1:C:352:LEU:HD12	2.28	0.67
1:D:295:VAL:HG22	1:D:408:LEU:HD22	1.75	0.67
1:A:173:ASP:O	1:A:177:VAL:HG23	1.93	0.67
1:D:478:PHE:CZ	1:D:495:TYR:HB2	2.29	0.67
1:A:464:ASN:ND2	1:A:475:TYR:H	1.93	0.67
1:D:94:THR:HG23	1:D:354:GLY:O	1.95	0.67
1:B:193:GLY:O	1:B:581:ASN:HA	1.95	0.67
1:A:94:THR:HG23	1:A:354:GLY:O	1.95	0.67
1:B:197:MET:HE1	1:B:423:VAL:HA	1.77	0.67
1:D:281:GLU:HG2	1:D:284:GLN:NE2	2.10	0.67
1:C:385:TYR:CE2	4:C:701:S58:BR1	3.03	0.67
1:D:39:ASN:N	1:D:40:PRO:HD3	2.10	0.67
1:B:388:HIS:CE1	1:B:447:VAL:HG11	2.30	0.67
1:C:184:ARG:HH21	1:C:187:PHE:HA	1.60	0.67
1:D:254:TYR:HB2	1:D:261:VAL:HG13	1.76	0.67
1:B:564:ILE:HG13	1:B:580:PHE:CZ	2.30	0.66
1:B:113:MET:O	1:B:116:VAL:HG22	1.95	0.66
1:A:254:TYR:HB2	1:A:261:VAL:HG13	1.76	0.66
1:C:181:VAL:HG21	1:C:491:LEU:HG	1.76	0.66
1:C:435:ALA:O	1:C:512:PRO:HG3	1.95	0.66
1:A:160:PRO:HG2	1:A:165:VAL:HA	1.77	0.66
1:C:470:PHE:CD1	1:C:525:LEU:HD22	2.30	0.66
1:B:39:ASN:N	1:B:40:PRO:HD3	2.11	0.66
1:D:283:LEU:HD22	1:D:411:ASN:HB2	1.78	0.66
1:C:206:THR:HB	1:C:210:PHE:CD2	2.30	0.66
1:A:109:ARG:HG3	1:A:357:PHE:HE1	1.60	0.66
1:D:419:LEU:HB3	1:D:572:VAL:HG13	1.78	0.66
1:B:279:ILE:CG1	1:B:283:LEU:HD23	2.25	0.66
1:C:150:ARG:NH2	1:C:154:PRO:HB3	2.10	0.66
1:B:352:LEU:HD23	4:B:701:S58:H10	1.78	0.66
1:C:333:LYS:O	1:C:337:ILE:HG13	1.95	0.66
1:C:205:PHE:CZ	1:C:344:VAL:HG11	2.31	0.66
1:C:142:PHE:O	1:C:376:ARG:NH2	2.29	0.66
1:B:160:PRO:HG3	1:B:165:VAL:HG12	1.76	0.66
1:A:193:GLY:O	1:A:581:ASN:HA	1.95	0.66
1:D:160:PRO:HG3	1:D:165:VAL:HG12	1.78	0.66
1:B:109:ARG:HG3	1:B:357:PHE:CE1	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:254:TYR:HB2	1:B:261:VAL:HG13	1.78	0.66
1:D:470:PHE:CD1	1:D:525:LEU:HD22	2.31	0.66
1:B:255:GLN:HE22	1:B:265:THR:HG23	1.61	0.65
1:A:281:GLU:HG2	1:A:284:GLN:NE2	2.10	0.65
1:D:195:ASN:HB2	1:D:426:PHE:O	1.95	0.65
1:A:142:PHE:O	1:A:376:ARG:NH2	2.28	0.65
1:C:183:LEU:HD21	1:C:445:GLN:HB3	1.77	0.65
1:D:160:PRO:HG2	1:D:165:VAL:HA	1.78	0.65
1:A:97:LYS:HB2	1:A:356:HIS:NE2	2.12	0.65
1:A:266:VAL:HG23	1:A:271:VAL:O	1.97	0.65
1:C:388:HIS:CE1	1:C:447:VAL:HG11	2.32	0.65
1:A:208:GLN:HB3	1:A:232:HIS:HD2	1.62	0.65
1:D:150:ARG:HH22	1:D:154:PRO:HB3	1.62	0.65
1:B:318:GLN:HA	1:B:318:GLN:NE2	2.11	0.65
1:C:279:ILE:CG1	1:C:283:LEU:HD23	2.27	0.65
1:B:208:GLN:HE22	1:B:228:VAL:HG13	1.62	0.65
1:C:109:ARG:HG3	1:C:357:PHE:HE1	1.61	0.65
1:B:479:GLU:HG3	1:B:488:ALA:HB1	1.79	0.65
1:D:406:GLN:HA	2:D:681:NAG:O7	1.95	0.65
1:B:75:LEU:HG	1:B:79:LYS:HE2	1.78	0.65
1:C:109:ARG:NH2	1:C:360:LYS:HB2	2.11	0.65
1:A:464:ASN:HD21	1:A:475:TYR:H	1.44	0.65
1:C:505:PRO:O	1:C:509:VAL:HG12	1.97	0.65
1:B:264:PRO:HG2	1:B:286:ALA:HB3	1.76	0.65
1:A:527:ALA:HB3	1:A:528:PRO:HD3	1.79	0.65
1:D:251:LYS:HG2	1:D:310:GLN:HG3	1.78	0.65
1:B:352:LEU:HD21	1:B:518:PHE:HZ	1.62	0.65
1:D:464:ASN:HD21	1:D:475:TYR:H	1.42	0.65
1:B:160:PRO:HG2	1:B:165:VAL:HA	1.79	0.65
1:C:251:LYS:HG2	1:C:310:GLN:HG3	1.79	0.65
1:D:497:ASP:HB3	1:D:500:VAL:HG23	1.80	0.65
1:C:208:GLN:HB3	1:C:232:HIS:HD2	1.63	0.64
1:D:173:ASP:O	1:D:177:VAL:HG23	1.97	0.64
1:A:568:ILE:HG13	1:A:572:VAL:HG21	1.79	0.64
1:B:195:ASN:HB2	1:B:426:PHE:O	1.97	0.64
1:B:208:GLN:HB3	1:B:232:HIS:HD2	1.61	0.64
1:C:482:THR:HG22	1:C:509:VAL:HG22	1.80	0.64
1:D:497:ASP:OD2	1:D:499:ASP:HB2	1.97	0.64
1:C:193:GLY:O	1:C:581:ASN:HA	1.97	0.64
1:C:391:LEU:HD21	3:C:682:HEM:HAB	1.78	0.64
1:B:94:THR:HG23	1:B:354:GLY:O	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:35:PRO:HD3	1:B:52:PHE:O	1.97	0.64
1:A:518:PHE:HE1	4:A:701:S58:H9	1.63	0.64
1:C:35:PRO:HD3	1:C:52:PHE:O	1.98	0.64
1:C:479:GLU:HG2	1:C:485:LYS:NZ	2.13	0.64
1:B:279:ILE:HG23	1:B:283:LEU:HB3	1.79	0.64
1:B:150:ARG:HH22	1:B:154:PRO:HB3	1.62	0.64
1:C:273:MET:SD	1:C:290:GLU:HA	2.37	0.64
1:A:198:PHE:CZ	1:A:352:LEU:HD12	2.33	0.64
1:A:352:LEU:HD21	1:A:518:PHE:HZ	1.63	0.64
1:D:447:VAL:HG13	3:D:682:HEM:HBA2	1.78	0.64
1:B:198:PHE:HD2	1:B:580:PHE:HB3	1.63	0.64
1:B:452:ILE:O	1:B:456:ARG:HG3	1.98	0.64
1:D:230:LEU:HG	1:D:337:ILE:HG12	1.80	0.64
1:C:527:ALA:HB3	1:C:528:PRO:HD3	1.80	0.64
1:B:205:PHE:CZ	1:B:344:VAL:HG11	2.32	0.64
1:A:150:ARG:HH22	1:A:154:PRO:HB3	1.61	0.64
1:D:150:ARG:NH2	1:D:154:PRO:HB3	2.12	0.64
1:A:472:LEU:HD21	1:A:524:GLU:HG3	1.80	0.64
1:A:104:ASN:ND2	1:A:358:LYS:HB2	2.13	0.64
1:C:419:LEU:HB3	1:C:572:VAL:HG13	1.80	0.64
1:A:181:VAL:HG21	1:A:491:LEU:HG	1.80	0.64
1:D:281:GLU:HA	1:D:284:GLN:HE21	1.63	0.63
1:B:497:ASP:OD2	1:B:499:ASP:HB2	1.99	0.63
1:D:113:MET:HE3	1:D:117:LEU:HD13	1.79	0.63
1:C:255:GLN:HE22	1:C:265:THR:HG23	1.63	0.63
1:D:193:GLY:O	1:D:581:ASN:HA	1.98	0.63
1:A:322:GLU:HG2	1:B:52:PHE:H	1.61	0.63
1:C:198:PHE:HD2	1:C:580:PHE:HB3	1.63	0.63
1:D:254:TYR:HD1	1:D:254:TYR:C	2.01	0.63
1:C:113:MET:O	1:C:116:VAL:HG22	1.99	0.63
1:A:505:PRO:O	1:A:509:VAL:HG12	1.98	0.63
1:D:266:VAL:HG23	1:D:271:VAL:O	1.99	0.63
1:B:198:PHE:CZ	1:B:352:LEU:HD12	2.31	0.62
1:C:264:PRO:HG2	1:C:286:ALA:HB3	1.81	0.62
1:A:205:PHE:CZ	1:A:344:VAL:HG11	2.34	0.62
1:C:160:PRO:HG2	1:C:165:VAL:HA	1.78	0.62
1:A:39:ASN:HD22	1:A:39:ASN:N	1.98	0.62
1:A:333:LYS:O	1:A:337:ILE:HG13	1.99	0.62
1:C:74:PHE:HA	1:C:77:ARG:NE	2.14	0.62
1:A:391:LEU:HD21	3:A:682:HEM:HAB	1.81	0.62
1:C:150:ARG:HH22	1:C:154:PRO:HB3	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:98:GLY:O	1:A:101:ASN:HB2	1.99	0.62
1:D:181:VAL:HG21	1:D:491:LEU:HG	1.81	0.62
1:D:151:ALA:HB2	1:D:529:PHE:HZ	1.65	0.62
1:A:113:MET:O	1:A:116:VAL:HG22	2.00	0.62
1:C:100:TRP:CE3	1:C:357:PHE:HB2	2.34	0.62
1:B:243:LYS:O	1:B:269:THR:HB	1.99	0.62
1:D:43:ASN:ND2	1:D:70:THR:HA	2.14	0.62
1:A:452:ILE:O	1:A:456:ARG:HG3	2.00	0.62
1:B:230:LEU:HG	1:B:337:ILE:HG12	1.81	0.62
1:B:216:ARG:HB3	1:B:220:PHE:CD2	2.34	0.62
1:B:281:GLU:HG2	1:B:284:GLN:HE21	1.64	0.62
1:A:100:TRP:CE3	1:A:357:PHE:HB2	2.34	0.62
1:A:98:GLY:HA2	1:A:101:ASN:HD22	1.64	0.62
1:B:333:LYS:O	1:B:337:ILE:HG13	1.99	0.62
1:A:198:PHE:HD2	1:A:580:PHE:HB3	1.65	0.62
1:D:568:ILE:HG13	1:D:572:VAL:HG21	1.82	0.62
1:B:100:TRP:CE3	1:B:357:PHE:HB2	2.35	0.62
1:A:312:VAL:HA	1:A:315:ILE:HD12	1.82	0.62
1:D:281:GLU:HA	1:D:284:GLN:HG3	1.81	0.62
1:A:72:PRO:HB2	1:A:76:THR:HB	1.80	0.62
1:A:470:PHE:CD1	1:A:525:LEU:HD22	2.34	0.61
1:A:583:GLN:NE2	1:D:282:ASN:ND2	2.48	0.61
1:C:501:MET:HG3	1:C:506:ALA:HB2	1.81	0.61
1:D:198:PHE:HD2	1:D:580:PHE:HB3	1.66	0.61
1:A:197:MET:CE	1:A:423:VAL:HA	2.29	0.61
1:D:269:THR:O	1:D:271:VAL:HG12	2.00	0.61
1:D:98:GLY:O	1:D:101:ASN:HB2	2.00	0.61
1:B:464:ASN:ND2	1:B:475:TYR:H	1.97	0.61
1:D:255:GLN:HE22	1:D:265:THR:HG23	1.64	0.61
1:A:482:THR:HG22	1:A:509:VAL:HG22	1.81	0.61
1:C:43:ASN:ND2	1:C:70:THR:HA	2.15	0.61
1:A:583:GLN:HE21	1:D:282:ASN:CG	2.04	0.61
1:A:342:LYS:HD2	1:A:346:GLU:HG3	1.82	0.61
1:A:229:ASP:OD1	1:A:231:ASN:HB3	2.00	0.61
1:D:183:LEU:HD21	1:D:445:GLN:HB3	1.82	0.61
1:D:38:SER:HB2	2:D:661:NAG:O6	1.99	0.61
1:A:279:ILE:CG1	1:A:283:LEU:HD23	2.31	0.61
1:D:420:THR:O	1:D:424:GLU:HG3	1.99	0.61
1:A:246:LEU:HG	1:A:248:LYS:HB2	1.83	0.61
1:D:35:PRO:HD3	1:D:52:PHE:O	2.01	0.61
1:A:52:PHE:CD1	1:B:322:GLU:HB3	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:230:LEU:HG	1:C:337:ILE:HG12	1.83	0.61
1:C:254:TYR:HB2	1:C:261:VAL:HG13	1.81	0.61
1:B:85:THR:HB	1:B:88:THR:HG23	1.82	0.61
1:A:195:ASN:HB2	1:A:426:PHE:O	2.00	0.61
1:C:113:MET:HE3	1:C:117:LEU:HD13	1.83	0.61
1:D:100:TRP:CE3	1:D:357:PHE:HB2	2.35	0.61
1:B:175:LYS:HA	1:B:178:LEU:HB3	1.82	0.61
1:B:205:PHE:CE1	1:B:344:VAL:HG21	2.36	0.60
1:C:464:ASN:ND2	1:C:475:TYR:H	1.98	0.60
1:D:85:THR:CG2	1:D:86:PRO:HD2	2.30	0.60
1:A:105(A):ILE:HG22	1:A:108:LEU:HB2	1.82	0.60
1:A:479:GLU:HG3	1:A:488:ALA:HB1	1.82	0.60
1:D:208:GLN:HE22	1:D:228:VAL:HG13	1.65	0.60
1:B:120:ARG:HD3	1:B:527:ALA:CB	2.30	0.60
1:C:478:PHE:HZ	1:C:495:TYR:HB2	1.65	0.60
1:B:568:ILE:HG13	1:B:572:VAL:HG21	1.82	0.60
1:D:72:PRO:HB2	1:D:76:THR:HB	1.83	0.60
1:C:444:VAL:HG12	1:C:444:VAL:O	2.01	0.60
1:B:197:MET:CE	1:B:423:VAL:HA	2.31	0.60
1:D:182:LEU:O	1:D:438:ARG:HA	2.00	0.60
1:A:205:PHE:CE1	1:A:344:VAL:HG21	2.36	0.60
1:B:505:PRO:O	1:B:509:VAL:HG12	1.99	0.60
1:D:254:TYR:CD1	1:D:254:TYR:C	2.75	0.60
1:B:281:GLU:HG2	1:B:284:GLN:NE2	2.17	0.60
1:B:216:ARG:HB3	1:B:220:PHE:CG	2.37	0.60
1:C:72:PRO:HB2	1:C:76:THR:HB	1.83	0.60
1:B:173:ASP:O	1:B:177:VAL:HG23	2.01	0.60
1:D:281:GLU:HG2	1:D:284:GLN:HE21	1.65	0.60
1:A:497:ASP:HB3	1:A:500:VAL:CG2	2.32	0.60
1:A:184:ARG:HH21	1:A:187:PHE:HA	1.66	0.60
1:C:568:ILE:HG13	1:C:572:VAL:HG21	1.83	0.60
1:B:253:LYS:HE2	1:B:269:THR:HG22	1.83	0.60
1:B:229:ASP:OD1	1:B:231:ASN:HB3	2.02	0.60
1:B:245:ARG:HG2	1:B:247:PHE:H	1.66	0.60
1:C:383:THR:HG22	1:C:384:LEU:N	2.16	0.60
1:C:386:HIS:CE1	3:C:682:HEM:HAD2	2.36	0.60
1:B:283:LEU:HD22	1:B:411:ASN:HB2	1.83	0.60
1:B:527:ALA:HB3	1:B:528:PRO:HD3	1.83	0.60
1:C:120:ARG:O	1:C:123:LEU:HD23	2.01	0.60
1:D:198:PHE:CZ	1:D:352:LEU:HD12	2.34	0.60
1:B:37:CYS:O	1:B:39:ASN:ND2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:149:THR:O	1:B:378:ALA:HA	2.02	0.60
1:D:269:THR:O	1:D:271:VAL:N	2.35	0.59
1:B:97:LYS:HB2	1:B:356:HIS:NE2	2.17	0.59
1:A:269:THR:O	1:A:271:VAL:N	2.34	0.59
1:D:113:MET:O	1:D:116:VAL:HG22	2.02	0.59
1:A:385:TYR:CE2	4:A:701:S58:BR1	3.10	0.59
1:B:43:ASN:ND2	1:B:70:THR:HA	2.17	0.59
1:B:104:ASN:ND2	1:B:358:LYS:HB2	2.17	0.59
1:A:43:ASN:ND2	1:A:70:THR:HA	2.18	0.59
1:C:210:PHE:O	1:C:211:LYS:HG3	2.03	0.59
1:D:55:TYR:HE2	1:D:57:CYS:SG	2.25	0.59
1:D:452:ILE:O	1:D:456:ARG:HG3	2.02	0.59
1:D:109:ARG:HG3	1:D:357:PHE:HE1	1.67	0.59
1:C:472:LEU:HD21	1:C:524:GLU:HG3	1.85	0.59
1:C:352:LEU:HD21	1:C:518:PHE:HZ	1.68	0.59
1:B:182:LEU:O	1:B:438:ARG:HA	2.03	0.59
1:B:386:HIS:CE1	3:B:682:HEM:HAD2	2.37	0.59
1:D:191:PRO:HG3	1:D:433:ARG:CZ	2.33	0.59
1:B:273:MET:SD	1:B:290:GLU:HA	2.43	0.59
1:C:151:ALA:HB2	1:C:529:PHE:HZ	1.68	0.59
1:C:274:ILE:HG13	1:C:290:GLU:HG2	1.85	0.59
1:A:582:VAL:O	1:A:582:VAL:HG13	2.03	0.59
1:D:105(A):ILE:HG23	1:D:107:PHE:CE1	2.38	0.59
1:B:446:ALA:O	1:B:449:LYS:HB3	2.03	0.59
1:D:205:PHE:CZ	1:D:344:VAL:HG11	2.38	0.59
1:B:113:MET:HE3	1:B:117:LEU:HD13	1.84	0.59
1:C:504:TYR:HB3	1:C:505:PRO:HD3	1.85	0.59
1:C:464:ASN:HD21	1:C:475:TYR:H	1.49	0.59
1:A:206:THR:HB	1:A:210:PHE:CE2	2.38	0.58
1:C:197:MET:CE	1:C:423:VAL:HA	2.33	0.58
1:C:104:ASN:ND2	1:C:358:LYS:HB2	2.17	0.58
1:B:198:PHE:HZ	1:B:352:LEU:CD1	2.16	0.58
1:A:264:PRO:HG2	1:A:286:ALA:HB3	1.84	0.58
1:C:85:THR:CG2	1:C:86:PRO:HD2	2.33	0.58
1:C:246:LEU:HG	1:C:248:LYS:HB2	1.84	0.58
1:D:386:HIS:CE1	3:D:682:HEM:HAD2	2.38	0.58
1:D:444:VAL:HG12	1:D:444:VAL:O	2.04	0.58
1:B:206:THR:HB	1:B:210:PHE:CE2	2.39	0.58
1:C:327:GLN:NE2	1:D:136:TYR:HD2	2.02	0.58
1:B:72:PRO:HB2	1:B:76:THR:HB	1.83	0.58
1:B:506:ALA:O	1:B:510:GLU:HB2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:105(A):ILE:HG22	1:B:108:LEU:HB2	1.85	0.58
1:C:318:GLN:HA	1:C:318:GLN:NE2	2.19	0.58
1:C:353:SER:HA	4:C:701:S58:C7	2.33	0.58
1:A:405:LYS:HD2	1:A:405:LYS:N	2.16	0.58
1:B:251:LYS:HG2	1:B:310:GLN:HG3	1.85	0.58
1:D:105(A):ILE:HG22	1:D:108:LEU:HB2	1.85	0.58
1:C:216:ARG:HB3	1:C:220:PHE:CG	2.39	0.58
1:B:381:PHE:CD1	1:B:529:PHE:CB	2.87	0.58
1:C:90:HIS:NE2	4:C:701:S58:N3	2.51	0.58
1:A:506:ALA:O	1:A:510:GLU:HB2	2.03	0.58
1:D:183:LEU:O	1:D:438:ARG:HB3	2.03	0.58
1:D:40:PRO:HB3	2:D:661:NAG:H5	1.86	0.58
1:C:452:ILE:O	1:C:456:ARG:HG3	2.03	0.58
1:B:385:TYR:CE2	4:B:701:S58:BR1	3.12	0.58
1:B:184:ARG:HH11	1:B:441:PRO:HG3	1.68	0.58
1:C:272:GLU:HB3	1:C:290:GLU:OE2	2.04	0.58
1:D:104:ASN:ND2	1:D:358:LYS:HB2	2.19	0.58
1:C:67:GLU:HB3	2:C:661:NAG:H82	1.86	0.58
1:B:203:GLN:HB2	3:B:682:HEM:HMC2	1.86	0.57
1:D:206:THR:HB	1:D:210:PHE:CE2	2.38	0.57
1:A:501:MET:HG3	1:A:506:ALA:HB2	1.86	0.57
1:D:216:ARG:HB3	1:D:220:PHE:CD2	2.40	0.57
1:C:479:GLU:HG3	1:C:488:ALA:HB1	1.87	0.57
1:A:183:LEU:HD22	1:A:442:ILE:HG13	1.85	0.57
1:B:464:ASN:HD21	1:B:475:TYR:H	1.51	0.57
1:B:582:VAL:HG13	1:B:582:VAL:O	2.04	0.57
1:C:198:PHE:HZ	1:C:352:LEU:CD1	2.14	0.57
1:C:195:ASN:HB2	1:C:426:PHE:O	2.03	0.57
1:B:470:PHE:CD1	1:B:525:LEU:HD22	2.40	0.57
1:B:477:SER:O	1:B:480:GLU:HB2	2.04	0.57
1:D:40:PRO:HA	2:D:661:NAG:C6	2.33	0.57
1:D:205:PHE:CE1	1:D:344:VAL:HG21	2.38	0.57
1:C:94:THR:HG23	1:C:354:GLY:O	2.04	0.57
1:A:74:PHE:CD1	1:A:77:ARG:HD2	2.39	0.57
1:D:427:THR:HB	1:D:428:ARG:HD2	1.86	0.57
1:B:244:LEU:HD21	1:B:271:VAL:HG11	1.85	0.57
1:B:92:ILE:HA	1:B:96:PHE:HE1	1.69	0.57
1:A:335:ILE:HA	1:A:559:ILE:HD11	1.87	0.57
