Full wwPDB X-ray Structure Validation Report (i)

Nov 13, 2023 – 07:58 PM JST

PDB ID	:	5XYA
Title	:	Crystal structure of a serine protease from Streptococcus species
Authors	:	Jobichen, C.; Sivaraman, J.
Deposited on	:	2017-07-06
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
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

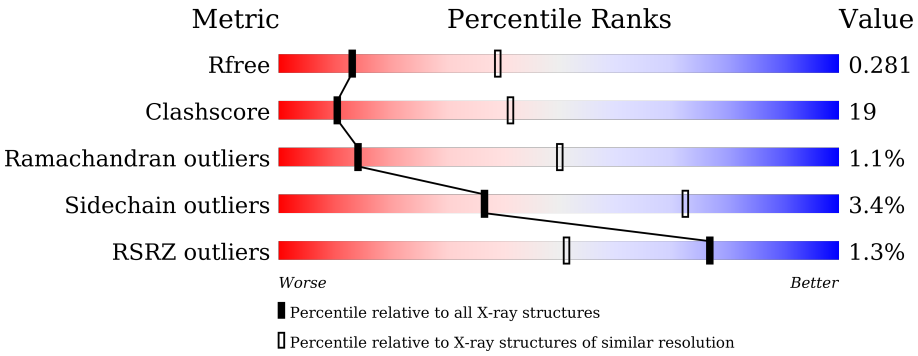
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (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 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	1530	% 58% 30% · 11%

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
3	SO4	A	1704	-	-	X	-

2 Entry composition

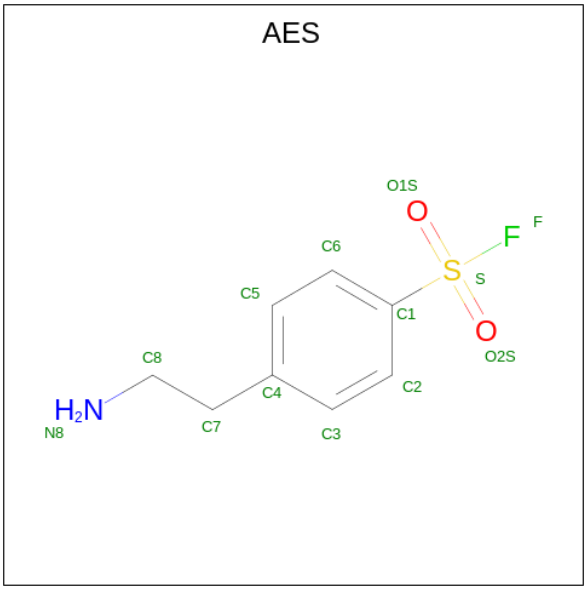
There are 4 unique types of molecules in this entry. The entry contains 10300 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Chemokine protease C.

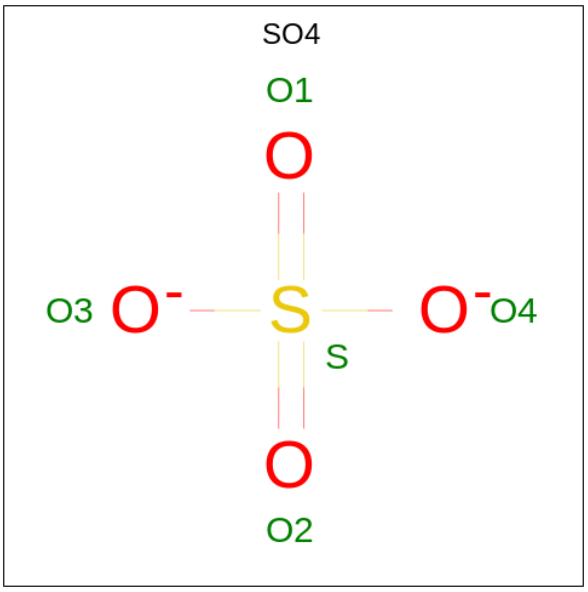
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	Se			
1	A	1358	10269	6462	1764	2019	24	0	0	0

- Molecule 2 is 4-(2-AMINOETHYL)BENZENESULFONYL FLUORIDE (three-letter code: AES) (formula: $C_8H_{10}FNO_2S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
2	A	1	12	8	1	2	1	0	0

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total O S 5 4 1	0	0
3	A	1	Total O S 5 4 1	0	0
3	A	1	Total O S 5 4 1	0	0

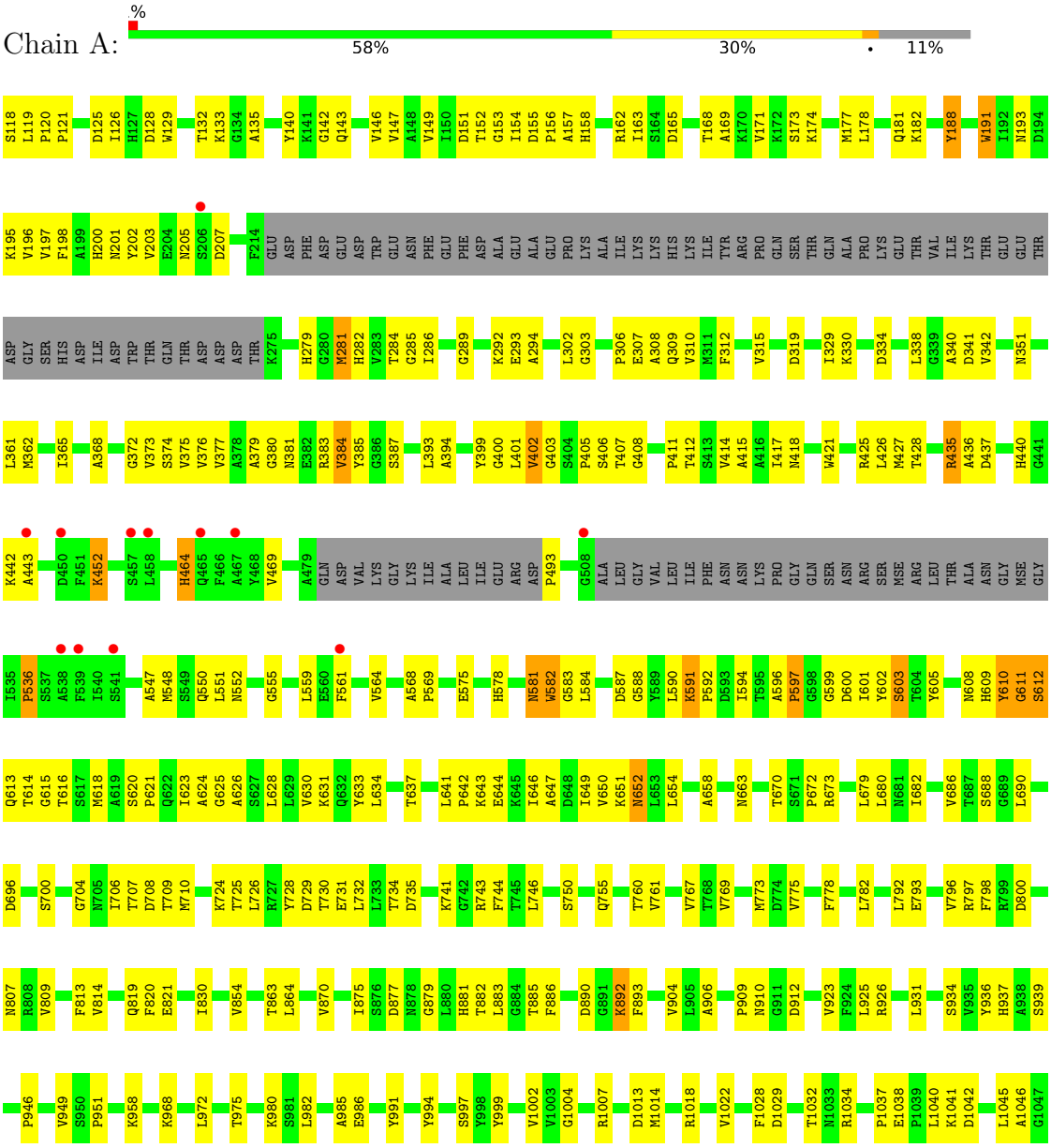
- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

