Full wwPDB X-ray Structure Validation Report ⓘ

Oct 3, 2021 – 03:27 PM EDT

PDB ID	:	3IBR
Title	:	Crystal Structure of P. aeruginosa Bacteriophytochrome Photosensory Core Module Mutant Q188L in the Mixed Pr/Pfr State
Authors	:	Yang, X.; Kuk, J.; Moffat, K.
Deposited on	:	2009-07-16
Resolution	:	2.97 Å(reported)

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

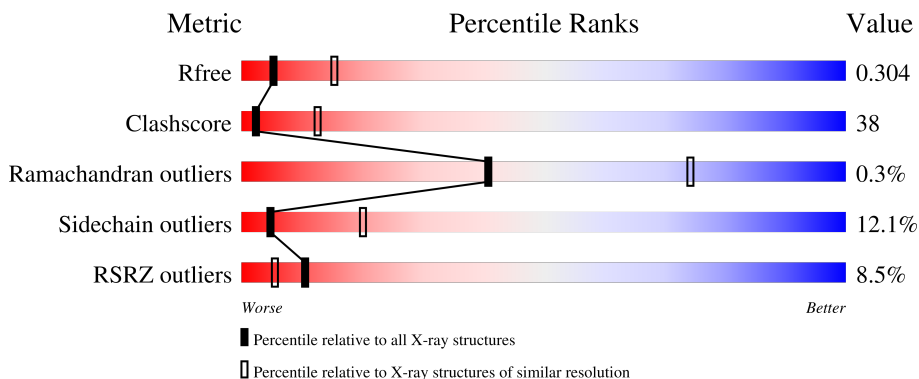|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

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 2.97 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		0.304
Clashscore		38
Ramachandran outliers		0.3%
Sidechain outliers		12.1%
RSRZ outliers		8.5%

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	2754 (3.00-2.96)
Clashscore	141614	3103 (3.00-2.96)
Ramachandran outliers	138981	2993 (3.00-2.96)
Sidechain outliers	138945	2996 (3.00-2.96)
RSRZ outliers	127900	2644 (3.00-2.96)

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	505	8% / 43% / 41% / 7% / 10%
1	B	505	7% / 39% / 45% / 6% / 10%

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

2 Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 7530 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 Bacteriophytochrome.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	457	Total	C	N	O	S	Se	0	6	0
			3666	2313	653	680	9	11			
1	B	457	Total	C	N	O	S	Se	0	9	0
			3690	2326	658	686	9	11			

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	188	LEU	GLN	engineered mutation	UNP Q9HWR3
A	498	LEU	-	expression tag	UNP Q9HWR3
A	499	GLU	-	expression tag	UNP Q9HWR3
A	500	HIS	-	expression tag	UNP Q9HWR3
A	501	HIS	-	expression tag	UNP Q9HWR3
A	502	HIS	-	expression tag	UNP Q9HWR3
A	503	HIS	-	expression tag	UNP Q9HWR3
A	504	HIS	-	expression tag	UNP Q9HWR3
A	505	HIS	-	expression tag	UNP Q9HWR3
B	188	LEU	GLN	engineered mutation	UNP Q9HWR3
B	498	LEU	-	expression tag	UNP Q9HWR3
B	499	GLU	-	expression tag	UNP Q9HWR3
B	500	HIS	-	expression tag	UNP Q9HWR3
B	501	HIS	-	expression tag	UNP Q9HWR3
B	502	HIS	-	expression tag	UNP Q9HWR3
B	503	HIS	-	expression tag	UNP Q9HWR3
B	504	HIS	-	expression tag	UNP Q9HWR3
B	505	HIS	-	expression tag	UNP Q9HWR3

- Molecule 2 is BILIVERDINE IX ALPHA (three-letter code: BLA) (formula: $C_{33}H_{34}N_4O_6$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	1
			86	66	8	12		
2	B	1	Total	C	N	O	0	1
			86	66	8	12		

• Molecule 3 is water.

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

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: Bacteriophytochrome

- Molecule 1: Bacteriophytochrome

A162 Y163 R164 F165 R166 H167 D168 E172 V173 V174 A175 E176 S177 R178 R179 E180 D181 L182 Y185 L186 G187 L188 R189 Y190 P191 A192 S193 D194 I195 Q198 A199 R200 R201 L202 Y203 N206 P207 I208 R209 L210 I211 V214 A215 Y216 T217 P218 M219 R220 V221 F222 P223 A224 L225 N226 P227

E228 T229 N230 E231 S232 F233 D234 L235 S236 Y237 S238 V239 L240 R241 S242 V243 S244 H247 Y250 M254 G255 V256 R257 A258 S259 M260 S261 I262 S263 I264 V265 V266 W271 G272 L273 F274 S275 C276 H277 H278 M279 S280 P281 I284 P285 Y286 P287 V288 R289 M290 S291 F292 Q293 I294 F295

S296 Q297 V298 C299 I302 R305 L306 E307 Q308 I311 A312 E313 L314 L315 R316 V317 S318 T319 E320 R321 R322 L323 A324 L325 R328 A329 R330 D331 A332 L335 F336 L339 A340 H341 P342 D343 D344 G345 I346 L349 I350 P351 C352 D353 G354 A355 L356 V357 M358 L359 G360 G361 R362

T363 I366 R367 GLY ASP PHE E371 R372 Q373 A374 G375 N376 V377 L378 Q379 R380 L381 Q382 R383 D384 P385 E386 R387 D388 I389 Y390 D393 N394 W395 PRO GLN PRO SER GLU ASP SER PRO ASP GLY G406 D407 C408 C409 L412 A413 I414 R415 F416 HIS ARG GLN GLU SER G422 W423 I424 F425

