Full wwPDB X-ray Structure Validation Report ⓘ

May 27, 2024 – 09:19 PM EDT

PDB ID	:	6MF0
Title	:	Crystal Structure Determination of Human/Porcine Chimera Coagulation Factor VIII
Authors	:	Smith, I.W.; Spiegel, P.C.
Deposited on	:	2018-09-07
Resolution	:	3.20 Å(reported)

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

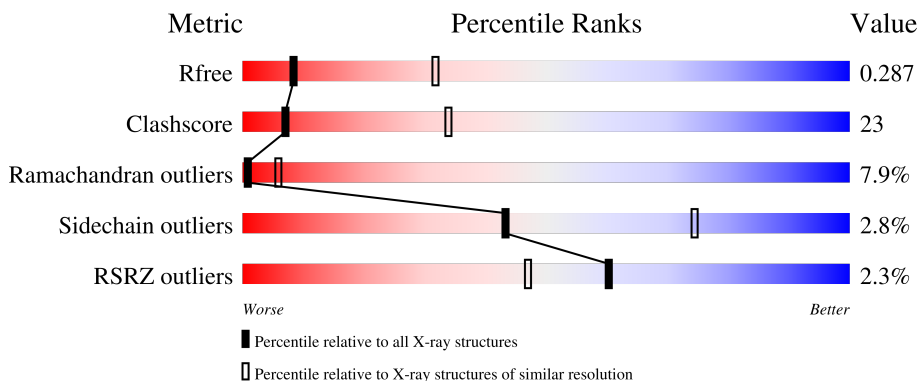|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1　Overall quality at a glance　ⓘ

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

The reported resolution of this entry is 3.20 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.
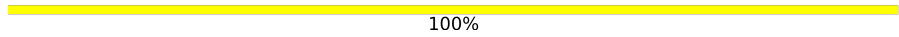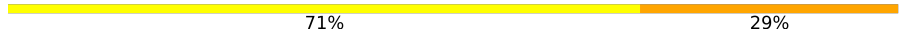
Metric	Percentile Ranks	Value
Rfree		0.287
Clashscore		23
Ramachandran outliers		7.9%
Sidechain outliers		2.8%
RSRZ outliers		2.3%

Worse .... *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	1133 (3.20-3.20)
Clashscore	141614	1253 (3.20-3.20)
Ramachandran outliers	138981	1234 (3.20-3.20)
Sidechain outliers	138945	1233 (3.20-3.20)
RSRZ outliers	127900	1095 (3.20-3.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	1467	·% / 46% 35% 5% 14%
1	B	1467	2% / 42% 38% 5% 15%
2	C	5	80% 20%
2	E	5	20% 60% 20%
2	F	5	20% 60% 20%

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WORLDWIDE wwPDB PROTEIN DATA BANK

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Mol	Chain	Length	Quality of chain
3	D	3	100%
4	G	7	71% / 29%
5	H	6	50% / 50%

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

| Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	NAG	C	2	-	-	-	X
2	BMA	C	3	-	-	-	X
2	MAN	C	4	-	-	-	X
2	MAN	C	5	-	-	-	X
2	BMA	F	3	-	-	-	X
2	MAN	F	4	-	-	-	X
2	MAN	F	5	-	-	-	X
3	BMA	D	3	-	-	-	X
4	FUC	G	7	-	-	-	X
5	MAN	H	5	-	-	-	X

2 Entry composition ⓘ

There are 9 unique types of molecules in this entry. The entry contains 20622 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Coagulation factor VIII chimera.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1256	Total 10147	C 6520	N 1738	O 1837	S 52	0	0	0
1	B	1247	Total 10084	C 6476	N 1729	O 1827	S 52	0	0	0

- Molecule 2 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
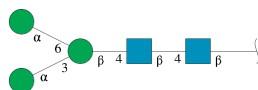
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	C	5	Total 61	C 34	N 2	O 25	0	0	0
2	E	5	Total 61	C 34	N 2	O 25	0	0	0
2	F	5	Total 61	C 34	N 2	O 25	0	0	0

- Molecule 3 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
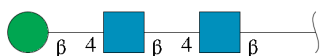
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	D	3	Total 39	C 22	N 2	O 15	0	0	0

- Molecule 4 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-alpha-D-mannopyranose-(1-6)-[alpha-D-mannopyranose-(1-3)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
4	G	7	85	48	3	34	0	0	0

- Molecule 5 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
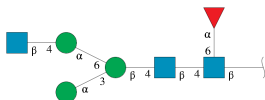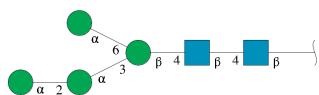

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
5	H	6	72	40	2	30	0	0	0

- Molecule 6 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Ca		
6	A	1	1	1	0	0
			Total	Ca		
6	B	1	1	1	0	0

- Molecule 7 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Zn		
7	A	1	1	1	0	0
			Total	Zn		
7	B	1	1	1	0	0

- Molecule 8 is COPPER (I) ION (three-letter code: CU1) (formula: Cu).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	1	Total 1	Cu 1	0	0
8	B	1	Total 1	Cu 1	0	0

- Molecule 9 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	A	5	Total 5	O 5	0	0
9	B	1	Total 1	O 1	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Coagulation factor VIII chimera

• Molecule 1: Coagulation factor VIII chimera

Chain B:

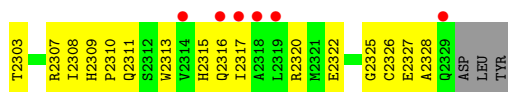T2303 R2307 I2308 H2309 P2310 Q2311 S2312 W2313 V2314 H2315 Q2316 I2317 A2318 L2319 R2320 M2321 E2322 G2325 C2326 E2327 A2328 Q2329 ASP LEU TYR

• Molecule 2: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyrano se-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyra nose

Chain C:

80%   20%

NAG1 NAG2 BMA3 MAN4 MAN5

• Molecule 2: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyrano se-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyra nose

Chain E:

20%   60%   20%

NAG1 NAG2 BMA3 MAN4 MAN5

• Molecule 2: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyrano se-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyra nose

Chain F:

20%   60%   20%

NAG1 NAG2 BMA3 MAN4 MAN5

• Molecule 3: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-ac etamido-2-deoxy-beta-D-glucopyranose

Chain D:

100%

NAG1 NAG2 BMA3

• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-alpha-D-mannopyranose-(1-6)-[al pha-D-mannopyranose-(1-3)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyra nose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:

71%   29%

NAG1 NAG2 BMA3 MAN4 NAG5 MAN6 FUC7

• Molecule 5: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyran ose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetam ido-2-deoxy-beta-D-glucopyranose

Chain H:

NAG1 NAG2 BMA3 MAN4 MAN5 MAN6

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	72.00Å 135.86Å 196.11Å 90.00° 90.15° 90.00°	Depositor
Resolution (Å)	49.03 – 3.20 49.03 – 3.20	Depositor EDS
% Data completeness (in resolution range)	99.9 (49.03-3.20) 99.9 (49.03-3.20)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.27 (at 3.19Å)	Xtriage
Refinement program	PHENIX 1.12_2829, PHENIX 1.12_2829	Depositor
R, R_{free}	0.206 , 0.287 0.206 , 0.287	Depositor DCC
R_{free} test set	3077 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å^2)	62.6	Xtriage
Anisotropy	0.515	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 47.2	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.031 for h,-k,-l	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	20622	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.83% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section:
MAN, BMA, ZN, CA, NAG, CU1, FUC

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	0.54	5/10434 (0.0%)	0.78	8/14149 (0.1%)
1	B	0.49	1/10367 (0.0%)	0.72	7/14053 (0.0%)
All	All	0.51	6/20801 (0.0%)	0.75	15/28202 (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	11
1	B	0	6
All	All	0	17

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	2150	ARG	CZ-NH2	-7.05	1.23	1.33
1	A	191	GLN	CD-NE2	6.91	1.50	1.32
1	A	2174	CYS	CA-CB	-6.57	1.39	1.53
1	A	191	GLN	CD-OE1	-6.53	1.09	1.24
1	A	2016	VAL	CB-CG2	-5.65	1.41	1.52
1	A	191	GLN	CG-CD	-5.14	1.39	1.51

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	191	GLN	CG-CD-OE1	29.15	179.90	121.60
1	A	191	GLN	CA-CB-CG	19.14	155.50	113.40
1	A	191	GLN	CG-CD-NE2	-14.70	81.43	116.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	191	GLN	OE1-CD-NE2	-10.11	98.66	121.90
1	A	191	GLN	CB-CG-CD	-8.73	88.89	111.60
1	B	2150	ARG	NE-CZ-NH2	8.59	124.59	120.30
1	B	683	GLU	C-N-CA	-8.37	100.77	121.70
1	A	292	LEU	CA-CB-CG	-7.18	98.79	115.30
1	B	2150	ARG	NH1-CZ-NH2	-6.77	111.95	119.40
1	A	449	LEU	CA-CB-CG	6.76	130.86	115.30
1	B	42	GLY	C-N-CD	-6.26	106.84	120.60
1	B	2150	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	A	627	LEU	CA-CB-CG	5.56	128.08	115.30
1	B	199	LEU	CA-CB-CG	5.16	127.17	115.30
1	B	44	SER	N-CA-C	5.15	124.92	111.00

There are no chirality outliers.

All (17) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	2057	GLY	Peptide
1	A	2141	ASN	Peptide
1	A	2278	GLY	Peptide
1	A	2298	ASP	Peptide
1	A	24	GLU	Peptide
1	A	39	LEU	Peptide
1	A	404	ASP	Peptide
1	A	473	TYR	Peptide
1	A	570	LYS	Peptide
1	A	691	GLY	Peptide
1	A	696	ASP	Peptide
1	B	2119	SER	Peptide
1	B	2141	ASN	Peptide
1	B	2298	ASP	Peptide
1	B	244	PRO	Peptide
1	B	28	ASP	Peptide
1	B	684	ASN	Peptide

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	10147	0	9905	424	2
1	B	10084	0	9837	506	1
2	C	61	0	52	3	0
2	E	61	0	52	2	0
2	F	61	0	52	0	2
3	D	39	0	34	0	0
4	G	85	0	73	2	0
5	H	72	0	61	2	0
6	A	1	0	0	0	0
6	B	1	0	0	0	0
7	A	1	0	0	0	0
7	B	1	0	0	0	0
8	A	1	0	0	0	0
8	B	1	0	0	0	0
9	A	5	0	0	0	0
9	B	1	0	0	0	0
All	All	20622	0	20066	927	3

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 23.