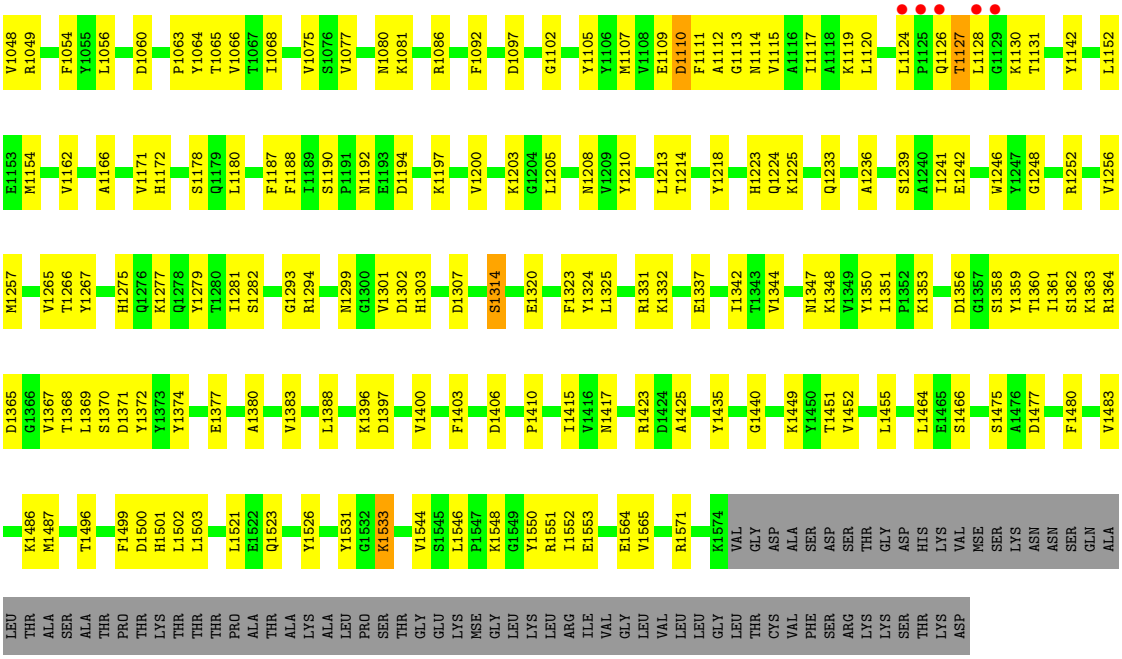
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	4	Total Ca 4 4	0	0

3 Residue-property plots (i)

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: Chemokine protease C




V1048 R1049 F1054 Y1055 L1056 D1060 P1063 Y1064 T1065 V1066 T1067 I1068 V1075 S1076 V1077 N1080 K1081 R1086 F1092 D1097 G1102 Y1105 Y1106 M1107 V1108 E1109 D1110 F1111 A1112 G1113 N1114 V1115 A1116 I1117 A1118 K1119 L1120 L1124 P1125 Q1126 T1127 L1128 G1129 K1130 T1131 Y1142 L1152
E1153 M1154 V1162 A1166 V1171 H1172 S1178 Q1179 L1180 F1187 F1188 I1189 S1190 P1191 N1192 E1193 D1194 K1197 V1200 K1203 G1204 L1205 N1208 V1209 Y1210 L1213 T1214 Y1218 H1223 Q1224 K1225 Q1233 A1236 S1239 A1240 I1241 E1242 W1246 Y1247 G1248 R1252 V1256
M1257 V1265 T1266 Y1267 H1275 Q1276 K1277 Q1278 Y1279 T1280 I1281 S1282 G1293 R1294 N1299 G1300 V1301 D1302 H1303 D1307 S1314 E1320 F1323 Y1324 L1325 R1331 K1332 E1337 I1342 T1343 V1344 N1347 K1348 V1349 Y1350 I1351 P1352 K1353 D1356 G1357 S1358 Y1359 T1360 I1361 S1362 K1363 R1364
D1365 G1366 V1367 T1368 L1369 S1370 D1371 Y1372 Y1373 Y1374 E1377 A1380 V1383 L1388 K1396 D1397 V1400 F1403 D1406 P1410 I1415 V1416 N1417 R1423 D1424 A1425 Y1435 G1440 K1449 Y1450 T1451 V1452 L1455 L1464 E1465 S1466 S1475 A1476 D1477 F1480 V1483
K1486 M1487 T1496 F1499 D1500 H1501 L1502 L1503 L1521 E1522 Q1523 Y1526 Y1531 G1532 K1533 V1544 S1545 L1546 P1547 K1548 G1549 Y1550 R1551 I1552 E1553 E1564 V1565 R1571 K1574 VAL GLY ASP ALA SER ASP SER THR GLY ASP HIS LYS VAL MSE SER LYS ASN ASN SER GLN ALA
LEU THR ALA SER ALA THR PRO THR LYS THR THR THR PRO ALA THR ALA LYS ALA LEU PRO SER THR GLY GLU LYS MSE GLY LEU LYS LEU ARG ILE VAL GLY LEU VAL LEU LEU GLY LEU THR CYS VAL PHE SER ARG LYS LYS SER THR LYS ASP