W426 F427 R428 H429 E430 E431 V432 H433 ARG ILE ARG TRP GLY GLY LYS PRO GLU LYS LEU LEU THR ILE G448 P452 R453 L454 T455 P456 R457 G458 S459 F460 E461 A462 W463 V466 V467 R468 G469 H470 S471 W474 S475 E476 L479 E483 K484 L485 R486 L487 D488 L489 M490 E491 L492

C493 L494 ASN HIS ALA LEU GLU HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 65	Depositor
Cell constants a, b, c, α, β, γ	108.90Å　108.90Å　188.90Å 90.00°　　90.00°　　120.00°	Depositor
Resolution (Å)	37.74　–　2.97 35.65　–　2.61	Depositor EDS
% Data completeness (in resolution range)	84.7 (37.74-2.97) 54.6 (35.65-2.61)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	1.04 (at 2.61Å)	Xtriage
Refinement program	PHENIX (phenix.refine)	Depositor
R, R_{free}	0.233　,　0.307 0.234　,　0.304	Depositor DCC
R_{free} test set	1067 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	94.2	Xtriage
Anisotropy	0.013	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 66.4	EDS
L-test for twinning[2]	$<|L|> = 0.50, <L^2> = 0.33$	Xtriage
Estimated twinning fraction	0.430 for h,-h-k,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	7530	wwPDB-VP
Average B, all atoms (Å^2)	136.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.10% 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: BLA

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	0.37	0/3735	0.61	0/5050
1	B	0.36	0/3760	0.60	0/5084
All	All	0.36	0/7495	0.61	0/10134

There are no bond length outliers.

There are no bond angle outliers.

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	3666	0	3592	264	0
1	B	3690	0	3605	285	0
2	A	86	0	62	32	0
2	B	86	0	62	35	0
3	A	1	0	0	1	0
3	B	1	0	0	0	0
All	All	7530	0	7321	563	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 38.

All (563) 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:363:THR:HG21	1:A:371:GLU:HB2	1.27	1.16
1:A:194:ASP:HB3	2:A:900[A]:BLA:HHB	1.34	1.05
2:B:900[A]:BLA:HMC1	2:B:900[A]:BLA:HBC1	1.33	1.04
1:A:209[A]:ARG:HH11	1:A:209[A]:ARG:HG2	1.27	1.00
1:B:182:LEU:HD13	1:B:279:MSE:HE3	1.41	1.00
1:B:206:ASN:HB2	1:B:209[B]:ARG:CZ	1.92	0.99
1:B:229:THR:HG23	1:B:231:GLU:H	1.26	0.96
2:A:900[A]:BLA:HMC1	2:A:900[A]:BLA:HBC1	1.46	0.95
2:B:900[A]:BLA:HMD1	2:B:900[A]:BLA:HBD2	1.48	0.95
1:A:206:ASN:HB2	1:A:209[B]:ARG:HH22	1.32	0.94
1:B:206:ASN:HB2	1:B:209[B]:ARG:NH2	1.80	0.94
1:A:203[B]:TYR:HA	1:A:209[B]:ARG:NH1	1.83	0.94
1:A:188:LEU:HD13	1:A:190[B]:TYR:OH	1.67	0.94
1:A:257:ARG:HG2	1:A:257:ARG:HH11	1.35	0.90
1:A:90:ILE:HG22	1:A:91:GLY:H	1.35	0.90
1:B:33:ARG:HB3	1:B:39:LEU:HD11	1.51	0.90
2:A:900[A]:BLA:CMA	2:A:900[A]:BLA:HMB3	2.06	0.86
1:A:363:THR:HG21	1:A:371:GLU:CB	2.05	0.86
1:B:20:PRO:HD2	1:B:235:LEU:HD12	1.59	0.85
1:B:210:LEU:HD12	1:B:289:ARG:HD3	1.59	0.85
1:B:208:ILE:C	1:B:209[B]:ARG:HD3	1.97	0.84
1:A:194:ASP:HB3	2:A:900[A]:BLA:CHB	2.07	0.84
1:A:25:PRO:HB3	1:A:219:MSE:HE2	1.59	0.83
1:B:194[A]:ASP:HB3	2:B:900[A]:BLA:HHB	1.61	0.82
1:B:134:VAL:HA	1:B:143:LEU:HD21	1.62	0.81
1:A:209[B]:ARG:HG2	1:A:261:SER:HB2	1.62	0.81
1:B:188:LEU:HD22	1:B:190[B]:TYR:CE2	2.15	0.80
1:B:416:PHE:HE1	1:B:424:ILE:HG13	1.45	0.80
1:B:209[B]:ARG:HD3	1:B:209[B]:ARG:N	1.97	0.80
1:B:95:PHE:CE2	1:B:112:ILE:HD13	2.18	0.79
1:A:203[B]:TYR:CD1	1:A:209[B]:ARG:HD3	2.18	0.78
1:A:199:ALA:HB1	1:A:203[B]:TYR:CE2	2.19	0.78
1:A:206:ASN:HB2	1:A:209[B]:ARG:NH2	1.99	0.77
1:A:203[B]:TYR:CZ	2:A:900[B]:BLA:HAA1	2.19	0.77
1:B:161:MSE:HE1	2:B:900[B]:BLA:HBB1	1.66	0.77
1:A:335:LEU:HD13	1:A:492:LEU:HD23	1.65	0.77
1:B:266:VAL:HG22	1:B:271:TRP:HB2	1.65	0.77
1:A:123:PHE:HE2	1:B:123:PHE:CE2	2.02	0.77
1:A:416:PHE:HE1	1:A:424:ILE:HG13	1.48	0.77
1:B:185:TYR:HD1	1:B:188:LEU:HD12	1.49	0.77
2:A:900[A]:BLA:HMB3	2:A:900[A]:BLA:HMA2	1.66	0.76