All (927) 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:B:2104:MET:CE	1:B:2150:ARG:HH21	1.60	1.12
1:B:2104:MET:HE2	1:B:2150:ARG:HH21	1.04	1.10
1:B:44:SER:O	1:B:46:LEU:HD12	1.66	0.95
1:A:1728:PRO:HG3	1:A:1897:ARG:HH21	1.29	0.94
1:B:1776:LYS:HG3	1:B:1812:THR:HG22	1.49	0.92
1:B:690:LEU:HB3	1:B:704:ALA:HB3	1.53	0.91
1:B:1752:LEU:HD13	1:B:2118:ASN:HB2	1.53	0.88
1:B:2212:LEU:O	1:B:2320:ARG:NH1	2.07	0.87
1:B:2185:ILE:O	1:B:2209:ARG:NH1	2.06	0.87
1:B:2104:MET:CE	1:B:2150:ARG:NH2	2.38	0.86
1:B:435:THR:HG23	1:B:437:LYS:H	1.41	0.85
1:B:2104:MET:HE2	1:B:2150:ARG:NH2	1.90	0.85
1:B:622:PHE:O	1:B:624:SER:N	2.09	0.85
1:B:82:TYR:HE1	1:B:143:LYS:HG2	1.42	0.84
1:B:2086:THR:HG22	1:B:2136:LYS:HB3	1.58	0.84
1:A:2182:SER:O	1:A:2184:ALA:N	2.11	0.83
1:A:697:PHE:O	1:A:699:ASN:N	2.11	0.83
1:A:1993:VAL:HA	1:A:2016:VAL:HG23	1.59	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:147:PRO:O	1:B:151:ASP:HB2	1.79	0.83
1:A:708:VAL:HG23	1:A:709:SER:H	1.42	0.83
1:B:27:VAL:HB	1:B:63:ALA:HB2	1.59	0.83
1:A:601:VAL:HG23	1:A:602:GLN:H	1.43	0.82
1:B:147:PRO:HG2	1:B:181:ARG:HG3	1.60	0.81
1:A:1846:ASP:HB3	1:A:1889:TRP:HE1	1.45	0.81
1:B:617:ILE:HG23	1:B:625:LEU:HD23	1.63	0.81
1:A:522:THR:O	1:A:524:SER:N	2.13	0.81
1:A:2100:GLN:HB3	1:A:2155:HIS:HB2	1.63	0.81
1:B:2096:LEU:HD23	1:B:2159:ARG:HB3	1.60	0.81
1:B:266:GLU:OE1	1:B:318:HIS:CE1	2.34	0.81
1:A:602:GLN:O	1:A:604:GLU:N	2.16	0.79
1:B:2110:LYS:HD3	1:B:2112:TRP:HE1	1.47	0.79
1:B:1696:ARG:HD2	1:B:1765:ALA:HA	1.64	0.79
1:A:435:THR:HG23	1:A:437:LYS:H	1.46	0.78
1:A:3:ARG:NH1	1:A:83:ASP:OD2	2.15	0.78
1:A:265:PRO:HG3	1:A:1951:GLU:HG2	1.65	0.78
1:A:50:THR:HG21	1:A:95:HIS:CE1	2.19	0.78
1:B:687:LEU:HD12	1:B:707:LYS:HB3	1.64	0.78
1:A:192:ASN:HB3	1:A:252:LYS:HG2	1.64	0.77
1:A:504:LEU:HB3	1:A:505:PRO:HD2	1.65	0.77
1:A:64:ARG:HD3	1:A:65:PRO:HD2	1.65	0.77
1:A:666:ASP:HB2	1:A:1835:TRP:HZ3	1.50	0.77
1:A:654:SER:O	1:A:656:TYR:N	2.18	0.76
1:A:1895:VAL:O	1:A:1897:ARG:N	2.20	0.75
1:B:2026:GLY:HA3	1:B:2032:ILE:HG13	1.69	0.75
1:A:326:ARG:NH1	1:A:328:GLU:OE2	2.19	0.75
1:B:1737:GLU:HB2	1:B:1761:PRO:HG3	1.68	0.75
1:B:1937:ASN:HA	1:B:1989:LEU:HD21	1.69	0.74
1:B:2100:GLN:HE22	1:B:2127:PHE:HE1	1.35	0.74
1:A:119:THR:HG23	1:A:123:GLU:HB2	1.70	0.74
1:B:651:VAL:HG12	1:B:668:LEU:O	1.89	0.73
1:A:114:GLU:HB2	1:A:127:ASP:HB3	1.71	0.73
1:B:382:TRP:HB2	1:B:461:LEU:HD23	1.71	0.73
1:A:1732:LYS:NZ	1:A:1885:GLU:OE2	2.21	0.72
1:B:2107:LEU:HD23	1:B:2146:ALA:HA	1.70	0.72
1:B:2244:THR:HB	1:B:2322:GLU:HB3	1.71	0.72
1:B:686:GLY:HA2	1:B:1801:GLU:HG3	1.70	0.72
1:A:188:GLU:HG3	1:A:193:LEU:HD13	1.72	0.72
1:B:306:GLN:HG2	1:B:326:ARG:HG2	1.71	0.72
1:A:443:GLN:HE22	1:A:446:SER:H	1.36	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:193:LEU:O	1:A:195:GLU:N	2.23	0.71
1:B:574:ILE:HD11	1:B:637:TRP:CE3	2.25	0.71
1:B:1777:ASN:OD1	1:B:1778:GLN:N	2.24	0.71
1:A:317:HIS:HD2	2:C:2:NAG:H81	1.56	0.70
1:A:504:LEU:O	1:A:506:GLY:N	2.24	0.70
1:B:1769:ASP:O	1:B:1819:VAL:HG12	1.91	0.70
1:A:2169:CYS:SG	1:A:2173:SER:HA	2.30	0.70
1:A:195:GLU:HG2	1:A:255:TYR:HB2	1.73	0.70
1:B:190:THR:O	1:B:192:ASN:N	2.24	0.70
1:B:574:ILE:HD11	1:B:637:TRP:HE3	1.56	0.70
1:B:82:TYR:CE1	1:B:143:LYS:HG2	2.26	0.70
1:B:396:ALA:HB3	1:B:421:ARG:HD3	1.73	0.70
1:B:485:PRO:HD3	1:B:498:LEU:HD11	1.74	0.70
1:A:443:GLN:NE2	1:A:446:SER:H	1.90	0.70
1:A:1869:ARG:NH2	2:E:1:NAG:O7	2.25	0.70
1:B:1945:LEU:HG	1:B:1983:PHE:HD1	1.56	0.70
1:B:266:GLU:OE1	1:B:318:HIS:HE1	1.71	0.70
1:A:483:VAL:HG23	1:A:513:TRP:CD1	2.26	0.70
1:B:525:ASP:HB2	1:B:526:PRO:HD2	1.74	0.70
1:B:6:TYR:HB3	1:B:60:PHE:CE1	2.27	0.70
1:B:27:VAL:HG11	1:B:62:VAL:HA	1.74	0.69
1:A:467:ASN:OD1	1:A:468:GLN:N	2.26	0.69
1:A:2162:LEU:HD11	1:A:2164:MET:HB3	1.75	0.69
1:A:1826:THR:HG22	1:A:1828:ASP:H	1.58	0.69
1:B:120:SER:HB2	1:B:123:GLU:HG3	1.74	0.69
1:A:2286:ASN:H	1:A:2293:VAL:HG11	1.56	0.69
1:B:1772:MET:HB2	1:B:1816:PHE:HD1	1.56	0.69
1:A:250:HIS:O	1:A:252:LYS:N	2.25	0.69
1:A:271:PHE:CZ	1:A:286:SER:HB3	2.28	0.69
1:B:80:GLU:HB2	1:B:181:ARG:O	1.93	0.69
1:B:625:LEU:HD12	1:B:626:GLN:H	1.58	0.69
1:B:1807:VAL:HG22	1:B:1813:ARG:NH1	2.07	0.69
1:A:616:SER:HA	1:A:621:VAL:HG12	1.75	0.68
1:B:189:ARG:HG3	1:B:193:LEU:HD22	1.75	0.68
1:A:317:HIS:CD2	2:C:2:NAG:H81	2.29	0.68
1:A:1764:ARG:HB3	1:A:1863:LEU:HD11	1.73	0.68
1:A:1936:GLN:HB2	1:A:2018:SER:HA	1.76	0.68
1:A:555:TYR:HD1	1:A:556:LYS:H	1.40	0.68
1:B:6:TYR:HB3	1:B:60:PHE:HE1	1.58	0.68
1:A:518:GLU:OE2	1:B:488:SER:OG	2.10	0.68
1:A:182:GLU:OE1	1:A:182:GLU:N	2.16	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:160:LEU:HD22	1:A:169:LEU:HD21	1.75	0.67
1:A:1756:LEU:HD21	1:A:1762:TYR:CE2	2.29	0.67
1:A:2055:TYR:HD1	1:A:2056:SER:H	1.41	0.67
1:B:2196:PHE:HB2	1:B:2222:GLN:HA	1.76	0.67
1:A:445:GLU:O	1:A:618:ASN:ND2	2.28	0.67
1:A:1742:SER:O	1:A:1744:THR:N	2.27	0.67
1:B:1945:LEU:HD22	1:B:1947:MET:HG2	1.76	0.67
1:A:107:TRP:O	1:A:108:LYS:HB2	1.95	0.67
1:B:2096:LEU:HD12	1:B:2096:LEU:H	1.59	0.67
1:B:581:GLU:HB2	1:B:612:ASN:HB3	1.77	0.66
1:B:2087:GLN:HB3	1:B:2163:ARG:HB2	1.76	0.66
1:A:1769:ASP:O	1:A:1819:VAL:HG12	1.94	0.66
1:B:1764:ARG:NH2	1:B:1875:GLU:OE1	2.27	0.66
1:B:2182:SER:O	1:B:2184:ALA:N	2.28	0.66
1:B:1976:TYR:CZ	1:B:1984:GLU:HG2	2.31	0.66
1:A:1927:ASP:HA	1:A:2012:THR:HA	1.77	0.66
1:A:2180:MET:HE1	1:A:2232:VAL:HG21	1.77	0.65
1:B:2246:GLN:HB3	1:B:2320:ARG:HB2	1.77	0.65
1:B:2224:ASN:ND2	1:B:2316:GLN:OE1	2.30	0.65
1:B:66:ARG:NH1	1:B:73:LEU:O	2.29	0.65
1:B:2170:ASP:OD1	1:B:2175:SER:HB2	1.96	0.65
1:B:208:SER:O	1:B:210:HIS:N	2.29	0.65
1:B:446:SER:HA	1:B:618:ASN:ND2	2.12	0.65
1:A:443:GLN:NE2	1:A:443:GLN:O	2.29	0.65
1:A:2261:LEU:HD12	1:A:2309:HIS:HB2	1.79	0.65
1:B:397:PRO:HD2	1:B:624:SER:HB3	1.77	0.65
1:B:2061:ALA:HB2	1:B:2163:ARG:HG3	1.79	0.65
1:A:2241:THR:HG22	1:A:2325:GLY:HA2	1.79	0.65
1:B:12:LEU:HD11	1:B:14:TRP:HB2	1.79	0.65
1:B:2015:LEU:HD11	1:B:2171:LEU:HD22	1.79	0.64
1:A:654:SER:HB2	1:A:688:TRP:HB3	1.78	0.64
1:A:449:LEU:HD13	1:A:550:PRO:HD3	1.79	0.64
1:A:666:ASP:HB2	1:A:1835:TRP:CZ3	2.32	0.64
1:A:1934:MET:HE2	1:A:2016:VAL:HG12	1.79	0.64
1:B:464:ILE:HG12	1:B:510:LYS:HE3	1.81	0.64
1:B:1884:ASP:OD1	1:B:1886:THR:OG1	2.15	0.63
1:B:2210:LEU:HA	1:B:2320:ARG:HB3	1.80	0.63
1:B:50:THR:HG21	1:B:95:HIS:NE2	2.13	0.63
1:A:2187:ASP:HB3	1:A:2206:SER:HB2	1.81	0.63
1:A:601:VAL:HG23	1:A:602:GLN:N	2.14	0.63
1:A:14:TRP:CE2	1:A:72:LEU:HD11	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:114:GLU:HB2	1:B:127:ASP:HB3	1.79	0.63
1:A:591:ILE:HG23	1:A:595:LEU:HD22	1.81	0.62
1:A:2246:GLN:HE21	1:A:2292:PRO:HD3	1.64	0.62
1:B:192:ASN:HB3	1:B:252:LYS:HD2	1.81	0.62
1:B:435:THR:HG23	1:B:437:LYS:N	2.13	0.62
1:A:453:LEU:HD22	1:A:533:TYR:CE2	2.34	0.62
1:B:2094:SER:HB3	1:B:2158:ILE:HD13	1.80	0.62
1:B:1893:GLU:O	1:B:1895:VAL:N	2.30	0.62
1:A:2072:LYS:HB2	1:A:2150:ARG:HG3	1.80	0.62
1:B:68:PRO:HB2	1:B:244:PRO:HG2	1.82	0.62
1:B:623:ASP:HB3	1:B:705:LEU:HG	1.81	0.62
1:B:654:SER:HB2	1:B:688:TRP:HB3	1.81	0.62
1:A:164:ASP:OD1	1:A:2007:GLN:NE2	2.32	0.62
1:A:1826:THR:O	1:A:1859:ARG:NH1	2.33	0.62
1:B:29:THR:HG23	1:B:30:ARG:H	1.64	0.62
1:B:631:LEU:HD22	1:B:632:HIS:CD2	2.34	0.62
1:B:1913:LYS:O	1:B:1915:ASN:N	2.32	0.62
1:B:147:PRO:HA	1:B:155:LEU:HD11	1.81	0.62
1:B:1927:ASP:HA	1:B:2012:THR:HA	1.79	0.61
1:B:27:VAL:HG11	1:B:62:VAL:CA	2.30	0.61
1:B:2147:ARG:HD3	1:B:2148:TYR:CE1	2.36	0.61
1:A:36:PRO:HB2	1:A:46:LEU:HD22	1.83	0.61
1:B:495:VAL:HG11	1:B:501:PHE:HB2	1.82	0.61
1:B:400:LEU:HD11	1:B:622:PHE:HB2	1.81	0.61
1:B:1732:LYS:HB3	1:B:1849:SER:O	2.01	0.61
1:B:1756:LEU:HD21	1:B:1762:TYR:CZ	2.36	0.61
1:B:2039:ALA:HA	1:B:2071:ILE:HA	1.83	0.61
1:A:91:ASN:ND2	1:A:97:VAL:HG22	2.16	0.60
1:B:1936:GLN:OE1	1:B:1993:VAL:HG23	2.01	0.60
1:B:250:HIS:CE1	1:B:304:LEU:HG	2.35	0.60
1:A:416:PRO:HA	1:A:596:PRO:HG3	1.83	0.60
1:A:651:VAL:HG12	1:A:668:LEU:O	2.00	0.60
1:A:2026:GLY:HA3	1:A:2031:HIS:HB3	1.84	0.60
1:A:80:GLU:HG2	1:A:184:SER:HB2	1.83	0.60
1:A:525:ASP:HB2	1:A:526:PRO:HD2	1.83	0.60
1:B:241:ARG:NH2	1:B:322:GLU:OE1	2.35	0.60
1:B:1733:VAL:HG13	1:B:1851:LEU:HG	1.82	0.60
1:B:2100:GLN:NE2	1:B:2127:PHE:CE1	2.70	0.60
1:B:2186:SER:HB3	1:B:2189:GLN:HG3	1.84	0.60
1:A:310:PHE:HB2	1:A:322:GLU:HG2	1.84	0.60
1:A:2174:CYS:O	1:A:2241:THR:HG21	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:708:VAL:HG23	1:A:709:SER:N	2.16	0.60
1:B:113:ALA:HB2	1:B:162:HIS:CD2	2.37	0.60
1:A:1756:LEU:HD21	1:A:1762:TYR:HE2	1.67	0.59
1:B:1801:GLU:OE1	1:B:1803:ARG:NH2	2.34	0.59
1:A:50:THR:HG21	1:A:95:HIS:HE1	1.65	0.59
1:A:518:GLU:HG3	1:B:490:ARG:HH11	1.67	0.59
1:A:1826:THR:HB	1:A:1829:GLU:HG3	1.84	0.59
1:B:269:SER:O	1:B:311:CYS:HA	2.03	0.59
1:B:692:CYS:O	1:B:693:HIS:HB2	2.03	0.59
1:A:119:THR:CG2	1:A:123:GLU:HB2	2.33	0.58
1:A:504:LEU:CB	1:A:505:PRO:HD2	2.32	0.58
1:A:2246:GLN:HA	1:A:2286:ASN:HD21	1.69	0.58
1:A:1766:GLU:O	1:A:1819:VAL:HG11	2.03	0.58
1:B:208:SER:C	1:B:210:HIS:H	2.04	0.58
1:B:240:ASN:O	1:B:242:SER:N	2.37	0.58
1:B:315:SER:HB3	1:B:317:HIS:HB2	1.86	0.58
1:A:1925:VAL:HG22	1:A:1926:MET:HG2	1.86	0.58
1:A:2076:LEU:HA	1:A:2147:ARG:NH2	2.18	0.58
1:A:2281:LYS:HG2	1:A:2283:PHE:CE1	2.38	0.58
1:A:601:VAL:CG2	1:A:602:GLN:H	2.16	0.58
1:A:2182:SER:C	1:A:2184:ALA:H	2.07	0.58
1:B:1979:TYR:O	1:B:1982:VAL:HG22	2.03	0.58
1:A:692:CYS:SG	1:A:694:ASN:HB2	2.44	0.57
1:B:1945:LEU:HG	1:B:1983:PHE:CD1	2.38	0.57
1:A:1764:ARG:HG2	1:A:1856:LEU:HB2	1.86	0.57
1:B:2100:GLN:NE2	1:B:2127:PHE:HE1	2.01	0.57
1:B:1743:PHE:CE2	1:B:1776:LYS:HB2	2.39	0.57
1:A:2229:TRP:HB3	1:A:2309:HIS:HD1	1.70	0.57
1:B:233:HIS:HB3	1:B:321:MET:HG3	1.86	0.57
1:B:2183:LYS:HZ1	1:B:2212:LEU:HD11	1.70	0.57
1:A:620:TYR:HD2	1:A:625:LEU:HB2	1.70	0.57
1:B:91:ASN:ND2	1:B:96:PRO:HA	2.20	0.57
1:B:631:LEU:HD22	1:B:632:HIS:NE2	2.20	0.57
1:B:656:TYR:CE2	1:B:682:MET:HA	2.39	0.57
1:A:182:GLU:H	1:A:182:GLU:CD	2.05	0.57
1:A:1870:GLN:O	1:A:1871:VAL:HG22	2.04	0.57
1:A:631:LEU:HD11	1:A:685:PRO:HG3	1.87	0.57
1:B:29:THR:CG2	1:B:30:ARG:H	2.17	0.57
1:B:315:SER:C	1:B:317:HIS:H	2.07	0.57
1:A:2129:ASN:ND2	1:A:2134:GLY:O	2.36	0.57
1:B:497:HIS:HD2	1:B:498:LEU:H	1.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:2:NAG:H83	4:G:2:NAG:H3	1.87	0.57
1:A:627:LEU:HD23	1:A:705:LEU:O	2.04	0.57
1:B:12:LEU:HD23	1:B:25:LEU:HD21	1.86	0.57
1:A:166:VAL:HB	1:A:2007:GLN:HE22	1.69	0.56
1:A:401:ALA:HA	1:A:408:LYS:HE2	1.86	0.56
1:B:110:SER:CB	1:B:138:VAL:H	2.17	0.56
1:A:617:ILE:HD12	1:A:703:THR:O	2.05	0.56