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 62 2 2	Depositor
Cell constants a, b, c, α, β, γ	190.53Å 190.53Å 248.67Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	19.90 – 3.00 49.84 – 2.85	Depositor EDS
% Data completeness (in resolution range)	99.4 (19.90-3.00) 88.1 (49.84-2.85)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.72 (at 2.86Å)	Xtriage
Refinement program	PHENIX (dev_2733: ???)	Depositor
R, R_{free}	0.223 , 0.278 0.227 , 0.281	Depositor DCC
R_{free} test set	1990 reflections (3.60%)	wwPDB-VP
Wilson B-factor (Å^2)	37.2	Xtriage
Anisotropy	0.047	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.26 , 30.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.40$, $< L^2 > = 0.22$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.85	EDS
Total number of atoms	10300	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.61% of the height of the origin peak. No significant pseudotranslation is detected.*

[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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, AES, CA

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	0.62	0/10444	0.78	4/14117 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1299	ASN	CB-CA-C	6.47	123.35	110.40
1	A	536	PRO	N-CA-CB	6.29	110.85	103.30
1	A	493	PRO	N-CA-CB	6.11	110.63	103.30
1	A	610	TYR	CB-CA-C	5.53	121.45	110.40

There are no chirality outliers.

There are no planarity outliers.

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	10269	0	9868	375	0
2	A	12	0	10	2	0
3	A	15	0	0	2	0
4	A	4	0	0	0	0
All	All	10300	0	9878	375	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 19.