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:45:ILE:HD12	1:B:46:GLN:H	1.50	0.76
1:A:220:ARG:HE	1:A:222:PHE:HZ	1.33	0.76
1:B:163[B]:TYR:OH	1:B:190[B]:TYR:CD2	2.39	0.76
1:B:415:ARG:HD3	1:B:423:TRP:CZ2	2.20	0.76
1:B:29:LEU:HD13	1:B:109:GLU:HG2	1.67	0.76
1:A:194:ASP:CB	2:A:900[A]:BLA:HHB	2.15	0.76
1:B:64:VAL:HG13	1:B:68:VAL:HB	1.67	0.75
1:A:493:CYS:O	1:A:494:LEU:HB2	1.86	0.75
2:A:900[A]:BLA:HMD1	2:A:900[A]:BLA:HBD2	1.67	0.75
1:B:203[B]:TYR:OH	2:B:900[B]:BLA:HAA1	1.86	0.75
1:B:19:VAL:CG2	1:B:232:SER:HB3	2.17	0.74
1:A:90:ILE:HG22	1:A:91:GLY:N	2.02	0.74
1:A:95:PHE:CE2	1:A:112:ILE:HD13	2.22	0.74
1:B:206:ASN:HD21	1:B:237:TYR:H	1.32	0.74
1:B:493:CYS:O	1:B:494:LEU:HB2	1.85	0.74
1:A:188:LEU:HD23	1:A:189:ARG:H	1.51	0.74
1:A:302:ILE:HG23	1:B:305:ARG:HH12	1.52	0.74
1:A:415:ARG:HD3	1:A:423:TRP:CZ2	2.23	0.73
1:A:123:PHE:CE2	1:B:123:PHE:CE2	2.76	0.73
1:A:191:PRO:HD2	1:A:453:ARG:HH22	1.53	0.73
1:A:123:PHE:HE2	1:B:123:PHE:HE2	1.36	0.73
1:B:140:THR:HG23	1:B:164:ARG:NH2	2.03	0.73
1:A:190[B]:TYR:CD1	2:A:900[B]:BLA:HMB1	2.23	0.72
1:A:314:LEU:HD23	1:A:314:LEU:N	2.04	0.72
1:B:415:ARG:HB2	1:B:423:TRP:CH2	2.24	0.72
1:B:19:VAL:HG21	1:B:232:SER:HB3	1.71	0.72
1:B:194[A]:ASP:HB3	2:B:900[A]:BLA:CHB	2.19	0.72
1:A:203[B]:TYR:OH	2:A:900[B]:BLA:HHA	1.89	0.72
1:B:488:ASP:O	1:B:491:GLU:HB3	1.90	0.72
1:A:90:ILE:CG2	1:A:91:GLY:H	2.03	0.72
1:A:98:ILE:HG21	1:A:286:TYR:CD1	2.25	0.71
1:A:414:ILE:CG1	1:A:424:ILE:HB	2.20	0.71
1:B:90:ILE:HG22	1:B:91:GLY:H	1.54	0.71
1:A:257:ARG:HG2	1:A:257:ARG:NH1	1.97	0.71
1:A:359:LEU:HD13	1:A:422:GLY:HA3	1.73	0.71
1:B:390:TYR:HB3	1:B:413:ALA:HB3	1.73	0.71
1:B:376:ASN:O	1:B:379:GLN:HB3	1.90	0.71
1:B:430:GLU:HG2	1:B:471:SER:CA	2.21	0.70
1:A:390:TYR:HB3	1:A:413:ALA:HB3	1.74	0.70
1:B:19:VAL:N	1:B:20:PRO:HD3	2.07	0.70
1:B:209[A]:ARG:NH1	1:B:241:ARG:NH1	2.38	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:203[B]:TYR:OH	2:A:900[B]:BLA:HAA1	1.91	0.70
1:A:190[B]:TYR:N	1:A:190[B]:TYR:CD2	2.60	0.69
1:A:209[A]:ARG:HH11	1:A:209[A]:ARG:CG	2.04	0.69
1:A:190[B]:TYR:CE1	2:A:900[B]:BLA:HAB	2.28	0.69
1:B:341:HIS:O	1:B:345:GLY:N	2.26	0.69
2:B:900[B]:BLA:HMA1	2:B:900[B]:BLA:NB	2.07	0.69
1:B:150:GLU:O	1:B:154:MSE:HG3	1.93	0.68
1:B:188:LEU:HD11	1:B:190[B]:TYR:OH	1.93	0.68
1:A:33:ARG:HB3	1:A:39:LEU:HD11	1.75	0.68
1:A:43:GLU:HG2	1:A:220:ARG:O	1.94	0.68
1:A:98:ILE:HG21	1:A:286:TYR:CE1	2.29	0.68
1:A:64:VAL:HG13	1:A:68:VAL:HB	1.75	0.67
1:A:346:ILE:HG23	1:A:426:TRP:CZ3	2.29	0.67
1:A:124:THR:O	1:A:128:GLN:HG3	1.92	0.67
1:A:379:GLN:HA	1:A:382:GLN:CG	2.24	0.67
1:A:294:ILE:O	1:A:298:VAL:HG23	1.94	0.67
1:B:211:ILE:HB	1:B:259:SER:HB3	1.75	0.67
1:A:209[A]:ARG:HG2	1:A:209[A]:ARG:NH1	2.06	0.67
1:A:363:THR:CG2	1:A:371:GLU:HB2	2.17	0.67
1:A:350:ILE:HG23	1:A:351:PRO:HD2	1.77	0.66