1:A:565:GLN:HG2	1:D:268:ASP:HA	1.87	0.57
1:A:577:PHE:HE2	1:D:267:LYS:HD3	1.69	0.57
1:B:142:PHE:O	1:B:376:ARG:NH2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:273:MET:SD	1:D:290:GLU:HA	2.45	0.57
1:B:184:ARG:HH21	1:B:187:PHE:HA	1.70	0.56
1:A:276:PRO:HD2	1:A:279:ILE:HD13	1.86	0.56
1:A:230:LEU:HG	1:A:337:ILE:HG12	1.87	0.56
1:D:291:VAL:HG22	1:D:294:LEU:HD12	1.86	0.56
1:B:151:ALA:HB2	1:B:529:PHE:HZ	1.68	0.56
1:C:105(A):ILE:HG22	1:C:108:LEU:HB2	1.88	0.56
1:D:142:PHE:O	1:D:376:ARG:NH2	2.37	0.56
1:C:276:PRO:HB2	1:C:278:HIS:CE1	2.41	0.56
1:C:279:ILE:CG2	1:C:283:LEU:HB3	2.34	0.56
1:A:322:GLU:HB3	1:B:52:PHE:CD1	2.40	0.56
1:B:352:LEU:HD21	1:B:518:PHE:CZ	2.41	0.56
1:B:183:LEU:HD21	1:B:445:GLN:HB3	1.86	0.56
1:D:198:PHE:HZ	1:D:352:LEU:CD1	2.18	0.56
1:A:151:ALA:HB2	1:A:529:PHE:HZ	1.70	0.56
1:C:120:ARG:HD3	1:C:527:ALA:CB	2.34	0.56
1:C:109:ARG:HH21	1:C:360:LYS:HB2	1.71	0.56
1:D:197:MET:HE1	1:D:423:VAL:HA	1.87	0.56
1:C:105(A):ILE:HG23	1:C:107:PHE:CE1	2.41	0.56
1:D:399:ASP:O	1:D:400:GLN:HB2	2.04	0.56
1:A:176:GLU:O	1:A:180:LYS:HG3	2.05	0.56
1:B:352:LEU:HD23	4:B:701:S58:C10	2.36	0.56
1:D:271:VAL:HG11	1:D:286:ALA:HB1	1.87	0.56
1:A:105(A):ILE:HG23	1:A:107:PHE:CE1	2.40	0.56
1:D:105(A):ILE:HG23	1:D:107:PHE:CD1	2.41	0.56
1:B:283:LEU:HB2	1:B:411:ASN:HB2	1.86	0.56
1:D:564:ILE:HG13	1:D:580:PHE:CZ	2.41	0.56
1:A:213:ASP:OD1	1:A:215:LYS:HG2	2.06	0.56
1:B:406:GLN:HA	2:B:681:NAG:O7	2.05	0.56
1:D:253:LYS:HE2	1:D:269:THR:HG22	1.87	0.56
1:C:253:LYS:HE2	1:C:269:THR:HG22	1.88	0.56
1:C:216:ARG:HB3	1:C:220:PHE:CD2	2.40	0.56
1:D:338:GLY:HA3	1:D:559:ILE:HG13	1.88	0.56
1:C:206:THR:HB	1:C:210:PHE:CE2	2.41	0.56
1:C:506:ALA:O	1:C:510:GLU:HB2	2.04	0.56
1:D:83:LYS:O	1:D:83:LYS:HG3	2.04	0.56
1:A:445:GLN:HG3	1:A:446:ALA:N	2.21	0.56
1:B:482:THR:HG22	1:B:509:VAL:HG22	1.88	0.56
1:A:127:PRO:HD2	1:B:543:GLN:OE1	2.06	0.56
1:B:253:LYS:NZ	1:B:269:THR:HG21	2.21	0.56
1:C:464:ASN:HB3	1:C:474:PRO:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:255:GLN:HE22	1:A:265:THR:HG23	1.71	0.56
1:A:175:LYS:HG2	1:A:178:LEU:HD13	1.88	0.56
1:C:477:SER:O	1:C:480:GLU:HB2	2.06	0.56
1:D:184:ARG:HH11	1:D:441:PRO:HG3	1.70	0.56
1:B:447:VAL:HG13	3:B:682:HEM:HBA2	1.88	0.56
1:D:85:THR:HB	1:D:88:THR:HG23	1.88	0.56
1:D:335:ILE:HA	1:D:559:ILE:HD11	1.87	0.56
1:A:241:GLN:NE2	1:A:329:PHE:CE1	2.74	0.56
1:C:183:LEU:HD22	1:C:442:ILE:HG13	1.88	0.55
1:C:229:ASP:OD1	1:C:231:ASN:HB3	2.06	0.55
1:A:444:VAL:HG12	1:A:444:VAL:O	2.06	0.55
1:D:352:LEU:HD23	4:D:701:S58:H10	1.88	0.55
1:C:205:PHE:CE1	1:C:344:VAL:HG21	2.42	0.55
1:A:279:ILE:HG13	1:A:283:LEU:HD23	1.86	0.55
1:A:183:LEU:HD21	1:A:445:GLN:HB3	1.89	0.55
1:A:136:TYR:HD2	1:B:327:GLN:NE2	2.05	0.55
1:D:419:LEU:O	1:D:423:VAL:HG23	2.06	0.55
1:D:216:ARG:HB3	1:D:220:PHE:CG	2.40	0.55
1:C:92:ILE:HA	1:C:96:PHE:HE1	1.70	0.55
1:D:385:TYR:HE2	4:D:701:S58:BR1	2.44	0.55
1:A:43:ASN:HD22	1:A:70:THR:HA	1.72	0.55
1:A:41:CYS:SG	1:A:47:CYS:HB2	2.47	0.55
1:D:188:ILE:O	1:D:432:GLY:HA2	2.07	0.55
1:C:445:GLN:HG3	1:C:446:ALA:N	2.22	0.55
1:C:57:CYS:HB3	1:C:69:CYS:SG	2.47	0.55
1:A:37:CYS:O	1:A:39:ASN:ND2	2.39	0.55
1:C:51:GLY:O	1:C:52:PHE:HB2	2.07	0.55
1:B:504:TYR:HB3	1:B:505:PRO:HD3	1.89	0.55
1:D:197:MET:CE	1:D:423:VAL:HA	2.36	0.55
1:C:476:THR:OG1	1:C:480:GLU:HG3	2.06	0.55
1:D:313:CYS:O	1:D:317:LYS:HB2	2.06	0.55
1:B:399:ASP:O	1:B:400:GLN:HB2	2.07	0.55
1:A:345:ILE:CD1	1:A:534:LEU:HD23	2.35	0.55
1:A:478:PHE:HZ	1:A:495:TYR:HB2	1.67	0.55
1:B:51:GLY:O	1:B:52:PHE:HB2	2.07	0.55
1:A:208:GLN:HE22	1:A:228:VAL:HG13	1.71	0.55
1:A:419:LEU:HB3	1:A:572:VAL:CG1	2.37	0.55
1:D:241:GLN:NE2	1:D:329:PHE:CE1	2.75	0.55
1:D:184:ARG:HH21	1:D:187:PHE:HA	1.72	0.55
1:D:513:ARG:HH11	4:D:701:S58:HN31	1.55	0.55
1:C:497:ASP:HB3	1:C:500:VAL:CG2	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:504:TYR:HB3	1:A:505:PRO:HD3	1.89	0.55
1:C:43:ASN:HD22	1:C:70:THR:HA	1.71	0.55
1:D:501:MET:HG3	1:D:506:ALA:HB2	1.89	0.55
1:A:85:THR:HB	1:A:88:THR:HG23	1.88	0.55
1:D:388:HIS:CE1	1:D:447:VAL:HG11	2.41	0.55
1:B:283:LEU:O	1:B:285:PHE:N	2.40	0.55
1:A:39:ASN:N	1:A:40:PRO:HD3	2.21	0.55
1:B:364:GLU:HG2	1:B:367:PHE:CE2	2.41	0.55
1:B:34:ASN:HD22	1:B:156:ALA:HB2	1.72	0.54
1:A:352:LEU:HD23	4:A:701:S58:H10	1.89	0.54
1:A:123:LEU:O	1:A:469:ARG:NH2	2.40	0.54
1:A:120:ARG:HD3	1:A:527:ALA:CB	2.36	0.54
1:B:464:ASN:HB3	1:B:474:PRO:HB3	1.88	0.54
1:C:316:LEU:HB3	1:C:328:LEU:CD2	2.37	0.54
1:A:52:PHE:CE1	1:B:322:GLU:HB3	2.43	0.54
1:B:197:MET:CE	1:B:423:VAL:HG13	2.37	0.54
1:A:269:THR:O	1:A:271:VAL:HG12	2.06	0.54
1:C:463:LEU:HD13	1:C:506:ALA:HB3	1.89	0.54
1:B:272:GLU:HB3	1:B:290:GLU:OE2	2.07	0.54
1:D:210:PHE:O	1:D:211:LYS:HG3	2.08	0.54
1:A:276:PRO:HB2	1:A:279:ILE:HD13	1.89	0.54
1:B:244:LEU:O	1:B:253:LYS:HB2	2.07	0.54
1:C:114:LYS:HG3	1:C:365:LEU:HB3	1.89	0.54
1:B:398:GLU:HG2	1:B:425:SER:HA	1.89	0.54
1:B:448:ALA:O	1:B:452:ILE:HG13	2.08	0.54
1:D:98:GLY:HA2	1:D:101:ASN:HD22	1.72	0.54
1:B:335:ILE:HA	1:B:559:ILE:HD11	1.88	0.54
1:C:123:LEU:O	1:C:469:ARG:NH2	2.40	0.54
1:D:244:LEU:O	1:D:253:LYS:HB2	2.06	0.54
1:B:57:CYS:HB3	1:B:69:CYS:SG	2.47	0.54
1:C:197:MET:HE1	1:C:423:VAL:HA	1.87	0.54
1:D:208:GLN:NE2	1:D:228:VAL:HG13	2.23	0.54
1:B:345:ILE:CD1	1:B:534:LEU:HD23	2.34	0.54
1:B:572:VAL:O	1:B:574:GLY:N	2.40	0.54
1:A:152:LEU:HD13	1:A:461:GLN:OE1	2.07	0.54
1:C:572:VAL:O	1:C:574:GLY:N	2.41	0.54
1:A:335:ILE:HG23	1:A:559:ILE:HD12	1.90	0.54
1:D:260:GLU:HB2	1:D:262:TYR:CE2	2.42	0.54
1:D:391:LEU:CD2	3:D:682:HEM:HAB	2.30	0.54
1:B:34:ASN:HD22	1:B:156:ALA:CB	2.21	0.54
1:C:323:TRP:HH2	1:C:551:GLY:CA	2.19	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:213:ASP:OD2	1:B:216:ARG:HB2	2.08	0.54
1:A:66:GLY:O	1:A:68:ASN:N	2.40	0.54
1:C:273:MET:HA	1:C:290:GLU:CG	2.38	0.54
1:D:34:ASN:HD22	1:D:156:ALA:CB	2.21	0.54
1:D:479:GLU:HG3	1:D:488:ALA:HB1	1.89	0.54
1:A:424:GLU:HG2	1:A:428:ARG:HH12	1.73	0.54
1:B:232:HIS:CE1	1:B:233:ILE:HG13	2.43	0.54
1:D:350:GLN:HE22	1:D:359:LEU:H	1.56	0.54
1:C:85:THR:HB	1:C:88:THR:HG23	1.89	0.54
1:C:582:VAL:O	1:C:582:VAL:HG13	2.06	0.54
1:A:291:VAL:HG22	1:A:294:LEU:HD12	1.90	0.54
1:C:155:VAL:HB	1:C:459:LYS:HZ2	1.72	0.54
1:B:472:LEU:HD21	1:B:524:GLU:HG3	1.90	0.54
1:B:281:GLU:HA	1:B:284:GLN:HG3	1.90	0.53
1:D:572:VAL:O	1:D:574:GLY:N	2.42	0.53
1:A:399:ASP:O	1:A:400:GLN:HB2	2.08	0.53
1:A:92:ILE:HA	1:A:96:PHE:HE1	1.72	0.53
1:D:283:LEU:HB2	1:D:411:ASN:HB2	1.89	0.53
1:B:396:ASN:CB	1:B:401:GLU:HG2	2.36	0.53
1:D:381:PHE:CD1	1:D:529:PHE:CB	2.91	0.53
1:D:272:GLU:HB3	1:D:290:GLU:OE2	2.08	0.53
1:A:175:LYS:HA	1:A:178:LEU:HB3	1.88	0.53
1:B:383:THR:HG22	1:B:384:LEU:N	2.24	0.53
1:A:320:HIS:CE1	1:A:551:GLY:O	2.61	0.53
1:A:387:TRP:HB2	3:A:682:HEM:HBC2	1.90	0.53
1:B:232:HIS:ND1	1:B:233:ILE:HG13	2.24	0.53
1:B:478:PHE:HZ	1:B:495:TYR:HB2	1.69	0.53
1:D:541:SER:HB2	1:D:543:GLN:OE1	2.08	0.53
1:D:34:ASN:HD22	1:D:156:ALA:HB2	1.73	0.53
1:D:279:ILE:CG2	1:D:283:LEU:HB3	2.38	0.53
1:D:39:ASN:N	1:D:39:ASN:HD22	2.06	0.53
1:A:134:TYR:CD1	1:A:136:TYR:CE1	2.92	0.53
1:A:463:LEU:HD22	1:A:506:ALA:CB	2.37	0.53
1:D:134:TYR:CD1	1:D:136:TYR:CE1	2.89	0.53
1:C:232:HIS:CE1	1:C:233:ILE:HG13	2.44	0.53
1:D:197:MET:CE	1:D:423:VAL:HG13	2.38	0.53
1:B:244:LEU:CD2	1:B:271:VAL:HG11	2.38	0.53
1:D:213:ASP:OD2	1:D:216:ARG:HB2	2.09	0.53
1:C:311:ARG:O	1:C:315:ILE:HG13	2.08	0.53
1:D:183:LEU:HD22	1:D:442:ILE:HG13	1.91	0.53
1:B:210:PHE:O	1:B:211:LYS:HG3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:518:PHE:HE1	4:D:701:S58:H9	1.73	0.53
1:C:350:GLN:HE22	1:C:359:LEU:H	1.56	0.53
1:A:364:GLU:HA	1:A:367:PHE:CD2	2.44	0.53
1:B:105(A):ILE:HG23	1:B:107:PHE:CE1	2.44	0.53
1:B:513:ARG:NH1	1:B:523:VAL:HG11	2.23	0.53
1:B:246:LEU:HG	1:B:248:LYS:HB2	1.89	0.53
1:A:383:THR:HG22	1:A:384:LEU:N	2.23	0.53
1:C:322:GLU:HB3	1:D:52:PHE:CD1	2.44	0.53
1:B:191:PRO:HG3	1:B:433:ARG:CZ	2.39	0.53
1:A:136:TYR:CD2	1:B:327:GLN:NE2	2.76	0.53
1:D:504:TYR:HB3	1:D:505:PRO:HD3	1.90	0.53
1:D:482:THR:HG22	1:D:509:VAL:HG22	1.89	0.53
1:A:253:LYS:HE2	1:A:269:THR:HG22	1.91	0.53
1:A:216:ARG:HB3	1:A:220:PHE:CD2	2.44	0.53
1:C:208:GLN:HE22	1:C:228:VAL:HG13	1.73	0.53
1:B:55:TYR:HE2	1:B:57:CYS:SG	2.32	0.53
1:B:206:THR:HB	1:B:210:PHE:HD2	1.72	0.53
1:D:43:ASN:O	1:D:44:ARG:HB2	2.08	0.53
1:D:43:ASN:HD22	1:D:70:THR:HA	1.73	0.53
1:A:464:ASN:HB3	1:A:474:PRO:HB3	1.91	0.53
1:B:266:VAL:HG23	1:B:271:VAL:O	2.08	0.53
1:D:291:VAL:O	1:D:293:GLY:N	2.42	0.53
1:C:335:ILE:HG12	1:C:550:PHE:HB3	1.91	0.53
1:C:381:PHE:CD1	1:C:529:PHE:CB	2.92	0.53
1:C:345:ILE:CD1	1:C:534:LEU:HD23	2.36	0.53
1:B:150:ARG:NH2	1:B:458:MET:O	2.42	0.53
1:D:505:PRO:O	1:D:509:VAL:HG12	2.09	0.53
1:C:254:TYR:HD2	1:C:310:GLN:HE21	1.57	0.53
1:C:266:VAL:HG23	1:C:271:VAL:O	2.09	0.53
1:A:260:GLU:HB2	1:A:262:TYR:CE2	2.43	0.53
1:C:281:GLU:HG2	1:C:284:GLN:HE21	1.74	0.52
1:B:75:LEU:O	1:B:79:LYS:HG3	2.10	0.52
1:C:273:MET:HA	1:C:290:GLU:HG3	1.91	0.52
1:A:105(A):ILE:CG2	1:A:108:LEU:HB2	2.39	0.52
1:A:188:ILE:O	1:A:432:GLY:HA2	2.09	0.52
1:A:210:PHE:O	1:A:211:LYS:HG3	2.08	0.52
1:B:66:GLY:O	1:B:68:ASN:N	2.43	0.52
1:D:273:MET:HA	1:D:290:GLU:CG	2.39	0.52
1:D:383:THR:HG22	1:D:384:LEU:N	2.23	0.52
1:C:260:GLU:HB2	1:C:262:TYR:CE2	2.44	0.52
1:C:291:VAL:HG22	1:C:294:LEU:HD12	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:352:LEU:HD21	1:D:518:PHE:HZ	1.75	0.52
1:D:150:ARG:NH2	1:D:458:MET:O	2.42	0.52
1:C:253:LYS:NZ	1:C:269:THR:HG21	2.23	0.52
1:A:398:GLU:HG2	1:A:425:SER:HA	1.92	0.52
1:C:448:ALA:O	1:C:452:ILE:HG13	2.10	0.52
1:B:381:PHE:CD1	1:B:529:PHE:HB2	2.44	0.52
1:C:427:THR:HB	1:C:428:ARG:HD2	1.90	0.52
1:C:39:ASN:N	1:C:39:ASN:HD22	2.07	0.52
1:A:57:CYS:HB3	1:A:69:CYS:SG	2.49	0.52
1:A:572:VAL:O	1:A:574:GLY:N	2.43	0.52
1:D:274:ILE:HG13	1:D:290:GLU:HG2	1.90	0.52
1:B:316:LEU:HB3	1:B:328:LEU:CD2	2.39	0.52
1:A:476:THR:OG1	1:A:480:GLU:HG3	2.09	0.52
1:C:275:TYR:CZ	1:C:284:GLN:HA	2.44	0.52
1:D:464:ASN:HB3	1:D:474:PRO:HB3	1.91	0.52
1:B:274:ILE:HG13	1:B:290:GLU:HG2	1.91	0.52
1:B:273:MET:HA	1:B:290:GLU:CG	2.39	0.52
1:B:134:TYR:CD1	1:B:136:TYR:CE1	2.84	0.52
1:B:381:PHE:O	1:B:385:TYR:HB2	2.09	0.52
1:C:136:TYR:HD2	1:D:327:GLN:NE2	2.06	0.52
1:A:232:HIS:ND1	1:A:233:ILE:HG13	2.25	0.52
1:D:490:GLU:O	1:D:493:ALA:HB3	2.09	0.52
1:D:410:ASN:CG	1:D:413:ILE:HG13	2.30	0.52
1:B:183:LEU:HD22	1:B:442:ILE:HG13	1.92	0.52
1:B:445:GLN:HG3	1:B:446:ALA:N	2.24	0.52
1:D:381:PHE:O	1:D:385:TYR:HB2	2.10	0.52
1:A:150:ARG:HD3	1:A:379:SER:OG	2.09	0.52
1:A:293:GLY:HA2	1:A:299:MET:CE	2.40	0.52
1:B:433:ARG:HH21	1:B:512:PRO:CB	2.23	0.52
1:A:482:THR:CG2	1:A:509:VAL:HG22	2.40	0.52
1:D:419:LEU:HB3	1:D:572:VAL:CG1	2.38	0.52
1:B:175:LYS:HG2	1:B:178:LEU:HD13	1.91	0.52
1:D:477:SER:O	1:D:480:GLU:HB2	2.10	0.52
1:B:442:ILE:O	1:B:445:GLN:HG2	2.10	0.52
1:D:120:ARG:HD3	1:D:527:ALA:CB	2.36	0.52
1:B:320:HIS:CE1	1:B:551:GLY:O	2.63	0.52
1:C:312:VAL:HA	1:C:315:ILE:HD12	1.90	0.52
1:C:442:ILE:O	1:C:445:GLN:HG2	2.10	0.52
1:B:389:PRO:HG2	1:B:508:LEU:HD22	1.91	0.52
1:A:279:ILE:CG2	1:A:283:LEU:HB3	2.37	0.52
1:A:120:ARG:O	1:A:123:LEU:HD23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:350:GLN:NE2	1:C:359:LEU:H	2.08	0.52
1:A:55:TYR:HE2	1:A:57:CYS:SG	2.33	0.52
1:B:109:ARG:HG3	1:B:357:PHE:HE1	1.72	0.52
1:A:553:GLU:O	1:A:557:LYS:HG2	2.10	0.52
1:D:316:LEU:HB3	1:D:328:LEU:CD2	2.40	0.52
1:B:136:TYR:O	1:B:136:TYR:HD1	1.91	0.51
1:C:327:GLN:NE2	1:D:136:TYR:CD2	2.78	0.51
1:A:448:ALA:O	1:A:452:ILE:HG13	2.10	0.51
1:D:582:VAL:HG13	1:D:582:VAL:O	2.10	0.51
1:A:335:ILE:HG12	1:A:550:PHE:HB3	1.93	0.51
1:A:176:GLU:HB3	1:A:494:LEU:HD21	1.91	0.51
1:B:444:VAL:HG12	1:B:444:VAL:O	2.09	0.51
1:C:232:HIS:ND1	1:C:233:ILE:HG13	2.25	0.51
1:D:197:MET:HE2	1:D:423:VAL:HG13	1.93	0.51
1:D:152:LEU:HD13	1:D:461:GLN:OE1	2.10	0.51
1:C:269:THR:O	1:C:271:VAL:N	2.44	0.51
1:B:397:ILE:HG21	1:B:417:HIS:ND1	2.25	0.51
1:A:35:PRO:HG3	1:A:54:GLN:O	2.09	0.51
1:A:52:PHE:H	1:B:322:GLU:HG2	1.75	0.51
1:D:253:LYS:NZ	1:D:269:THR:HG21	2.25	0.51
1:A:105:ASN:O	1:A:106:PRO:HD3	2.10	0.51
1:A:335:ILE:HG23	1:A:559:ILE:CD1	2.40	0.51
1:D:445:GLN:HG3	1:D:446:ALA:N	2.26	0.51
1:B:381:PHE:CD1	1:B:529:PHE:HB3	2.46	0.51
1:B:495:TYR:HE2	1:B:502:GLU:HG3	1.76	0.51
1:C:252:LEU:O	1:C:310:GLN:NE2	2.43	0.51
1:C:269:THR:O	1:C:271:VAL:HG12	2.11	0.51
1:D:459:LYS:HB3	1:D:459:LYS:HZ2	1.75	0.51
1:B:203:GLN:HB2	3:B:682:HEM:CMC	2.41	0.51
1:A:51:GLY:O	1:A:52:PHE:HB2	2.10	0.51