All (375) 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:A:188:TYR:OH	1:A:330:LYS:HE3	1.32	1.25
1:A:401:LEU:O	1:A:581:ASN:ND2	1.82	1.12
1:A:412:THR:HG22	1:A:651:LYS:HD3	1.40	1.04
1:A:910:ASN:ND2	1:A:912:ASP:OD1	1.94	1.00
1:A:188:TYR:OH	1:A:330:LYS:CE	2.13	0.95
1:A:402:VAL:HA	1:A:581:ASN:HD22	1.34	0.90
1:A:362:MSE:HE1	1:A:405:PRO:HB3	1.51	0.90
1:A:1190:SER:O	1:A:1192:ASN:OD1	1.89	0.90
1:A:1102:GLY:HA2	1:A:1120:LEU:HB2	1.55	0.88
1:A:142:GLY:H	1:A:306:PRO:HD2	1.40	0.87
1:A:302:LEU:HD21	1:A:306:PRO:HB3	1.60	0.83
1:A:603:SER:H	1:A:611:GLY:HA3	1.44	0.83
1:A:710:MSE:HE3	1:A:775:VAL:HG11	1.60	0.81
1:A:383:ARG:HG2	1:A:384:VAL:HG22	1.62	0.81
1:A:1127:THR:HG23	1:A:1130:LYS:HE2	1.65	0.78
1:A:149:VAL:HG13	1:A:312:PHE:HD2	1.49	0.77
1:A:158:HIS:CD2	1:A:608:ASN:H	2.02	0.77
1:A:582:TRP:HD1	1:A:583:GLY:H	1.32	0.76
1:A:679:LEU:HD23	1:A:680:LEU:N	2.01	0.76
1:A:282:HIS:CE1	1:A:612:SER:O	2.39	0.76
1:A:1294:ARG:HD2	1:A:1396:LYS:HE3	1.66	0.75
1:A:154:ILE:HG22	1:A:155:ASP:H	1.52	0.75
1:A:146:VAL:HG23	1:A:340:ALA:HA	1.68	0.74
1:A:158:HIS:HD2	1:A:608:ASN:H	1.36	0.73
1:A:885:THR:HG21	1:A:893:PHE:HB3	1.71	0.73
1:A:132:THR:HA	1:A:682:ILE:HD11	1.71	0.72
1:A:1152:LEU:HD23	1:A:1154:MSE:HE1	1.72	0.71
1:A:147:VAL:HG23	1:A:342:VAL:HG13	1.74	0.70
1:A:174:LYS:HB3	1:A:191:TRP:NE1	2.07	0.70
1:A:1054:PHE:HE2	1:A:1107:MSE:HE3	1.57	0.70
1:A:171:VAL:HG21	1:A:197:VAL:HG11	1.75	0.69
1:A:885:THR:CG2	1:A:893:PHE:HB3	2.23	0.69
1:A:631:LYS:HE2	1:A:646:ILE:HG12	1.75	0.68
1:A:142:GLY:N	1:A:306:PRO:HD2	2.08	0.68
1:A:394:ALA:HA	1:A:744:PHE:CE2	2.29	0.68
1:A:407:THR:HA	1:A:591:LYS:HD3	1.76	0.67
1:A:1499:PHE:CE2	1:A:1503:LEU:HD11	2.29	0.67
1:A:1400:VAL:HG13	1:A:1480:PHE:HD1	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:798:PHE:HB2	1:A:809:VAL:O	1.95	0.67
1:A:365:ILE:HG23	1:A:375:VAL:HG21	1.75	0.67
1:A:402:VAL:HA	1:A:581:ASN:ND2	2.09	0.66
1:A:1415:ILE:HG22	1:A:1417:ASN:H	1.60	0.66
1:A:630:VAL:HG12	1:A:634:LEU:HD11	1.78	0.66
1:A:643:LYS:HG3	1:A:644:GLU:OE1	1.95	0.66
1:A:937:HIS:ND1	1:A:939:SER:HB3	2.11	0.66
1:A:372:GLY:HA2	1:A:646:ILE:HG21	1.78	0.66
1:A:201:ASN:HB3	1:A:207:ASP:H	1.60	0.65
1:A:1546:LEU:HD13	1:A:1550:TYR:HB3	1.78	0.65
1:A:951:PRO:HA	1:A:1252:ARG:NH2	2.12	0.65
1:A:279:HIS:NE2	2:A:1701:AES:O1S	2.29	0.64
1:A:1110:ASP:HB3	1:A:1113:GLY:H	1.62	0.64
1:A:1546:LEU:HD11	1:A:1552:ILE:HG13	1.79	0.64
1:A:1403:PHE:HD1	1:A:1483:VAL:HG22	1.62	0.64
1:A:135:ALA:HB2	1:A:686:VAL:HG21	1.79	0.64
1:A:195:LYS:NZ	1:A:308:ALA:O	2.26	0.64
1:A:625:GLY:HA2	1:A:628:LEU:HD12	1.80	0.64
1:A:400:GLY:HA3	1:A:583:GLY:HA3	1.79	0.63
1:A:1029:ASP:OD2	1:A:1032:THR:HG22	1.98	0.63
1:A:1377:GLU:HB2	1:A:1383:VAL:HG22	1.81	0.63
1:A:708:ASP:OD1	1:A:709:THR:HG23	1.98	0.63
1:A:402:VAL:HG22	1:A:582:TRP:O	1.99	0.62
1:A:427:MSE:SE	1:A:559:LEU:HD11	2.49	0.62
1:A:1107:MSE:HE2	1:A:1117:ILE:HD11	1.81	0.62
1:A:631:LYS:HG3	1:A:646:ILE:HD11	1.79	0.62
1:A:985:ALA:HA	1:A:1233:GLN:HG3	1.81	0.62
1:A:464:HIS:O	1:A:464:HIS:ND1	2.33	0.62
1:A:1192:ASN:OD1	1:A:1192:ASN:N	2.32	0.61
1:A:1192:ASN:ND2	1:A:1194:ASP:OD1	2.33	0.61
1:A:154:ILE:HD11	1:A:312:PHE:CG	2.35	0.61
1:A:1130:LYS:HB2	1:A:1131:THR:HG22	1.82	0.61
1:A:464:HIS:HB2	1:A:555:GLY:O	2.00	0.61
1:A:641:LEU:HD21	1:A:649:ILE:HD12	1.81	0.61
1:A:1205:LEU:HD12	1:A:1205:LEU:H	1.66	0.61
1:A:587:ASP:HA	1:A:1002:VAL:HG12	1.82	0.61
1:A:1496:THR:OG1	3:A:1704:SO4:O1	2.13	0.60
1:A:400:GLY:CA	1:A:583:GLY:HA3	2.31	0.60
1:A:149:VAL:HG21	1:A:284:THR:HG22	1.82	0.60
1:A:200:HIS:HB3	1:A:202:TYR:CE1	2.36	0.60
1:A:1353:LYS:HG3	1:A:1359:TYR:CZ	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:728:TYR:HB3	1:A:798:PHE:CE1	2.36	0.60
1:A:994:TYR:HB2	1:A:1014:MSE:HE2	1.82	0.60
1:A:673:ARG:HG3	1:A:793:GLU:OE2	2.02	0.60
1:A:146:VAL:HG12	1:A:309:GLN:HB2	1.84	0.60
1:A:706:ILE:HD12	1:A:710:MSE:HG2	1.82	0.60
1:A:1127:THR:HA	1:A:1130:LYS:NZ	2.16	0.59
1:A:679:LEU:HD23	1:A:680:LEU:H	1.66	0.59
1:A:603:SER:O	1:A:611:GLY:N	2.35	0.59
1:A:383:ARG:O	1:A:384:VAL:HG13	2.03	0.59
1:A:402:VAL:CA	1:A:581:ASN:HD22	2.14	0.59
1:A:149:VAL:HG11	1:A:284:THR:HG22	1.85	0.58
1:A:741:LYS:HD2	1:A:743:ARG:HD2	1.86	0.58
1:A:761:VAL:HG23	1:A:767:VAL:HG12	1.85	0.58
1:A:380:GLY:H	1:A:616:THR:HG21	1.69	0.58