1:B:209[B]:ARG:N	1:B:209[B]:ARG:CD	2.57	0.66
1:B:430:GLU:HG2	1:B:471:SER:HA	1.76	0.66
1:B:59:LEU:HD22	1:B:59:LEU:H	1.60	0.66
1:A:139:ASP:HB3	1:A:142:SER:OG	1.95	0.66
1:A:45:ILE:HB	1:A:51:PHE:CE1	2.30	0.66
1:B:190[B]:TYR:CE1	2:B:900[B]:BLA:HMB1	2.31	0.66
1:B:335:LEU:HD13	1:B:492:LEU:HD23	1.76	0.66
1:B:136:LEU:HB2	1:B:137:HIS:CE1	2.30	0.66
1:A:22:ALA:O	1:A:242:SER:HB3	1.96	0.65
1:A:379:GLN:HA	1:A:382:GLN:HG2	1.79	0.65
1:B:43:GLU:HG3	1:B:219:MSE:HG3	1.77	0.65
1:A:159:ARG:CZ	1:A:185:TYR:HE2	2.09	0.65
1:B:209[A]:ARG:O	1:B:260:MSE:HA	1.97	0.65
1:A:294:ILE:HD11	1:B:294:ILE:CD1	2.26	0.65
1:B:9:LEU:HD11	1:B:454:LEU:HD21	1.78	0.65
1:A:157:TYR:CZ	1:A:260:MSE:HB2	2.31	0.65
1:B:134:VAL:HG13	1:B:302:ILE:HG21	1.79	0.65
1:B:32:LEU:HD12	1:B:32:LEU:N	2.11	0.64
1:A:33:ARG:HB3	1:A:39:LEU:CD1	2.26	0.64
1:A:216:TYR:CE2	1:A:218:PRO:HG3	2.32	0.64
1:A:209[B]:ARG:CG	1:A:261:SER:HB2	2.26	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:18:HIS:C	1:B:20:PRO:HD3	2.18	0.64
1:B:68:VAL:O	1:B:71:MSE:HB3	1.98	0.64
1:B:359:LEU:HD13	1:B:422:GLY:CA	2.27	0.64
1:A:152:ARG:HB2	1:A:160:VAL:HG11	1.78	0.64
1:A:191:PRO:CD	1:A:453:ARG:HH22	2.09	0.64
1:A:314:LEU:HD23	1:A:314:LEU:H	1.61	0.64
2:A:900[B]:BLA:NB	2:A:900[B]:BLA:HMA1	2.12	0.64
1:A:359:LEU:HD22	1:A:416:PHE:HE2	1.62	0.64
1:B:202:LEU:O	1:B:209[B]:ARG:NH2	2.30	0.64
1:B:359:LEU:HD22	1:B:416:PHE:HE2	1.60	0.64
1:B:493:CYS:O	1:B:494:LEU:CB	2.46	0.64
1:B:90:ILE:CG2	1:B:91:GLY:H	2.11	0.63
1:B:140:THR:HG23	1:B:164:ARG:HH22	1.63	0.63
1:B:479:LEU:O	1:B:483:GLU:HB2	1.99	0.63
1:A:83:SER:O	1:A:84:ASN:HB2	1.98	0.63
1:A:359:LEU:HD13	1:A:422:GLY:CA	2.28	0.63
1:B:319:THR:HG22	1:B:322:ARG:HH21	1.63	0.63
1:A:199:ALA:HB1	1:A:203[B]:TYR:HE2	1.58	0.63
1:B:377:VAL:HG22	1:B:395:TRP:CH2	2.33	0.63
1:A:283:LEU:C	1:A:283:LEU:HD23	2.19	0.63
1:B:190[B]:TYR:CZ	2:B:900[B]:BLA:HAB	2.34	0.63
1:A:335:LEU:CD1	1:A:492:LEU:HD23	2.27	0.63
1:B:163[B]:TYR:OH	1:B:190[B]:TYR:HD2	1.81	0.62
1:A:49:LEU:HD21	1:A:95:PHE:CE1	2.35	0.62
1:B:90:ILE:HG22	1:B:91:GLY:N	2.13	0.62
1:B:172:GLU:HG2	1:B:174:VAL:HG12	1.81	0.62
1:A:416:PHE:CE1	1:A:424:ILE:HG13	2.33	0.62
1:B:235:LEU:O	1:B:241:ARG:HD3	1.99	0.62
1:A:389:ILE:HD11	1:A:483:GLU:OE2	1.99	0.62
1:A:354:GLY:HA2	1:A:367:ARG:HB2	1.82	0.61
1:B:307:GLU:O	1:B:311:ILE:HG23	2.00	0.61
2:B:900[B]:BLA:HMA1	2:B:900[B]:BLA:HB	1.65	0.61
2:B:900[B]:BLA:HMA2	2:B:900[B]:BLA:CGA	2.31	0.61
1:B:209[B]:ARG:O	1:B:260:MSE:HA	2.00	0.61
1:A:203[B]:TYR:HA	1:A:209[B]:ARG:HH12	1.60	0.61
1:B:208:ILE:C	1:B:209[B]:ARG:CD	2.67	0.61
1:B:339:LEU:O	1:B:346:ILE:HG23	2.00	0.61
1:A:453:ARG:HH21	1:A:459:SER:CB	2.13	0.61
1:B:32:LEU:HD23	1:B:36:GLY:O	2.01	0.61
1:B:165:PHE:CD1	1:B:272:GLY:HA2	2.36	0.61
1:A:306:LEU:HD22	1:B:305:ARG:NH1	2.16	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:235:LEU:O	1:B:238:SER:HB3	2.01	0.60