1:A:2196:PHE:HB2	1:A:2222:GLN:HA	1.87	0.56
1:B:2187:ASP:HB3	1:B:2206:SER:HB2	1.86	0.56
1:A:485:PRO:HD3	1:A:498:LEU:HD22	1.88	0.56
1:B:47:TYR:OH	1:B:230:PRO:HG3	2.05	0.56
1:B:238:TYR:HB3	1:B:242:SER:HB2	1.86	0.56
1:B:449:LEU:HD22	1:B:550:PRO:HD3	1.87	0.56
1:B:656:TYR:HE2	1:B:682:MET:HA	1.71	0.56
1:B:1883:PHE:O	1:B:1917:ARG:HA	2.04	0.56
1:B:2100:GLN:HB2	1:B:2154:THR:OG1	2.05	0.56
1:B:2223:VAL:HG12	1:B:2225:ASN:HD22	1.69	0.56
1:A:1739:ALA:HB3	1:A:1745:GLN:HB3	1.87	0.56
1:B:396:ALA:HB2	1:B:412:LEU:HD22	1.86	0.56
1:A:2082:HIS:HD2	1:A:2143:PRO:HB3	1.70	0.56
1:B:98:SER:HB3	1:B:162:HIS:H	1.69	0.56
1:A:37:GLY:O	1:A:39:LEU:N	2.33	0.56
1:A:2080:ILE:HG12	1:A:2145:ILE:HD12	1.86	0.56
1:A:2100:GLN:HG2	1:A:2154:THR:OG1	2.05	0.56
1:B:120:SER:HB3	1:B:2298:ASP:O	2.06	0.56
1:A:443:GLN:NE2	1:A:446:SER:HB2	2.20	0.56
1:A:538:ASN:OD1	1:A:541:ARG:HB2	2.06	0.56
1:B:2154:THR:O	1:B:2155:HIS:ND1	2.39	0.56
1:A:577:SER:HA	1:A:645:GLN:NE2	2.21	0.56
1:A:2096:LEU:HD23	1:A:2159:ARG:HB2	1.88	0.56
1:A:243:LEU:HD12	1:A:244:PRO:HD2	1.87	0.55
1:A:1756:LEU:O	1:A:1759:LEU:HB2	2.05	0.55
1:A:2032:ILE:O	1:A:2052:ARG:NH2	2.30	0.55
1:A:2180:MET:CE	1:A:2232:VAL:HG21	2.36	0.55
1:A:1786:TYR:CE1	1:A:1790:ILE:HD11	2.41	0.55
1:B:267:VAL:HB	1:B:671:PHE:CE2	2.42	0.55
1:A:444:HIS:O	1:A:445:GLU:HB2	2.07	0.55
1:A:1768:GLU:H	1:A:1819:VAL:HG13	1.72	0.55
1:B:589:GLU:OE1	1:B:593:ARG:NH1	2.40	0.55
1:B:1912:LEU:HD23	1:B:1912:LEU:H	1.70	0.55
1:A:380:LYS:HD3	1:A:382:TRP:CZ2	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:433:ASP:OD1	1:A:435:THR:HG22	2.06	0.55
1:B:60:PHE:CE2	1:B:90:LYS:HB2	2.42	0.55
1:B:267:VAL:HB	1:B:671:PHE:HE2	1.71	0.55
1:B:2062:TRP:O	1:B:2161:THR:HA	2.06	0.55
1:B:2087:GLN:N	1:B:2163:ARG:O	2.39	0.55
1:A:599:ALA:O	1:A:601:VAL:HG13	2.07	0.55
1:A:1697:HIS:CD2	1:A:1772:MET:HG2	2.42	0.55
1:A:1756:LEU:HD12	1:A:1759:LEU:HB3	1.88	0.55
1:A:1874:GLN:HE22	1:A:1934:MET:HA	1.71	0.55
1:A:2027:MET:HE3	1:A:2073:VAL:HG21	1.87	0.55
1:A:387:ALA:HA	1:A:466:LYS:O	2.07	0.55
1:B:410:GLN:OE1	1:B:418:ARG:NH2	2.38	0.55
1:B:685:PRO:HA	1:B:708:VAL:CG2	2.37	0.55
1:A:412:LEU:HD23	1:A:421:ARG:HB2	1.88	0.55
1:A:581:GLU:HB2	1:A:612:ASN:HB3	1.89	0.55
1:A:167:LYS:HD3	1:A:209:TRP:HA	1.87	0.55
1:A:1700:ILE:O	1:A:1775:PHE:HA	2.07	0.55
1:B:2230:LEU:O	1:B:2307:ARG:HA	2.07	0.55
2:E:2:NAG:H83	2:E:2:NAG:H3	1.89	0.55
1:A:1934:MET:CE	1:A:2016:VAL:HG12	2.37	0.54
1:A:108:LYS:HG2	1:A:1996:TRP:CH2	2.42	0.54
1:A:193:LEU:HG	1:A:195:GLU:HG3	1.87	0.54
1:A:2042:GLN:HG3	1:A:2048:PRO:HD3	1.87	0.54
1:B:570:LYS:O	1:B:571:ARG:HB2	2.07	0.54
1:B:1743:PHE:CD2	1:B:1776:LYS:HD2	2.42	0.54
1:A:582:ASN:ND2	1:A:609:GLN:O	2.40	0.54
1:A:1993:VAL:HG11	1:A:2173:SER:HB2	1.89	0.54
1:B:1695:THR:HG23	1:B:1770:ASN:HB2	1.88	0.54
1:A:504:LEU:HB3	1:A:505:PRO:CD	2.37	0.54
1:A:1751:GLU:HG3	1:A:2117:GLY:HA2	1.88	0.54
1:B:1736:ARG:HE	1:B:1749:ARG:NH1	2.06	0.54
1:B:411:TYR:CE2	1:B:700:ARG:HB3	2.43	0.54
1:B:1707:TRP:CE2	1:B:1758:LEU:HD13	2.43	0.54
1:A:1759:LEU:HD12	1:A:1852:ILE:HG23	1.88	0.54
1:A:1882:ILE:HG22	1:A:1952:ASN:OD1	2.07	0.54
1:A:2207:LYS:HD2	1:A:2216:SER:O	2.07	0.54
1:B:109:SER:O	1:B:126:ASP:HB3	2.08	0.54
1:B:440:GLU:HG2	1:B:441:ALA:H	1.72	0.54
1:B:1735:PHE:O	1:B:1760:GLY:HA2	2.06	0.54
1:A:1790:ILE:HD12	1:A:1790:ILE:O	2.07	0.54
1:B:110:SER:HB3	1:B:138:VAL:H	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:400:LEU:CD1	1:B:622:PHE:HB2	2.37	0.54
1:B:437:LYS:O	1:B:438:THR:HG23	2.08	0.54
1:A:2222:GLN:HG3	1:A:2223:VAL:HG23	1.90	0.54
1:B:1941:ARG:HD2	1:B:1943:TYR:OH	2.07	0.54
1:A:30:ARG:HG3	1:A:32:PRO:HD2	1.89	0.54
1:A:35:ALA:N	1:A:36:PRO:HD3	2.23	0.54
1:B:1784:SER:OG	1:B:1785:PHE:N	2.40	0.53
1:B:684:ASN:HB2	1:B:1792:TYR:H	1.72	0.53
1:B:389:GLU:OE1	1:B:431:TYR:OH	2.15	0.53
1:B:521:PRO:HG3	1:B:529:LEU:HD13	1.90	0.53
1:A:654:SER:HB3	1:A:688:TRP:CE3	2.44	0.53
1:A:1834:ALA:HB2	1:A:1943:TYR:CD1	2.43	0.53
1:B:91:ASN:HD21	1:B:96:PRO:HA	1.72	0.53
1:A:44:SER:O	1:A:45:VAL:HG12	2.07	0.53
1:A:2116:ARG:HG3	1:A:2123:LEU:HA	1.89	0.53
1:B:2239:LYS:HB3	1:B:2326:CYS:SG	2.49	0.53
1:A:1751:GLU:H	1:A:1754:LYS:HG3	1.73	0.53
1:A:1874:GLN:NE2	1:A:1934:MET:HA	2.23	0.53
1:A:279:VAL:O	1:A:281:HIS:N	2.41	0.53
1:A:666:ASP:OD2	1:A:1788:SER:OG	2.24	0.53
1:A:2265:SER:O	1:A:2303:THR:HB	2.09	0.53
1:B:166:VAL:HA	1:B:263:THR:HG21	1.89	0.53
1:B:457:VAL:HA	1:B:515:VAL:HG12	1.90	0.53
1:B:520:GLY:HA2	1:B:529:LEU:HD22	1.89	0.53
1:A:380:LYS:HD3	1:A:382:TRP:CH2	2.43	0.53
1:A:419:ILE:HD12	1:A:419:ILE:H	1.74	0.53
1:A:2009:GLY:O	1:A:2011:SER:N	2.42	0.53
1:B:2261:LEU:HD12	1:B:2309:HIS:HB2	1.88	0.53
1:A:630:CYS:O	1:A:633:GLU:HB2	2.09	0.53
1:A:650:SER:OG	1:A:669:THR:HG22	2.09	0.53
1:A:1846:ASP:HB3	1:A:1889:TRP:NE1	2.21	0.53
1:B:471:ARG:HH12	1:B:537:VAL:HG23	1.74	0.53
1:B:1749:ARG:HD2	1:B:1753:ASN:HB3	1.90	0.53
1:A:525:ASP:HB2	1:A:526:PRO:CD	2.38	0.52
1:A:2198:ASN:OD1	1:A:2199:MET:N	2.43	0.52
1:B:49:LYS:NZ	1:B:205:GLU:OE2	2.31	0.52
5:H:1:NAG:O3	5:H:2:NAG:O5	2.17	0.52
1:A:1738:PHE:CD2	1:A:1746:PRO:HA	2.44	0.52
1:B:495:VAL:HG21	1:B:501:PHE:HD1	1.74	0.52
1:A:654:SER:HB3	1:A:688:TRP:HE3	1.74	0.52
1:A:1833:LYS:HD3	1:A:1835:TRP:CZ2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2036:GLN:NE2	1:A:2074:ASP:O	2.34	0.52
1:B:2085:LYS:HB2	1:B:2165:GLU:HB3	1.91	0.52
1:A:417:GLN:NE2	1:A:605:ASP:OD2	2.39	0.52
1:B:152:PRO:HG2	1:B:154:CYS:O	2.10	0.52
1:B:394:ASP:HB3	1:B:422:LYS:HG3	1.92	0.52
1:A:1759:LEU:HD22	1:A:1922:ASN:OD1	2.09	0.52
1:A:1924:TYR:CD1	1:A:1928:THR:HG22	2.44	0.52
1:A:2308:ILE:HG21	1:A:2319:LEU:HD11	1.92	0.52
1:B:1776:LYS:HG3	1:B:1812:THR:CG2	2.31	0.52
1:B:238:TYR:CD2	1:B:243:LEU:HD12	2.44	0.52
1:B:575:LEU:HD12	1:B:640:LEU:HB2	1.90	0.52
1:A:568:SER:HA	1:A:571:ARG:NH2	2.25	0.52
1:B:20:GLU:O	1:B:23:ARG:HG3	2.10	0.52
1:B:1945:LEU:HB2	1:B:1983:PHE:CE1	2.43	0.52
1:A:1:ALA:HB1	1:A:83:ASP:HA	1.91	0.52
1:A:1992:LYS:O	1:A:2016:VAL:HG21	2.10	0.52
1:B:160:LEU:HD13	1:B:169:LEU:HD21	1.91	0.52
1:B:2026:GLY:O	1:B:2028:ALA:N	2.43	0.52
1:B:2187:ASP:OD1	1:B:2209:ARG:NH2	2.42	0.52
1:A:119:THR:HG22	1:A:124:LYS:HG3	1.91	0.51
1:B:535:SER:HB3	1:B:542:ASP:HB3	1.92	0.51
1:B:625:LEU:HD12	1:B:626:GLN:N	2.24	0.51
1:A:81:VAL:HG23	1:A:181:ARG:HA	1.92	0.51
1:A:470:SER:O	1:A:471:ARG:HG2	2.10	0.51
1:B:497:HIS:HD2	1:B:498:LEU:N	2.08	0.51
1:B:2115:TYR:CE2	1:B:2117:GLY:HA2	2.45	0.51
1:A:430:ALA:HB2	1:A:451:PRO:HG3	1.93	0.51
1:B:101:ALA:O	1:B:106:PHE:HZ	1.93	0.51
1:B:449:LEU:HD21	1:B:575:LEU:HD22	1.92	0.51
1:A:692:CYS:HB3	1:A:698:ARG:HB2	1.93	0.51
1:A:2074:ASP:CG	1:A:2147:ARG:HH21	2.14	0.51
1:B:2119:SER:HB2	1:B:2120:THR:HG23	1.93	0.51
1:B:395:TYR:CE2	1:B:614:MET:HG3	2.46	0.51
1:B:411:TYR:HE2	1:B:700:ARG:HB3	1.74	0.51
1:A:643:GLY:HA3	1:A:645:GLN:HE21	1.76	0.51
1:B:2009:GLY:O	1:B:2011:SER:N	2.43	0.51
1:A:34:THR:HB	1:A:36:PRO:HD3	1.93	0.51
1:B:497:HIS:CD2	1:B:498:LEU:N	2.78	0.51
1:B:2104:MET:HG3	1:B:2152:HIS:CD2	2.46	0.51
1:A:98:SER:O	1:A:161:SER:HA	2.10	0.51
1:A:589:GLU:O	1:A:593:ARG:HG3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:29:THR:HG23	1:B:30:ARG:N	2.26	0.51
1:B:428:PHE:CZ	1:B:547:LEU:HD22	2.46	0.51
1:B:472:PRO:HG3	1:B:504:LEU:HD23	1.92	0.51
1:B:258:VAL:HB	1:B:295:LEU:HB2	1.93	0.51
1:B:2061:ALA:HB3	1:B:2089:ALA:HB2	1.93	0.51
1:A:1829:GLU:O	1:A:1859:ARG:NH2	2.44	0.50
1:B:1821:HIS:CG	1:B:1822:HIS:N	2.79	0.50
1:B:2086:THR:CG2	1:B:2136:LYS:HB3	2.33	0.50
1:A:15:ASP:OD2	1:A:18:GLN:HG2	2.11	0.50
1:A:2203:TRP:CD2	1:A:2220:ARG:HG3	2.46	0.50
1:B:71:GLY:HA3	1:B:236:ASN:O	2.11	0.50
1:B:396:ALA:HB1	1:B:400:LEU:HB2	1.93	0.50
1:B:456:GLU:OE1	1:B:556:LYS:HB2	2.11	0.50
1:A:634:VAL:HG13	1:A:679:PHE:CZ	2.46	0.50
1:B:117:ASP:OD1	1:B:117:ASP:N	2.37	0.50
1:B:1834:ALA:HB1	1:B:1983:PHE:HE2	1.76	0.50
1:B:1837:TYR:CZ	1:B:1853:GLY:HA3	2.46	0.50
1:B:2285:GLY:HA2	1:B:2293:VAL:HG11	1.93	0.50
1:A:684:ASN:O	1:A:708:VAL:HG21	2.11	0.50
1:A:1993:VAL:HA	1:A:2016:VAL:CG2	2.36	0.50
1:B:56:THR:OG1	1:B:62:VAL:HG21	2.12	0.50
1:B:1926:MET:SD	1:B:2009:GLY:HA2	2.51	0.50
1:B:2225:ASN:HB2	1:B:2226:PRO:HD2	1.94	0.50
1:A:2102:ILE:HG13	1:A:2152:HIS:HB2	1.92	0.50
1:A:2191:THR:O	1:A:2231:GLN:HB3	2.12	0.50
1:B:151:ASP:HB3	1:B:152:PRO:HD2	1.94	0.50
1:B:396:ALA:CB	1:B:400:LEU:HD12	2.41	0.50
1:B:629:VAL:CG2	1:B:708:VAL:HG12	2.42	0.50
1:B:2081:ILE:HG12	1:B:2149:ILE:HD11	1.93	0.50
1:A:14:TRP:NE1	1:A:16:TYR:HA	2.26	0.50
1:B:523:LYS:HA	1:B:527:ARG:HH12	1.76	0.50
1:B:640:LEU:HD22	1:B:642:ILE:HD11	1.93	0.50
1:A:517:VAL:HB	1:B:488:SER:HB2	1.93	0.50
1:A:1941:ARG:HD2	1:A:1943:TYR:OH	2.11	0.50
1:B:27:VAL:HG11	1:B:63:ALA:N	2.26	0.50
1:A:192:ASN:HB3	1:A:252:LYS:CG	2.37	0.50
1:A:267:VAL:HG12	1:A:290:SER:HB3	1.93	0.50
1:A:2201:ALA:O	1:A:2202:THR:HG23	2.11	0.50
1:B:1884:ASP:O	1:B:1887:LYS:N	2.45	0.50
1:B:2038:THR:O	1:B:2072:LYS:N	2.39	0.50
1:A:1837:TYR:CZ	1:A:1853:GLY:HA3	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1924:TYR:HB2	1:A:1929:LEU:HB2	1.93	0.49
1:B:106:PHE:CD2	1:B:111:GLU:HG3	2.47	0.49
1:B:1772:MET:HB2	1:B:1816:PHE:CD1	2.43	0.49
1:B:2027:MET:HB2	1:B:2165:GLU:OE2	2.11	0.49
1:B:95:HIS:HB2	1:B:96:PRO:HD2	1.95	0.49
1:B:126:ASP:OD1	1:B:126:ASP:N	2.46	0.49
1:A:106:PHE:CE1	1:A:111:GLU:HG3	2.48	0.49
1:A:168:ASP:OD1	1:A:209:TRP:NE1	2.45	0.49
1:A:379:PRO:HG3	1:B:486:LEU:HD11	1.93	0.49
1:A:453:LEU:O	1:A:551:LEU:HD12	2.13	0.49
1:B:1924:TYR:HB2	1:B:1929:LEU:HB2	1.94	0.49
1:B:14:TRP:CE2	1:B:72:LEU:HD21	2.47	0.49
1:B:395:TYR:OH	1:B:425:LYS:NZ	2.23	0.49
1:B:518:GLU:CD	1:B:518:GLU:H	2.15	0.49
1:A:1886:THR:HA	1:A:1891:PHE:CD1	2.47	0.49
1:B:1789:LEU:HD22	1:B:1823:MET:HB3	1.94	0.49
1:A:406:SER:O	1:A:408:LYS:N	2.36	0.49
1:B:12:LEU:CD1	1:B:14:TRP:HB2	2.43	0.49
1:A:2055:TYR:HD1	1:A:2056:SER:N	2.08	0.49
1:B:2261:LEU:HA	1:B:2283:PHE:HD1	1.78	0.49
1:A:454:TYR:CE1	1:A:456:GLU:HG3	2.48	0.49
1:A:591:ILE:HA	1:A:595:LEU:HD13	1.95	0.49
1:A:1880:PHE:CE2	1:A:1921:ILE:HG12	2.47	0.49
1:B:603:LEU:HD23	1:B:603:LEU:O	2.13	0.49
1:B:1776:LYS:HG2	1:B:1777:ASN:O	2.13	0.49
1:B:1945:LEU:HB2	1:B:1983:PHE:HE1	1.78	0.49
1:A:34:THR:C	1:A:36:PRO:HD3	2.33	0.48
1:A:484:ARG:HH21	1:B:514:THR:HG21	1.77	0.48
1:A:660:HIS:O	1:A:662:MET:N	2.45	0.48
1:B:540:GLU:HG2	1:B:541:ARG:HG3	1.93	0.48
1:B:2106:SER:O	1:B:2146:ALA:HB1	2.13	0.48
1:A:1841:VAL:HG22	1:A:1846:ASP:OD2	2.12	0.48
1:B:42:GLY:HA2	1:B:44:SER:N	2.28	0.48
1:B:56:THR:H	1:B:62:VAL:HG23	1.77	0.48