1:B:39:ASN:N	1:B:39:ASN:HD22	2.09	0.51
1:A:546:LYS:C	1:A:547:PRO:O	2.48	0.51
1:A:91:TYR:O	1:A:95:HIS:HD2	1.92	0.51
1:A:43:ASN:O	1:A:44:ARG:HB2	2.10	0.51
1:B:43:ASN:HD22	1:B:70:THR:HA	1.75	0.51
1:A:216:ARG:HB3	1:A:220:PHE:CG	2.45	0.51
1:B:132:VAL:HG21	1:B:219:GLY:HA3	1.92	0.51
1:D:75:LEU:HG	1:D:79:LYS:HE2	1.93	0.51
1:C:42:GLN:O	1:C:69:CYS:HB2	2.10	0.51
1:C:241:GLN:NE2	1:C:329:PHE:CE1	2.78	0.51
1:B:184:ARG:NH1	1:B:441:PRO:HG3	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:187:PHE:HE2	1:B:392:PRO:HA	1.76	0.51
1:B:391:LEU:HD21	3:B:682:HEM:HAB	1.93	0.51
1:A:352:LEU:HD21	1:A:518:PHE:CZ	2.44	0.51
1:B:171:LEU:HD23	1:B:502:GLU:OE2	2.11	0.51
1:B:463:LEU:HD13	1:B:506:ALA:HB3	1.92	0.51
1:A:105(A):ILE:HG23	1:A:107:PHE:CD1	2.46	0.51
1:A:74:PHE:HA	1:A:77:ARG:NE	2.26	0.51
1:A:477:SER:O	1:A:480:GLU:HB2	2.11	0.51
1:A:273:MET:SD	1:A:290:GLU:HA	2.51	0.51
1:A:274:ILE:HG13	1:A:290:GLU:HG2	1.92	0.51
1:D:405:LYS:HD2	1:D:405:LYS:H	1.76	0.51
1:D:345:ILE:CD1	1:D:534:LEU:HD23	2.38	0.51
1:B:419:LEU:HB3	1:B:572:VAL:CG1	2.39	0.51
1:B:105(A):ILE:HG23	1:B:107:PHE:CD1	2.45	0.51
1:A:541:SER:HB2	1:A:543:GLN:OE1	2.11	0.51
1:C:335:ILE:HA	1:C:559:ILE:HD11	1.92	0.51
1:C:543:GLN:OE1	1:D:127:PRO:HD2	2.11	0.51
1:B:291:VAL:O	1:B:293:GLY:N	2.44	0.51
1:B:35:PRO:HG3	1:B:54:GLN:O	2.12	0.51
1:D:323:TRP:HH2	1:D:551:GLY:CA	2.22	0.51
1:C:109:ARG:NH2	1:C:359:LEU:O	2.43	0.51
1:D:253:LYS:HZ3	1:D:269:THR:HG21	1.75	0.51
1:C:150:ARG:HD3	1:C:379:SER:OG	2.11	0.51
1:C:274:ILE:HG13	1:C:290:GLU:O	2.10	0.51
1:C:34:ASN:HD22	1:C:156:ALA:HB2	1.76	0.51
1:C:175:LYS:HA	1:C:178:LEU:HB3	1.91	0.51
1:D:276:PRO:HB2	1:D:278:HIS:CE1	2.45	0.50
1:A:509:VAL:O	1:A:509:VAL:HG13	2.11	0.50
1:D:478:PHE:HZ	1:D:495:TYR:HB2	1.74	0.50
1:C:150:ARG:NH2	1:C:458:MET:O	2.43	0.50
1:A:424:GLU:O	1:A:428:ARG:HD2	2.10	0.50
1:D:283:LEU:HB2	1:D:411:ASN:CG	2.31	0.50
1:A:283:LEU:HD22	1:A:411:ASN:HB2	1.92	0.50
1:B:42:GLN:O	1:B:69:CYS:HB2	2.11	0.50
1:D:273:MET:HA	1:D:290:GLU:HG3	1.94	0.50
1:A:397:ILE:HG22	1:A:397:ILE:O	2.11	0.50
1:B:427:THR:HB	1:B:428:ARG:HD2	1.94	0.50
1:A:197:MET:CE	1:A:423:VAL:HG13	2.42	0.50
1:C:254:TYR:C	1:C:254:TYR:CD1	2.84	0.50
1:C:530:SER:O	1:C:534:LEU:HD13	2.11	0.50
1:A:198:PHE:HZ	1:A:352:LEU:CD1	2.20	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:43:ASN:O	1:C:44:ARG:HB2	2.11	0.50
1:C:55:TYR:HE2	1:C:57:CYS:SG	2.34	0.50
1:A:215:LYS:HE3	1:A:222:ARG:HH12	1.77	0.50
1:A:85:THR:CG2	1:A:86:PRO:HD2	2.41	0.50
1:A:291:VAL:O	1:A:293:GLY:N	2.44	0.50
1:B:342:LYS:HD2	1:B:346:GLU:HG3	1.94	0.50
1:D:206:THR:HB	1:D:210:PHE:HD2	1.71	0.50
1:B:501:MET:HG3	1:B:506:ALA:HB2	1.94	0.50
1:D:350:GLN:NE2	1:D:359:LEU:H	2.09	0.50
1:C:132:VAL:HG21	1:C:219:GLY:HA3	1.92	0.50
1:C:381:PHE:O	1:C:385:TYR:HB2	2.12	0.50
1:B:150:ARG:HD3	1:B:379:SER:OG	2.11	0.50
1:C:48:MET:HE3	1:C:49:SER:OG	2.12	0.50
1:B:197:MET:HE2	1:B:423:VAL:HG13	1.93	0.50
1:A:39:ASN:OD1	1:A:461:GLN:NE2	2.44	0.50
1:A:40:PRO:HB2	1:A:55:TYR:CE2	2.47	0.50
1:C:397:ILE:HG21	1:C:417:HIS:ND1	2.27	0.50
1:C:41:CYS:SG	1:C:47:CYS:HB2	2.52	0.50
1:B:254:TYR:HD1	1:B:254:TYR:C	2.15	0.50
1:C:501:MET:CE	1:C:505:PRO:HB2	2.42	0.50
1:A:565:GLN:HG3	1:D:268:ASP:OD1	2.12	0.50
1:D:335:ILE:HG12	1:D:550:PHE:HB3	1.93	0.50
1:B:311:ARG:O	1:B:315:ILE:HG13	2.11	0.50
1:A:137:LYS:HG3	1:B:549:THR:HG23	1.94	0.50
1:D:41:CYS:SG	1:D:47:CYS:HB2	2.51	0.50
1:A:568:ILE:HG13	1:A:572:VAL:CG2	2.40	0.50
1:D:506:ALA:O	1:D:510:GLU:HB2	2.12	0.50
1:D:187:PHE:HE2	1:D:392:PRO:HA	1.77	0.50
1:A:206:THR:HB	1:A:210:PHE:HD2	1.76	0.50
1:D:501:MET:CE	1:D:505:PRO:HB2	2.42	0.50
1:C:509:VAL:HG22	1:C:509:VAL:O	2.12	0.50
1:D:105:ASN:O	1:D:106:PRO:HD3	2.12	0.50
1:B:323:TRP:CH2	1:B:551:GLY:HA2	2.36	0.49
1:D:37:CYS:O	1:D:39:ASN:ND2	2.45	0.49
1:B:208:GLN:NE2	1:B:228:VAL:HA	2.26	0.49
1:D:247:PHE:HA	1:D:325:ASP:OD2	2.12	0.49
1:D:171:LEU:HD23	1:D:502:GLU:OE2	2.12	0.49
1:B:350:GLN:HE22	1:B:359:LEU:H	1.60	0.49
1:B:391:LEU:HB2	1:B:441:PRO:HG2	1.94	0.49
1:D:120:ARG:O	1:D:123:LEU:HD23	2.12	0.49
1:D:509:VAL:O	1:D:509:VAL:HG22	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:105:ASN:O	1:C:106:PRO:HD3	2.12	0.49
1:D:114:LYS:HG3	1:D:365:LEU:HB3	1.94	0.49
1:B:546:LYS:C	1:B:547:PRO:O	2.49	0.49
1:B:172:PRO:HG2	1:B:495:TYR:CD1	2.48	0.49
1:B:509:VAL:HG22	1:B:509:VAL:O	2.13	0.49
1:B:497:ASP:HB3	1:B:500:VAL:CG2	2.42	0.49
1:A:556:PHE:CD2	1:A:557:LYS:HE2	2.48	0.49
1:D:182:LEU:C	1:D:438:ARG:HA	2.33	0.49
1:A:327:GLN:NE2	1:B:136:TYR:HD2	2.09	0.49
1:C:327:GLN:HE22	1:D:48:MET:HE2	1.77	0.49
1:D:150:ARG:HG2	1:D:152:LEU:O	2.11	0.49
1:D:430:ILE:HG13	1:D:582:VAL:HG21	1.95	0.49
1:D:472:LEU:HD21	1:D:524:GLU:HG3	1.93	0.49
1:C:276:PRO:CB	1:C:278:HIS:CE1	2.95	0.49
1:D:210:PHE:CE1	1:D:382:ASN:CA	2.94	0.49
1:B:150:ARG:HG2	1:B:152:LEU:O	2.12	0.49
1:A:34:ASN:HD22	1:A:156:ALA:CB	2.25	0.49
1:B:191:PRO:HD2	1:B:433:ARG:HG3	1.95	0.49
1:A:308:GLU:HA	1:A:308:GLU:OE1	2.13	0.49
1:A:342:LYS:NZ	1:A:560:ASN:HA	2.27	0.49
1:B:273:MET:HA	1:B:290:GLU:HG3	1.95	0.49
1:D:176:GLU:HB3	1:D:494:LEU:HD21	1.95	0.49
1:C:183:LEU:HD21	1:C:445:GLN:CB	2.42	0.49
1:A:198:PHE:CD1	1:A:198:PHE:C	2.86	0.49
1:A:34:ASN:HD22	1:A:156:ALA:HB2	1.76	0.49
1:B:260:GLU:HB2	1:B:262:TYR:CE2	2.48	0.49
1:B:182:LEU:C	1:B:438:ARG:HA	2.32	0.49
1:A:405:LYS:H	1:A:405:LYS:CD	2.23	0.49
1:B:501:MET:CE	1:B:505:PRO:HB2	2.42	0.49
1:D:150:ARG:HD3	1:D:379:SER:OG	2.13	0.49
1:C:419:LEU:HB3	1:C:572:VAL:CG1	2.42	0.49
1:A:430:ILE:HG13	1:A:582:VAL:HG21	1.95	0.49
1:B:350:GLN:NE2	1:B:359:LEU:H	2.10	0.49
1:B:241:GLN:NE2	1:B:329:PHE:CE1	2.81	0.49
1:A:509:VAL:O	1:A:509:VAL:HG22	2.13	0.49
1:A:39:ASN:ND2	1:A:39:ASN:N	2.61	0.49
1:B:43:ASN:O	1:B:44:ARG:HB2	2.12	0.49
1:C:105(A):ILE:CG2	1:C:108:LEU:HB2	2.43	0.49
1:B:402:TYR:CE1	1:B:417:HIS:HE1	2.30	0.49
1:B:155:VAL:HB	1:B:459:LYS:HZ2	1.77	0.49
1:C:66:GLY:O	1:C:68:ASN:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:381:PHE:CD1	1:C:529:PHE:HB3	2.48	0.48
1:D:381:PHE:CD1	1:D:529:PHE:HB2	2.48	0.48
1:D:402:TYR:CE1	1:D:417:HIS:HE1	2.31	0.48
1:C:430:ILE:HG13	1:C:582:VAL:HG21	1.94	0.48
1:C:543:GLN:HE22	1:D:127:PRO:HB2	1.78	0.48
1:C:283:LEU:HA	1:C:411:ASN:OD1	2.13	0.48
1:A:323:TRP:HH2	1:A:551:GLY:CA	2.24	0.48
1:D:124:ILE:HD11	1:D:528:PRO:HB3	1.94	0.48
1:B:105(A):ILE:CG2	1:B:108:LEU:HB2	2.42	0.48
1:B:183:LEU:O	1:B:438:ARG:HB3	2.13	0.48
1:D:320:HIS:CE1	1:D:551:GLY:O	2.67	0.48
1:A:210:PHE:CE1	1:A:382:ASN:CA	2.94	0.48
1:A:283:LEU:HD13	1:A:411:ASN:HA	1.94	0.48
1:A:245:ARG:HD2	1:A:247:PHE:CD1	2.48	0.48
1:C:335:ILE:HG23	1:C:559:ILE:CD1	2.43	0.48
1:D:283:LEU:O	1:D:285:PHE:N	2.46	0.48
1:C:136:TYR:CD2	1:D:327:GLN:NE2	2.81	0.48
1:B:208:GLN:NE2	1:B:228:VAL:HG13	2.26	0.48
1:B:419:LEU:O	1:B:423:VAL:HG23	2.13	0.48
1:C:419:LEU:O	1:C:423:VAL:HG23	2.13	0.48
1:A:556:PHE:HD2	1:A:557:LYS:HE2	1.78	0.48
1:D:35:PRO:HG3	1:D:54:GLN:O	2.14	0.48
1:A:124:ILE:N	1:A:124:ILE:HD12	2.28	0.48
1:A:197:MET:HE2	1:A:423:VAL:HG13	1.96	0.48
1:B:254:TYR:CD1	1:B:254:TYR:C	2.86	0.48
1:C:197:MET:CE	1:C:423:VAL:HG13	2.44	0.48
1:B:467:ARG:NH1	1:B:521:THR:OG1	2.46	0.48
1:D:556:PHE:CD2	1:D:557:LYS:HE2	2.49	0.48
1:B:40:PRO:HB2	1:B:55:TYR:CE2	2.48	0.48
1:A:338:GLY:HA3	1:A:559:ILE:HG13	1.96	0.48
1:D:229:ASP:OD1	1:D:231:ASN:HB3	2.13	0.48
1:A:322:GLU:HB3	1:B:52:PHE:CE1	2.49	0.48
1:C:424:GLU:O	1:C:428:ARG:HD2	2.13	0.48
1:A:463:LEU:HD22	1:A:506:ALA:HB1	1.95	0.48
1:C:291:VAL:O	1:C:293:GLY:N	2.46	0.48
1:B:424:GLU:O	1:B:428:ARG:HD2	2.13	0.48
1:B:295:VAL:HG12	1:B:297:GLY:H	1.79	0.48
1:A:150:ARG:NH2	1:A:458:MET:O	2.46	0.48
1:D:463:LEU:HD22	1:D:506:ALA:CB	2.44	0.48
1:C:482:THR:CG2	1:C:509:VAL:HG22	2.43	0.48
1:D:85:THR:HG23	1:D:86:PRO:HD2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:335:ILE:HG23	1:D:559:ILE:CD1	2.44	0.48
1:D:338:GLY:HA3	1:D:559:ILE:CG1	2.44	0.48
1:C:293:GLY:HA2	1:C:299:MET:CE	2.44	0.48
1:D:312:VAL:HA	1:D:315:ILE:HD12	1.95	0.48
1:D:149:THR:O	1:D:378:ALA:HA	2.13	0.48
1:B:48:MET:SD	1:B:49:SER:N	2.86	0.48
1:B:187:PHE:CE2	1:B:392:PRO:HA	2.49	0.48
1:B:386:HIS:CE1	3:B:682:HEM:CAD	2.96	0.48
1:D:136:TYR:HD1	1:D:136:TYR:O	1.97	0.48
1:A:283:LEU:HB2	1:A:411:ASN:HB2	1.95	0.48
1:D:132:VAL:HG21	1:D:219:GLY:HA3	1.96	0.48
1:C:389:PRO:HG2	1:C:508:LEU:HD22	1.96	0.48
1:D:513:ARG:NH1	1:D:523:VAL:HG11	2.29	0.48
1:B:124:ILE:N	1:B:124:ILE:HD12	2.29	0.48
1:C:320:HIS:CE1	1:C:551:GLY:O	2.67	0.48
1:B:127:PRO:HA	1:B:128:PRO:HD2	1.74	0.48
1:C:34:ASN:HD22	1:C:156:ALA:CB	2.26	0.48
1:D:175:LYS:HA	1:D:178:LEU:HB3	1.95	0.48
1:C:91:TYR:O	1:C:95:HIS:HD2	1.97	0.48
1:A:114:LYS:HG3	1:A:365:LEU:HB3	1.95	0.48
1:D:546:LYS:C	1:D:547:PRO:O	2.51	0.48
1:C:187:PHE:HE2	1:C:392:PRO:HA	1.78	0.47
1:C:433:ARG:HH21	1:C:512:PRO:HB3	1.79	0.47
1:B:198:PHE:C	1:B:198:PHE:CD1	2.87	0.47
1:C:478:PHE:HZ	1:C:495:TYR:CB	2.26	0.47
1:A:213:ASP:OD2	1:A:216:ARG:HB2	2.13	0.47
1:D:335:ILE:HG23	1:D:559:ILE:HD12	1.95	0.47
1:A:132:VAL:HG21	1:A:219:GLY:HA3	1.96	0.47
1:A:513:ARG:NH1	1:A:523:VAL:HG11	2.29	0.47
1:D:109:ARG:NH2	1:D:360:LYS:HB2	2.30	0.47
1:D:495:TYR:HE2	1:D:502:GLU:HG3	1.79	0.47
1:C:128:PRO:HG3	1:C:376:ARG:CZ	2.44	0.47
1:A:264:PRO:HB2	1:A:269:THR:CG2	2.44	0.47
1:C:105(A):ILE:HG23	1:C:107:PHE:CD1	2.49	0.47
1:B:91:TYR:O	1:B:95:HIS:HD2	1.96	0.47
1:D:92:ILE:HA	1:D:96:PHE:HE1	1.78	0.47
1:A:232:HIS:CE1	1:A:233:ILE:HG13	2.49	0.47
1:B:463:LEU:HD22	1:B:506:ALA:CB	2.44	0.47
1:A:364:GLU:HA	1:A:367:PHE:CG	2.49	0.47
1:D:253:LYS:HB2	1:D:253:LYS:NZ	2.29	0.47
1:D:397:ILE:HG21	1:D:417:HIS:ND1	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:335:ILE:HG23	1:B:559:ILE:CD1	2.44	0.47
1:D:303:THR:HG22	1:D:307:ARG:HD2	1.96	0.47
1:A:387:TRP:HB2	3:A:682:HEM:CBC	2.45	0.47
1:C:98:GLY:HA2	1:C:101:ASN:HD22	1.79	0.47
1:B:253:LYS:HE2	1:B:269:THR:CG2	2.43	0.47
1:B:338:GLY:HA3	1:B:559:ILE:HG13	1.96	0.47
1:C:283:LEU:O	1:C:285:PHE:N	2.47	0.47
1:C:352:LEU:HD23	4:C:701:S58:C9	2.44	0.47
1:A:497:ASP:OD2	1:A:499:ASP:HB2	2.14	0.47
1:A:381:PHE:O	1:A:385:TYR:HB2	2.14	0.47
1:A:387:TRP:O	1:A:390:LEU:HB2	2.15	0.47
1:C:122:TYR:CE1	1:C:123:LEU:HD13	2.50	0.47
1:D:264:PRO:HG2	1:D:286:ALA:CB	2.42	0.47
1:C:98:GLY:O	1:C:101:ASN:HB2	2.14	0.47
1:C:213:ASP:OD2	1:C:216:ARG:HB2	2.14	0.47
1:A:273:MET:HA	1:A:290:GLU:CG	2.44	0.47
1:D:198:PHE:CD1	1:D:198:PHE:C	2.87	0.47
1:D:57:CYS:HB3	1:D:69:CYS:SG	2.55	0.47
1:A:518:PHE:CE1	4:A:701:S58:H9	2.45	0.47
1:A:501:MET:CE	1:A:505:PRO:HB2	2.43	0.47
1:A:150:ARG:HG2	1:A:150:ARG:NH1	2.30	0.47
1:A:42:GLN:O	1:A:69:CYS:HB2	2.14	0.47
1:B:476:THR:OG1	1:B:480:GLU:HG3	2.15	0.47
1:D:131:ASN:ND2	1:D:141:ALA:HA	2.29	0.47
1:B:465:GLU:OE2	1:B:468:LYS:HE2	2.15	0.47
1:D:42:GLN:O	1:D:69:CYS:HB2	2.14	0.47
1:A:124:ILE:HD11	1:A:528:PRO:HB3	1.97	0.47
1:A:254:TYR:C	1:A:254:TYR:CD1	2.89	0.47
1:D:172:PRO:HG2	1:D:495:TYR:CD1	2.50	0.47
1:C:110:SER:O	1:C:114:LYS:HB2	2.15	0.47
1:A:397:ILE:HG21	1:A:417:HIS:ND1	2.30	0.47
1:A:149:THR:O	1:A:378:ALA:HA	2.14	0.47
1:B:518:PHE:HE1	4:B:701:S58:H9	1.80	0.47
1:B:152:LEU:HB2	1:B:466:TYR:CZ	2.50	0.47
1:C:136:TYR:HD1	1:C:136:TYR:O	1.98	0.47
1:A:184:ARG:HH11	1:A:441:PRO:HG3	1.80	0.47
1:B:478:PHE:HZ	1:B:495:TYR:CB	2.28	0.47
1:A:48:MET:O	1:A:55:TYR:HA	2.15	0.47
1:B:254:TYR:HD2	1:B:310:GLN:HE21	1.63	0.47
1:C:254:TYR:C	1:C:254:TYR:HD1	2.17	0.47
1:A:245:ARG:HG2	1:A:246:LEU:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:149:THR:O	1:C:378:ALA:HA	2.15	0.47
1:D:235:GLY:HA3	1:D:240:ARG:HG2	1.97	0.47
1:D:381:PHE:CD1	1:D:529:PHE:HB3	2.49	0.47
1:A:513:ARG:HH11	4:A:701:S58:HN31	1.63	0.47
1:A:187:PHE:HE2	1:A:392:PRO:HA	1.80	0.47
1:B:482:THR:CG2	1:B:509:VAL:HG22	2.45	0.47
1:C:125:ASP:O	1:C:128:PRO:HA	2.15	0.47
1:B:85:THR:CG2	1:B:86:PRO:HD2	2.44	0.47
1:B:312:VAL:HA	1:B:315:ILE:HD12	1.97	0.47
1:D:48:MET:O	1:D:55:TYR:HA	2.15	0.46
1:C:134:TYR:CD1	1:C:136:TYR:CE1	2.89	0.46
1:B:269:THR:O	1:B:271:VAL:N	2.45	0.46
1:D:257:ILE:HD12	1:D:262:TYR:CD2	2.49	0.46
1:D:176:GLU:O	1:D:494:LEU:HD11	2.15	0.46
1:A:275:TYR:CZ	1:A:284:GLN:HA	2.48	0.46
1:D:187:PHE:CE2	1:D:392:PRO:HA	2.49	0.46
1:B:276:PRO:CD	1:B:279:ILE:HD13	2.37	0.46
1:B:210:PHE:CE1	1:B:382:ASN:CA	2.98	0.46
1:D:513:ARG:O	1:D:514:PRO:C	2.54	0.46
1:A:502:GLU:HB2	1:A:505:PRO:HD2	1.98	0.46
1:B:116:VAL:HG23	1:B:117:LEU:N	2.31	0.46
1:C:509:VAL:HG13	1:C:509:VAL:O	2.14	0.46
1:B:92:ILE:HA	1:B:96:PHE:CE1	2.50	0.46
1:A:546:LYS:O	1:A:547:PRO:O	2.34	0.46