1:A:631:LYS:HA	1:A:634:LEU:HD12	1.85	0.58
1:A:931:LEU:HA	1:A:997:SER:O	2.03	0.58
1:A:143:GLN:N	1:A:307:GLU:HB3	2.19	0.58
1:A:376:VAL:HG12	1:A:620:SER:OG	2.03	0.58
1:A:1056:LEU:HD13	1:A:1063:PRO:HB2	1.85	0.58
1:A:146:VAL:CG2	1:A:340:ALA:HA	2.34	0.57
1:A:647:ALA:HA	1:A:650:VAL:HG12	1.86	0.57
1:A:999:TYR:CZ	1:A:1007:ARG:HB2	2.39	0.57
1:A:418:ASN:HA	1:A:599:GLY:HA3	1.87	0.57
1:A:384:VAL:HG12	1:A:399:TYR:HD1	1.69	0.57
1:A:1325:LEU:HA	1:A:1347:ASN:O	2.05	0.57
1:A:1127:THR:HA	1:A:1130:LYS:HZ3	1.69	0.57
1:A:1109:GLU:HG2	1:A:1115:VAL:HG22	1.87	0.57
1:A:1464:LEU:HA	1:A:1487:MSE:HG2	1.87	0.57
1:A:690:LEU:HD21	1:A:726:LEU:HD11	1.85	0.57
1:A:602:TYR:CE2	1:A:610:TYR:HB3	2.41	0.56
1:A:1397:ASP:OD1	1:A:1397:ASP:N	2.26	0.56
1:A:128:ASP:OD2	1:A:133:LYS:NZ	2.38	0.56
1:A:854:VAL:HB	1:A:881:HIS:HA	1.87	0.56
1:A:202:TYR:OH	1:A:334:ASP:OD2	2.22	0.56
1:A:548:MSE:O	1:A:551:LEU:N	2.38	0.56
1:A:594:ILE:HD13	1:A:623:ILE:HD12	1.87	0.56
1:A:143:GLN:HA	1:A:307:GLU:O	2.06	0.56
1:A:1200:VAL:HG21	1:A:1281:ILE:HG13	1.87	0.56
1:A:341:ASP:O	1:A:373:VAL:HA	2.05	0.55
1:A:904:VAL:HG11	1:A:1111:PHE:CG	2.42	0.55
1:A:403:GLY:C	1:A:407:THR:HG23	2.27	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:658:ALA:HB1	1:A:679:LEU:O	2.06	0.55
1:A:1154:MSE:HE3	1:A:1203:LYS:HD3	1.87	0.55
1:A:156:PRO:HB2	1:A:196:VAL:HG21	1.89	0.55
1:A:435:ARG:NH1	1:A:437:ASP:OD1	2.39	0.55
1:A:630:VAL:HB	1:A:650:VAL:HG23	1.89	0.54
1:A:633:TYR:O	1:A:637:THR:HG23	2.06	0.54
1:A:126:ILE:HD11	1:A:597:PRO:HG2	1.88	0.54
1:A:154:ILE:HG22	1:A:155:ASP:N	2.20	0.54
1:A:1400:VAL:HG13	1:A:1480:PHE:CD1	2.41	0.54
1:A:625:GLY:O	1:A:628:LEU:HB2	2.07	0.54
1:A:329:ILE:HG12	1:A:361:LEU:HD13	1.90	0.54
1:A:452:LYS:H	1:A:452:LYS:HD2	1.73	0.53
1:A:162:ARG:HG2	1:A:292:LYS:NZ	2.23	0.53
1:A:910:ASN:OD1	1:A:910:ASN:N	2.39	0.53
1:A:704:GLY:HA2	1:A:1526:TYR:CE2	2.44	0.53
1:A:1188:PHE:O	1:A:1197:LYS:HE3	2.09	0.53
1:A:591:LYS:HA	1:A:592:PRO:O	2.09	0.53
1:A:688:SER:OG	1:A:690:LEU:HB2	2.07	0.53
1:A:882:THR:O	1:A:885:THR:HB	2.08	0.53
1:A:1110:ASP:HB2	1:A:1114:ASN:O	2.08	0.53
1:A:428:THR:HG22	1:A:442:LYS:HG2	1.91	0.52
1:A:731:GLU:OE2	1:A:750:SER:OG	2.27	0.52
1:A:1423:ARG:HB2	1:A:1451:THR:HG23	1.92	0.52
1:A:169:ALA:HB1	1:A:309:GLN:NE2	2.24	0.52
1:A:630:VAL:O	1:A:633:TYR:HB3	2.09	0.52
1:A:149:VAL:HG13	1:A:312:PHE:CD2	2.38	0.52
1:A:1571:ARG:HH11	1:A:1571:ARG:HB3	1.75	0.52
1:A:286:ILE:HD11	1:A:601:ILE:HG21	1.91	0.51
1:A:435:ARG:C	1:A:437:ASP:H	2.13	0.51
1:A:1403:PHE:HD1	1:A:1483:VAL:CG2	2.23	0.51
1:A:1265:VAL:HB	1:A:1277:LYS:HB2	1.90	0.51
1:A:282:HIS:HE1	1:A:612:SER:H	1.59	0.51
1:A:1028:PHE:HA	1:A:1034:ARG:O	2.10	0.51
1:A:1403:PHE:CD1	1:A:1483:VAL:HG22	2.45	0.51
1:A:730:THR:OG1	1:A:796:VAL:HG22	2.11	0.51
1:A:1042:ASP:HB2	1:A:1048:VAL:HG23	1.91	0.51
1:A:1246:TRP:CZ2	1:A:1248:GLY:HA2	2.45	0.51
1:A:177:MSE:HE1	1:A:338:LEU:HG	1.91	0.51
1:A:643:LYS:O	1:A:646:ILE:HG22	2.10	0.51
1:A:152:THR:O	1:A:152:THR:OG1	2.28	0.51
1:A:1188:PHE:HA	1:A:1282:SER:O	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:165:ASP:O	1:A:168:THR:HG22	2.11	0.51
1:A:870:VAL:HG12	1:A:1142:TYR:CG	2.46	0.51
1:A:384:VAL:HG21	1:A:746:LEU:HD11	1.92	0.51
1:A:773:MSE:HE1	1:A:813:PHE:CZ	2.46	0.51
1:A:550:GLN:O	1:A:552:ASN:N	2.44	0.50
1:A:1213:LEU:HB3	1:A:1236:ALA:O	2.11	0.50
1:A:1435:TYR:CD1	1:A:1440:GLY:HA2	2.46	0.50
1:A:156:PRO:O	1:A:193:ASN:ND2	2.45	0.50
1:A:177:MSE:HE3	1:A:177:MSE:HA	1.92	0.50
1:A:1323:PHE:CE2	1:A:1348:LYS:HE3	2.46	0.50
1:A:731:GLU:OE1	1:A:797:ARG:NH2	2.33	0.50
1:A:1107:MSE:HE2	1:A:1117:ILE:CD1	2.42	0.50
1:A:1246:TRP:CE2	1:A:1248:GLY:HA2	2.47	0.50
1:A:1521:LEU:HD21	1:A:1533:LYS:HB2	1.94	0.50
1:A:1571:ARG:HB3	1:A:1571:ARG:NH1	2.26	0.50
1:A:125:ASP:HB3	1:A:421:TRP:HB2	1.93	0.50
1:A:1068:ILE:HG12	1:A:1075:VAL:HG22	1.93	0.50
1:A:1452:VAL:HG11	1:A:1483:VAL:HG21	1.93	0.50
1:A:1124:LEU:HD23	1:A:1124:LEU:H	1.77	0.50
1:A:1166:ALA:HB2	1:A:1178:SER:CB	2.42	0.49
1:A:1363:LYS:HZ3	1:A:1369:LEU:H	1.60	0.49
1:A:725:THR:OG1	1:A:760:THR:HG22	2.12	0.49
1:A:178:LEU:O	1:A:182:LYS:HG2	2.12	0.49
1:A:443:ALA:HB1	1:A:547:ALA:HB1	1.95	0.49
1:A:399:TYR:OH	1:A:673:ARG:NH2	2.46	0.49
1:A:672:PRO:HD2	1:A:793:GLU:CD	2.33	0.49
1:A:1188:PHE:CD2	1:A:1314:SER:HB2	2.47	0.48
1:A:428:THR:HG22	1:A:442:LYS:CG	2.43	0.48