1:B:453:LEU:HD13	1:B:533:TYR:HE2	1.78	0.48
1:A:250:HIS:C	1:A:252:LYS:H	2.14	0.48
1:B:27:VAL:HG22	1:B:28:ASP:H	1.78	0.48
1:A:454:TYR:HE2	1:A:570:LYS:HE3	1.78	0.48
1:A:1963:PHE:CD2	1:A:1986:VAL:HB	2.49	0.48
1:B:2104:MET:HE3	1:B:2112:TRP:HB3	1.95	0.48
1:B:2110:LYS:HD3	1:B:2112:TRP:NE1	2.23	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2115:TYR:C	1:B:2117:GLY:H	2.17	0.48
1:A:192:ASN:O	1:A:194:HIS:N	2.45	0.48
1:A:273:GLU:HG3	1:A:308:LEU:HB3	1.94	0.48
1:A:622:PHE:O	1:A:623:ASP:HB2	2.12	0.48
1:A:2034:ASP:OD2	1:A:2049:LYS:HB2	2.14	0.48
1:A:2052:ARG:O	1:A:2055:TYR:HB2	2.14	0.48
1:A:2043:TYR:HD2	1:A:2046:TRP:CD1	2.31	0.48
1:B:2096:LEU:HD21	1:B:2159:ARG:NH1	2.29	0.48
1:A:45:VAL:HG22	1:A:46:LEU:H	1.78	0.48
1:A:425:LYS:HB3	1:A:545:SER:O	2.13	0.48
1:A:685:PRO:HA	1:A:708:VAL:CG2	2.44	0.48
1:A:1694:ARG:O	1:A:1769:ASP:HB2	2.14	0.48
1:B:631:LEU:CD2	1:B:632:HIS:CD2	2.96	0.48
1:B:705:LEU:HD23	1:B:705:LEU:HA	1.53	0.48
1:A:686:GLY:O	1:A:708:VAL:HG22	2.14	0.48
1:A:2044:GLY:O	1:A:2046:TRP:N	2.46	0.48
1:B:200:PHE:HB3	1:B:321:MET:HE1	1.95	0.48
1:B:617:ILE:HG21	1:B:704:ALA:HB2	1.95	0.48
2:C:1:NAG:H83	2:C:1:NAG:H3	1.95	0.48
1:A:486:LEU:HD12	1:A:487:TYR:H	1.79	0.48
1:A:2053:LEU:HD13	1:A:2165:GLU:HB3	1.95	0.48
1:B:230:PRO:HB2	1:B:232:MET:CE	2.44	0.48
1:B:2179:GLY:HA3	1:B:2185:ILE:H	1.79	0.48
1:A:427:ARG:NE	1:A:448:ILE:HA	2.28	0.48
1:A:692:CYS:C	1:A:694:ASN:H	2.16	0.48
1:A:1936:GLN:O	1:A:1990:PRO:HG2	2.14	0.48
1:B:701:GLY:O	1:B:703:THR:N	2.47	0.48
1:B:2063:SER:HA	1:B:2160:SER:O	2.14	0.48
1:A:148:THR:O	1:A:181:ARG:NH2	2.36	0.47
1:B:640:LEU:HD23	1:B:675:GLY:HA3	1.94	0.47
1:A:304:LEU:HA	1:A:327:VAL:HG23	1.96	0.47
1:A:467:ASN:O	1:A:468:GLN:HG3	2.15	0.47
1:A:521:PRO:HG3	1:A:529:LEU:HD23	1.96	0.47
1:B:474:ASN:HB2	1:B:537:VAL:HG13	1.96	0.47
1:B:1834:ALA:HB1	1:B:1983:PHE:CE2	2.48	0.47
1:B:1929:LEU:HD23	1:B:1930:PRO:O	2.14	0.47
1:A:261:MET:HG2	1:A:262:GLY:H	1.79	0.47
1:A:1819:VAL:HG21	1:A:1857:ILE:HD12	1.96	0.47
1:A:1913:LYS:O	1:A:1916:TYR:N	2.37	0.47
1:A:2185:ILE:O	1:A:2209:ARG:NH1	2.40	0.47
1:A:2187:ASP:OD1	1:A:2209:ARG:NH2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1790:ILE:HD12	1:B:1790:ILE:O	2.13	0.47
1:B:2178:LEU:HD11	1:B:2325:GLY:HA3	1.96	0.47
1:A:2229:TRP:HB3	1:A:2309:HIS:ND1	2.28	0.47
1:B:60:PHE:HD2	1:B:90:LYS:HD3	1.80	0.47
1:B:680:MET:HB2	1:B:680:MET:HE3	1.69	0.47
1:B:1833:LYS:HG2	1:B:1834:ALA:H	1.80	0.47
1:A:303:ASP:O	1:A:327:VAL:HG21	2.15	0.47
1:A:602:GLN:HB3	1:A:605:ASP:HB2	1.97	0.47
1:A:2026:GLY:C	1:A:2032:ILE:HG13	2.35	0.47
1:A:58:GLN:OE1	1:A:58:GLN:N	2.42	0.47
1:A:602:GLN:HB3	1:A:605:ASP:CB	2.44	0.47
1:B:42:GLY:HA2	1:B:44:SER:H	1.79	0.47
1:B:174:ILE:HD13	1:B:199:LEU:HD21	1.96	0.47
1:B:281:HIS:O	1:B:524:SER:HB2	2.15	0.47
1:B:607:GLU:HA	1:B:610:ALA:HB3	1.96	0.47
1:B:2211:HIS:CE1	1:B:2292:PRO:HG3	2.49	0.47
1:A:292:LEU:HD13	1:A:2001:LEU:HB3	1.96	0.47
1:A:518:GLU:H	1:A:518:GLU:CD	2.18	0.47
1:A:1766:GLU:HG3	1:A:1863:LEU:HB3	1.96	0.47
1:A:1949:SER:O	1:A:1952:ASN:ND2	2.31	0.47
1:A:2196:PHE:HZ	1:A:2198:ASN:HD22	1.63	0.47
1:B:574:ILE:HD12	1:B:639:ILE:HG12	1.96	0.47
1:B:620:TYR:HB3	1:B:624:SER:HB2	1.96	0.47
1:B:1735:PHE:CZ	1:B:1851:LEU:HD22	2.50	0.47
1:B:2049:LYS:O	1:B:2052:ARG:NH1	2.48	0.47
1:B:2086:THR:O	1:B:2135:ILE:HA	2.15	0.47
1:B:2100:GLN:H	1:B:2155:HIS:HB2	1.79	0.47
1:A:20:GLU:HG3	1:A:23:ARG:HG3	1.96	0.47
1:A:251:LYS:HE3	1:B:496:LYS:O	2.13	0.47
1:A:443:GLN:HE22	1:A:446:SER:N	2.09	0.47
1:A:568:SER:HA	1:A:571:ARG:HH21	1.80	0.47
1:A:645:GLN:O	1:A:646:THR:HB	2.13	0.47
1:B:80:GLU:OE1	1:B:183:GLY:N	2.48	0.47
1:B:641:SER:C	1:B:642:ILE:HG13	2.34	0.47
4:G:1:NAG:H3	4:G:2:NAG:H82	1.96	0.47
1:A:85:VAL:O	1:A:138:VAL:HA	2.13	0.47
1:B:26:HIS:CD2	1:B:65:PRO:HA	2.48	0.47
1:B:155:LEU:O	1:B:178:LEU:HA	2.15	0.47
1:B:392:ASP:OD1	1:B:593:ARG:NH2	2.46	0.47
1:B:504:LEU:HD22	1:B:505:PRO:HD2	1.97	0.47
1:B:1789:LEU:HD11	1:B:1835:TRP:CD1	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2274:PHE:HE2	1:B:2301:LEU:HD13	1.79	0.47
1:A:20:GLU:HG3	1:A:23:ARG:NE	2.30	0.47
1:A:103:GLY:HA2	1:A:1962:VAL:HG12	1.97	0.47
1:A:2166:LEU:HD23	1:A:2166:LEU:HA	1.74	0.47
1:B:315:SER:C	1:B:317:HIS:N	2.67	0.47
1:B:1781:ARG:HB2	1:B:1782:PRO:HD2	1.96	0.47
1:B:2228:GLU:O	1:B:2310:PRO:HD2	2.14	0.47
1:A:49:LYS:HZ2	1:A:171:SER:HA	1.80	0.46
1:A:80:GLU:HG2	1:A:184:SER:CB	2.45	0.46
1:B:120:SER:O	1:B:123:GLU:N	2.48	0.46
1:B:1709:TYR:O	1:B:1928:THR:HG21	2.15	0.46
1:B:2247:GLY:H	1:B:2286:ASN:HD21	1.61	0.46
1:A:2046:TRP:CE2	1:A:2059:ILE:HG22	2.49	0.46
1:B:387:ALA:HA	1:B:466:LYS:O	2.15	0.46
1:B:1738:PHE:HD2	1:B:1743:PHE:HA	1.81	0.46
1:B:2265:SER:O	1:B:2303:THR:HB	2.15	0.46
1:A:417:GLN:OE1	1:A:602:GLN:HG3	2.15	0.46
1:A:526:PRO:HG2	1:A:528:CYS:O	2.16	0.46
1:A:582:ASN:HA	1:A:587:LEU:HD12	1.97	0.46
1:B:91:ASN:HB2	1:B:129:VAL:HG23	1.97	0.46
1:B:17:ARG:HG3	1:B:242:SER:OG	2.15	0.46
1:B:400:LEU:HD23	1:B:400:LEU:HA	1.73	0.46
1:B:586:TYR:O	1:B:589:GLU:N	2.49	0.46
1:B:1707:TRP:CZ2	1:B:1758:LEU:HD13	2.50	0.46
1:A:483:VAL:HG23	1:A:513:TRP:HD1	1.76	0.46
1:B:2092:LYS:HG2	1:B:2093:PHE:CD2	2.50	0.46
1:A:253:SER:HA	1:A:300:PHE:HA	1.98	0.46
1:B:394:ASP:HB2	1:B:421:ARG:HG3	1.98	0.46
1:B:397:PRO:HD2	1:B:624:SER:CB	2.44	0.46
1:B:2110:LYS:HA	1:B:2112:TRP:NE1	2.31	0.46
1:B:165:LEU:HD23	1:B:2003:GLY:HA2	1.97	0.46
1:A:1888:SER:O	1:A:1891:PHE:N	2.49	0.46
1:A:2021:CYS:O	1:A:2169:CYS:HB2	2.16	0.46
1:A:2263:SER:HB3	1:A:2273:LEU:HD23	1.98	0.46
1:B:119:THR:HB	1:B:123:GLU:HB2	1.97	0.46
1:B:522:THR:C	1:B:524:SER:H	2.19	0.46
1:B:1758:LEU:HD12	1:B:1758:LEU:HA	1.70	0.46
1:B:2060:ASN:O	1:B:2163:ARG:HD3	2.15	0.46
1:B:2088:GLY:O	1:B:2163:ARG:NH2	2.47	0.46
1:B:2265:SER:HB2	1:B:2271:TRP:CD2	2.51	0.46
1:B:2286:ASN:H	1:B:2293:VAL:HG11	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:4:MAN:O3	5:H:5:MAN:H3	2.15	0.46
1:A:80:GLU:HA	1:A:180:CYS:O	2.16	0.46
1:A:2038:THR:O	1:A:2072:LYS:N	2.49	0.46
1:B:574:ILE:O	1:B:639:ILE:HA	2.16	0.46
1:B:2107:LEU:CD2	1:B:2146:ALA:HA	2.44	0.46
1:A:454:TYR:HE1	1:A:456:GLU:HG3	1.81	0.46
1:B:397:PRO:O	1:B:399:VAL:N	2.49	0.46
1:B:657:THR:O	1:B:658:PHE:CG	2.69	0.46
1:A:1839:SER:HB2	1:A:1851:LEU:HD13	1.98	0.45
1:A:2233:ASP:HB2	1:A:2305:TYR:HE1	1.79	0.45
1:B:255:TYR:HE1	1:B:298:GLN:HG3	1.82	0.45
1:B:407:TYR:CD2	1:B:408:LYS:HG2	2.51	0.45
1:B:498:LEU:HD22	1:B:511:TYR:HE1	1.82	0.45
1:B:521:PRO:HB3	1:B:526:PRO:O	2.16	0.45
1:B:582:ASN:HA	1:B:587:LEU:HD22	1.98	0.45
1:B:2048:PRO:HA	1:B:2062:TRP:CD1	2.50	0.45
1:B:2264:SER:HB2	1:B:2303:THR:OG1	2.17	0.45
1:A:128:LYS:HE3	1:A:128:LYS:HB3	1.70	0.45
1:A:1788:SER:H	1:A:1790:ILE:HG13	1.80	0.45
1:A:1989:LEU:O	1:A:1989:LEU:HD12	2.16	0.45
1:A:2314:VAL:O	1:A:2316:GLN:N	2.49	0.45
1:B:90:LYS:HG3	1:B:133:LYS:O	2.16	0.45
1:B:1831:ASP:HB2	1:B:1941:ARG:NH1	2.32	0.45
1:A:2044:GLY:C	1:A:2046:TRP:H	2.19	0.45
1:B:16:TYR:O	1:B:239:VAL:HG22	2.17	0.45
1:B:461:LEU:HB2	1:B:513:TRP:HB2	1.97	0.45
1:B:648:PHE:CE1	1:B:1953:ILE:HD11	2.51	0.45
1:B:1833:LYS:O	1:B:1834:ALA:HB2	2.16	0.45
1:A:1774:THR:HG22	1:A:1814:THR:OG1	2.17	0.45
1:A:1789:LEU:HD11	1:A:1835:TRP:CD1	2.52	0.45
1:B:70:MET:O	1:B:73:LEU:HB2	2.15	0.45
1:B:1700:ILE:O	1:B:1775:PHE:HA	2.17	0.45
1:A:130:LEU:HB2	1:A:133:LYS:HD3	1.99	0.45
1:A:601:VAL:O	1:A:603:LEU:HD12	2.17	0.45
1:B:78:GLN:HG2	1:B:178:LEU:HD12	1.98	0.45
1:B:453:LEU:HD13	1:B:533:TYR:CE2	2.52	0.45
1:A:200:PHE:CD1	1:A:321:MET:HE3	2.50	0.45
1:A:300:PHE:CE2	1:B:490:ARG:HG3	2.52	0.45
1:A:486:LEU:HG	1:A:487:TYR:CD2	2.51	0.45
1:A:629:VAL:HG23	1:A:708:VAL:HG12	1.99	0.45
1:A:642:ILE:HD13	1:A:673:PHE:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:69:TRP:CZ3	1:B:70:MET:HG2	2.50	0.45
1:B:269:SER:H	1:B:313:ILE:HD13	1.81	0.45
1:B:613:ILE:O	1:B:613:ILE:HG13	2.16	0.45
1:B:1731:LYS:HB3	1:B:1894:ASN:HD21	1.82	0.45
1:B:1965:VAL:HG12	1:B:1971:TYR:O	2.17	0.45
1:B:2210:LEU:HD22	1:B:2322:GLU:HB2	1.99	0.45
1:B:2286:ASN:H	1:B:2293:VAL:CG1	2.29	0.45
1:A:596:PRO:HG2	1:A:597:ASN:ND2	2.31	0.45
1:B:287:LEU:HD12	1:B:287:LEU:HA	1.67	0.45
1:B:1789:LEU:HA	1:B:1789:LEU:HD23	1.62	0.45
1:B:2100:GLN:OE1	1:B:2125:VAL:HG12	2.17	0.45
1:A:101:ALA:HB2	1:A:139:TRP:CZ2	2.51	0.45
1:B:457:VAL:HA	1:B:515:VAL:CG1	2.46	0.45
1:B:631:LEU:CD2	1:B:632:HIS:NE2	2.80	0.45
1:A:703:THR:O	1:A:704:ALA:HB3	2.17	0.45
1:B:1826:THR:HG23	1:B:1829:GLU:OE2	2.17	0.45
1:A:14:TRP:HZ3	1:A:22:LEU:HG	1.82	0.45
1:A:1863:LEU:HD23	1:A:1863:LEU:O	2.17	0.45
1:B:1819:VAL:HG21	1:B:1857:ILE:HD12	1.99	0.45
1:B:2102:ILE:HG22	1:B:2124:MET:O	2.17	0.45
1:A:290:SER:O	1:A:291:PRO:C	2.55	0.44
1:A:389:GLU:OE2	1:A:439:ARG:NH1	2.50	0.44
1:A:586:TYR:N	1:A:586:TYR:CD1	2.85	0.44
1:A:1757:GLY:C	1:A:1759:LEU:H	2.21	0.44
1:B:16:TYR:CZ	1:B:232:MET:HG3	2.52	0.44
1:B:89:LEU:HD21	1:B:97:VAL:HG23	1.99	0.44
1:B:103:GLY:HA3	1:B:157:TYR:CD2	2.51	0.44
1:B:200:PHE:HE2	1:B:258:VAL:HG13	1.83	0.44
1:B:310:PHE:HA	1:B:321:MET:O	2.18	0.44
1:B:664:TYR:CE2	1:B:1822:HIS:HB2	2.52	0.44
1:B:2203:TRP:CE3	1:B:2220:ARG:HG3	2.52	0.44
1:A:1764:ARG:HB3	1:A:1863:LEU:CD1	2.44	0.44
1:B:396:ALA:HB1	1:B:400:LEU:HD12	2.00	0.44
1:B:1699:PHE:CE1	1:B:1741:GLY:HA2	2.53	0.44
1:B:1790:ILE:HD13	1:B:1792:TYR:CE1	2.52	0.44
1:B:15:ASP:HB2	1:B:45:VAL:HG22	2.00	0.44
1:B:54:GLU:HG3	1:B:55:PHE:N	2.33	0.44
1:B:185:LEU:H	1:B:185:LEU:HG	1.59	0.44
1:B:2114:THR:HG21	1:B:2123:LEU:CD2	2.47	0.44
1:A:454:TYR:CE2	1:A:570:LYS:HE3	2.52	0.44
1:B:2217:ASN:OD1	1:B:2217:ASN:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:69:TRP:CE3	1:B:70:MET:HG2	2.53	0.44
1:B:497:HIS:CE1	1:B:499:LYS:HG2	2.53	0.44
1:B:2262:ILE:HA	1:B:2307:ARG:O	2.16	0.44
1:A:191:GLN:HE22	1:A:331:ALA:H	1.65	0.44
1:A:2047:ALA:O	1:A:2050:LEU:HD23	2.17	0.44
1:A:2236:LYS:HD3	1:A:2327:GLU:HG3	1.99	0.44
1:A:2255:MET:HB3	1:A:2316:GLN:HB2	1.98	0.44
1:B:12:LEU:CD2	1:B:25:LEU:HD11	2.48	0.44
1:B:238:TYR:CE2	1:B:243:LEU:HD12	2.52	0.44
1:B:485:PRO:HB3	1:B:509:PHE:CZ	2.53	0.44
1:B:2043:TYR:HB3	1:B:2046:TRP:HB2	1.99	0.44
1:B:2052:ARG:O	1:B:2163:ARG:HG2	2.18	0.44
1:B:2076:LEU:C	1:B:2147:ARG:HE	2.20	0.44
1:B:2180:MET:HB2	1:B:2322:GLU:CD	2.38	0.44
1:A:36:PRO:HB2	1:A:37:GLY:H	1.64	0.44
1:B:462:LEU:HD21	1:B:486:LEU:HD13	1.99	0.44
1:B:593:ARG:HD2	1:B:594:PHE:CE2	2.52	0.44
1:B:633:GLU:O	1:B:682:MET:HG2	2.17	0.44
1:A:165:LEU:HD23	1:A:2003:GLY:HA2	2.00	0.44
1:A:2267:ASP:OD1	1:A:2270:GLN:N	2.43	0.44
1:B:1733:VAL:HB	1:B:1890:TYR:OH	2.17	0.44
1:B:1755:HIS:HB3	1:B:1931:GLY:HA3	1.99	0.44