1:B:188:ILE:O	1:B:432:GLY:HA2	2.14	0.46
1:C:182:LEU:O	1:C:438:ARG:HA	2.15	0.46
1:C:278:HIS:CD2	1:C:279:ILE:HD12	2.51	0.46
1:B:176:GLU:O	1:B:180:LYS:HG3	2.15	0.46
1:B:257:ILE:HD12	1:B:262:TYR:CD2	2.51	0.46
1:A:253:LYS:O	1:A:306:LEU:HD11	2.14	0.46
1:C:253:LYS:HZ3	1:C:269:THR:HG21	1.80	0.46
1:B:194:SER:OG	1:B:351:HIS:HE1	1.98	0.46
1:C:386:HIS:CE1	3:C:682:HEM:CAD	2.98	0.46
1:A:283:LEU:O	1:A:285:PHE:N	2.48	0.46
1:A:34:ASN:HA	1:A:35:PRO:HD2	1.73	0.46
1:C:414:LEU:HD11	1:C:419:LEU:HD22	1.97	0.46
1:A:549:THR:HG23	1:B:137:LYS:HG3	1.98	0.46
1:B:48:MET:O	1:B:50:THR:HG23	2.15	0.46
1:D:232:HIS:ND1	1:D:233:ILE:HG13	2.31	0.46
1:A:184:ARG:O	1:A:442:ILE:HD11	2.15	0.46
1:A:478:PHE:HZ	1:A:495:TYR:CB	2.28	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:402:TYR:CE1	1:C:417:HIS:HE1	2.33	0.46
1:D:450:ALA:O	1:D:454:GLN:HB2	2.15	0.46
1:C:399:ASP:O	1:C:400:GLN:HB2	2.14	0.46
1:A:136:TYR:HD1	1:A:136:TYR:O	1.97	0.46
1:B:98:GLY:HA2	1:B:101:ASN:HD22	1.81	0.46
1:D:463:LEU:HD13	1:D:506:ALA:HB3	1.98	0.46
1:C:175:LYS:HG2	1:C:178:LEU:HD13	1.96	0.46
1:C:198:PHE:CD1	1:C:198:PHE:C	2.89	0.46
1:A:381:PHE:CD1	1:A:529:PHE:CB	2.99	0.46
1:B:176:GLU:OE2	1:B:180:LYS:HE3	2.16	0.46
1:C:131:ASN:ND2	1:C:141:ALA:HA	2.30	0.46
1:A:513:ARG:O	1:A:514:PRO:C	2.53	0.46
1:A:198:PHE:CD2	1:A:580:PHE:HB3	2.50	0.46
1:C:39:ASN:N	1:C:40:PRO:CD	2.77	0.46
1:C:97:LYS:HG2	1:C:101:ASN:ND2	2.31	0.46
1:C:308:GLU:OE1	1:C:308:GLU:HA	2.16	0.46
1:A:80:LEU:C	1:A:82:LEU:H	2.18	0.46
1:C:111:LEU:HD23	1:C:111:LEU:HA	1.84	0.46
1:A:281:GLU:CA	1:A:284:GLN:HG3	2.37	0.46
1:C:281:GLU:HG2	1:C:284:GLN:NE2	2.31	0.46
1:D:184:ARG:O	1:D:442:ILE:HD11	2.15	0.46
1:C:323:TRP:CH2	1:C:551:GLY:HA2	2.40	0.46
1:D:568:ILE:HG13	1:D:572:VAL:CG2	2.46	0.46
1:A:342:LYS:HG2	1:A:562:ALA:HB3	1.98	0.46
1:C:198:PHE:CD2	1:C:580:PHE:HB3	2.47	0.46
1:D:509:VAL:O	1:D:509:VAL:HG13	2.16	0.46
1:B:230:LEU:CD2	1:B:230:LEU:N	2.79	0.46
1:C:291:VAL:CG2	1:C:294:LEU:HD12	2.46	0.46
1:A:274:ILE:HG13	1:A:290:GLU:O	2.16	0.46
1:D:80:LEU:C	1:D:82:LEU:H	2.18	0.46
1:A:410:ASN:CG	1:A:413:ILE:HG13	2.35	0.46
1:C:184:ARG:HH11	1:C:441:PRO:HG3	1.81	0.45
1:D:184:ARG:NH1	1:D:441:PRO:HG3	2.30	0.45
1:B:123:LEU:HD22	1:B:123:LEU:N	2.31	0.45
1:C:208:GLN:OE1	1:C:230:LEU:HA	2.15	0.45
1:B:64:PHE:CD2	1:B:70:THR:O	2.69	0.45
1:D:152:LEU:HD23	1:D:152:LEU:HA	1.80	0.45
1:D:105(A):ILE:CG2	1:D:108:LEU:HB2	2.45	0.45
1:B:513:ARG:HH12	1:B:523:VAL:HG11	1.79	0.45
1:A:402:TYR:CE1	1:A:417:HIS:HE1	2.35	0.45
1:A:327:GLN:HE22	1:B:48:MET:HE2	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:275:TYR:CZ	1:B:284:GLN:HA	2.48	0.45
1:B:449:LYS:O	1:B:452:ILE:N	2.50	0.45
1:D:40:PRO:HB2	1:D:55:TYR:CE2	2.51	0.45
1:B:461:GLN:HB2	1:B:466:TYR:CE1	2.52	0.45
1:A:123:LEU:HD22	1:A:123:LEU:N	2.30	0.45
1:C:171:LEU:HD23	1:C:502:GLU:OE2	2.16	0.45
1:C:150:ARG:HG2	1:C:150:ARG:NH1	2.30	0.45
1:C:513:ARG:O	1:C:514:PRO:C	2.54	0.45
1:C:191:PRO:HG3	1:C:433:ARG:CZ	2.47	0.45
1:B:191:PRO:HG3	1:B:433:ARG:NH1	2.32	0.45
1:D:467:ARG:NH1	1:D:521:THR:OG1	2.48	0.45
1:C:575:CYS:N	1:C:576:PRO:CD	2.79	0.45
1:D:187:PHE:CD1	1:D:187:PHE:C	2.90	0.45
1:D:386:HIS:CE1	3:D:682:HEM:CAD	2.99	0.45
1:D:123:LEU:O	1:D:469:ARG:NH2	2.47	0.45
1:D:352:LEU:HD23	4:D:701:S58:C10	2.47	0.45
1:C:495:TYR:HE2	1:C:502:GLU:HG3	1.82	0.45
1:D:266:VAL:HG13	1:D:267:LYS:N	2.32	0.45
1:B:490:GLU:O	1:B:493:ALA:HB3	2.16	0.45
1:D:172:PRO:HG2	1:D:495:TYR:CE1	2.52	0.45
1:D:291:VAL:CG2	1:D:294:LEU:HD12	2.46	0.45
1:D:575:CYS:N	1:D:576:PRO:CD	2.79	0.45
1:D:111:LEU:HA	1:D:111:LEU:HD23	1.81	0.45
1:B:303:THR:HG22	1:B:307:ARG:HD2	1.99	0.45
1:C:206:THR:HB	1:C:210:PHE:HD2	1.80	0.45
1:A:266:VAL:CG1	1:A:267:LYS:N	2.80	0.45
1:C:271:VAL:HG11	1:C:286:ALA:HB1	1.98	0.45
1:D:128:PRO:HG3	1:D:376:ARG:CZ	2.47	0.45
1:A:397:ILE:O	1:A:398:GLU:O	2.35	0.45
1:A:281:GLU:HA	1:A:284:GLN:HE21	1.81	0.45
1:C:352:LEU:O	4:C:701:S58:C9	2.65	0.45
1:B:183:LEU:HD21	1:B:445:GLN:CB	2.46	0.45
1:A:117:LEU:HD12	1:A:117:LEU:HA	1.86	0.45
1:D:448:ALA:O	1:D:452:ILE:HG13	2.15	0.45
1:A:264:PRO:HB2	1:A:269:THR:HG23	1.99	0.45
1:D:150:ARG:HG2	1:D:150:ARG:NH1	2.30	0.45
1:D:398:GLU:HG2	1:D:425:SER:HA	1.99	0.45
1:D:388:HIS:CD2	1:D:444:VAL:HG11	2.52	0.45
1:D:43:ASN:O	1:D:44:ARG:CB	2.64	0.45
1:A:414:LEU:HD11	1:A:419:LEU:HD22	1.98	0.45
1:C:295:VAL:HB	1:C:298:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:397:ILE:O	1:D:397:ILE:HG22	2.16	0.45
1:C:253:LYS:HE2	1:C:269:THR:CG2	2.47	0.45
1:A:311:ARG:O	1:A:315:ILE:HG13	2.16	0.45
1:D:213:ASP:OD1	1:D:215:LYS:HG2	2.17	0.45
1:C:190:ASP:CG	1:C:192:GLN:H	2.20	0.45
1:B:573:LYS:O	1:B:573:LYS:HG3	2.15	0.45
1:D:275:TYR:CZ	1:D:284:GLN:HA	2.52	0.45
1:D:230:LEU:CD2	1:D:230:LEU:N	2.80	0.45
1:A:128:PRO:HG3	1:A:376:ARG:CZ	2.47	0.45
1:A:266:VAL:HG13	1:A:267:LYS:N	2.31	0.45
1:C:75:LEU:HA	1:C:78:ILE:HD12	1.97	0.45
1:B:110:SER:O	1:B:114:LYS:HB2	2.16	0.45
1:B:276:PRO:HB2	1:B:278:HIS:CE1	2.52	0.45
1:D:323:TRP:CH2	1:D:551:GLY:HA2	2.39	0.45
1:C:172:PRO:HG2	1:C:495:TYR:CD1	2.52	0.45
1:C:40:PRO:HB2	1:C:55:TYR:CE2	2.52	0.45
1:A:43:ASN:HB2	1:A:69:CYS:O	2.16	0.45
1:D:246:LEU:O	1:D:247:PHE:HB2	2.17	0.45
1:D:364:GLU:HA	1:D:367:PHE:CD2	2.52	0.45
1:D:190:ASP:HA	1:D:433:ARG:HB2	1.98	0.45
1:D:518:PHE:CG	1:D:522:MET:HG2	2.52	0.45
1:D:527:ALA:N	1:D:528:PRO:CD	2.80	0.45
4:A:701:S58:C11	4:A:701:S58:H10	2.47	0.45
1:C:123:LEU:HD22	1:C:123:LEU:N	2.32	0.45
1:A:172:PRO:HG2	1:A:495:TYR:CD1	2.52	0.45
1:B:568:ILE:HG13	1:B:572:VAL:CG2	2.46	0.45
1:C:308:GLU:OE1	1:C:311:ARG:NH1	2.50	0.45
1:D:110:SER:O	1:D:114:LYS:HB2	2.17	0.45
1:A:279:ILE:HG12	1:A:283:LEU:HD23	1.99	0.44
1:C:478:PHE:CE1	1:C:492:LYS:HA	2.52	0.44
1:A:495:TYR:HE2	1:A:502:GLU:HG3	1.81	0.44
1:D:203:GLN:NE2	1:D:298:LEU:HD13	2.33	0.44
1:D:463:LEU:HD22	1:D:506:ALA:HB1	1.97	0.44
1:B:335:ILE:HG23	1:B:559:ILE:HD12	1.98	0.44
1:A:323:TRP:CH2	1:A:551:GLY:HA2	2.41	0.44
1:C:381:PHE:CD1	1:C:529:PHE:HB2	2.52	0.44
1:A:391:LEU:HB2	1:A:441:PRO:HG2	1.98	0.44
1:B:97:LYS:HG2	1:B:101:ASN:ND2	2.32	0.44
1:B:80:LEU:C	1:B:82:LEU:H	2.20	0.44
1:B:176:GLU:CD	1:B:180:LYS:HE3	2.37	0.44
1:B:253:LYS:O	1:B:306:LEU:HD11	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:364:GLU:HA	1:B:367:PHE:CD2	2.52	0.44
1:A:272:GLU:HB3	1:A:290:GLU:OE2	2.16	0.44
1:B:546:LYS:O	1:B:547:PRO:O	2.34	0.44
1:B:235:GLY:HA3	1:B:240:ARG:HG2	1.98	0.44
1:C:188:ILE:O	1:C:432:GLY:HA2	2.17	0.44
1:B:450:ALA:O	1:B:454:GLN:HB2	2.17	0.44
1:C:176:GLU:O	1:C:494:LEU:HD11	2.17	0.44
1:C:83:LYS:HG3	1:C:83:LYS:O	2.17	0.44
1:C:208:GLN:NE2	1:C:228:VAL:HG13	2.32	0.44
1:B:247:PHE:HA	1:B:325:ASP:OD2	2.18	0.44
1:C:105:ASN:CG	1:C:105(A):ILE:N	2.71	0.44
1:C:312:VAL:O	1:C:315:ILE:N	2.51	0.44
1:A:547:PRO:O	1:A:549:THR:N	2.48	0.44
1:A:273:MET:HA	1:A:290:GLU:HG3	1.99	0.44
1:B:131:ASN:ND2	1:B:141:ALA:HA	2.32	0.44
1:C:182:LEU:C	1:C:438:ARG:HA	2.38	0.44
1:C:283:LEU:HB2	1:C:411:ASN:HB2	1.99	0.44
1:B:433:ARG:HH21	1:B:512:PRO:HB2	1.82	0.44
1:B:463:LEU:HD22	1:B:506:ALA:HB1	2.00	0.44
1:A:43:ASN:O	1:A:44:ARG:CB	2.65	0.44
1:A:125:ASP:O	1:A:128:PRO:HA	2.18	0.44
1:A:583:GLN:NE2	1:D:282:ASN:CG	2.69	0.44
1:C:105(A):ILE:HD12	1:C:108:LEU:HD12	1.99	0.44
1:B:513:ARG:O	1:B:514:PRO:C	2.56	0.44
1:C:80:LEU:C	1:C:82:LEU:H	2.21	0.44
1:C:184:ARG:HB3	1:C:439:ASN:HA	2.00	0.44
1:C:183:LEU:O	1:C:438:ARG:HB3	2.17	0.44
1:A:396:ASN:CB	1:A:401:GLU:HG2	2.44	0.44
1:C:48:MET:O	1:C:55:TYR:HA	2.17	0.44
1:B:39:ASN:N	1:B:40:PRO:CD	2.80	0.44
1:A:291:VAL:CG2	1:A:294:LEU:HD12	2.48	0.44
1:B:291:VAL:HG22	1:B:294:LEU:HD12	2.00	0.44
1:C:546:LYS:C	1:C:547:PRO:O	2.53	0.44
1:B:34:ASN:HA	1:B:35:PRO:HD2	1.69	0.44
1:B:518:PHE:CG	1:B:522:MET:HG2	2.52	0.44
1:D:39:ASN:N	1:D:40:PRO:CD	2.80	0.44
1:B:152:LEU:HD21	1:B:469:ARG:HD3	2.00	0.44
1:A:187:PHE:CE2	1:A:392:PRO:HA	2.53	0.44
1:A:171:LEU:HD23	1:A:502:GLU:OE2	2.17	0.44
1:B:338:GLY:HA3	1:B:559:ILE:CG1	2.48	0.44
1:A:465:GLU:OE2	1:A:468:LYS:HE2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:575:CYS:N	1:B:576:PRO:CD	2.80	0.44
1:C:281:GLU:HA	1:C:284:GLN:HE21	1.82	0.44
1:D:283:LEU:HB2	1:D:411:ASN:CB	2.47	0.44
1:C:353:SER:HA	4:C:701:S58:C8	2.47	0.44
1:A:527:ALA:N	1:A:528:PRO:CD	2.80	0.44
1:C:253:LYS:NZ	1:C:253:LYS:HB2	2.32	0.44
1:A:308:GLU:OE1	1:A:311:ARG:NH1	2.51	0.44
1:C:335:ILE:HG23	1:C:559:ILE:HD12	1.98	0.44
1:C:287:VAL:HG11	1:C:299:MET:SD	2.58	0.44
1:A:83:LYS:O	1:A:83:LYS:HG3	2.17	0.44
1:A:131:ASN:ND2	1:A:141:ALA:HA	2.33	0.44
1:A:316:LEU:HB3	1:A:328:LEU:CD2	2.48	0.44
1:C:352:LEU:HD21	1:C:518:PHE:CZ	2.50	0.44
1:A:389:PRO:HG2	1:A:508:LEU:HD22	2.00	0.44
1:C:255:GLN:NE2	1:C:265:THR:HG23	2.32	0.44
1:A:338:GLY:HA3	1:A:559:ILE:CG1	2.48	0.44
1:A:241:GLN:NE2	1:A:329:PHE:CZ	2.86	0.44
1:A:303:THR:HG22	1:A:307:ARG:HD2	2.00	0.44
1:B:203:GLN:O	1:B:207:HIS:ND1	2.51	0.43
1:D:122:TYR:CE1	1:D:123:LEU:HD13	2.53	0.43
1:D:266:VAL:CG1	1:D:267:LYS:N	2.81	0.43
1:D:478:PHE:HZ	1:D:495:TYR:CB	2.31	0.43
1:C:568:ILE:HG13	1:C:572:VAL:CG2	2.47	0.43
1:C:266:VAL:HG13	1:C:267:LYS:N	2.32	0.43
1:B:125:ASP:O	1:B:128:PRO:HA	2.18	0.43
1:D:476:THR:OG1	1:D:480:GLU:HG3	2.16	0.43
1:B:293:GLY:HA2	1:B:299:MET:CE	2.48	0.43
1:C:91:TYR:CE2	1:C:95:HIS:NE2	2.86	0.43
1:D:308:GLU:OE1	1:D:308:GLU:HA	2.18	0.43
1:B:362:ASP:HB3	1:B:365:LEU:HG	1.99	0.43
1:C:185:ARG:HH21	1:C:438:ARG:HE	1.64	0.43
1:C:187:PHE:CE2	1:C:392:PRO:HA	2.52	0.43
1:C:210:PHE:CE1	1:C:382:ASN:CA	3.00	0.43
1:A:184:ARG:CB	1:A:439:ASN:HA	2.48	0.43
1:B:321:PRO:HG2	1:B:322:GLU:HG3	1.99	0.43
1:C:106:PRO:C	1:C:108:LEU:H	2.22	0.43
1:B:309:HIS:CD2	1:B:313:CYS:SG	3.11	0.43
1:D:421:GLN:O	1:D:422:PHE:HD1	2.00	0.43
1:D:34:ASN:HA	1:D:35:PRO:HD2	1.72	0.43
1:B:281:GLU:HA	1:B:284:GLN:HE21	1.83	0.43
1:C:203:GLN:O	1:C:207:HIS:ND1	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:116:VAL:HG23	1:C:117:LEU:N	2.33	0.43
1:C:495:TYR:CE2	1:C:502:GLU:HG3	2.53	0.43
1:C:37:CYS:O	1:C:39:ASN:ND2	2.51	0.43
1:A:253:LYS:NZ	1:A:253:LYS:HB2	2.32	0.43
1:C:453:ASP:HA	1:C:456:ARG:CD	2.40	0.43
1:D:40:PRO:CB	2:D:661:NAG:H5	2.47	0.43
1:B:150:ARG:NH1	1:B:150:ARG:HG2	2.32	0.43
1:A:243:LYS:O	1:A:269:THR:HB	2.17	0.43
1:C:85:THR:HG22	1:C:86:PRO:HD2	2.00	0.43
1:C:467:ARG:NH1	1:C:521:THR:OG1	2.51	0.43
1:B:176:GLU:HB3	1:B:494:LEU:HD21	1.99	0.43
1:B:43:ASN:ND2	1:B:64:PHE:CG	2.87	0.43
1:A:106:PRO:C	1:A:108:LEU:H	2.21	0.43
1:C:108:LEU:O	1:C:112:ILE:HG12	2.19	0.43
1:C:412:SER:OG	1:C:416:GLU:HG2	2.18	0.43
1:B:319:GLU:OE1	1:B:554:VAL:HG21	2.18	0.43
1:D:183:LEU:HD21	1:D:445:GLN:CB	2.48	0.43
1:D:442:ILE:HG22	1:D:442:ILE:O	2.18	0.43
1:C:447:VAL:HG13	3:C:682:HEM:HBA2	2.00	0.43
1:A:276:PRO:HD2	1:A:279:ILE:CD1	2.49	0.43
1:A:208:GLN:NE2	1:A:228:VAL:HG13	2.32	0.43
1:D:253:LYS:HE2	1:D:269:THR:CG2	2.49	0.43
1:C:43:ASN:O	1:C:44:ARG:CB	2.66	0.43
1:A:127:PRO:HA	1:A:128:PRO:HD2	1.74	0.43
1:B:402:TYR:OH	1:B:417:HIS:CE1	2.71	0.43
1:D:547:PRO:O	1:D:549:THR:N	2.47	0.43
1:C:176:GLU:O	1:C:180:LYS:HG3	2.18	0.43
1:A:479:GLU:HG2	1:A:485:LYS:NZ	2.34	0.43
1:B:123:LEU:H	1:B:123:LEU:HD22	1.84	0.43
1:A:352:LEU:HD23	4:A:701:S58:C10	2.48	0.43
1:B:495:TYR:CE2	1:B:502:GLU:HG3	2.54	0.43
1:B:43:ASN:HB2	1:B:69:CYS:O	2.19	0.43
1:D:414:LEU:HD11	1:D:419:LEU:HD22	2.01	0.43
1:A:244:LEU:O	1:A:253:LYS:HB2	2.18	0.43
1:B:106:PRO:C	1:B:108:LEU:H	2.22	0.43
1:A:301:TYR:HA	1:A:304:ILE:HG12	2.00	0.43
1:C:283:LEU:HD22	1:C:411:ASN:HB2	2.00	0.43
1:D:279:ILE:HG12	1:D:283:LEU:CD2	2.38	0.43
1:A:327:GLN:NE2	1:B:136:TYR:CD2	2.86	0.43
1:B:187:PHE:CD1	1:B:187:PHE:C	2.92	0.43
1:A:116:VAL:O	1:A:120:ARG:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:152:LEU:HD13	1:C:461:GLN:OE1	2.18	0.43
1:A:271:VAL:HG11	1:A:286:ALA:HB1	2.00	0.43
1:D:166:LYS:HD3	1:D:497:ASP:OD2	2.18	0.43
1:A:246:LEU:O	1:A:247:PHE:HB2	2.19	0.43
1:D:85:THR:CG2	1:D:87:ASN:HD22	2.32	0.43
1:B:226:HIS:ND1	1:B:376:ARG:HG3	2.34	0.43
1:C:457:GLU:C	1:C:459:LYS:H	2.22	0.43
1:C:241:GLN:NE2	1:C:329:PHE:CZ	2.87	0.43
1:B:381:PHE:CE1	1:B:529:PHE:HB2	2.54	0.43
1:B:120:ARG:O	1:B:123:LEU:HD23	2.19	0.43
1:A:387:TRP:HB3	1:A:390:LEU:HD12	2.01	0.43
1:C:295:VAL:HG12	1:C:297:GLY:H	1.83	0.43
1:B:38:SER:C	1:B:40:PRO:HD3	2.38	0.43
1:C:266:VAL:CG1	1:C:267:LYS:N	2.82	0.43
1:B:266:VAL:CG1	1:B:267:LYS:N	2.81	0.43
1:A:397:ILE:O	1:A:398:GLU:C	2.57	0.43
1:B:410:ASN:CG	1:B:413:ILE:HG13	2.39	0.43
1:D:206:THR:HG21	1:D:385:TYR:CD1	2.52	0.43
1:A:530:SER:O	1:A:534:LEU:HD13	2.19	0.43