1:A:910:ASN:CG	1:A:912:ASP:OD1	2.48	0.48
1:A:1257:MSE:SE	1:A:1410:PRO:HD3	2.63	0.48
1:A:1423:ARG:HB2	1:A:1451:THR:CG2	2.42	0.48
1:A:1502:LEU:HD12	1:A:1502:LEU:H	1.78	0.48
1:A:1004:GLY:N	3:A:1704:SO4:O4	2.46	0.48
1:A:282:HIS:HE1	1:A:612:SER:O	1.95	0.48
1:A:414:VAL:HG21	1:A:620:SER:HA	1.96	0.48
1:A:1075:VAL:HB	1:A:1344:VAL:HG21	1.94	0.48
1:A:1045:LEU:HD12	1:A:1045:LEU:H	1.78	0.48
1:A:1425:ALA:HB2	1:A:1449:LYS:HB3	1.94	0.48
1:A:707:THR:HG23	1:A:709:THR:H	1.79	0.48
1:A:710:MSE:HE2	1:A:792:LEU:HD13	1.95	0.48
1:A:728:TYR:HB3	1:A:798:PHE:CD1	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1277:LYS:HB3	1:A:1279:TYR:CE1	2.49	0.48
1:A:417:ILE:HG13	1:A:575:GLU:O	2.13	0.48
1:A:302:LEU:HD23	1:A:303:GLY:H	1.79	0.48
1:A:904:VAL:HG11	1:A:1111:PHE:CD2	2.49	0.48
1:A:368:ALA:HB1	1:A:373:VAL:HB	1.95	0.47
1:A:155:ASP:O	1:A:157:ALA:N	2.47	0.47
1:A:590:LEU:O	1:A:591:LYS:HG2	2.14	0.47
1:A:1022:VAL:HG22	1:A:1041:LYS:O	2.15	0.47
1:A:704:GLY:HA2	1:A:1526:TYR:CZ	2.50	0.47
1:A:403:GLY:O	1:A:406:SER:OG	2.29	0.46
1:A:415:ALA:HB2	1:A:592:PRO:HG3	1.96	0.46
1:A:1068:ILE:HG21	1:A:1331:ARG:HD3	1.97	0.46
1:A:302:LEU:HD23	1:A:303:GLY:N	2.29	0.46
1:A:626:ALA:HB1	1:A:654:LEU:HD21	1.96	0.46
1:A:710:MSE:HE1	1:A:732:LEU:HD11	1.97	0.46
1:A:153:GLY:H	1:A:312:PHE:HZ	1.63	0.46
1:A:1521:LEU:HD23	1:A:1521:LEU:HA	1.58	0.46
1:A:663:ASN:HB2	1:A:670:THR:HG23	1.96	0.46
1:A:1188:PHE:HB2	1:A:1380:ALA:HA	1.97	0.46
1:A:1361:ILE:HG12	1:A:1388:LEU:CD1	2.45	0.46
1:A:1500:ASP:HB3	1:A:1501:HIS:ND1	2.31	0.46
1:A:201:ASN:OD1	1:A:203:VAL:HG12	2.14	0.46
1:A:293:GLU:HG3	1:A:294:ALA:H	1.81	0.46
1:A:1064:TYR:OH	1:A:1337:GLU:OE1	2.22	0.46
1:A:289:GLY:O	1:A:302:LEU:HA	2.16	0.46
1:A:1152:LEU:HB3	1:A:1154:MSE:HE2	1.96	0.46
1:A:385:TYR:CE1	1:A:925:LEU:HA	2.51	0.46
1:A:649:ILE:O	1:A:652:ASN:N	2.48	0.46
1:A:408:GLY:C	1:A:411:PRO:HD2	2.36	0.46
1:A:435:ARG:O	1:A:437:ASP:N	2.49	0.46
1:A:641:LEU:HD12	1:A:642:PRO:HD2	1.97	0.46
1:A:934:SER:HB2	1:A:936:TYR:CE1	2.51	0.46
1:A:936:TYR:N	1:A:936:TYR:CD1	2.84	0.46
1:A:188:TYR:CG	1:A:200:HIS:CE1	3.04	0.46
1:A:972:LEU:O	1:A:975:THR:OG1	2.30	0.46
1:A:1046:ALA:HB3	1:A:1110:ASP:OD1	2.16	0.46
1:A:132:THR:HA	1:A:682:ILE:CD1	2.44	0.45
1:A:202:TYR:HB2	1:A:315:VAL:HG22	1.98	0.45
1:A:620:SER:N	1:A:621:PRO:HD2	2.31	0.45
1:A:724:LYS:HD2	1:A:807:ASN:OD1	2.16	0.45
1:A:782:LEU:HD23	1:A:782:LEU:HA	1.72	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1045:LEU:HD12	1:A:1045:LEU:N	2.31	0.45
1:A:1323:PHE:CZ	1:A:1348:LYS:HE3	2.51	0.45
1:A:1551:ARG:NH2	1:A:1553:GLU:OE2	2.50	0.45
1:A:820:PHE:HB3	1:A:1526:TYR:CD2	2.51	0.45
1:A:1499:PHE:CE1	1:A:1552:ILE:HD13	2.51	0.45
1:A:383:ARG:HD3	1:A:387:SER:HB2	1.99	0.45
1:A:642:PRO:HB2	1:A:644:GLU:HG2	1.99	0.45
1:A:734:THR:OG1	1:A:735:ASP:N	2.49	0.45
1:A:1332:LYS:HE2	1:A:1371:ASP:OD1	2.16	0.45
1:A:1356:ASP:HB3	1:A:1358:SER:H	1.81	0.45
1:A:568:ALA:HB1	1:A:569:PRO:HD2	1.99	0.45
1:A:149:VAL:HG11	1:A:284:THR:CG2	2.46	0.45
1:A:936:TYR:CE2	1:A:946:PRO:HG3	2.52	0.45
1:A:1455:LEU:HA	1:A:1455:LEU:HD23	1.57	0.45
1:A:154:ILE:HD11	1:A:312:PHE:CB	2.47	0.45
1:A:1303:HIS:NE2	1:A:1360:THR:HG23	2.32	0.45
1:A:870:VAL:HG12	1:A:1142:TYR:CD1	2.52	0.45
1:A:1066:VAL:HG22	1:A:1077:VAL:HG23	1.98	0.45
1:A:726:LEU:HD23	1:A:800:ASP:HA	1.98	0.45
1:A:149:VAL:HG21	1:A:284:THR:CG2	2.46	0.44
1:A:177:MSE:O	1:A:181:GLN:HG3	2.17	0.44
1:A:621:PRO:O	1:A:624:ALA:HB3	2.17	0.44
1:A:135:ALA:CB	1:A:686:VAL:HG21	2.48	0.44
1:A:596:ALA:HB2	1:A:623:ILE:HD11	1.99	0.44
1:A:991:TYR:HE1	1:A:1013:ASP:HB3	1.82	0.44
1:A:1544:VAL:HG11	1:A:1552:ILE:HD12	2.00	0.44
1:A:142:GLY:HA3	1:A:307:GLU:H	1.82	0.44
1:A:293:GLU:HG3	1:A:294:ALA:N	2.33	0.44
1:A:654:LEU:HD23	1:A:654:LEU:HA	1.85	0.44
1:A:728:TYR:CE2	1:A:769:VAL:HG21	2.52	0.44
1:A:1365:ASP:OD1	1:A:1365:ASP:N	2.45	0.44
1:A:1368:THR:HG23	1:A:1370:SER:H	1.83	0.44
1:A:281:MSE:O	1:A:285:GLY:N	2.42	0.44
1:A:994:TYR:HB2	1:A:1014:MSE:CE	2.47	0.44
1:A:1564:GLU:HG3	1:A:1565:VAL:N	2.33	0.44
1:A:163:ILE:HG13	1:A:307:GLU:HG3	2.00	0.44
1:A:377:VAL:HB	1:A:406:SER:HB3	1.99	0.44
1:A:690:LEU:CD1	1:A:724:LYS:HE2	2.47	0.44
1:A:710:MSE:HE1	1:A:792:LEU:HB3	2.00	0.44
1:A:1126:GLN:O	1:A:1128:LEU:N	2.50	0.44