1:B:1828:ASP:O	1:B:1966:ARG:HG2	2.18	0.44
1:B:2006:LEU:C	1:B:2008:ALA:H	2.21	0.44
1:B:2260:PHE:CE1	1:B:2308:ILE:HD12	2.53	0.44
1:A:24:GLU:O	1:A:25:LEU:HB2	2.18	0.43
1:A:165:LEU:HD12	1:A:165:LEU:HA	1.85	0.43
1:A:641:SER:O	1:A:642:ILE:HD13	2.17	0.43
1:A:669:THR:HG21	1:A:1979:TYR:HB3	2.00	0.43
1:B:1875:GLU:HG2	1:B:1943:TYR:OH	2.18	0.43
1:B:2105:TYR:HB2	1:B:2146:ALA:CB	2.47	0.43
1:B:2140:PHE:CD2	1:B:2144:ILE:HG13	2.53	0.43
1:B:2244:THR:OG1	1:B:2294:VAL:HG22	2.18	0.43
1:A:73:LEU:HD12	1:A:236:ASN:ND2	2.33	0.43
1:A:400:LEU:O	1:A:408:LYS:HE2	2.18	0.43
1:B:3:ARG:HB3	1:B:5:TYR:HE1	1.83	0.43
1:B:81:VAL:HA	1:B:141:VAL:CG1	2.47	0.43
1:B:124:LYS:HG2	1:B:127:ASP:OD2	2.18	0.43
1:B:1841:VAL:HG22	1:B:1846:ASP:OD2	2.18	0.43
1:B:1945:LEU:HD12	1:B:1983:PHE:CE1	2.52	0.43
1:B:2203:TRP:CD2	1:B:2216:SER:HB2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2224:ASN:HB3	1:B:2317:ILE:HG13	2.00	0.43
1:A:15:ASP:O	1:A:16:TYR:HB2	2.18	0.43
1:A:433:ASP:OD1	1:A:433:ASP:N	2.52	0.43
1:B:208:SER:C	1:B:210:HIS:N	2.70	0.43
1:A:87:VAL:HG11	1:A:99:LEU:HD21	2.01	0.43
1:A:1763:ILE:HG23	1:A:1855:LEU:HG	1.99	0.43
1:A:1764:ARG:CZ	1:A:1869:ARG:HG3	2.48	0.43
1:B:81:VAL:HG12	1:B:82:TYR:CD2	2.53	0.43
1:B:2193:SER:HB3	1:B:2229:TRP:NE1	2.33	0.43
1:B:2225:ASN:HA	1:B:2313:TRP:HH2	1.84	0.43
1:A:1771:ILE:HD12	1:A:1817:TRP:NE1	2.33	0.43
1:A:1792:TYR:CD1	1:A:1792:TYR:N	2.86	0.43
1:B:23:ARG:HH11	1:B:23:ARG:HG2	1.83	0.43
1:B:407:TYR:CE2	1:B:408:LYS:HG2	2.54	0.43
1:B:409:SER:HA	1:B:413:ASN:HB2	2.00	0.43
1:B:692:CYS:SG	1:B:693:HIS:N	2.90	0.43
1:B:1830:PHE:CE1	1:B:1966:ARG:HD2	2.53	0.43
1:B:1972:LYS:O	1:B:1973:MET:HG3	2.17	0.43
1:A:50:THR:HG22	1:A:171:SER:HB2	2.00	0.43
1:A:484:ARG:HH21	1:B:514:THR:CG2	2.31	0.43
1:A:2022:GLN:HG2	1:A:2082:HIS:HB2	2.01	0.43
1:A:2170:ASP:OD1	1:A:2175:SER:OG	2.35	0.43
1:B:133:LYS:HB3	1:B:134:SER:H	1.66	0.43
1:B:261:MET:HE3	1:B:262:GLY:HA2	1.99	0.43
1:B:1755:HIS:NE2	1:B:1762:TYR:OH	2.32	0.43
1:B:2095:SER:O	1:B:2095:SER:OG	2.36	0.43
1:A:2048:PRO:C	1:A:2050:LEU:H	2.22	0.43
1:A:2074:ASP:OD1	1:A:2147:ARG:NH2	2.44	0.43
1:A:293:THR:HA	1:A:1977:ASN:HD21	1.82	0.43
1:A:627:LEU:HD11	1:A:637:TRP:HZ3	1.84	0.43
1:A:1732:LYS:HD3	1:A:1758:LEU:HD21	2.01	0.43
1:A:1883:PHE:O	1:A:1917:ARG:HA	2.19	0.43
1:A:1945:LEU:HB2	1:A:1983:PHE:CE1	2.54	0.43
1:A:2273:LEU:O	1:A:2275:PHE:HD1	2.02	0.43
1:B:1774:THR:HG22	1:B:1814:THR:HG23	2.01	0.43
1:B:2261:LEU:HA	1:B:2283:PHE:CD1	2.54	0.43
1:A:251:LYS:HD2	1:B:491:LEU:HD12	2.01	0.43
1:A:708:VAL:O	1:A:709:SER:HB3	2.19	0.43
1:B:1734:VAL:HG23	1:B:1736:ARG:HD3	2.01	0.43
1:B:1756:LEU:HD11	1:B:1762:TYR:CE2	2.54	0.43
1:B:2147:ARG:HD3	1:B:2148:TYR:CZ	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:154:CYS:HA	1:A:180:CYS:HA	2.01	0.43
1:A:1889:TRP:C	1:A:1891:PHE:H	2.22	0.43
1:B:312:HIS:O	1:B:312:HIS:ND1	2.51	0.43
1:B:397:PRO:HD3	1:B:620:TYR:HD2	1.84	0.43
1:B:1709:TYR:CD2	1:B:1923:GLY:O	2.72	0.43
1:B:114:GLU:HG3	1:B:124:LYS:HD3	2.00	0.42
1:B:452:LEU:HD23	1:B:550:PRO:HG2	2.01	0.42
1:B:2050:LEU:HD12	1:B:2055:TYR:CE2	2.53	0.42
1:B:2109:GLY:HA2	1:B:2148:TYR:CE1	2.53	0.42
1:B:2178:LEU:HD23	1:B:2178:LEU:HA	1.76	0.42
1:A:493:LYS:O	1:A:495:VAL:N	2.48	0.42
1:A:1732:LYS:HB3	1:A:1849:SER:O	2.18	0.42
1:B:47:TYR:CG	1:B:205:GLU:HG3	2.54	0.42
1:B:89:LEU:HA	1:B:89:LEU:HD12	1.81	0.42
1:B:229:GLN:HB3	1:B:230:PRO:CD	2.49	0.42
1:B:255:TYR:CE1	1:B:298:GLN:HG3	2.54	0.42
1:B:495:VAL:HG21	1:B:501:PHE:CD1	2.53	0.42
1:A:483:VAL:HG13	1:A:483:VAL:O	2.19	0.42
1:A:2045:GLN:O	1:A:2059:ILE:HD13	2.18	0.42
1:A:2104:MET:O	1:A:2150:ARG:N	2.51	0.42
1:B:169:LEU:HA	1:B:169:LEU:HD23	1.65	0.42
1:B:504:LEU:CD2	1:B:505:PRO:HD2	2.50	0.42
1:B:1876:PHE:CD2	1:B:1932:LEU:HD23	2.54	0.42
1:A:493:LYS:H	1:A:495:VAL:HG23	1.85	0.42
1:B:68:PRO:HB2	1:B:244:PRO:CG	2.47	0.42
1:B:685:PRO:HA	1:B:708:VAL:HG23	2.01	0.42
1:A:23:ARG:O	1:A:26:HIS:N	2.53	0.42
1:A:293:THR:HA	1:A:1977:ASN:ND2	2.34	0.42
1:A:447:GLY:O	1:A:448:ILE:HG22	2.20	0.42
1:A:587:LEU:O	1:A:591:ILE:HG13	2.19	0.42
1:A:1693:LYS:HE2	1:A:1693:LYS:HB2	1.76	0.42
1:A:1924:TYR:HD1	1:A:1928:THR:HG22	1.84	0.42
1:A:1999:GLU:HB3	1:A:2006:LEU:HD13	2.01	0.42
1:B:193:LEU:CD1	1:B:252:LYS:HD3	2.49	0.42
1:B:2171:LEU:HD23	1:B:2171:LEU:HA	1.78	0.42
1:A:270:ILE:HB	1:A:287:LEU:HB2	2.01	0.42
1:A:317:HIS:O	1:A:319:GLY:N	2.52	0.42
1:A:572:ASN:HB2	1:A:637:TRP:CE3	2.55	0.42
1:A:631:LEU:HD22	1:A:632:HIS:CD2	2.55	0.42
1:A:1731:LYS:HB3	1:A:1890:TYR:HB3	2.02	0.42
1:B:397:PRO:O	1:B:399:VAL:HG22	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:573:VAL:HG22	1:B:638:TYR:HB2	2.02	0.42
1:B:654:SER:OG	1:B:689:ILE:HB	2.19	0.42
1:B:660:HIS:N	1:B:663:VAL:O	2.49	0.42
1:A:659:LYS:HE2	1:A:664:TYR:CZ	2.54	0.42
1:B:102:VAL:HG21	1:B:294:PHE:CE2	2.55	0.42
1:B:466:LYS:HD2	1:B:508:ILE:HD11	2.02	0.42
1:B:466:LYS:HD2	1:B:508:ILE:CD1	2.49	0.42
1:B:622:PHE:CD1	1:B:701:GLY:HA2	2.54	0.42
1:B:623:ASP:N	1:B:623:ASP:OD1	2.52	0.42
1:B:2117:GLY:CA	1:B:2124:MET:HB2	2.49	0.42
1:A:115:TYR:CZ	1:A:1997:ARG:HB2	2.55	0.42
1:A:1767:VAL:O	1:A:1768:GLU:HB2	2.19	0.42
1:A:1934:MET:O	1:A:2016:VAL:HA	2.20	0.42
1:A:2179:GLY:HA3	1:A:2184:ALA:HB3	2.02	0.42
1:B:241:ARG:HD2	1:B:322:GLU:HB2	2.02	0.42
1:B:1745:GLN:HA	1:B:1746:PRO:HD3	1.82	0.42
1:A:282:HIS:CD2	1:A:525:ASP:HB3	2.54	0.42
1:A:522:THR:N	1:A:525:ASP:OD1	2.41	0.42
1:A:1838:PHE:HD2	1:A:1839:SER:O	2.03	0.42
1:A:1843:LEU:HD23	1:A:1843:LEU:HA	1.75	0.42
1:A:2020:LYS:HA	1:A:2020:LYS:HD3	1.84	0.42
1:B:2157:SER:O	1:B:2158:ILE:HB	2.20	0.42
1:B:2257:VAL:HG22	1:B:2317:ILE:HG23	2.02	0.42
1:A:127:ASP:OD1	1:A:127:ASP:N	2.52	0.42
1:A:177:LEU:HD12	1:A:177:LEU:HA	1.82	0.42
1:A:320:GLY:O	1:A:322:GLU:N	2.53	0.42
1:B:315:SER:HB2	1:B:318:HIS:H	1.85	0.42
1:B:1784:SER:HB3	1:B:1841:VAL:HG13	2.01	0.42
1:A:390:GLU:OE2	1:A:470:SER:N	2.53	0.41
1:A:1963:PHE:HD2	1:A:1986:VAL:HB	1.85	0.41
1:A:2286:ASN:N	1:A:2293:VAL:HG11	2.30	0.41
1:B:1736:ARG:HE	1:B:1749:ARG:HH12	1.68	0.41
1:B:1978:LEU:HA	1:B:1978:LEU:HD23	1.77	0.41
1:B:2313:TRP:CE3	1:B:2317:ILE:HD11	2.54	0.41
1:A:631:LEU:HD22	1:A:632:HIS:NE2	2.35	0.41
1:A:634:VAL:HG22	1:A:681:SER:HB2	2.03	0.41
1:B:527:ARG:HD3	1:B:527:ARG:HA	1.63	0.41
1:B:2020:LYS:NZ	1:B:2327:GLU:OE1	2.47	0.41
1:B:2045:GLN:O	1:B:2059:ILE:HG21	2.20	0.41
1:A:106:PHE:HB2	1:A:110:SER:HB2	2.01	0.41
1:A:162:HIS:NE2	1:A:1999:GLU:OE2	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:389:GLU:HG2	1:B:429:MET:SD	2.60	0.41
1:B:626:GLN:HA	1:B:705:LEU:HB2	2.03	0.41
1:B:2147:ARG:O	1:B:2147:ARG:HG2	2.19	0.41
1:B:2189:GLN:HB3	1:B:2233:ASP:O	2.21	0.41
1:B:2192:ALA:HB1	1:B:2229:TRP:O	2.20	0.41
1:A:540:GLU:HB3	1:A:583:ARG:HH21	1.85	0.41
1:B:2098:ILE:HD11	1:B:2153:PRO:HB3	2.02	0.41
1:A:417:GLN:O	1:A:418:ARG:NE	2.54	0.41
1:A:431:TYR:CE2	1:A:439:ARG:HG2	2.54	0.41
1:A:706:LEU:O	1:A:707:LYS:C	2.59	0.41
1:A:1953:ILE:HG22	1:A:1979:TYR:CD1	2.56	0.41
1:B:12:LEU:C	1:B:12:LEU:HD12	2.40	0.41
1:B:2189:GLN:HG2	1:B:2235:GLN:OE1	2.20	0.41
1:A:1781:ARG:O	1:A:1809:PRO:HG3	2.20	0.41
1:A:1807:VAL:HG22	1:A:1813:ARG:HB3	2.03	0.41
1:B:44:SER:O	1:B:46:LEU:N	2.52	0.41
1:B:1832:CYS:HA	1:B:1858:CYS:HA	2.02	0.41
1:B:1940:ILE:HD12	1:B:1990:PRO:HG3	2.03	0.41
1:A:188:GLU:O	1:A:190:THR:N	2.54	0.41
1:A:408:LYS:O	1:A:412:LEU:HD12	2.21	0.41
1:A:622:PHE:CD2	1:A:701:GLY:HA2	2.56	0.41
1:B:7:LEU:HD23	1:B:52:PHE:CD1	2.56	0.41
1:B:1967:LYS:O	1:B:1968:LYS:HB3	2.21	0.41
1:B:2053:LEU:HD23	1:B:2054:HIS:CG	2.56	0.41
1:B:2079:MET:HB3	1:B:2169:CYS:O	2.20	0.41
1:B:2274:PHE:CE2	1:B:2301:LEU:HD13	2.54	0.41
1:A:95:HIS:HB2	1:A:96:PRO:HD2	2.02	0.41
1:A:418:ARG:NH2	1:A:607:GLU:HG2	2.35	0.41
1:A:2217:ASN:O	1:A:2218:ALA:HB2	2.20	0.41
1:B:571:ARG:O	1:B:572:ASN:HB2	2.20	0.41
1:B:1693:LYS:O	1:B:1769:ASP:HB3	2.21	0.41
1:B:2043:TYR:HD1	1:B:2043:TYR:O	2.04	0.41
1:B:2247:GLY:N	1:B:2286:ASN:HD21	2.17	0.41
1:A:250:HIS:CE1	1:A:304:LEU:HG	2.56	0.41
1:A:273:GLU:HB2	1:A:307:PHE:HB3	2.03	0.41
1:A:597:ASN:C	1:A:599:ALA:N	2.73	0.41
1:A:2115:TYR:CZ	1:A:2117:GLY:HA3	2.55	0.41
1:B:108:LYS:HE3	1:B:108:LYS:HB3	1.71	0.41
1:B:148:THR:CG2	1:B:1972:LYS:HB2	2.51	0.41
1:B:277:PHE:CD2	1:B:287:LEU:HB2	2.56	0.41
1:B:418:ARG:HD3	1:B:611:SER:CB	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1766:GLU:HG2	1:B:1863:LEU:HD13	2.03	0.41
1:B:1789:LEU:HD12	1:B:1855:LEU:HD22	2.03	0.41
1:B:2084:ILE:CG2	1:B:2138:ASN:HB2	2.51	0.41
1:A:26:HIS:O	1:A:28:ASP:N	2.54	0.41
1:A:498:LEU:HA	1:A:498:LEU:HD12	1.76	0.41
1:B:15:ASP:HB2	1:B:45:VAL:CG2	2.51	0.41
1:B:29:THR:CG2	1:B:30:ARG:N	2.81	0.41
1:B:130:LEU:HB2	1:B:133:LYS:CD	2.51	0.41
1:B:1783:TYR:HH	1:B:1890:TYR:HH	1.68	0.41
1:B:1879:PHE:HD1	1:B:1945:LEU:HB3	1.86	0.41
1:A:35:ALA:HB1	1:A:41:LEU:HD21	2.03	0.40
1:A:206:GLY:O	1:A:207:LYS:HB3	2.21	0.40
1:A:2080:ILE:HG13	1:A:2171:LEU:HD23	2.04	0.40
1:A:2115:TYR:CE2	1:A:2117:GLY:HA3	2.56	0.40
1:B:2192:ALA:HB3	1:B:2205:PRO:HG3	2.03	0.40
1:A:685:PRO:HA	1:A:708:VAL:HG21	2.02	0.40
1:A:1708:ASP:C	1:A:1710:GLY:H	2.25	0.40
1:A:1778:GLN:HB3	1:A:1779:ALA:H	1.69	0.40
1:A:1940:ILE:HD12	1:A:1990:PRO:HD3	2.03	0.40
1:B:1731:LYS:H	1:B:1894:ASN:HD21	1.68	0.40
1:B:2032:ILE:HG23	1:B:2036:GLN:NE2	2.36	0.40
1:B:2049:LYS:H	1:B:2049:LYS:HG3	1.57	0.40
1:B:2302:LEU:HD13	1:B:2302:LEU:HA	1.97	0.40
1:A:454:TYR:CE2	1:A:570:LYS:HG3	2.56	0.40
1:A:577:SER:O	1:A:616:SER:HB3	2.21	0.40
1:A:1758:LEU:HD12	1:A:1758:LEU:HA	1.73	0.40
1:A:1888:SER:O	1:A:1889:TRP:C	2.60	0.40
1:A:2080:ILE:HG12	1:A:2145:ILE:CD1	2.51	0.40
1:B:112:GLY:O	1:B:162:HIS:HB3	2.21	0.40
1:B:552:LEU:HD21	1:B:638:TYR:CE2	2.57	0.40
1:A:404:ASP:OD2	1:A:409:SER:HB3	2.20	0.40
1:A:1753:ASN:HB3	1:A:1756:LEU:HD23	2.02	0.40
1:A:1781:ARG:CZ	1:A:1889:TRP:CZ2	3.05	0.40
1:A:1832:CYS:HA	1:A:1858:CYS:HA	2.03	0.40
1:A:2176:MET:HE3	1:A:2177:PRO:HD2	2.03	0.40
1:A:2263:SER:OG	1:A:2307:ARG:HB2	2.21	0.40
1:B:135:GLN:HG3	1:B:136:THR:O	2.21	0.40
1:B:419:ILE:HG23	1:B:594:PHE:HB2	2.04	0.40
1:B:632:HIS:O	1:B:634:VAL:HG23	2.22	0.40
1:B:635:ALA:N	1:B:680:MET:O	2.53	0.40
1:B:1936:GLN:HG3	1:B:1937:ASN:ND2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2193:SER:HB3	1:B:2229:TRP:CE2	2.57	0.40
1:A:271:PHE:CE1	1:A:286:SER:HB3	2.56	0.40
1:A:2195:TYR:CG	1:A:2195:TYR:O	2.74	0.40
1:B:59:LEU:H	1:B:59:LEU:HG	1.50	0.40
1:B:1749:ARG:HH21	1:B:1749:ARG:HD3	1.75	0.40
1:B:1756:LEU:HD21	1:B:1762:TYR:CE2	2.57	0.40
1:B:1792:TYR:HD2	1:B:1801:GLU:OE2	2.05	0.40