1:A:206:ASN:CB	1:A:209[B]:ARG:NH2	2.64	0.60
1:A:414:ILE:HG12	1:A:424:ILE:HB	1.82	0.60
1:B:12[A]:CYS:SG	1:B:13:GLU:N	2.73	0.60
1:A:294:ILE:HD11	1:B:294:ILE:HD11	1.82	0.60
1:A:359:LEU:HD12	1:A:360:GLY:H	1.66	0.60
1:A:203[B]:TYR:HD1	1:A:209[B]:ARG:HD3	1.64	0.60
1:B:202:LEU:C	1:B:209[B]:ARG:NH2	2.54	0.60
1:A:319:THR:HG22	1:A:322:ARG:HH21	1.65	0.60
1:B:38:VAL:O	1:B:55:PRO:HA	2.01	0.60
2:A:900[B]:BLA:HMA1	2:A:900[B]:BLA:HB	1.66	0.60
1:A:366:ILE:HG13	1:A:367:ARG:HG3	1.83	0.60
2:B:900[B]:BLA:HBB1	2:B:900[B]:BLA:OB	2.00	0.60
1:B:394:ASN:CB	1:B:469:GLY:O	2.49	0.60
1:B:48:LEU:HB3	1:B:49:LEU:HG	1.83	0.59
1:B:257:ARG:HD2	1:B:281:PRO:HD3	1.83	0.59
1:B:318:SER:O	1:B:321:ARG:HB2	2.02	0.59
1:B:203[B]:TYR:OH	2:B:900[B]:BLA:HHA	2.02	0.59
1:B:408:CYS:SG	1:B:429:HIS:HB3	2.43	0.59
2:A:900[A]:BLA:HMC1	2:A:900[A]:BLA:CBC	2.28	0.59
1:A:206:ASN:HD21	1:A:237:TYR:HA	1.68	0.59
1:A:307:GLU:O	1:A:311:ILE:HG23	2.02	0.59
1:B:134:VAL:HA	1:B:143:LEU:CD2	2.30	0.59
1:B:163[A]:TYR:OH	1:B:275:SER:HB3	2.01	0.59
1:B:239:VAL:HG11	1:B:289:ARG:NH2	2.18	0.59
1:B:395:TRP:HB3	1:B:409:CYS:HA	1.85	0.58
1:B:457:ARG:O	1:B:461:GLU:HG3	2.02	0.58
1:A:33:ARG:HG3	1:A:35:ASP:OD1	2.02	0.58
1:A:49:LEU:HB2	1:A:51:PHE:CE2	2.38	0.58
1:A:253:ASN:ND2	1:A:449:PRO:HB3	2.17	0.58
1:A:426:TRP:N	1:A:426:TRP:CD1	2.71	0.58
1:A:371:GLU:O	1:A:374:ALA:HB3	2.03	0.58
1:A:157:TYR:OH	1:A:260:MSE:HB2	2.02	0.58
2:B:900[A]:BLA:HMB3	2:B:900[A]:BLA:CMA	2.33	0.58
1:B:346:ILE:O	1:B:426:TRP:HZ3	1.87	0.58
1:B:379:GLN:HA	1:B:382:GLN:HG2	1.85	0.58
2:B:900[A]:BLA:HMC1	2:B:900[A]:BLA:CBC	2.22	0.58
1:B:159:ARG:NH1	1:B:185:TYR:HE2	2.01	0.58
1:A:479:LEU:O	1:A:483:GLU:HB2	2.04	0.58
1:B:313:GLU:O	1:B:317:VAL:HG13	2.04	0.58
1:A:197:ALA:O	1:A:201:ARG:HG2	2.04	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:71:MSE:HE1	1:B:97:VAL:HG12	1.85	0.57
1:B:290:MSE:HE1	1:B:293:GLN:OE1	2.03	0.57
1:A:159:ARG:HD2	1:A:161:MSE:HE2	1.85	0.57
1:B:209[A]:ARG:NH1	1:B:241:ARG:HH12	2.01	0.57
1:B:247[B]:HIS:CE1	2:B:900[B]:BLA:C1A	2.88	0.57
1:B:314:LEU:N	1:B:314:LEU:HD23	2.19	0.57
1:A:181:ASP:OD1	1:A:181:ASP:N	2.38	0.57
1:B:210:LEU:HD23	1:B:211:ILE:N	2.20	0.57
1:A:214:VAL:HG23	1:A:257:ARG:C	2.25	0.56
1:B:98:ILE:HG12	1:B:98:ILE:O	2.04	0.56
1:A:43:GLU:HG3	1:A:219:MSE:HG3	1.87	0.56
1:B:209[A]:ARG:HH12	1:B:241:ARG:HH12	1.52	0.56
1:B:286:TYR:HB3	1:B:287:PRO:HD3	1.86	0.56
1:A:203[B]:TYR:OH	2:A:900[B]:BLA:HAD2	2.06	0.56
1:A:366:ILE:HG13	1:A:367:ARG:N	2.21	0.56
1:B:359:LEU:HD13	1:B:422:GLY:HA3	1.87	0.56
1:A:190[B]:TYR:CE1	2:A:900[B]:BLA:HMB1	2.40	0.56
1:B:181:ASP:N	1:B:181:ASP:OD1	2.38	0.56
1:B:209[A]:ARG:HG2	1:B:209[A]:ARG:HH11	1.70	0.56
1:B:260:MSE:CE	1:B:289:ARG:HG2	2.36	0.56
1:A:282:LYS:HE3	1:A:284:ILE:HD11	1.88	0.56