1:A:1162:VAL:CG2	1:A:1180:LEU:HD11	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1032:THR:HG23	1:A:1034:ARG:HB2	1.99	0.44
1:A:1277:LYS:HG3	1:A:1279:TYR:OH	2.18	0.44
1:A:1301:VAL:CG1	1:A:1362:SER:HA	2.48	0.44
1:A:436:ALA:HB2	1:A:440:HIS:NE2	2.33	0.44
1:A:863:THR:HG21	1:A:883:LEU:HD13	2.00	0.44
1:A:906:ALA:HB1	1:A:1112:ALA:HB2	2.00	0.44
1:A:1166:ALA:HB2	1:A:1178:SER:HB3	2.00	0.44
1:A:351:ASN:OD1	1:A:958:LYS:HE3	2.17	0.43
1:A:1320:GLU:HG2	1:A:1374:TYR:HE1	1.83	0.43
1:A:119:LEU:C	1:A:121:PRO:HD3	2.39	0.43
1:A:282:HIS:HD1	1:A:605:TYR:HE2	1.64	0.43
1:A:630:VAL:O	1:A:634:LEU:HD12	2.18	0.43
1:A:710:MSE:CE	1:A:775:VAL:HG11	2.39	0.43
1:A:821:GLU:HA	1:A:1002:VAL:HG21	2.00	0.43
1:A:877:ASP:N	1:A:877:ASP:OD1	2.51	0.43
1:A:1293:GLY:HA2	1:A:1307:ASP:OD1	2.19	0.43
1:A:1361:ILE:HG12	1:A:1388:LEU:HD12	2.00	0.43
1:A:1363:LYS:HZ3	1:A:1369:LEU:N	2.16	0.43
1:A:1364:ARG:HB2	1:A:1367:VAL:CG1	2.49	0.43
1:A:680:LEU:HD11	1:A:682:ILE:HG22	2.00	0.43
1:A:1105:TYR:CE2	1:A:1119:LYS:HB2	2.53	0.43
1:A:1324:TYR:HB3	1:A:1372:TYR:CD2	2.54	0.43
1:A:195:LYS:HG3	1:A:310:VAL:HG12	1.99	0.43
1:A:746:LEU:HD23	1:A:746:LEU:HA	1.70	0.43
1:A:147:VAL:HB	1:A:628:LEU:HD11	2.00	0.43
1:A:923:VAL:HG22	1:A:968:LYS:O	2.19	0.43
1:A:1086:ARG:HG3	1:A:1092:PHE:CZ	2.53	0.43
1:A:1162:VAL:HG23	1:A:1180:LEU:HD11	2.00	0.43
1:A:1187:PHE:N	1:A:1187:PHE:CD1	2.86	0.43
1:A:581:ASN:O	1:A:582:TRP:HB2	2.19	0.43
1:A:590:LEU:HD23	1:A:700:SER:HB2	2.01	0.43
1:A:140:TYR:CZ	1:A:633:TYR:HA	2.54	0.43
1:A:379:ALA:O	1:A:581:ASN:ND2	2.52	0.43
1:A:821:GLU:HA	1:A:1002:VAL:CG2	2.49	0.43
1:A:949:VAL:O	1:A:1252:ARG:NH2	2.50	0.43
1:A:198:PHE:CD2	1:A:338:LEU:HD21	2.54	0.43
1:A:980:LYS:HD3	1:A:986:GLU:HG2	1.99	0.43
1:A:1218:TYR:CZ	1:A:1225:LYS:HB3	2.53	0.43
1:A:1248:GLY:O	1:A:1256:VAL:HG22	2.19	0.43
1:A:426:LEU:HD22	1:A:442:LYS:HB3	2.01	0.42
1:A:615:GLY:HA3	2:A:1701:AES:H6	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:875:ILE:HD11	1:A:1342:ILE:O	2.18	0.42
1:A:892:LYS:N	1:A:892:LYS:HD2	2.34	0.42
1:A:875:ILE:HD13	1:A:875:ILE:HA	1.86	0.42
1:A:1350:TYR:O	1:A:1351:ILE:HD13	2.18	0.42
1:A:342:VAL:HA	1:A:374:SER:O	2.18	0.42
1:A:393:LEU:HD23	1:A:743:ARG:HG2	2.01	0.42
1:A:864:LEU:HD12	1:A:879:GLY:O	2.20	0.42
1:A:372:GLY:O	1:A:631:LYS:HE3	2.18	0.42
1:A:819:GLN:HB3	1:A:821:GLU:HG3	2.01	0.42
1:A:1110:ASP:OD2	1:A:1114:ASN:HB2	2.19	0.42
1:A:1124:LEU:HD11	1:A:1127:THR:HG21	2.00	0.42
1:A:1223:HIS:HB2	1:A:1224:GLN:OE1	2.18	0.42
1:A:154:ILE:HG23	1:A:281:MSE:HG3	2.02	0.42
1:A:623:ILE:HG23	1:A:654:LEU:HD13	2.01	0.42
1:A:820:PHE:HB3	1:A:1526:TYR:CE2	2.55	0.42
1:A:793:GLU:HB3	1:A:814:VAL:HG23	2.01	0.42
1:A:118:SER:C	1:A:120:PRO:HD3	2.40	0.42
1:A:931:LEU:C	1:A:931:LEU:HD23	2.40	0.42
1:A:729:ASP:HB3	1:A:755:GLN:CD	2.41	0.41
1:A:1363:LYS:HZ1	1:A:1369:LEU:HB2	1.84	0.41
1:A:1406:ASP:HB3	1:A:1486:LYS:HA	2.01	0.41
1:A:982:LEU:HD23	1:A:982:LEU:HA	1.89	0.41
1:A:1097:ASP:OD2	1:A:1097:ASP:N	2.49	0.41
1:A:1214:THR:HG23	1:A:1266:THR:OG1	2.21	0.41
1:A:601:ILE:HG22	1:A:602:TYR:N	2.35	0.41
1:A:1241:ILE:HG13	1:A:1242:GLU:N	2.35	0.41
1:A:1544:VAL:HG21	1:A:1552:ILE:HD12	2.02	0.41
1:A:1065:THR:HG23	1:A:1080:ASN:HD21	1.86	0.41
1:A:1081:LYS:HE2	1:A:1107:MSE:HE1	2.02	0.41
1:A:174:LYS:HB3	1:A:191:TRP:CE2	2.55	0.41
1:A:885:THR:C	1:A:886:PHE:CD1	2.94	0.41
1:A:909:PRO:HB2	1:A:1018:ARG:HE	1.85	0.41
1:A:1171:VAL:HG23	1:A:1172:HIS:H	1.86	0.41
1:A:1544:VAL:HG21	1:A:1552:ILE:CD1	2.51	0.41
1:A:381:ASN:OD1	1:A:616:THR:HG22	2.21	0.41
1:A:883:LEU:HD12	1:A:883:LEU:HA	1.84	0.41
1:A:1110:ASP:HB3	1:A:1113:GLY:N	2.32	0.41
1:A:135:ALA:O	1:A:140:TYR:HB2	2.21	0.41
1:A:1040:LEU:HD23	1:A:1040:LEU:HA	1.77	0.41
1:A:173:SER:HA	1:A:191:TRP:CZ3	2.56	0.40
1:A:406:SER:C	1:A:408:GLY:H	2.25	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1042:ASP:HB2	1:A:1048:VAL:CG2	2.50	0.40
1:A:154:ILE:HD11	1:A:312:PHE:HB2	2.03	0.40
1:A:286:ILE:CG2	1:A:621:PRO:HB2	2.51	0.40
1:A:1521:LEU:CD2	1:A:1533:LYS:HB2	2.51	0.40
1:A:1500:ASP:HB2	1:A:1571:ARG:HA	2.03	0.40
1:A:1523:GLN:HA	1:A:1531:TYR:CD2	2.56	0.40
1:A:584:LEU:HD13	1:A:588:GLY:C	2.41	0.40
1:A:830:ILE:HD12	1:A:830:ILE:HA	1.83	0.40
1:A:1210:TYR:HD1	1:A:1267:TYR:CG	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	1350/1530 (88%)	1159 (86%)	176 (13%)	15 (1%)	14 50