All (3) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:504:LEU:O	2:F:4:MAN:O6[1_455]	1.98	0.22
1:A:469:ALA:O	2:F:4:MAN:O2[1_455]	2.04	0.16
1:B:326:ARG:NH2	1:B:2094:SER:OG[2_457]	2.11	0.09

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	1242/1467 (85%)	966 (78%)	174 (14%)	102 (8%)	1	5
1	B	1231/1467 (84%)	955 (78%)	182 (15%)	94 (8%)	1	7
All	All	2473/2934 (84%)	1921 (78%)	356 (14%)	196 (8%)	1	6

All (196) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	32	PRO
1	A	36	PRO
1	A	39	LEU
1	A	40	PRO

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Mol	Chain	Res	Type
1	A	44	SER
1	A	45	VAL
1	A	207	LYS
1	A	229	GLN
1	A	250	HIS
1	A	265	PRO
1	A	291	PRO
1	A	318	HIS
1	A	321	MET
1	A	407	TYR
1	A	505	PRO
1	A	556	LYS
1	A	603	LEU
1	A	655	GLY
1	A	695	SER
1	A	1796	GLN
1	A	1804	HIS
1	A	1871	VAL
1	A	1889	TRP
1	A	1896	GLU
1	A	1936	GLN
1	A	2010	MET
1	A	2120	THR
1	A	2183	LYS
1	A	2206	SER
1	A	2252	LEU
1	A	2284	GLN
1	B	29	THR
1	B	44	SER
1	B	46	LEU
1	B	181	ARG
1	B	191	GLN
1	B	209	TRP
1	B	250	HIS
1	B	265	PRO
1	B	331	ALA
1	B	398	LEU
1	B	571	ARG
1	B	622	PHE
1	B	685	PRO
1	B	695	SER
1	B	1694	ARG

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Mol	Chain	Res	Type
1	B	1695	THR
1	B	1709	TYR
1	B	1726	GLU
1	B	1765	ALA
1	B	1804	HIS
1	B	1894	ASN
1	B	1914	GLU
1	B	2142	PRO
1	B	2183	LYS
1	A	25	LEU
1	A	38	ALA
1	A	189	ARG
1	A	192	ASN
1	A	193	LEU
1	A	194	HIS
1	A	211	SER
1	A	280	ARG
1	A	399	VAL
1	A	403	ASP
1	A	445	GLU
1	A	523	LYS
1	A	600	GLY
1	A	707	LYS
1	A	1742	SER
1	A	1743	PHE
1	A	1938	GLN
1	A	2045	GLN
1	A	2092	LYS
1	A	2119	SER
1	A	2184	ALA
1	B	230	PRO
1	B	240	ASN
1	B	241	ARG
1	B	242	SER
1	B	397	PRO
1	B	407	TYR
1	B	409	SER
1	B	439	ARG
1	B	526	PRO
1	B	623	ASP
1	B	636	TYR
1	B	658	PHE

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Mol	Chain	Res	Type
1	B	693	HIS
1	B	702	MET
1	B	706	LEU
1	B	1713	GLU
1	B	1821	HIS
1	B	2010	MET
1	B	2027	MET
1	B	2044	GLY
1	B	2067	PRO
1	B	2180	MET
1	B	2280	VAL
1	B	2328	ALA
1	A	34	THR
1	A	195	GLU
1	A	230	PRO
1	A	251	LYS
1	A	266	GLU
1	A	319	GLY
1	A	468	GLN
1	A	654	SER
1	A	1751	GLU
1	A	1778	GLN
1	A	1897	ARG
1	A	2040	SER
1	A	2043	TYR
1	A	2067	PRO
1	A	2218	ALA
1	B	28	ASP
1	B	128	LYS
1	B	187	ARG
1	B	266	GLU
1	B	287	LEU
1	B	316	HIS
1	B	406	SER
1	B	414	ASN
1	B	493	LYS
1	B	539	MET
1	B	618	ASN
1	B	1747	SER
1	B	1752	LEU
1	B	1833	LYS
1	B	1913	LYS

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Mol	Chain	Res	Type
1	B	1930	PRO
1	B	2115	TYR
1	B	2135	ILE
1	B	2158	ILE
1	B	2286	ASN
1	B	2299	PRO
1	A	27	VAL
1	A	41	LEU
1	A	138	VAL
1	A	273	GLU
1	A	331	ALA
1	A	540	GLU
1	A	697	PHE
1	A	704	ALA
1	A	1890	TYR
1	A	2132	SER
1	A	2142	PRO
1	A	2286	ASN
1	A	2315	HIS
1	B	147	PRO
1	B	378	HIS
1	B	447	GLY
1	B	599	ALA
1	B	654	SER
1	B	1850	GLY
1	B	2092	LYS
1	B	2133	SER
1	B	2311	GLN
1	B	2315	HIS
1	A	135	GLN
1	A	187	ARG
1	A	569	ASP
1	A	622	PHE
1	A	698	ARG
1	A	1843	LEU
1	A	1860	ALA
1	A	2280	VAL
1	A	2303	THR
1	B	64	ARG
1	B	133	LYS
1	B	239	VAL
1	B	413	ASN

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Mol	Chain	Res	Type
1	B	443	GLN
1	B	2007	GLN
1	A	474	ASN
1	A	494	GLY
1	A	504	LEU
1	A	708	VAL
1	A	1713	GLU
1	A	1779	ALA
1	A	1797	GLU
1	A	2202	THR
1	B	2159	ARG
1	B	2175	SER
1	B	45	VAL
1	A	141	VAL
1	A	174	ILE
1	B	402	PRO
1	B	1741	GLY
1	A	31	PHE
1	A	402	PRO
1	A	448	ILE
1	B	229	GLN
1	B	1990	PRO
1	B	27	VAL
1	B	2098	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1110/1301 (85%)	1074 (97%)	36 (3%)	39	71
1	B	1104/1301 (85%)	1079 (98%)	25 (2%)	50	78
All	All	2214/2602 (85%)	2153 (97%)	61 (3%)	43	74

All (61) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	GLU
1	A	39	LEU
1	A	66	ARG
1	A	106	PHE
1	A	133	LYS
1	A	153	PRO
1	A	185	LEU
1	A	193	LEU
1	A	208	SER
1	A	210	HIS
1	A	312	HIS
1	A	317	HIS
1	A	421	ARG
1	A	443	GLN
1	A	478	HIS
1	A	555	TYR
1	A	624	SER
1	A	647	ASP
1	A	654	SER
1	A	1801	GLU
1	A	1897	ARG
1	A	1949	SER
1	A	1983	PHE
1	A	1997	ARG
1	A	2000	CYS
1	A	2031	HIS
1	A	2034	ASP
1	A	2055	TYR
1	A	2110	LYS
1	A	2137	HIS
1	A	2157	SER
1	A	2206	SER
1	A	2220	ARG
1	A	2250	SER
1	A	2295	ASN
1	A	2319	LEU
1	B	43	PRO
1	B	94	SER
1	B	106	PHE
1	B	160	LEU
1	B	162	HIS
1	B	392	ASP
1	B	409	SER

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Mol	Chain	Res	Type
1	B	527	ARG
1	B	538	ASN
1	B	539	MET
1	B	616	SER
1	B	636	TYR
1	B	645	GLN
1	B	699	ASN
1	B	1709	TYR
1	B	1736	ARG
1	B	1784	SER
1	B	1899	CYS
1	B	1919	HIS
1	B	1946	SER
1	B	1983	PHE
1	B	2055	TYR
1	B	2104	MET
1	B	2206	SER
1	B	2286	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	191	GLN
1	A	317	HIS
1	A	443	GLN
1	A	2007	GLN
1	A	2082	HIS
1	A	2246	GLN
1	B	26	HIS
1	B	162	HIS
1	B	233	HIS
1	B	318	HIS
1	B	2189	GLN
1	B	2225	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 ⓘ