1:B:158:ASP:OD1	1:B:278:HIS:HA	2.06	0.56
1:A:20:PRO:HD2	1:A:235:LEU:HD12	1.86	0.56
1:A:159:ARG:NH2	1:A:185:TYR:HE2	2.03	0.56
1:A:19:VAL:HG23	1:A:19:VAL:O	2.06	0.56
1:B:260:MSE:HE3	1:B:284:ILE:HB	1.87	0.56
1:B:206:ASN:CB	1:B:209[B]:ARG:CZ	2.77	0.55
1:B:179:ARG:O	1:B:182:LEU:HG	2.07	0.55
1:B:389:ILE:HD11	1:B:483:GLU:OE2	2.05	0.55
1:B:29:LEU:HD11	1:B:107:TYR:HB3	1.88	0.55
1:B:189:ARG:HD3	1:B:463:TRP:CZ2	2.42	0.55
1:A:226:ASN:HB2	1:A:233:PHE:CZ	2.41	0.55
1:A:190[B]:TYR:CZ	2:A:900[B]:BLA:HAB	2.40	0.55
1:B:393:ASP:HB2	1:B:394:ASN:OD1	2.06	0.55
1:B:33:ARG:CB	1:B:39:LEU:HD11	2.32	0.55
1:B:193:SER:O	2:B:900[B]:BLA:HBC1	2.07	0.55
1:B:261[A]:SER:HB2	1:B:273:LEU:HD13	1.89	0.55
1:B:394:ASN:HB3	1:B:469:GLY:O	2.06	0.55
1:A:124:THR:HG21	1:B:290:MSE:HE3	1.87	0.54
1:A:359:LEU:HD12	1:A:360:GLY:N	2.23	0.54
1:A:373:GLN:NE2	1:A:406:GLY:HA3	2.22	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:341:HIS:C	1:A:343:ASP:H	2.11	0.54
1:A:430:GLU:HG2	1:A:471:SER:HA	1.89	0.54
1:A:235:LEU:O	1:A:241:ARG:HD3	2.06	0.54
1:B:430:GLU:OE1	1:B:468:ARG:O	2.24	0.54
1:B:42:SER:O	1:B:45:ILE:HG13	2.07	0.54
1:A:49:LEU:HD21	1:A:95:PHE:CZ	2.42	0.54
1:A:257:ARG:HH11	1:A:257:ARG:CG	2.15	0.53
1:A:393:ASP:HA	1:A:409:CYS:O	2.08	0.53
1:B:60:THR:OG1	1:B:63:GLN:NE2	2.41	0.53
1:B:189:ARG:HD2	1:B:463:TRP:CH2	2.42	0.53
2:B:900[A]:BLA:HMB3	2:B:900[A]:BLA:C3A	2.38	0.53
1:A:45:ILE:HD12	1:A:46:GLN:N	2.24	0.53
1:A:66:PRO:HD2	1:A:67:GLU:HG3	1.90	0.53
1:A:54:SER:O	1:A:57:SER:HB3	2.09	0.53
1:A:464:GLU:O	1:A:468:ARG:HG3	2.09	0.53
1:B:415:ARG:HB2	1:B:423:TRP:CZ2	2.44	0.53
1:A:38:VAL:O	1:A:55:PRO:HA	2.09	0.53
1:B:203[B]:TYR:CZ	2:B:900[B]:BLA:HAA1	2.44	0.53
1:B:225:LEU:HD21	1:B:230:ASN:HA	1.90	0.52
1:B:152:ARG:HB2	1:B:160:VAL:HG11	1.91	0.52
1:A:393:ASP:O	1:A:394:ASN:CG	2.48	0.52
1:B:188:LEU:HD13	1:B:190[B]:TYR:CE2	2.44	0.52
1:A:250[B]:TYR:CD1	2:A:900[B]:BLA:OC	2.63	0.52
1:B:90:ILE:CG2	1:B:91:GLY:N	2.72	0.52
1:B:266:VAL:HG21	1:B:271:TRP:CD1	2.44	0.52
1:B:188:LEU:CD1	1:B:190[B]:TYR:OH	2.56	0.52
1:B:415:ARG:HB2	1:B:423:TRP:CZ3	2.44	0.52
1:B:214:VAL:HG23	1:B:257:ARG:O	2.10	0.52
1:A:159:ARG:NH2	1:A:185:TYR:CE2	2.78	0.52
1:A:287:PRO:HB3	1:B:120:ILE:HD13	1.91	0.52
1:B:244:SER:HB3	2:B:900[A]:BLA:HMD2	1.91	0.52
1:B:190[B]:TYR:CD1	2:B:900[B]:BLA:HMB1	2.45	0.52
1:A:390:TYR:O	1:A:412:LEU:HD23	2.09	0.51
1:B:321:ARG:HB3	1:B:349:LEU:CD2	2.41	0.51
1:B:381:LEU:HD11	1:B:390:TYR:HB2	1.92	0.51
1:A:206:ASN:O	1:A:209[B]:ARG:NH1	2.43	0.51
1:B:19:VAL:HG23	1:B:233:PHE:O	2.10	0.51
1:B:359:LEU:HD12	1:B:360:GLY:H	1.75	0.51
1:A:306:LEU:HD22	1:B:305:ARG:HH12	1.74	0.51
1:A:350:ILE:HD13	1:A:478:ASP:HB3	1.93	0.51
1:B:19:VAL:HG22	1:B:232:SER:HB3	1.91	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:214:VAL:HG23	1:B:257:ARG:C	2.31	0.51