1:D:245:ARG:HG2	1:D:247:PHE:H	1.84	0.43
1:D:295:VAL:HB	1:D:298:LEU:HD22	2.01	0.43
1:B:252:LEU:O	1:B:310:GLN:NE2	2.52	0.43
1:D:497:ASP:HB3	1:D:500:VAL:CG2	2.46	0.43
1:D:156:ALA:HB3	1:D:159:CYS:SG	2.58	0.42
1:B:509:VAL:HG13	1:B:509:VAL:O	2.19	0.42
1:C:150:ARG:HG2	1:C:152:LEU:O	2.19	0.42
1:D:116:VAL:HG23	1:D:117:LEU:N	2.34	0.42
1:B:335:ILE:HG12	1:B:550:PHE:HB3	2.01	0.42
1:B:287:VAL:HG11	1:B:299:MET:SD	2.59	0.42
1:C:176:GLU:HB3	1:C:494:LEU:HD21	2.01	0.42
1:C:412:SER:O	1:C:416:GLU:HB2	2.19	0.42
1:D:66:GLY:O	1:D:68:ASN:N	2.51	0.42
1:A:403:SER:O	1:A:404:PHE:C	2.56	0.42
1:C:276:PRO:CD	1:C:279:ILE:HD13	2.44	0.42
1:D:43:ASN:HB2	1:D:69:CYS:O	2.18	0.42
1:A:254:TYR:HD2	1:A:310:GLN:HE21	1.67	0.42
1:C:504:TYR:O	1:C:507:LEU:HB2	2.18	0.42
1:C:397:ILE:O	1:C:398:GLU:C	2.57	0.42
1:C:402:TYR:OH	1:C:417:HIS:CE1	2.72	0.42
1:A:543:GLN:NE2	1:B:127:PRO:O	2.51	0.42
1:D:421:GLN:O	1:D:422:PHE:CD1	2.72	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:303:THR:HG22	1:C:307:ARG:HD2	2.01	0.42
1:C:386:HIS:HE1	3:C:682:HEM:HAD2	1.82	0.42
4:C:701:S58:C11	4:C:701:S58:H10	2.50	0.42
1:D:120:ARG:HD2	4:D:701:S58:F2	2.10	0.42
1:D:232:HIS:CE1	1:D:233:ILE:HG13	2.54	0.42
1:B:152:LEU:HB2	1:B:466:TYR:OH	2.18	0.42
1:B:117:LEU:HA	1:B:117:LEU:HD12	1.77	0.42
1:D:295:VAL:HG12	1:D:297:GLY:H	1.83	0.42
1:B:43:ASN:O	1:B:44:ARG:CB	2.67	0.42
1:A:85:THR:CG2	1:A:87:ASN:HD22	2.32	0.42
1:D:305:TRP:O	1:D:308:GLU:N	2.52	0.42
1:D:74:PHE:HA	1:D:77:ARG:NE	2.34	0.42
1:C:387:TRP:O	1:C:390:LEU:HB2	2.19	0.42
1:A:320:HIS:HD2	1:B:49:SER:O	2.03	0.42
1:C:388:HIS:N	1:C:389:PRO:CD	2.81	0.42
1:B:527:ALA:N	1:B:528:PRO:CD	2.82	0.42
1:C:152:LEU:HD23	1:C:152:LEU:HA	1.75	0.42
1:B:255:GLN:HG3	1:B:255:GLN:O	2.19	0.42
1:A:127:PRO:O	1:B:543:GLN:NE2	2.52	0.42
1:D:402:TYR:HE1	1:D:417:HIS:HE1	1.67	0.42
1:C:85:THR:HG23	1:C:86:PRO:HD2	2.00	0.42
1:A:467:ARG:NH1	1:A:521:THR:OG1	2.51	0.42
1:C:382:ASN:HD21	3:C:682:HEM:CGD	2.33	0.42
1:B:124:ILE:HD11	1:B:528:PRO:HB3	2.00	0.42
1:B:172:PRO:HG2	1:B:495:TYR:CE1	2.55	0.42
1:C:213:ASP:HB2	1:C:222:ARG:HG2	2.02	0.42
1:A:362:ASP:HB3	1:A:365:LEU:HG	2.02	0.42
1:A:83:LYS:HE3	1:A:83:LYS:HB2	1.82	0.42
1:C:403:SER:O	1:C:404:PHE:C	2.58	0.42
1:B:308:GLU:OE1	1:B:308:GLU:HA	2.20	0.42
1:C:35:PRO:HG3	1:C:54:GLN:O	2.19	0.42
1:A:479:GLU:CG	1:A:485:LYS:HE3	2.39	0.42
1:B:396:ASN:HA	1:B:401:GLU:HA	2.02	0.42
1:C:531:LEU:HD11	4:C:701:S58:F2	2.10	0.42
1:B:388:HIS:N	1:B:389:PRO:CD	2.82	0.42
1:C:109:ARG:CZ	1:C:360:LYS:HB2	2.50	0.42
1:A:254:TYR:HD1	1:A:254:TYR:C	2.22	0.42
1:B:68:ASN:N	2:B:661:NAG:H82	2.30	0.42
1:A:248:LYS:HB3	1:A:248:LYS:HE2	1.87	0.42
1:B:397:ILE:O	1:B:398:GLU:C	2.57	0.42
1:C:559:ILE:N	1:C:559:ILE:HD12	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:257:ILE:HD12	1:A:262:TYR:CD2	2.55	0.42
1:B:206:THR:HG21	1:B:385:TYR:CD1	2.53	0.42
1:A:183:LEU:HD21	1:A:445:GLN:CB	2.50	0.42
1:B:502:GLU:HB2	1:B:505:PRO:HD2	2.02	0.42
1:A:253:LYS:HZ3	1:A:269:THR:HG21	1.84	0.42
1:D:582:VAL:O	1:D:583:GLN:HB2	2.19	0.42
1:C:156:ALA:HB3	1:C:159:CYS:SG	2.59	0.42
1:C:396:ASN:HB2	1:C:401:GLU:HG2	2.02	0.42
1:B:83:LYS:O	1:B:83:LYS:HG3	2.18	0.42
1:C:321:PRO:HG2	1:C:322:GLU:HG3	2.02	0.42
1:D:391:LEU:HB2	1:D:441:PRO:HG2	2.01	0.42
1:A:279:ILE:HA	1:A:280:PRO:HD2	1.77	0.42
1:B:478:PHE:CD2	1:B:491:LEU:HB3	2.55	0.42
1:A:244:LEU:C	1:A:253:LYS:HZ2	2.23	0.42
1:B:457:GLU:C	1:B:459:LYS:H	2.23	0.42
1:C:225:GLY:O	1:C:227:GLY:N	2.53	0.42
1:D:465:GLU:OE2	1:D:468:LYS:HE2	2.20	0.42
1:A:75:LEU:HA	1:A:78:ILE:HD12	2.01	0.42
1:C:433:ARG:HH21	1:C:512:PRO:CB	2.33	0.42
1:C:405:LYS:HD2	1:C:405:LYS:N	2.26	0.42
1:D:208:GLN:OE1	1:D:232:HIS:CD2	2.73	0.42
1:A:463:LEU:HD13	1:A:506:ALA:HB3	2.00	0.42
1:D:495:TYR:CE2	1:D:502:GLU:HG3	2.55	0.42
1:A:253:LYS:NZ	1:A:269:THR:CG2	2.83	0.42
1:D:83:LYS:HE3	1:D:83:LYS:HB2	1.75	0.42
1:A:92:ILE:HA	1:A:96:PHE:CE1	2.53	0.42
1:B:316:LEU:HA	1:B:316:LEU:HD12	1.82	0.42
1:A:137:LYS:O	1:A:138:SER:O	2.38	0.42
1:A:301:TYR:O	1:A:304:ILE:HB	2.20	0.42
1:C:225:GLY:O	1:C:226:HIS:C	2.58	0.42
1:D:281:GLU:HA	1:D:284:GLN:NE2	2.33	0.42
1:C:203:GLN:HB2	3:C:682:HEM:CMC	2.49	0.42
1:A:276:PRO:O	1:A:278:HIS:N	2.49	0.42
1:A:123:LEU:HD22	1:A:123:LEU:H	1.85	0.42
1:D:253:LYS:NZ	1:D:269:THR:CG2	2.83	0.42
1:A:150:ARG:HG2	1:A:152:LEU:O	2.20	0.42
1:C:244:LEU:O	1:C:253:LYS:HB2	2.20	0.42
1:A:176:GLU:O	1:A:494:LEU:HD11	2.20	0.42
1:C:547:PRO:O	1:C:549:THR:N	2.47	0.42
1:C:283:LEU:O	1:C:283:LEU:HD12	2.20	0.41
1:B:530:SER:O	1:B:534:LEU:HD22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:406:GLN:CG	2:B:681:NAG:O7	2.63	0.41
1:A:523:VAL:HG22	4:A:701:S58:C9	2.49	0.41
1:A:442:ILE:O	1:A:445:GLN:HG2	2.20	0.41
1:B:64:PHE:HD2	1:B:70:THR:O	2.03	0.41
1:D:166:LYS:NZ	1:D:499:ASP:OD2	2.52	0.41
1:D:85:THR:HG22	1:D:86:PRO:HD2	2.01	0.41
1:C:397:ILE:HA	1:C:425:SER:CB	2.50	0.41
1:B:420:THR:O	1:B:424:GLU:HG3	2.20	0.41
1:C:465:GLU:OE2	1:C:468:LYS:HE2	2.20	0.41
1:A:575:CYS:N	1:A:576:PRO:CD	2.82	0.41
1:C:184:ARG:CB	1:C:439:ASN:HA	2.50	0.41
1:B:283:LEU:HB2	1:B:411:ASN:CB	2.50	0.41
1:A:184:ARG:NH2	1:A:187:PHE:HA	2.34	0.41
1:A:208:GLN:NE2	1:A:228:VAL:HA	2.35	0.41
1:B:105:ASN:O	1:B:106:PRO:HD3	2.20	0.41
1:C:397:ILE:HG22	1:C:397:ILE:O	2.20	0.41
1:C:477:SER:H	1:C:480:GLU:HB2	1.85	0.41
1:C:92:ILE:HA	1:C:96:PHE:CE1	2.53	0.41
1:A:85:THR:HG23	1:A:86:PRO:HD2	2.02	0.41
1:D:311:ARG:O	1:D:315:ILE:HG13	2.20	0.41
1:D:352:LEU:HD21	1:D:518:PHE:CZ	2.53	0.41
1:D:64:PHE:CD2	1:D:70:THR:O	2.74	0.41
1:A:122:TYR:CE1	1:A:123:LEU:HD13	2.55	0.41
1:D:344:VAL:CG1	1:D:344:VAL:O	2.68	0.41
1:D:253:LYS:NZ	1:D:253:LYS:CB	2.84	0.41
1:B:45:GLY:HA3	1:B:69:CYS:SG	2.60	0.41
1:A:264:PRO:HG2	1:A:286:ALA:CB	2.50	0.41
1:B:213:ASP:OD1	1:B:215:LYS:HG2	2.20	0.41
1:A:139:TRP:CZ3	1:B:538:PRO:HG2	2.54	0.41
1:A:249:ASP:OD1	1:A:249:ASP:N	2.54	0.41
1:C:279:ILE:HG13	1:C:283:LEU:HD23	1.99	0.41
1:C:279:ILE:CG2	1:C:284:GLN:HG2	2.51	0.41
1:D:208:GLN:OE1	1:D:230:LEU:HA	2.20	0.41
1:C:424:GLU:CA	1:C:428:ARG:HH11	2.26	0.41
1:A:504:TYR:O	1:A:507:LEU:HB2	2.20	0.41
1:A:388:HIS:N	1:A:389:PRO:CD	2.83	0.41
1:D:193:GLY:O	1:D:582:VAL:N	2.53	0.41
1:D:421:GLN:HA	1:D:421:GLN:OE1	2.18	0.41
1:D:144:ASN:OD1	1:D:146:SER:HB2	2.20	0.41
1:A:225:GLY:O	1:A:227:GLY:N	2.53	0.41
1:C:181:VAL:HG12	1:C:182:LEU:HG	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:321:PRO:HG2	1:A:322:GLU:HG3	2.03	0.41
1:C:352:LEU:CD2	4:C:701:S58:H10	2.45	0.41
1:D:517:ILE:HG23	1:D:518:PHE:CD2	2.55	0.41
1:A:396:ASN:HB2	1:A:401:GLU:CG	2.46	0.41
1:D:495:TYR:O	1:D:496:SER:HB2	2.21	0.41
1:C:364:GLU:HA	1:C:367:PHE:CD2	2.56	0.41
1:A:90:HIS:NE2	4:A:701:S58:N3	2.69	0.41
1:C:527:ALA:N	1:C:528:PRO:CD	2.83	0.41
1:C:172:PRO:HG2	1:C:495:TYR:CE1	2.55	0.41
1:A:577:PHE:CE2	1:D:267:LYS:HD3	2.54	0.41
1:D:402:TYR:HE2	2:D:681:NAG:HO6	1.66	0.41
1:B:213:ASP:CG	1:B:216:ARG:HB2	2.40	0.41
1:D:85:THR:HG21	1:D:87:ASN:HD22	1.85	0.41
1:B:273:MET:HA	1:B:290:GLU:HG2	2.02	0.41
1:B:272:GLU:O	1:B:290:GLU:HG3	2.21	0.41
1:A:216:ARG:HH21	2:A:671:NAG:H3	1.85	0.41
1:C:319:GLU:OE1	1:C:554:VAL:HG21	2.19	0.41
1:C:247:PHE:HA	1:C:325:ASP:OD2	2.21	0.41
1:B:190:ASP:CG	1:B:192:GLN:H	2.24	0.41
1:B:478:PHE:CE2	1:B:495:TYR:HB2	2.55	0.41
1:D:205:PHE:CZ	1:D:344:VAL:HG21	2.56	0.41
1:D:253:LYS:O	1:D:306:LEU:HD11	2.21	0.41
1:D:226:HIS:CE1	1:D:376:ARG:HD2	2.56	0.41
1:A:350:GLN:HE22	1:A:359:LEU:H	1.69	0.41
1:D:51:GLY:O	1:D:52:PHE:HB2	2.21	0.41
1:C:184:ARG:HB3	1:C:439:ASN:C	2.40	0.41
1:A:323:TRP:HE3	1:A:328:LEU:HD23	1.85	0.41
1:B:530:SER:O	1:B:534:LEU:HD13	2.21	0.41
1:B:123:LEU:O	1:B:469:ARG:NH2	2.49	0.41
1:A:35:PRO:CG	1:A:54:GLN:O	2.68	0.41
1:A:495:TYR:CE2	1:A:502:GLU:HG3	2.55	0.41
1:D:243:LYS:O	1:D:269:THR:HB	2.21	0.41
1:D:176:GLU:O	1:D:180:LYS:HG3	2.21	0.41
1:C:319:GLU:CD	1:C:554:VAL:HG21	2.41	0.41
1:B:74:PHE:HA	1:B:77:ARG:NE	2.36	0.41
1:C:184:ARG:NH2	1:C:187:PHE:CD2	2.89	0.41
1:C:435:ALA:HB3	1:C:518:PHE:CA	2.46	0.41
1:B:283:LEU:HD12	1:B:283:LEU:O	2.21	0.41
1:B:190:ASP:HA	1:B:433:ARG:HB2	2.03	0.41
1:A:381:PHE:CD1	1:A:529:PHE:HB3	2.55	0.41
1:A:478:PHE:CE1	1:A:492:LYS:HA	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:176:GLU:O	1:B:494:LEU:HD11	2.20	0.41
1:A:419:LEU:O	1:A:422:PHE:HB2	2.20	0.41
1:D:502:GLU:HB2	1:D:505:PRO:HD2	2.02	0.41
1:A:127:PRO:HB2	1:B:543:GLN:HE22	1.86	0.41
1:C:463:LEU:HD22	1:C:506:ALA:CB	2.50	0.41
1:C:419:LEU:O	1:C:422:PHE:HB2	2.21	0.41
1:B:253:LYS:HB2	1:B:253:LYS:NZ	2.35	0.41
1:B:244:LEU:C	1:B:253:LYS:HZ2	2.24	0.41
1:B:226:HIS:HB3	1:B:376:ARG:HA	2.03	0.41
1:D:293:GLY:HA2	1:D:299:MET:CE	2.50	0.41
1:D:50:THR:HG21	1:D:56:LYS:HG3	2.03	0.41
1:C:300:MET:O	1:C:304:ILE:HG12	2.21	0.41
1:D:181:VAL:HG12	1:D:182:LEU:HG	2.02	0.41
1:B:255:GLN:HG2	1:B:262:TYR:O	2.21	0.41
1:B:266:VAL:HG13	1:B:267:LYS:N	2.35	0.41
1:B:213:ASP:HB2	1:B:222:ARG:HG2	2.03	0.41
1:D:287:VAL:HG11	1:D:299:MET:SD	2.61	0.41
1:B:402:TYR:HE1	1:B:417:HIS:HE1	1.67	0.41
1:B:319:GLU:CD	1:B:554:VAL:HG21	2.41	0.41
1:D:122:TYR:C	1:D:122:TYR:CD1	2.94	0.40
1:C:117:LEU:HD12	1:C:117:LEU:HA	1.86	0.40
1:C:123:LEU:HD22	1:C:123:LEU:H	1.85	0.40
1:A:116:VAL:HG23	1:A:117:LEU:N	2.35	0.40
1:A:503:LEU:O	1:A:507:LEU:HD12	2.21	0.40
1:B:487:MET:O	1:B:490:GLU:N	2.54	0.40
1:C:43:ASN:HB2	1:C:69:CYS:O	2.21	0.40
1:D:162:PRO:HG2	1:D:171:LEU:HD13	2.02	0.40
1:D:482:THR:CG2	1:D:509:VAL:HG22	2.50	0.40
1:B:255:GLN:NE2	1:B:265:THR:HG23	2.32	0.40
1:A:128:PRO:HG3	1:A:376:ARG:NH1	2.36	0.40
1:B:286:ALA:O	1:B:288:GLY:N	2.54	0.40
1:D:429:GLN:H	1:D:582:VAL:HG23	1.86	0.40
1:A:230:LEU:N	1:A:230:LEU:CD2	2.84	0.40
1:B:128:PRO:HG3	1:B:376:ARG:CZ	2.51	0.40
1:A:265:THR:OG1	1:A:268:ASP:HB2	2.21	0.40
1:A:155:VAL:HB	1:A:459:LYS:HZ2	1.86	0.40
1:C:450:ALA:O	1:C:454:GLN:HB2	2.20	0.40
1:A:203:GLN:O	1:A:207:HIS:ND1	2.55	0.40
1:A:65:TYR:N	1:A:65:TYR:CD1	2.88	0.40
1:C:198:PHE:HB2	1:C:580:PHE:HB3	2.03	0.40
1:D:433:ARG:HH21	1:D:512:PRO:CB	2.33	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:PHE:CD1	1:A:529:PHE:HB2	2.57	0.40
1:B:405:LYS:N	1:B:405:LYS:HD2	2.26	0.40
1:D:109:ARG:NH2	1:D:359:LEU:O	2.46	0.40
1:B:419:LEU:O	1:B:422:PHE:HB2	2.20	0.40
1:B:85:THR:CG2	1:B:87:ASN:HD22	2.34	0.40
1:A:429:GLN:H	1:A:582:VAL:HG23	1.86	0.40
1:D:272:GLU:O	1:D:290:GLU:HG3	2.22	0.40
1:C:559:ILE:H	1:C:559:ILE:HD12	1.86	0.40
1:A:99:VAL:O	1:A:102:ILE:N	2.55	0.40
4:B:701:S58:H10	4:B:701:S58:C11	2.51	0.40
1:B:184:ARG:CB	1:B:439:ASN:HA	2.52	0.40
1:D:396:ASN:HA	1:D:401:GLU:HA	2.03	0.40
1:C:116:VAL:O	1:C:120:ARG:HB2	2.20	0.40
1:A:184:ARG:NH1	1:A:441:PRO:HG3	2.35	0.40
1:C:421:GLN:O	1:C:422:PHE:CD1	2.75	0.40
1:C:383:THR:CG2	1:C:384:LEU:N	2.83	0.40
1:D:106:PRO:C	1:D:108:LEU:H	2.24	0.40
1:B:477:SER:H	1:B:480:GLU:HB2	1.86	0.40
1:B:291:VAL:CG2	1:B:294:LEU:HD12	2.51	0.40
1:D:176:GLU:HB3	1:D:494:LEU:CD2	2.52	0.40
1:B:520:GLU:HG2	1:B:521:THR:N	2.37	0.40
1:C:554:VAL:HG23	1:C:554:VAL:H	1.67	0.40
1:B:111:LEU:HA	1:B:111:LEU:HD23	1.77	0.40
1:B:184:ARG:O	1:B:442:ILE:HD11	2.21	0.40
1:D:479:GLU:HG2	1:D:485:LYS:NZ	2.36	0.40
1:D:485:LYS:HA	1:D:485:LYS:HD3	1.92	0.40
1:C:122:TYR:C	1:C:122:TYR:CD1	2.95	0.40
1:B:504:TYR:O	1:B:507:LEU:HB2	2.21	0.40
1:D:245:ARG:HG2	1:D:246:LEU:N	2.37	0.40
1:B:230:LEU:N	1:B:230:LEU:HD23	2.37	0.40
1:B:429:GLN:H	1:B:582:VAL:HG23	1.86	0.40
1:C:397:ILE:HA	1:C:425:SER:HB3	2.03	0.40
1:D:559:ILE:HD12	1:D:559:ILE:N	2.37	0.40
1:B:384:LEU:C	1:B:384:LEU:HD12	2.42	0.40
1:D:75:LEU:HA	1:D:78:ILE:HD12	2.02	0.40
1:A:203:GLN:NE2	1:A:298:LEU:HD13	2.36	0.40
1:A:319:GLU:OE1	1:A:554:VAL:HG21	2.22	0.40
1:D:33:ALA:O	1:D:34:ASN:C	2.60	0.40
1:D:283:LEU:HA	1:D:411:ASN:OD1	2.21	0.40
1:D:442:ILE:O	1:D:445:GLN:HG2	2.21	0.40
1:B:283:LEU:O	1:B:285:PHE:CD1	2.75	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:45:GLY:HA3	1:A:69:CYS:SG	2.62	0.40
1:C:85:THR:HG21	1:C:87:ASN:HD22	1.87	0.40
1:C:397:ILE:HD11	1:C:426:PHE:CE1	2.56	0.40
1:C:108:LEU:HA	1:C:108:LEU:HD23	1.97	0.40
1:D:125:ASP:O	1:D:128:PRO:HA	2.21	0.40
1:C:313:CYS:O	1:C:317:LYS:HB2	2.21	0.40
1:A:194:SER:OG	1:A:351:HIS:HE1	2.05	0.40
1:B:201:PHE:HD2	1:B:301:TYR:CZ	2.39	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	550/587 (94%)	439 (80%)	86 (16%)	25 (4%)	3	18
1	B	550/587 (94%)	438 (80%)	85 (16%)	27 (5%)	3	16
1	C	550/587 (94%)	439 (80%)	84 (15%)	27 (5%)	3	16
1	D	550/587 (94%)	444 (81%)	78 (14%)	28 (5%)	2	15
All	All	2200/2348 (94%)	1760 (80%)	333 (15%)	107 (5%)	3	16