31 monosaccharides 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	C	1	1,2	14,14,15	1.07	1 (7%)	17,19,21	2.05	3 (17%)
2	NAG	C	2	2	14,14,15	0.37	0	17,19,21	0.44	0
2	BMA	C	3	2	11,11,12	1.38	3 (27%)	15,15,17	1.21	0
2	MAN	C	4	2	11,11,12	0.81	0	15,15,17	1.00	1 (6%)
2	MAN	C	5	2	11,11,12	1.47	3 (27%)	15,15,17	2.08	4 (26%)
3	NAG	D	1	1,3	14,14,15	0.79	1 (7%)	17,19,21	1.41	3 (17%)
3	NAG	D	2	3	14,14,15	0.87	1 (7%)	17,19,21	1.29	2 (11%)
3	BMA	D	3	3	11,11,12	1.49	2 (18%)	15,15,17	0.91	0
2	NAG	E	1	1,2	14,14,15	0.54	0	17,19,21	0.67	0
2	NAG	E	2	2	14,14,15	0.68	0	17,19,21	1.85	5 (29%)
2	BMA	E	3	2	11,11,12	1.98	4 (36%)	15,15,17	1.27	1 (6%)
2	MAN	E	4	2	11,11,12	1.59	2 (18%)	15,15,17	1.36	2 (13%)
2	MAN	E	5	2	11,11,12	0.87	0	15,15,17	1.05	0
2	NAG	F	1	1,2	14,14,15	0.27	0	17,19,21	0.44	0
2	NAG	F	2	2	14,14,15	0.73	1 (7%)	17,19,21	0.68	0
2	BMA	F	3	2	11,11,12	1.69	3 (27%)	15,15,17	2.41	8 (53%)
2	MAN	F	4	2	11,11,12	2.04	4 (36%)	15,15,17	2.98	5 (33%)
2	MAN	F	5	2	11,11,12	0.62	0	15,15,17	2.20	3 (20%)
4	NAG	G	1	1,4	14,14,15	0.55	0	17,19,21	1.07	1 (5%)
4	NAG	G	2	4	14,14,15	0.55	0	17,19,21	1.42	3 (17%)
4	BMA	G	3	4	11,11,12	1.20	2 (18%)	15,15,17	1.17	2 (13%)
4	MAN	G	4	4	11,11,12	1.09	1 (9%)	15,15,17	1.65	2 (13%)
4	NAG	G	5	4	14,14,15	0.41	0	17,19,21	1.50	3 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
4	MAN	G	6	4	11,11,12	1.04	1 (9%)	15,15,17	1.81	4 (26%)
4	FUC	G	7	4	10,10,11	1.17	1 (10%)	14,14,16	1.20	1 (7%)
5	NAG	H	1	1,5	14,14,15	0.68	1 (7%)	17,19,21	0.76	0
5	NAG	H	2	5	14,14,15	0.61	0	17,19,21	0.67	0
5	BMA	H	3	5	11,11,12	1.09	0	15,15,17	1.41	2 (13%)
5	MAN	H	4	5	11,11,12	0.99	0	15,15,17	1.26	1 (6%)
5	MAN	H	5	5	11,11,12	1.28	1 (9%)	15,15,17	1.17	1 (6%)
5	MAN	H	6	5	11,11,12	1.57	3 (27%)	15,15,17	1.04	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	C	1	1,2	-	4/6/23/26	0/1/1/1
2	NAG	C	2	2	-	0/6/23/26	0/1/1/1
2	BMA	C	3	2	-	1/2/19/22	0/1/1/1
2	MAN	C	4	2	-	2/2/19/22	0/1/1/1
2	MAN	C	5	2	-	1/2/19/22	0/1/1/1
3	NAG	D	1	1,3	-	1/6/23/26	0/1/1/1
3	NAG	D	2	3	-	2/6/23/26	0/1/1/1
3	BMA	D	3	3	-	2/2/19/22	0/1/1/1
2	NAG	E	1	1,2	-	4/6/23/26	0/1/1/1
2	NAG	E	2	2	-	6/6/23/26	0/1/1/1
2	BMA	E	3	2	-	2/2/19/22	0/1/1/1
2	MAN	E	4	2	-	2/2/19/22	1/1/1/1
2	MAN	E	5	2	-	2/2/19/22	1/1/1/1
2	NAG	F	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	F	2	2	-	0/6/23/26	0/1/1/1
2	BMA	F	3	2	-	0/2/19/22	0/1/1/1
2	MAN	F	4	2	-	2/2/19/22	0/1/1/1
2	MAN	F	5	2	-	1/2/19/22	0/1/1/1
4	NAG	G	1	1,4	-	1/6/23/26	0/1/1/1
4	NAG	G	2	4	-	5/6/23/26	0/1/1/1
4	BMA	G	3	4	-	2/2/19/22	0/1/1/1
4	MAN	G	4	4	-	1/2/19/22	0/1/1/1
4	NAG	G	5	4	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	MAN	G	6	4	-	2/2/19/22	0/1/1/1
4	FUC	G	7	4	-	-	0/1/1/1
5	NAG	H	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	H	2	5	-	1/6/23/26	0/1/1/1
5	BMA	H	3	5	-	0/2/19/22	0/1/1/1
5	MAN	H	4	5	-	1/2/19/22	0/1/1/1
5	MAN	H	5	5	-	2/2/19/22	0/1/1/1
5	MAN	H	6	5	-	1/2/19/22	0/1/1/1

All (35) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	4	MAN	C4-C5	-4.45	1.43	1.53
2	E	4	MAN	O5-C5	3.91	1.51	1.43
2	E	3	BMA	C1-C2	3.83	1.60	1.52
2	E	3	BMA	C2-C3	3.64	1.57	1.52
2	C	1	NAG	O5-C1	3.62	1.49	1.43
2	F	4	MAN	O5-C5	3.61	1.50	1.43
2	F	3	BMA	C2-C3	3.53	1.57	1.52
2	C	5	MAN	C1-C2	3.50	1.60	1.52
5	H	5	MAN	C1-C2	3.34	1.59	1.52
5	H	6	MAN	C4-C5	3.23	1.59	1.53
3	D	2	NAG	O5-C1	-2.97	1.39	1.43
3	D	3	BMA	C1-C2	2.73	1.58	1.52
3	D	1	NAG	O5-C1	-2.72	1.39	1.43
4	G	3	BMA	C2-C3	2.71	1.56	1.52
2	E	3	BMA	C4-C5	2.60	1.58	1.53
5	H	6	MAN	C1-C2	2.58	1.58	1.52
2	F	3	BMA	O3-C3	2.55	1.49	1.43
2	C	5	MAN	O5-C1	2.55	1.47	1.43
2	E	4	MAN	C1-C2	2.51	1.57	1.52
4	G	4	MAN	C4-C3	2.49	1.58	1.52
4	G	6	MAN	C1-C2	2.46	1.57	1.52
4	G	7	FUC	C2-C3	2.40	1.56	1.52
2	F	2	NAG	O5-C1	-2.37	1.39	1.43
2	F	4	MAN	C2-C3	2.29	1.55	1.52
5	H	1	NAG	O5-C1	-2.26	1.40	1.43
2	C	3	BMA	O5-C5	2.23	1.48	1.43
2	F	3	BMA	O5-C1	-2.19	1.40	1.43
2	C	3	BMA	C1-C2	2.17	1.57	1.52
2	E	3	BMA	C4-C3	2.13	1.57	1.52
4	G	3	BMA	C1-C2	2.12	1.57	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	H	6	MAN	O5-C1	-2.12	1.40	1.43
2	F	4	MAN	O5-C1	2.06	1.47	1.43
3	D	3	BMA	C4-C3	2.06	1.57	1.52
2	C	3	BMA	C4-C3	2.05	1.57	1.52
2	C	5	MAN	O5-C5	2.01	1.47	1.43

All (57) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	4	MAN	C1-O5-C5	7.18	121.92	112.19
2	F	5	MAN	C1-O5-C5	6.92	121.56	112.19
2	C	5	MAN	C1-O5-C5	6.20	120.59	112.19
2	F	4	MAN	C2-C3-C4	6.07	121.39	110.89
2	C	1	NAG	C1-O5-C5	5.99	120.31	112.19
4	G	6	MAN	C1-O5-C5	5.13	119.14	112.19
4	G	4	MAN	C1-O5-C5	5.03	119.01	112.19
2	F	3	BMA	C1-O5-C5	5.01	118.97	112.19
2	F	3	BMA	O3-C3-C2	4.65	118.90	109.99
2	C	1	NAG	C2-N2-C7	4.58	129.43	122.90
2	E	2	NAG	C2-N2-C7	4.43	129.21	122.90
4	G	2	NAG	C2-N2-C7	4.33	129.07	122.90
2	F	4	MAN	O5-C5-C6	3.78	113.13	107.20
2	E	2	NAG	C3-C4-C5	3.74	116.91	110.24
2	F	4	MAN	C1-C2-C3	3.69	114.20	109.67
4	G	5	NAG	C2-N2-C7	3.64	128.08	122.90
2	F	5	MAN	O5-C1-C2	3.38	115.98	110.77
5	H	3	BMA	C1-O5-C5	3.29	116.66	112.19
2	E	4	MAN	C1-O5-C5	3.25	116.59	112.19
3	D	2	NAG	C3-C4-C5	3.19	115.92	110.24
3	D	2	NAG	C4-C3-C2	3.10	115.56	111.02
4	G	3	BMA	C1-O5-C5	3.10	116.39	112.19
2	F	3	BMA	C3-C4-C5	3.09	115.75	110.24
2	C	5	MAN	C1-C2-C3	3.06	113.43	109.67
4	G	5	NAG	C1-C2-N2	-2.97	105.42	110.49
3	D	1	NAG	C3-C4-C5	2.97	115.53	110.24
3	D	1	NAG	C1-O5-C5	2.96	116.20	112.19
4	G	6	MAN	C1-C2-C3	2.77	113.07	109.67
4	G	1	NAG	C2-N2-C7	2.72	126.78	122.90
2	C	1	NAG	C1-C2-N2	2.68	115.06	110.49
2	F	4	MAN	O3-C3-C4	-2.68	104.16	110.35
2	E	3	BMA	O5-C1-C2	-2.65	106.68	110.77
2	E	2	NAG	C1-O5-C5	2.60	115.72	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	H	4	MAN	O2-C2-C3	-2.56	105.01	110.14
4	G	6	MAN	O2-C2-C3	-2.52	105.08	110.14
3	D	1	NAG	C2-N2-C7	2.52	126.49	122.90
5	H	5	MAN	C1-O5-C5	2.48	115.55	112.19
4	G	2	NAG	C1-C2-N2	2.42	114.62	110.49
4	G	5	NAG	C1-O5-C5	-2.39	108.95	112.19
2	F	3	BMA	O5-C5-C6	-2.38	103.47	107.20
2	F	3	BMA	O5-C1-C2	-2.37	107.11	110.77
4	G	6	MAN	O5-C1-C2	2.34	114.38	110.77
2	F	3	BMA	O5-C5-C4	2.34	116.51	110.83
2	C	5	MAN	O2-C2-C3	-2.29	105.56	110.14
2	F	3	BMA	C1-C2-C3	-2.23	106.93	109.67
5	H	3	BMA	O2-C2-C3	-2.18	105.78	110.14
2	E	2	NAG	O5-C5-C4	2.17	116.12	110.83
4	G	3	BMA	O3-C3-C2	2.17	114.15	109.99
4	G	2	NAG	C1-O5-C5	2.15	115.11	112.19
2	C	5	MAN	O5-C1-C2	2.15	114.09	110.77
2	C	4	MAN	O2-C2-C3	-2.13	105.87	110.14
4	G	4	MAN	O2-C2-C3	-2.11	105.91	110.14
2	F	3	BMA	C2-C3-C4	2.09	114.50	110.89
2	F	5	MAN	O2-C2-C3	-2.03	106.08	110.14
2	E	2	NAG	C1-C2-N2	2.01	113.92	110.49
4	G	7	FUC	C1-C2-C3	2.01	112.13	109.67
2	E	4	MAN	O2-C2-C3	-2.00	106.13	110.14

There are no chirality outliers.

All (52) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	1	NAG	C3-C2-N2-C7
2	E	4	MAN	O5-C5-C6-O6
2	C	4	MAN	C4-C5-C6-O6
4	G	2	NAG	O5-C5-C6-O6
2	E	1	NAG	O5-C5-C6-O6
2	E	5	MAN	O5-C5-C6-O6
2	F	4	MAN	O5-C5-C6-O6
3	D	2	NAG	O5-C5-C6-O6
5	H	5	MAN	O5-C5-C6-O6
4	G	2	NAG	C4-C5-C6-O6
2	E	4	MAN	C4-C5-C6-O6
3	D	3	BMA	C4-C5-C6-O6
5	H	5	MAN	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	C	1	NAG	C8-C7-N2-C2
2	C	1	NAG	O7-C7-N2-C2
2	E	1	NAG	C8-C7-N2-C2
2	E	1	NAG	O7-C7-N2-C2
2	E	2	NAG	C8-C7-N2-C2
2	E	2	NAG	O7-C7-N2-C2
2	F	1	NAG	C8-C7-N2-C2
2	F	1	NAG	O7-C7-N2-C2
4	G	2	NAG	C8-C7-N2-C2
4	G	2	NAG	O7-C7-N2-C2
2	E	1	NAG	C4-C5-C6-O6
2	E	5	MAN	C4-C5-C6-O6
2	E	2	NAG	O5-C5-C6-O6
2	E	3	BMA	O5-C5-C6-O6
2	F	4	MAN	C4-C5-C6-O6
2	C	4	MAN	O5-C5-C6-O6
3	D	3	BMA	O5-C5-C6-O6
4	G	6	MAN	O5-C5-C6-O6
3	D	1	NAG	C1-C2-N2-C7
4	G	4	MAN	O5-C5-C6-O6
4	G	3	BMA	C4-C5-C6-O6
2	C	5	MAN	O5-C5-C6-O6
2	F	5	MAN	O5-C5-C6-O6
5	H	4	MAN	O5-C5-C6-O6
5	H	6	MAN	O5-C5-C6-O6
2	E	3	BMA	C4-C5-C6-O6
3	D	2	NAG	C4-C5-C6-O6
2	C	1	NAG	C4-C5-C6-O6
4	G	3	BMA	O5-C5-C6-O6
5	H	1	NAG	O5-C5-C6-O6
5	H	2	NAG	O5-C5-C6-O6
2	C	1	NAG	C3-C2-N2-C7
2	E	2	NAG	C3-C2-N2-C7
4	G	2	NAG	C3-C2-N2-C7
5	H	1	NAG	C3-C2-N2-C7
4	G	6	MAN	C4-C5-C6-O6
2	C	3	BMA	O5-C5-C6-O6
2	E	2	NAG	C4-C5-C6-O6
2	E	2	NAG	C1-C2-N2-C7

All (2) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	E	5	MAN	C1-C2-C3-C4-C5-O5
2	E	4	MAN	C1-C2-C3-C4-C5-O5

11 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	H	2	NAG	1	0
2	C	2	NAG	2	0
5	H	4	MAN	1	0
2	C	1	NAG	1	0
4	G	1	NAG	1	0
2	E	1	NAG	1	0
2	E	2	NAG	1	0
4	G	2	NAG	2	0
5	H	1	NAG	1	0
2	F	4	MAN	0	2
5	H	5	MAN	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

Oligosaccharide Chain C

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain E

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain F

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain D

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain G

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain H

Bond lengths

Bond angles

Torsions

Rings

5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

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, 95th 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(Å²)	Q<0.9
1	A	1256/1467 (85%)	-0.29	22 (1%)	68	55	30, 48, 88, 273	0
1	B	1247/1467 (85%)	-0.13	35 (2%)	53	37	30, 58, 130, 157	0
All	All	2503/2934 (85%)	-0.21	57 (2%)	60	47	30, 52, 119, 273	0

All (57) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	34	THR	9.4
1	A	37	GLY	9.1
1	A	40	PRO	8.6
1	A	33	ALA	7.9
1	B	2318	ALA	6.3
1	A	41	LEU	6.2
1	B	2319	LEU	6.1
1	B	2277	ASN	5.0
1	A	36	PRO	5.0
1	A	32	PRO	4.6
1	A	39	LEU	4.3
1	B	2245	THR	4.2
1	B	212	ALA	3.7
1	A	505	PRO	3.6
1	A	43	PRO	3.5
1	B	1899	CYS	3.4
1	B	2329	GLN	3.3
1	B	2217	ASN	3.3
1	A	399	VAL	3.2
1	B	1799	GLY	3.2
1	A	44	SER	3.2
1	B	2197	THR	3.2
1	A	42	GLY	3.1
1	A	38	ALA	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	569	ASP	3.0
1	B	1911	THR	3.0
1	B	2314	VAL	2.9
1	B	2199	MET	2.9
1	B	398	LEU	2.9
1	B	2316	GLN	2.9
1	B	2295	ASN	2.8
1	B	2279	LYS	2.8
1	A	190	THR	2.8
1	B	2122	THR	2.7
1	A	31	PHE	2.7
1	B	2317	ILE	2.6
1	B	2274	PHE	2.6
1	A	35	ALA	2.6
1	B	2258	LYS	2.6
1	B	2254	SER	2.6
1	B	2213	GLN	2.5
1	A	403	ASP	2.5
1	B	2202	THR	2.5
1	B	2250	SER	2.3
1	A	30	ARG	2.3
1	B	568	SER	2.3
1	B	1897	ARG	2.2
1	B	2198	ASN	2.2
1	B	2257	VAL	2.2
1	B	709	SER	2.2
1	A	317	HIS	2.2
1	B	2276	GLN	2.1
1	B	2214	GLY	2.1
1	A	400	LEU	2.1
1	B	2216	SER	2.1
1	B	2248	VAL	2.0
1	B	2269	HIS	2.0