2:A:900[B]:BLA:HB	2:A:900[B]:BLA:CMA	2.23	0.51
1:B:359:LEU:HD22	1:B:416:PHE:CE2	2.43	0.51
1:A:49:LEU:HD22	1:A:90:ILE:HG21	1.93	0.51
1:B:394:ASN:CG	1:B:469:GLY:O	2.49	0.51
1:A:190[B]:TYR:N	1:A:190[B]:TYR:HD2	2.05	0.51
1:B:209[A]:ARG:NH1	2:B:900[A]:BLA:O1D	2.43	0.51
1:B:453:ARG:O	1:B:453:ARG:HG2	2.04	0.51
1:A:203[B]:TYR:CE1	1:A:209[B]:ARG:HD3	2.46	0.51
2:A:900[A]:BLA:HMB3	2:A:900[A]:BLA:C3A	2.41	0.51
2:B:900[B]:BLA:HB	2:B:900[B]:BLA:CMA	2.24	0.51
1:A:136:LEU:HB2	1:A:137:HIS:CE1	2.46	0.51
1:A:306:LEU:HD13	1:B:305:ARG:NH1	2.26	0.51
1:B:165:PHE:CE1	1:B:272:GLY:HA2	2.46	0.51
1:A:226:ASN:HB2	1:A:233:PHE:CE1	2.46	0.50
1:A:319:THR:HG22	1:A:322:ARG:NH2	2.26	0.50
1:A:394:ASN:O	1:A:395:TRP:C	2.50	0.50
1:B:188:LEU:HD13	1:B:190[B]:TYR:HE2	1.75	0.50
1:B:161:MSE:HE3	1:B:163[A]:TYR:OH	2.12	0.50
1:B:188:LEU:CD2	1:B:190[B]:TYR:CE2	2.93	0.50
1:A:203[B]:TYR:HA	1:A:209[B]:ARG:HH11	1.71	0.50
1:B:203[B]:TYR:OH	2:B:900[B]:BLA:HAD2	2.11	0.50
1:A:264:ILE:HD11	1:A:274:PHE:CE1	2.47	0.50
1:B:262:ILE:CG2	1:B:296:SER:HB2	2.42	0.50
1:A:159:ARG:HB3	1:A:277:HIS:HB2	1.93	0.50
1:A:350:ILE:HD11	1:A:481:ILE:HB	1.94	0.50
1:B:31:THR:C	1:B:32:LEU:HD12	2.32	0.50
1:A:423:TRP:O	1:A:424:ILE:HG13	2.11	0.49
1:B:166:ARG:HB2	1:B:168:ASP:OD1	2.11	0.49
1:A:97:VAL:HG22	1:A:110:PHE:CD2	2.47	0.49
1:A:120:ILE:HD13	1:A:120:ILE:N	2.27	0.49
2:A:900[A]:BLA:HBC1	2:A:900[A]:BLA:CMC	2.30	0.49
1:B:19:VAL:HG13	1:B:19:VAL:O	2.12	0.49
1:A:214:VAL:HG23	1:A:257:ARG:O	2.12	0.49
1:A:326:ALA:O	1:A:330:ARG:HB3	2.12	0.49
1:B:412:LEU:HB3	1:B:426:TRP:HD1	1.77	0.49
1:A:32:LEU:N	1:A:32:LEU:HD12	2.28	0.49
1:B:40:ALA:HB2	1:B:223:PRO:HD2	1.95	0.49
1:B:159:ARG:CZ	1:B:185:TYR:CE2	2.96	0.49
1:B:428:ARG:HG3	1:B:474:TRP:CH2	2.48	0.49
1:A:284:ILE:HD12	1:A:284:ILE:N	2.28	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:64:VAL:HG13	1:B:68:VAL:CB	2.40	0.49
1:B:373:GLN:HG2	1:B:406:GLY:HA3	1.94	0.49
1:A:381:LEU:HD21	1:A:390:TYR:CD1	2.47	0.49
1:A:150:GLU:HA	1:A:150:GLU:OE2	2.13	0.48
2:A:900[B]:BLA:ND	2:A:900[B]:BLA:NC	2.61	0.48
1:B:353:ASP:O	1:B:367:ARG:HB3	2.13	0.48
1:B:373:GLN:CG	1:B:406:GLY:HA3	2.42	0.48
1:B:430:GLU:HG2	1:B:471:SER:HB3	1.95	0.48
1:A:286:TYR:HB3	1:A:287:PRO:HD3	1.94	0.48
1:A:163[A]:TYR:CD2	1:A:173:VAL:HG22	2.48	0.48
1:B:207:PRO:HG2	1:B:293:GLN:HG3	1.95	0.48
1:B:43:GLU:HG2	1:B:220:ARG:O	2.12	0.48
1:B:239:VAL:HG11	1:B:289:ARG:HH21	1.77	0.48
1:A:209[A]:ARG:CG	1:A:209[A]:ARG:NH1	2.67	0.48
1:B:261[B]:SER:HB2	1:B:273:LEU:HD13	1.96	0.48
1:A:45:ILE:HD12	1:A:46:GLN:H	1.79	0.48
1:A:355:ALA:O	1:A:366:ILE:HG23	2.13	0.48
1:A:430:GLU:HG2	1:A:471:SER:CA	2.44	0.48
1:B:211:ILE:HB	1:B:259:SER:CB	2.44	0.48
1:A:15:GLU:O	1:A:198:GLN:OE1	2.31	0.48
1:A:306:LEU:HD13	1:B:305:ARG:HH11	1.78	0.48
1:B:202:LEU:HD21	1:B:236:SER:HB3	1.94	0.48