All (107) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	67	GLU
1	A	138	SER
1	A	226	HIS
1	A	270	GLN
1	A	284	GLN
1	A	292	PHE
1	A	356	HIS

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Mol	Chain	Res	Type
1	A	398	GLU
1	A	514	PRO
1	A	573	LYS
1	B	67	GLU
1	B	138	SER
1	B	226	HIS
1	B	270	GLN
1	B	284	GLN
1	B	287	VAL
1	B	292	PHE
1	B	356	HIS
1	B	514	PRO
1	B	573	LYS
1	C	67	GLU
1	C	138	SER
1	C	226	HIS
1	C	270	GLN
1	C	284	GLN
1	C	292	PHE
1	C	356	HIS
1	C	398	GLU
1	C	514	PRO
1	C	573	LYS
1	C	575	CYS
1	D	67	GLU
1	D	138	SER
1	D	226	HIS
1	D	270	GLN
1	D	284	GLN
1	D	287	VAL
1	D	292	PHE
1	D	356	HIS
1	D	398	GLU
1	D	514	PRO
1	D	573	LYS
1	A	278	HIS
1	A	287	VAL
1	A	575	CYS
1	A	582	VAL
1	B	144	ASN
1	B	278	HIS
1	B	280	PRO

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Mol	Chain	Res	Type
1	B	290	GLU
1	B	398	GLU
1	B	422	PHE
1	B	575	CYS
1	B	582	VAL
1	C	144	ASN
1	C	278	HIS
1	C	287	VAL
1	C	422	PHE
1	C	582	VAL
1	D	144	ASN
1	D	278	HIS
1	D	280	PRO
1	D	400	GLN
1	D	422	PHE
1	D	575	CYS
1	D	582	VAL
1	A	144	ASN
1	A	280	PRO
1	A	422	PHE
1	A	547	PRO
1	B	49	SER
1	B	81	LEU
1	B	547	PRO
1	C	81	LEU
1	C	280	PRO
1	C	290	GLU
1	D	81	LEU
1	D	429	GLN
1	A	81	LEU
1	B	212	THR
1	B	400	GLN
1	C	429	GLN
1	C	547	PRO
1	D	547	PRO
1	A	212	THR
1	A	290	GLU
1	A	400	GLN
1	A	429	GLN
1	B	107	PHE
1	C	400	GLN
1	C	458	MET