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

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

6.3 Carbohydrates ⓘ

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

| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MAN	F	5	11/12	0.49	0.59	149,151,160,160	0
2	MAN	E	4	11/12	0.52	0.33	117,124,129,131	0
5	MAN	H	5	11/12	0.57	0.42	125,134,142,149	0
2	BMA	F	3	11/12	0.59	0.60	131,138,150,151	0
2	BMA	C	3	11/12	0.60	0.61	144,158,163,164	0
4	NAG	G	2	14/15	0.61	0.39	118,133,142,145	0
2	NAG	F	2	14/15	0.61	0.37	130,144,153,154	0
3	BMA	D	3	11/12	0.62	0.56	134,157,162,163	0
5	MAN	H	6	11/12	0.63	0.30	99,113,125,126	0
2	NAG	C	2	14/15	0.64	0.47	128,137,149,156	0
2	MAN	C	4	11/12	0.64	0.56	148,158,161,163	0
4	NAG	G	5	14/15	0.67	0.32	78,93,101,102	0
2	MAN	C	5	11/12	0.70	0.51	138,145,151,156	0
2	MAN	F	4	11/12	0.71	0.43	77,96,119,134	0
2	NAG	F	1	14/15	0.72	0.33	86,120,136,142	0
3	NAG	D	2	14/15	0.74	0.38	114,145,152,154	0
4	BMA	G	3	11/12	0.75	0.39	123,144,149,152	0
5	NAG	H	2	14/15	0.75	0.28	73,95,100,103	0
4	MAN	G	6	11/12	0.77	0.36	128,135,144,145	0
4	NAG	G	1	14/15	0.78	0.23	99,116,124,128	0
2	NAG	E	2	14/15	0.79	0.28	74,105,116,122	0
2	BMA	E	3	11/12	0.79	0.24	112,121,126,127	0
4	FUC	G	7	10/11	0.80	0.41	124,134,139,144	0
4	MAN	G	4	11/12	0.80	0.22	69,97,108,110	0
3	NAG	D	1	14/15	0.82	0.38	95,131,141,144	0
2	MAN	E	5	11/12	0.84	0.16	84,109,119,120	0
5	MAN	H	4	11/12	0.84	0.18	105,120,127,133	0
5	BMA	H	3	11/12	0.86	0.18	108,114,120,123	0
2	NAG	C	1	14/15	0.88	0.28	79,89,109,121	0
2	NAG	E	1	14/15	0.89	0.18	78,83,92,104	0
5	NAG	H	1	14/15	0.91	0.18	81,86,93,93	0

The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around Chain C:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
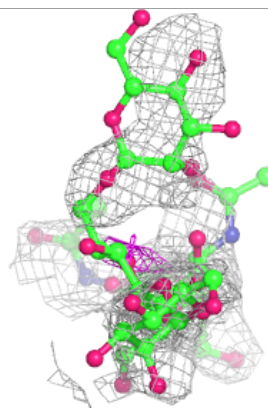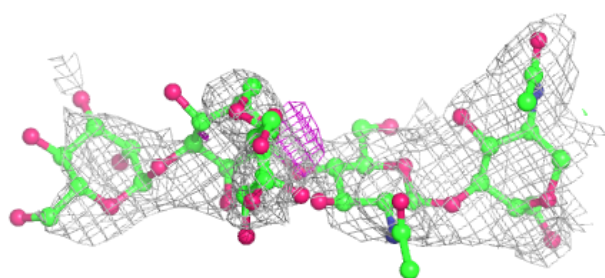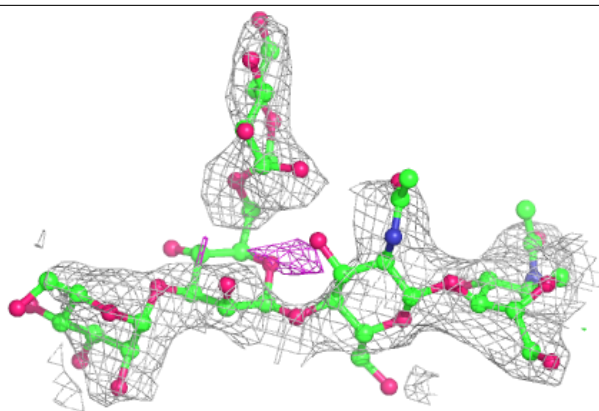
Electron density around Chain E:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
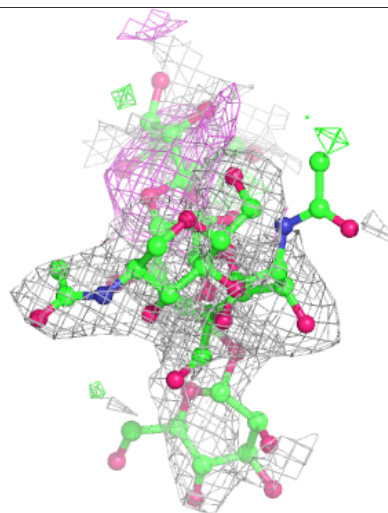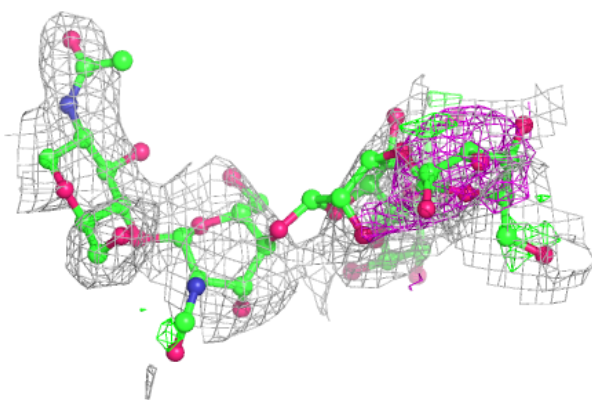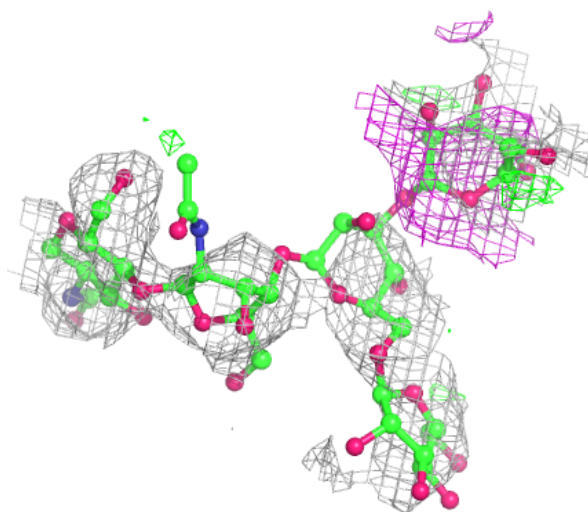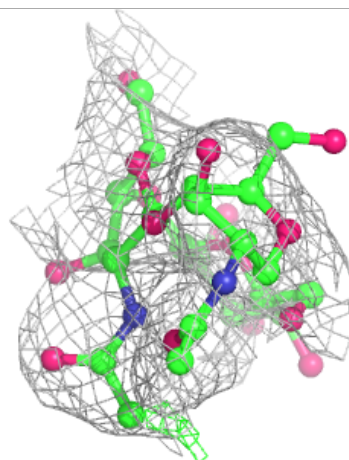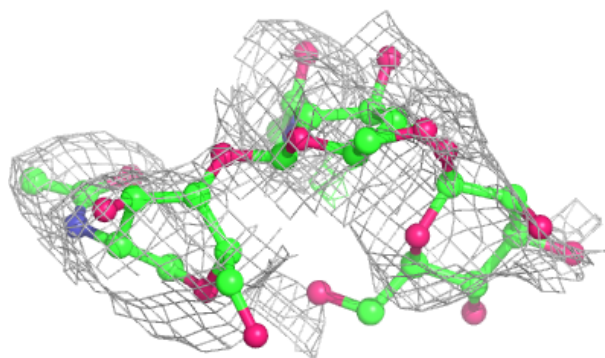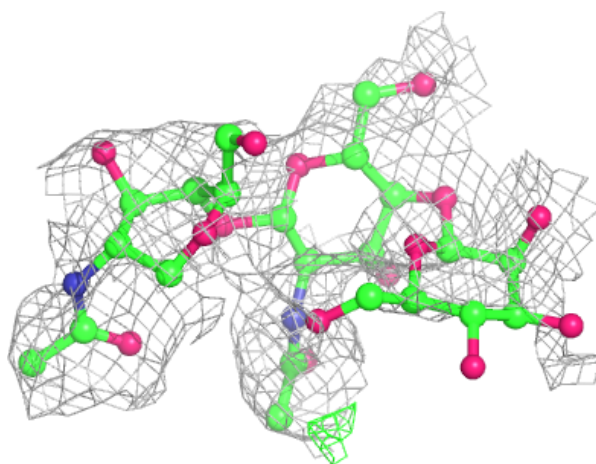and green (positive)
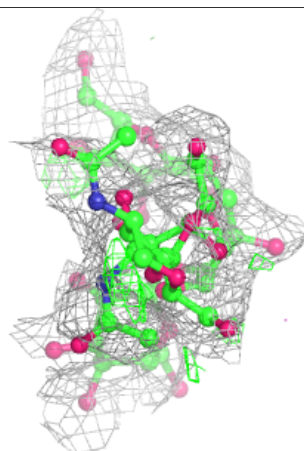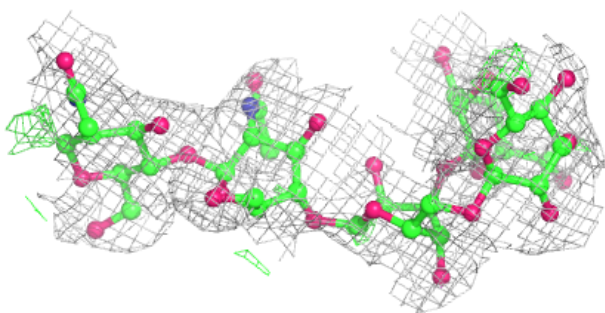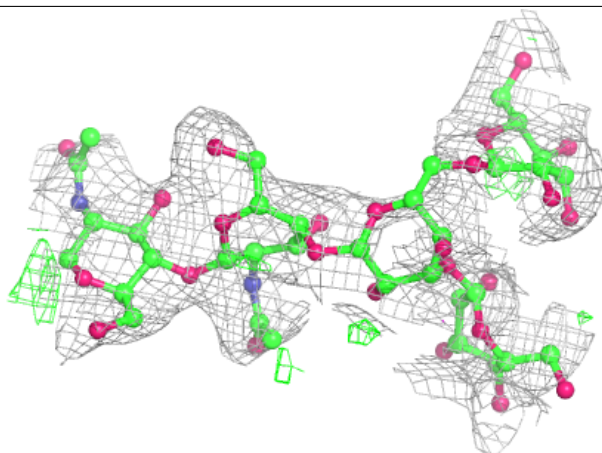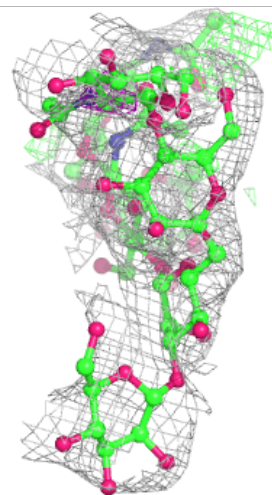
Electron density around Chain F:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
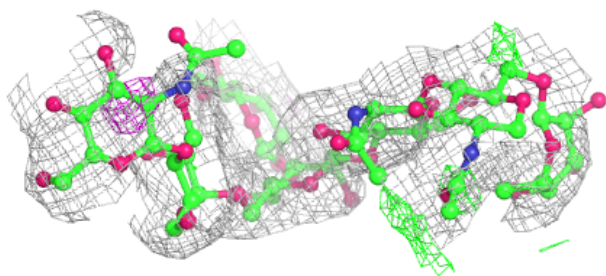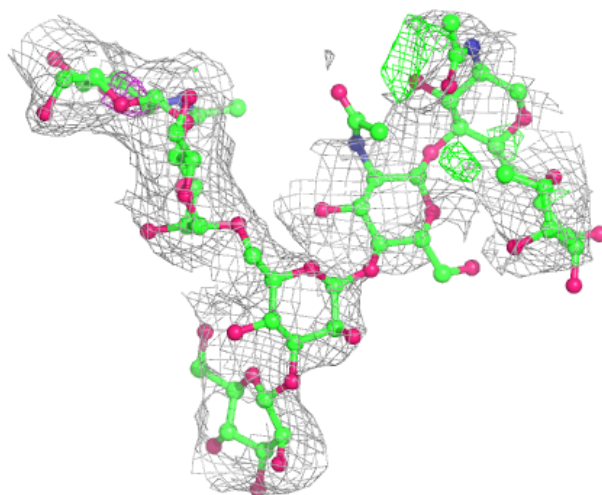and green (positive)

Electron density around Chain D:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
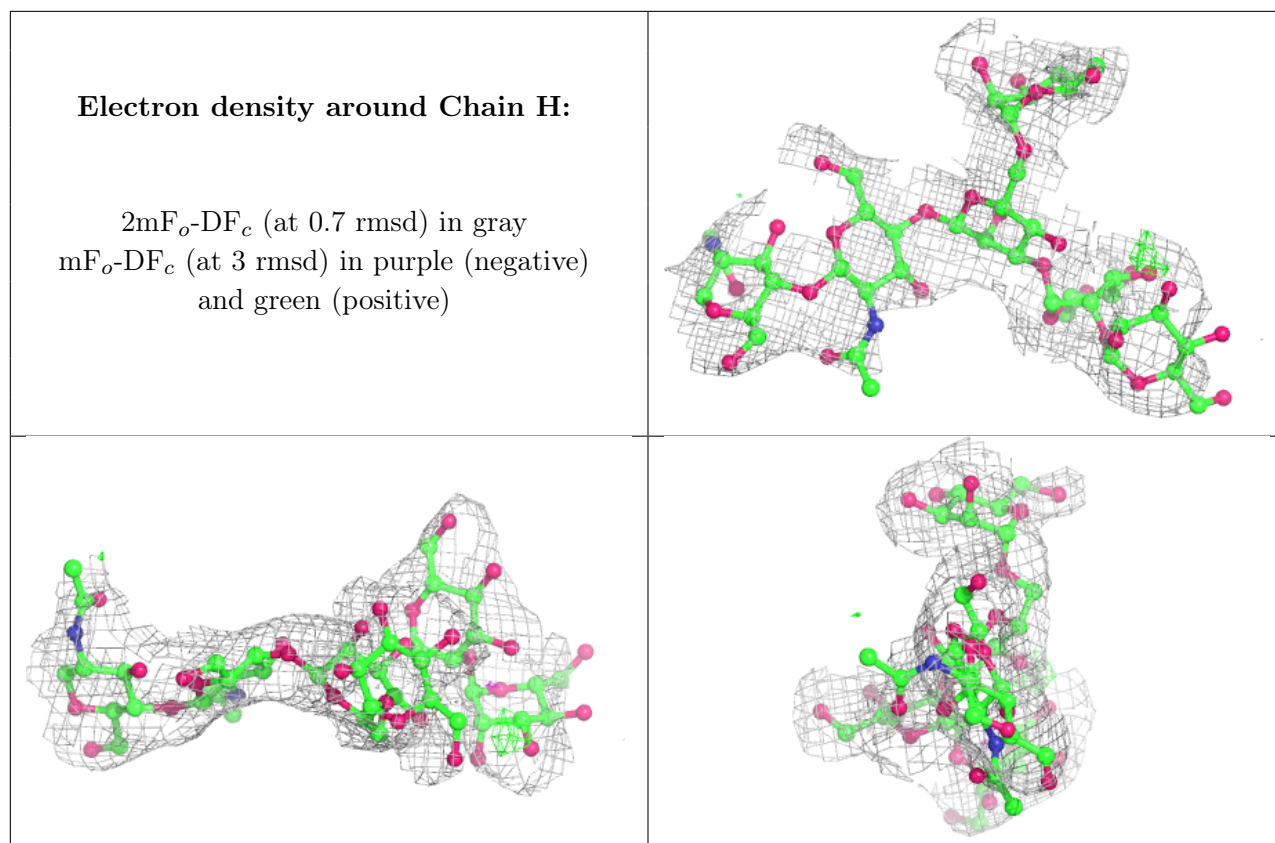and green (positive)

Electron density around Chain G:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around Chain H:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

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. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
7	ZN	A	2415	1/1	0.97	0.15	46,46,46,46	0
6	CA	B	2419	1/1	0.98	0.20	59,59,59,59	0
6	CA	A	2414	1/1	0.99	0.20	40,40,40,40	0
8	CU1	A	2416	1/1	0.99	0.20	40,40,40,40	0
8	CU1	B	2421	1/1	0.99	0.22	48,48,48,48	0
7	ZN	B	2420	1/1	1.00	0.19	47,47,47,47	0

6.5 Other polymers ⓘ

There are no such residues in this entry.