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	536	PRO
1	A	581	ASN
1	A	613	GLN
1	A	582	TRP
1	A	564	VAL
1	A	578	HIS
1	A	611	GLY
1	A	1037	PRO
1	A	1127	THR
1	A	205	ASN
1	A	597	PRO
1	A	1548	LYS

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Mol	Chain	Res	Type
1	A	469	VAL
1	A	384	VAL
1	A	1038	GLU

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	1073/1271 (84%)	1036 (97%)	37 (3%)	37 72

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	129	TRP
1	A	151	ASP
1	A	188	TYR
1	A	191	TRP
1	A	281	MSE
1	A	319	ASP
1	A	402	VAL
1	A	425	ARG
1	A	435	ARG
1	A	452	LYS
1	A	464	HIS
1	A	561	PHE
1	A	591	LYS
1	A	600	ASP
1	A	603	SER
1	A	609	HIS
1	A	612	SER
1	A	614	THR
1	A	618	MSE
1	A	652	ASN
1	A	696	ASP
1	A	778	PHE
1	A	890	ASP

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Mol	Chain	Res	Type
1	A	892	LYS
1	A	926	ARG
1	A	1049	ARG
1	A	1060	ASP
1	A	1110	ASP
1	A	1208	ASN
1	A	1239	SER
1	A	1275	HIS
1	A	1302	ASP
1	A	1314	SER
1	A	1466	SER
1	A	1475	SER
1	A	1477	ASP
1	A	1533	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	158	HIS
1	A	200	HIS
1	A	309	GLN
1	A	418	ASN
1	A	581	ASN
1	A	810	ASN
1	A	881	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 4 are monoatomic - leaving 4 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	SO4	A	1704	-	4,4,4	0.54	0	6,6,6	0.82	0
3	SO4	A	1702	-	4,4,4	0.65	0	6,6,6	0.58	0
3	SO4	A	1703	-	4,4,4	0.41	0	6,6,6	0.56	0
2	AES	A	1701	1	8,12,13	0.69	0	13,15,18	1.67	3 (23%)

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	AES	A	1701	1	-	3/7/7/9	0/1/1/1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1701	AES	C5-C6-C1	3.47	122.49	119.40
2	A	1701	AES	C2-C1-C6	-3.46	117.72	121.59
2	A	1701	AES	O2S-S-C1	2.18	109.55	104.58

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1701	AES	C2-C1-S-O2S
2	A	1701	AES	C6-C1-S-O2S
2	A	1701	AES	C4-C7-C8-N8

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1704	SO4	2	0
2	A	1701	AES	2	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{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	1333/1530 (87%)	-0.54	17 (1%) 77 51	6, 39, 88, 117	0

All (17) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1126	GLN	3.3
1	A	1129	GLY	3.1
1	A	465	GLN	3.0
1	A	538	ALA	3.0
1	A	1125	PRO	2.9
1	A	443	ALA	2.9
1	A	541	SER	2.6
1	A	467	ALA	2.6
1	A	458	LEU	2.6
1	A	450	ASP	2.5
1	A	1128	LEU	2.4
1	A	561	PHE	2.4
1	A	508	GLY	2.2
1	A	457	SER	2.1
1	A	1124	LEU	2.1
1	A	539	PHE	2.1
1	A	206	SER	2.0

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

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

6.3 Carbohydrates

There are no monosaccharides 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. 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	B-factors(Å^2)	Q<0.9
4	CA	A	1708	1/1	0.80	0.34	57,57,57,57	0
2	AES	A	1701	12/13	0.91	0.24	59,81,87,87	0
3	SO4	A	1702	5/5	0.92	0.26	28,29,60,83	0
3	SO4	A	1704	5/5	0.94	0.34	35,36,48,81	0
4	CA	A	1707	1/1	0.96	0.14	21,21,21,21	0
3	SO4	A	1703	5/5	0.96	0.17	37,42,57,73	0
4	CA	A	1705	1/1	0.98	0.10	18,18,18,18	0
4	CA	A	1706	1/1	0.98	0.10	24,24,24,24	0

6.5 Other polymers

There are no such residues in this entry.