1:B:254:MSE:HE1	1:B:277:HIS:CD2	2.48	0.48
1:B:264:ILE:HB	1:B:272:GLY:O	2.13	0.48
1:A:71:MSE:HE1	1:A:97:VAL:HG12	1.96	0.47
1:A:152:ARG:HB2	1:A:160:VAL:CG1	2.44	0.47
1:A:158:ASP:HB2	1:A:278:HIS:HA	1.96	0.47
1:A:395:TRP:HB3	1:A:409:CYS:HA	1.97	0.47
1:B:352:CYS:HB2	1:B:427:PHE:O	2.13	0.47
1:B:430:GLU:HG2	1:B:471:SER:CB	2.45	0.47
1:A:338:ALA:C	1:A:340:ALA:H	2.17	0.47
1:A:306:LEU:HD12	1:A:306:LEU:HA	1.71	0.47
1:A:330:ARG:HG2	1:A:331:ASP:OD1	2.14	0.47
1:B:157:TYR:CG	1:B:276:CYS:HB3	2.49	0.47
1:B:152:ARG:HD2	1:B:160:VAL:HG12	1.96	0.47
1:A:12[A]:CYS:HB2	2:A:900[A]:BLA:HAC	1.80	0.47
1:B:45:ILE:HG22	1:B:49:LEU:HD12	1.97	0.47
1:B:51:PHE:HD2	1:B:52:VAL:H	1.62	0.47
1:B:116:ASP:CG	1:B:117:THR:N	2.68	0.47
1:A:16:PRO:HA	1:A:198:GLN:OE1	2.15	0.47
1:A:163[B]:TYR:OH	1:A:190[B]:TYR:CD2	2.62	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:209[A]:ARG:CZ	1:A:241:ARG:NH1	2.78	0.47
1:A:484:LYS:O	1:A:488:ASP:OD2	2.33	0.47
1:B:226:ASN:HB2	1:B:233:PHE:CZ	2.50	0.47
1:A:48:LEU:C	1:A:49:LEU:HG	2.33	0.47
1:A:160:VAL:CG1	1:A:177:SER:HB3	2.45	0.47
1:A:350:ILE:CG2	1:A:351:PRO:HD2	2.44	0.47
2:B:900[A]:BLA:C2B	2:B:900[A]:BLA:HMA1	2.45	0.47
1:A:152:ARG:HD2	1:A:177:SER:O	2.15	0.47
1:A:198:GLN:O	1:A:202:LEU:HB2	2.15	0.47
1:A:341:HIS:O	1:A:343:ASP:N	2.47	0.47
1:B:59:LEU:HD22	1:B:59:LEU:N	2.28	0.47
1:B:388:ASP:HA	1:B:415:ARG:HB3	1.96	0.47
1:A:70:ARG:HH12	1:B:116:ASP:CG	2.18	0.46
1:A:194:ASP:OD2	2:A:900[A]:BLA:NB	2.39	0.46
1:A:213:ASP:O	1:A:216:TYR:HB3	2.14	0.46
1:A:33:ARG:NH1	1:A:37:MSE:SE	2.98	0.46
1:A:294:ILE:CG2	1:B:124:THR:HG23	2.46	0.46
1:B:159:ARG:CZ	1:B:185:TYR:HE2	2.28	0.46
1:B:226:ASN:HB3	1:B:229:THR:HG22	1.97	0.46
1:A:395:TRP:CB	1:A:409:CYS:HA	2.45	0.46
1:B:71:MSE:O	1:B:74:GLU:HG2	2.16	0.46
1:B:189:ARG:CD	1:B:463:TRP:CH2	2.98	0.46
1:B:354:GLY:HA2	1:B:367:ARG:HB2	1.97	0.46
1:B:394:ASN:O	1:B:409:CYS:HB3	2.16	0.46
1:A:163[A]:TYR:CE1	1:A:275:SER:HB2	2.50	0.46
1:B:163[A]:TYR:CE1	1:B:275:SER:HB2	2.51	0.46
1:B:12[B]:CYS:HB2	2:B:900[B]:BLA:HAC	1.54	0.46
1:A:250[A]:TYR:CD2	1:A:454:LEU:HB3	2.51	0.46
1:A:262:ILE:HD12	1:A:292:PHE:HB3	1.98	0.46
1:B:19:VAL:N	1:B:20:PRO:CD	2.76	0.46
1:B:51:PHE:CD1	1:B:63:GLN:HB2	2.50	0.46
1:B:359:LEU:HD12	1:B:360:GLY:N	2.31	0.46
1:A:157:TYR:CG	1:A:276:CYS:HB3	2.51	0.45
1:A:196:PRO:HG2	2:A:900[B]:BLA:HMD3	1.98	0.45
2:A:900[B]:BLA:OB	2:A:900[B]:BLA:HBB1	2.15	0.45
1:A:66:PRO:HD2	1:A:67:GLU:H	1.81	0.45
1:B:346:ILE:HD12	1:B:424:ILE:HG23	1.98	0.45
1:B:152:ARG:HG3	1:B:157:TYR:O	2.17	0.45
1:A:356:LEU:HD13	1:A:357:VAL:N	2.32	0.45
1:B:54:SER:O	1:B:57:SER:HB3	2.15	0.45
1:A:150:GLU:O	1:A:154:MSE:HG3	2.17	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:195:ILE:O	1:B:200:ARG:NH2	2.49	0.45
1:B:346:ILE:HG13	1:B:426:TRP:CZ3	2.51	0.45
1:A:171:GLY:O	1:A:189:ARG:HA	2.17	0.45
1:A:415:