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Mol	Chain	Res	Type
1	D	496	SER
1	B	228	VAL
1	B	277	PRO
1	C	49	SER
1	D	499	ASP
1	A	277	PRO
1	C	228	VAL
1	D	259	GLY
1	A	228	VAL
1	C	277	PRO
1	D	228	VAL
1	D	277	PRO
1	C	51	GLY
1	B	259	GLY
1	D	51	GLY
1	D	554	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	493/525 (94%)	422 (86%)	71 (14%)	4 18
1	B	493/525 (94%)	411 (83%)	82 (17%)	3 13
1	C	493/525 (94%)	423 (86%)	70 (14%)	4 19
1	D	493/525 (94%)	418 (85%)	75 (15%)	3 16
All	All	1972/2100 (94%)	1674 (85%)	298 (15%)	3 17

All (298) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	39	ASN
1	A	48	MET
1	A	49	SER
1	A	71	THR
1	A	74	PHE

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Mol	Chain	Res	Type
1	A	82	LEU
1	A	83	LYS
1	A	105	ASN
1	A	117	LEU
1	A	120	ARG
1	A	122	TYR
1	A	127	PRO
1	A	136	TYR
1	A	138	SER
1	A	150	ARG
1	A	157	ASP
1	A	178	LEU
1	A	181	VAL
1	A	197	MET
1	A	209	PHE
1	A	216	ARG
1	A	230	LEU
1	A	231	ASN
1	A	232	HIS
1	A	238	LEU
1	A	249	ASP
1	A	252	LEU
1	A	253	LYS
1	A	254	TYR
1	A	283	LEU
1	A	289	GLN
1	A	298	LEU
1	A	300	MET
1	A	301	TYR
1	A	310	GLN
1	A	316	LEU
1	A	322	GLU
1	A	326	GLU
1	A	356	HIS
1	A	368	ASN
1	A	376	ARG
1	A	379	SER
1	A	380	GLU
1	A	383	THR
1	A	384	LEU
1	A	385	TYR
1	A	389	PRO

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Mol	Chain	Res	Type
1	A	394	THR
1	A	409	TYR
1	A	412	SER
1	A	419	LEU
1	A	420	THR
1	A	422	PHE
1	A	428	ARG
1	A	459	LYS
1	A	469	ARG
1	A	479	GLU
1	A	480	GLU
1	A	484	GLU
1	A	486	GLU
1	A	510	GLU
1	A	514	PRO
1	A	518	PHE
1	A	520	GLU
1	A	530	SER
1	A	534	LEU
1	A	543	GLN
1	A	564	ILE
1	A	569	CYS
1	A	577	PHE
1	A	578	THR
1	B	38	SER
1	B	39	ASN
1	B	48	MET
1	B	49	SER
1	B	53	ASP
1	B	54	GLN
1	B	71	THR
1	B	74	PHE
1	B	82	LEU
1	B	83	LYS
1	B	94	THR
1	B	105	ASN
1	B	117	LEU
1	B	120	ARG
1	B	122	TYR
1	B	127	PRO
1	B	136	TYR
1	B	138	SER

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Mol	Chain	Res	Type
1	B	150	ARG
1	B	157	ASP
1	B	178	LEU
1	B	181	VAL
1	B	197	MET
1	B	209	PHE
1	B	216	ARG
1	B	230	LEU
1	B	231	ASN
1	B	238	LEU
1	B	248	LYS
1	B	249	ASP
1	B	252	LEU
1	B	253	LYS
1	B	254	TYR
1	B	271	VAL
1	B	279	ILE
1	B	283	LEU
1	B	289	GLN
1	B	298	LEU
1	B	300	MET
1	B	301	TYR
1	B	310	GLN
1	B	316	LEU
1	B	318	GLN
1	B	322	GLU
1	B	326	GLU
1	B	352	LEU
1	B	356	HIS
1	B	368	ASN
1	B	369	GLN
1	B	374	GLN
1	B	376	ARG
1	B	379	SER
1	B	380	GLU
1	B	383	THR
1	B	384	LEU
1	B	385	TYR
1	B	389	PRO
1	B	394	THR
1	B	409	TYR
1	B	412	SER

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Mol	Chain	Res	Type
1	B	419	LEU
1	B	420	THR
1	B	422	PHE
1	B	428	ARG
1	B	438	ARG
1	B	459	LYS
1	B	462	SER
1	B	469	ARG
1	B	479	GLU
1	B	480	GLU
1	B	484	GLU
1	B	486	GLU
1	B	514	PRO
1	B	518	PHE
1	B	520	GLU
1	B	530	SER
1	B	534	LEU
1	B	543	GLN
1	B	564	ILE
1	B	569	CYS
1	B	577	PHE
1	B	578	THR
1	C	39	ASN
1	C	49	SER
1	C	71	THR
1	C	72	PRO
1	C	74	PHE
1	C	82	LEU
1	C	83	LYS
1	C	105	ASN
1	C	117	LEU
1	C	120	ARG
1	C	122	TYR
1	C	127	PRO
1	C	136	TYR
1	C	150	ARG
1	C	157	ASP
1	C	178	LEU
1	C	197	MET
1	C	209	PHE
1	C	215	LYS
1	C	216	ARG

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Mol	Chain	Res	Type
1	C	230	LEU
1	C	231	ASN
1	C	238	LEU
1	C	252	LEU
1	C	253	LYS
1	C	254	TYR
1	C	283	LEU
1	C	289	GLN
1	C	298	LEU
1	C	300	MET
1	C	301	TYR
1	C	310	GLN
1	C	316	LEU
1	C	318	GLN
1	C	322	GLU
1	C	326	GLU
1	C	352	LEU
1	C	356	HIS
1	C	368	ASN
1	C	374	GLN
1	C	376	ARG
1	C	379	SER
1	C	380	GLU
1	C	383	THR
1	C	384	LEU
1	C	385	TYR
1	C	389	PRO
1	C	394	THR
1	C	409	TYR
1	C	412	SER
1	C	419	LEU
1	C	420	THR
1	C	422	PHE
1	C	459	LYS
1	C	469	ARG
1	C	479	GLU
1	C	480	GLU
1	C	484	GLU
1	C	486	GLU
1	C	514	PRO
1	C	518	PHE
1	C	520	GLU

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Mol	Chain	Res	Type
1	C	530	SER
1	C	534	LEU
1	C	543	GLN
1	C	564	ILE
1	C	569	CYS
1	C	577	PHE
1	C	578	THR
1	C	582	VAL
1	D	39	ASN
1	D	48	MET
1	D	49	SER
1	D	71	THR
1	D	72	PRO
1	D	74	PHE
1	D	82	LEU
1	D	83	LYS
1	D	94	THR
1	D	105	ASN
1	D	117	LEU
1	D	120	ARG
1	D	122	TYR
1	D	127	PRO
1	D	136	TYR
1	D	150	ARG
1	D	157	ASP
1	D	178	LEU
1	D	197	MET
1	D	209	PHE
1	D	216	ARG
1	D	230	LEU
1	D	231	ASN
1	D	238	LEU
1	D	241	GLN
1	D	249	ASP
1	D	252	LEU
1	D	253	LYS
1	D	254	TYR
1	D	279	ILE
1	D	283	LEU
1	D	289	GLN
1	D	298	LEU
1	D	300	MET

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Mol	Chain	Res	Type
1	D	301	TYR
1	D	310	GLN
1	D	316	LEU
1	D	318	GLN
1	D	322	GLU
1	D	326	GLU
1	D	352	LEU
1	D	356	HIS
1	D	374	GLN
1	D	376	ARG
1	D	379	SER
1	D	380	GLU
1	D	383	THR
1	D	384	LEU
1	D	385	TYR
1	D	389	PRO
1	D	394	THR
1	D	409	TYR
1	D	412	SER
1	D	419	LEU
1	D	420	THR
1	D	422	PHE
1	D	428	ARG
1	D	441	PRO
1	D	459	LYS
1	D	469	ARG
1	D	479	GLU
1	D	480	GLU
1	D	484	GLU
1	D	486	GLU
1	D	510	GLU
1	D	514	PRO
1	D	518	PHE
1	D	520	GLU
1	D	530	SER
1	D	534	LEU
1	D	543	GLN
1	D	564	ILE
1	D	569	CYS
1	D	577	PHE
1	D	578	THR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (71) such

sidechains are listed below:

Mol	Chain	Res	Type
1	A	39	ASN
1	A	43	ASN
1	A	87	ASN
1	A	95	HIS
1	A	101	ASN
1	A	203	GLN
1	A	255	GLN
1	A	278	HIS
1	A	282	ASN
1	A	284	GLN
1	A	318	GLN
1	A	320	HIS
1	A	327	GLN
1	A	350	GLN
1	A	351	HIS
1	A	417	HIS
1	A	461	GLN
1	A	464	ASN
1	A	583	GLN
1	B	39	ASN
1	B	43	ASN
1	B	87	ASN
1	B	95	HIS
1	B	101	ASN
1	B	203	GLN
1	B	255	GLN
1	B	278	HIS
1	B	284	GLN
1	B	318	GLN
1	B	320	HIS
1	B	327	GLN
1	B	350	GLN
1	B	351	HIS
1	B	382	ASN
1	B	417	HIS
1	B	461	GLN
1	B	464	ASN
1	C	39	ASN
1	C	43	ASN
1	C	87	ASN
1	C	95	HIS
1	C	101	ASN

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Mol	Chain	Res	Type
1	C	203	GLN
1	C	255	GLN
1	C	278	HIS
1	C	282	ASN
1	C	284	GLN
1	C	318	GLN
1	C	320	HIS
1	C	327	GLN
1	C	350	GLN
1	C	351	HIS
1	C	382	ASN
1	C	417	HIS
1	C	461	GLN
1	C	464	ASN
1	D	39	ASN
1	D	43	ASN
1	D	87	ASN
1	D	101	ASN
1	D	203	GLN
1	D	255	GLN
1	D	278	HIS
1	D	282	ASN
1	D	284	GLN
1	D	318	GLN
1	D	327	GLN
1	D	350	GLN
1	D	417	HIS
1	D	461	GLN
1	D	464	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

20 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	NAG	A	661	1	14,14,15	0.73	0	15,19,21	0.92	1 (6%)
2	NAG	A	671	1	14,14,15	0.54	0	15,19,21	1.22	2 (13%)
2	NAG	A	681	1	14,14,15	0.80	0	15,19,21	0.93	1 (6%)
3	HEM	A	682	1	30,50,50	2.83	9 (30%)	24,82,82	2.02	6 (25%)
4	S58	A	701	-	27,28,28	2.49	6 (22%)	40,43,43	1.69	7 (17%)
2	NAG	B	661	1	14,14,15	0.61	0	15,19,21	0.95	1 (6%)
2	NAG	B	671	1	14,14,15	0.59	0	15,19,21	0.95	1 (6%)
2	NAG	B	681	1	14,14,15	0.67	0	15,19,21	0.67	0
3	HEM	B	682	1	30,50,50	3.19	10 (33%)	24,82,82	2.08	7 (29%)
4	S58	B	701	-	27,28,28	2.60	8 (29%)	40,43,43	1.70	9 (22%)
2	NAG	C	661	1	14,14,15	0.90	0	15,19,21	0.82	1 (6%)
2	NAG	C	671	1	14,14,15	0.87	1 (7%)	15,19,21	1.20	2 (13%)
2	NAG	C	681	1	14,14,15	0.85	0	15,19,21	0.72	0
3	HEM	C	682	1	30,50,50	2.85	7 (23%)	24,82,82	2.02	6 (25%)
4	S58	C	701	-	27,28,28	2.61	8 (29%)	40,43,43	1.53	7 (17%)
2	NAG	D	661	1	14,14,15	0.61	0	15,19,21	0.84	1 (6%)
2	NAG	D	671	1	14,14,15	0.60	0	15,19,21	1.26	2 (13%)
2	NAG	D	681	1	14,14,15	0.54	0	15,19,21	0.85	0
3	HEM	D	682	1	30,50,50	2.90	9 (30%)	24,82,82	2.01	6 (25%)
4	S58	D	701	-	27,28,28	2.70	9 (33%)	40,43,43	1.69	9 (22%)

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	NAG	A	661	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	A	671	1	-	0/6/23/26	0/1/1/1
2	NAG	A	681	1	-	0/6/23/26	0/1/1/1
3	HEM	A	682	1	-	0/10/54/54	0/0/8/8
4	S58	A	701	-	-	0/20/20/20	0/3/3/3
2	NAG	B	661	1	-	0/6/23/26	0/1/1/1
2	NAG	B	671	1	-	0/6/23/26	0/1/1/1
2	NAG	B	681	1	-	0/6/23/26	0/1/1/1
3	HEM	B	682	1	-	0/10/54/54	0/0/8/8
4	S58	B	701	-	-	0/20/20/20	0/3/3/3
2	NAG	C	661	1	-	0/6/23/26	0/1/1/1
2	NAG	C	671	1	-	0/6/23/26	0/1/1/1
2	NAG	C	681	1	-	0/6/23/26	0/1/1/1
3	HEM	C	682	1	-	0/10/54/54	0/0/8/8
4	S58	C	701	-	-	0/20/20/20	0/3/3/3
2	NAG	D	661	1	-	0/6/23/26	0/1/1/1
2	NAG	D	671	1	-	0/6/23/26	0/1/1/1
2	NAG	D	681	1	-	0/6/23/26	0/1/1/1
3	HEM	D	682	1	-	0/10/54/54	0/0/8/8
4	S58	D	701	-	-	0/20/20/20	0/3/3/3

All (67) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	682	HEM	C3B-C4B	-9.69	1.43	1.51
3	C	682	HEM	C3B-C4B	-7.55	1.45	1.51
3	B	682	HEM	C3B-CAB	-7.43	1.37	1.51
3	D	682	HEM	C3B-C4B	-6.94	1.45	1.51
3	D	682	HEM	C3B-CAB	-6.83	1.38	1.51
3	B	682	HEM	C3C-CAC	-6.66	1.38	1.51
3	A	682	HEM	C3B-C4B	-6.64	1.45	1.51
3	D	682	HEM	C2D-C3D	-6.46	1.35	1.54
3	A	682	HEM	C3B-CAB	-6.42	1.39	1.51
3	D	682	HEM	C3C-CAC	-6.40	1.39	1.51
3	A	682	HEM	C2D-C3D	-6.33	1.35	1.54
3	C	682	HEM	C3C-CAC	-6.33	1.39	1.51
3	C	682	HEM	C3B-CAB	-6.27	1.39	1.51
3	C	682	HEM	C2D-C3D	-6.17	1.36	1.54
3	B	682	HEM	C2D-C3D	-6.11	1.36	1.54
3	A	682	HEM	C3C-CAC	-6.04	1.40	1.51
3	A	682	HEM	C3D-C4D	-5.30	1.44	1.51
3	B	682	HEM	C3D-C4D	-5.22	1.44	1.51
3	C	682	HEM	C3D-C4D	-5.14	1.45	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	682	HEM	C3D-C4D	-4.88	1.45	1.51
3	D	682	HEM	C2C-C1C	-4.76	1.43	1.52
4	B	701	S58	BR1-C14	-4.52	1.80	1.90
3	B	682	HEM	C2C-C1C	-4.30	1.44	1.52
3	A	682	HEM	C2C-C1C	-4.10	1.44	1.52
3	C	682	HEM	C2C-C1C	-4.08	1.44	1.52
4	C	701	S58	C3-N2	-4.07	1.28	1.33
4	D	701	S58	C3-N2	-4.02	1.29	1.33
4	B	701	S58	C3-N2	-3.85	1.29	1.33
4	B	701	S58	C4-C3	-3.31	1.45	1.50
4	A	701	S58	C5-N1	-3.12	1.37	1.44
4	D	701	S58	C5-N1	-2.80	1.38	1.44
4	B	701	S58	C5-N1	-2.79	1.38	1.44
4	D	701	S58	C1-C2	-2.65	1.34	1.39
3	A	682	HEM	C2D-C1D	-2.56	1.43	1.51
4	A	701	S58	BR1-C14	-2.38	1.85	1.90
4	A	701	S58	C3-N2	-2.34	1.31	1.33
3	B	682	HEM	C2B-C1B	-2.10	1.45	1.51
3	D	682	HEM	C2D-C1D	-2.05	1.45	1.51
4	C	701	S58	C5-N1	-2.04	1.39	1.44
3	B	682	HEM	C2D-C1D	-2.02	1.45	1.51
3	D	682	HEM	CBB-CAB	2.01	1.41	1.29
4	C	701	S58	C8-S1	2.02	1.80	1.77
4	B	701	S58	N2-N1	2.06	1.43	1.39
4	D	701	S58	N2-N1	2.07	1.43	1.39
3	D	682	HEM	C1C-NC	2.15	1.38	1.36
4	C	701	S58	O1-S1	2.19	1.47	1.43
4	D	701	S58	C13-C12	2.27	1.42	1.38
3	B	682	HEM	CBB-CAB	2.30	1.42	1.29
2	C	671	NAG	C1-C2	2.38	1.55	1.52
3	B	682	HEM	CBC-CAC	2.40	1.43	1.29
4	C	701	S58	C6-C5	2.55	1.42	1.38
3	A	682	HEM	C4C-NC	2.55	1.39	1.36
4	D	701	S58	C16-C15	2.60	1.43	1.38
4	B	701	S58	C8-S1	2.72	1.81	1.77
3	C	682	HEM	CBB-CAB	2.72	1.45	1.29
4	C	701	S58	N2-N1	2.87	1.45	1.39
3	A	682	HEM	CBC-CAC	2.97	1.46	1.29
4	D	701	S58	C8-S1	3.82	1.82	1.77
4	A	701	S58	C8-S1	3.85	1.82	1.77
4	B	701	S58	C1-C3	6.50	1.48	1.39
4	C	701	S58	S1-N3	6.92	1.75	1.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	701	S58	S1-N3	7.04	1.76	1.60
4	B	701	S58	S1-N3	7.12	1.76	1.60
4	D	701	S58	S1-N3	7.22	1.76	1.60
4	A	701	S58	C1-C3	7.46	1.49	1.39
4	D	701	S58	C1-C3	8.00	1.50	1.39
4	C	701	S58	C1-C3	8.05	1.50	1.39

All (69) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	701	S58	O2-S1-O1	-6.47	109.71	118.80
4	B	701	S58	O2-S1-O1	-6.25	110.02	118.80
4	D	701	S58	O2-S1-O1	-5.99	110.38	118.80
4	C	701	S58	O2-S1-O1	-5.16	111.55	118.80
2	D	671	NAG	C2-N2-C7	-3.46	118.59	123.04
2	A	671	NAG	C2-N2-C7	-3.38	118.69	123.04
2	C	671	NAG	C2-N2-C7	-3.27	118.84	123.04
4	B	701	S58	F2-C4-C3	-2.93	107.35	112.55
2	B	671	NAG	C2-N2-C7	-2.76	119.49	123.04
4	B	701	S58	F1-C4-C3	-2.69	107.78	112.55
2	B	661	NAG	C2-N2-C7	-2.66	119.62	123.04
4	A	701	S58	F3-C4-C3	-2.61	107.92	112.55
4	D	701	S58	F1-C4-C3	-2.54	108.05	112.55
2	C	661	NAG	C2-N2-C7	-2.50	119.83	123.04
2	A	681	NAG	C2-N2-C7	-2.46	119.88	123.04
4	C	701	S58	F1-C4-C3	-2.32	108.43	112.55
4	D	701	S58	C1-C2-C11	-2.30	124.30	128.12
4	C	701	S58	C1-C3-N2	-2.28	107.94	111.53
2	D	661	NAG	C2-N2-C7	-2.25	120.14	123.04
3	B	682	HEM	CMA-C3A-C4A	-2.25	124.64	128.36
4	A	701	S58	C1-C3-N2	-2.24	108.01	111.53
4	C	701	S58	F3-C4-C3	-2.24	108.58	112.55
4	D	701	S58	C1-C3-N2	-2.21	108.07	111.53
4	B	701	S58	C5-N1-C2	-2.21	127.97	130.11
4	D	701	S58	C5-N1-C2	-2.18	128.00	130.11
4	A	701	S58	C1-C2-C11	-2.15	124.54	128.12
4	B	701	S58	C1-C2-C11	-2.11	124.61	128.12
2	A	661	NAG	C2-N2-C7	-2.06	120.39	123.04
2	C	671	NAG	C1-O5-C5	2.03	114.83	112.25
4	B	701	S58	C11-C2-N1	2.09	126.84	123.23
2	D	671	NAG	C1-O5-C5	2.13	114.95	112.25
2	A	671	NAG	C1-O5-C5	2.13	114.95	112.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	701	S58	O1-S1-N3	2.14	110.05	107.28
4	C	701	S58	O1-S1-N3	2.26	110.21	107.28
4	B	701	S58	O2-S1-N3	2.27	110.22	107.28
4	D	701	S58	C11-C2-N1	2.28	127.18	123.23
4	C	701	S58	O2-S1-N3	2.34	110.31	107.28
4	A	701	S58	O2-S1-N3	2.39	110.37	107.28
4	C	701	S58	C4-C3-N2	2.41	122.68	119.65
4	D	701	S58	O2-S1-N3	2.65	110.72	107.28
3	D	682	HEM	CMD-C2D-C3D	2.72	126.36	114.35
3	B	682	HEM	C2D-C3D-C4D	2.81	106.27	101.50
3	D	682	HEM	C2D-C3D-C4D	2.82	106.29	101.50
3	B	682	HEM	CMD-C2D-C3D	2.86	126.99	114.35
4	A	701	S58	C4-C3-N2	2.93	123.33	119.65
4	B	701	S58	O1-S1-N3	2.99	111.15	107.28
3	A	682	HEM	CMD-C2D-C3D	3.00	127.64	114.35
3	C	682	HEM	CMD-C2D-C3D	3.02	127.71	114.35
3	C	682	HEM	C2D-C3D-C4D	3.21	106.94	101.50
3	B	682	HEM	CAD-C3D-C4D	3.29	124.08	112.47
3	A	682	HEM	C2D-C3D-C4D	3.38	107.23	101.50
4	D	701	S58	C4-C3-N2	3.47	124.02	119.65
4	B	701	S58	C4-C3-N2	3.51	124.06	119.65
3	C	682	HEM	CAD-C3D-C4D	3.52	124.89	112.47
3	A	682	HEM	CAD-C3D-C4D	3.63	125.26	112.47
4	A	701	S58	O1-S1-N3	3.65	112.01	107.28
3	A	682	HEM	CMB-C2B-C3B	3.82	126.07	116.53
3	D	682	HEM	CAD-C3D-C4D	3.85	126.04	112.47
3	C	682	HEM	CMB-C2B-C3B	3.92	126.31	116.53
3	D	682	HEM	CMB-C2B-C3B	3.92	126.32	116.53
3	B	682	HEM	CMB-C2B-C3B	4.12	126.83	116.53
3	B	682	HEM	CMC-C2C-C3C	4.45	127.65	116.53
3	A	682	HEM	CAD-C3D-C2D	4.49	126.12	113.22
3	D	682	HEM	CAD-C3D-C2D	4.53	126.23	113.22
3	A	682	HEM	CMC-C2C-C3C	4.61	128.03	116.53
3	D	682	HEM	CMC-C2C-C3C	4.67	128.19	116.53
3	C	682	HEM	CMC-C2C-C3C	4.72	128.31	116.53
3	C	682	HEM	CAD-C3D-C2D	4.86	127.18	113.22
3	B	682	HEM	CAD-C3D-C2D	5.23	128.26	113.22

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

14 monomers are involved in 68 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	671	NAG	1	0
3	A	682	HEM	3	0
4	A	701	S58	9	0
2	B	661	NAG	2	0
2	B	681	NAG	4	0
3	B	682	HEM	6	0
4	B	701	S58	5	0
2	C	661	NAG	1	0
3	C	682	HEM	7	0
4	C	701	S58	11	0
2	D	661	NAG	5	0
2	D	681	NAG	2	0
3	D	682	HEM	5	0
4	D	701	S58	7	0

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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^2)	Q<0.9
1	A	552/587 (94%)	-0.53	0 100 100	2, 6, 16, 30	0
1	B	552/587 (94%)	-0.56	1 (0%) 95 87	2, 6, 16, 27	0
1	C	552/587 (94%)	-0.53	0 100 100	2, 6, 16, 26	0
1	D	552/587 (94%)	-0.50	1 (0%) 95 87	2, 7, 17, 30	0
All	All	2208/2348 (94%)	-0.53	2 (0%) 95 90	2, 6, 16, 30	0

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	105	ASN	2.6
1	B	583	GLN	2.1

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^{th} 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^2)	Q<0.9
2	NAG	C	661	14/15	0.80	0.31	6.62	12,17,21,22	0
2	NAG	A	661	14/15	0.80	0.30	5.08	12,17,20,21	0
2	NAG	D	681	14/15	0.84	0.43	4.83	12,17,20,24	0
2	NAG	D	661	14/15	0.88	0.31	4.55	15,17,19,21	0
2	NAG	B	681	14/15	0.80	0.30	2.63	11,17,22,24	0
2	NAG	B	661	14/15	0.89	0.30	2.61	15,17,19,20	0
2	NAG	C	681	14/15	0.85	0.29	1.93	11,17,21,22	0
3	HEM	B	682	43/43	0.94	0.18	0.51	2,3,7,9	0
2	NAG	A	681	14/15	0.89	0.23	0.32	7,17,18,21	0
3	HEM	D	682	43/43	0.94	0.17	0.07	2,3,7,9	0
3	HEM	A	682	43/43	0.94	0.17	-0.06	2,3,8,10	0
2	NAG	A	671	14/15	0.93	0.16	-0.31	4,12,17,17	0
2	NAG	D	671	14/15	0.92	0.15	-0.33	5,11,17,17	0
2	NAG	C	671	14/15	0.92	0.15	-0.47	7,13,17,17	0
2	NAG	B	671	14/15	0.93	0.17	-0.50	5,12,17,17	0
4	S58	C	701	26/26	0.97	0.13	-0.71	2,8,15,17	0
4	S58	A	701	26/26	0.98	0.13	-0.78	2,9,15,17	0
4	S58	D	701	26/26	0.97	0.12	-0.90	2,8,13,17	0
3	HEM	C	682	43/43	0.96	0.14	-0.91	2,3,7,8	0
4	S58	B	701	26/26	0.98	0.12	-1.45	2,8,14,17	0

6.5 Other polymers (i)

There are no such residues in this entry.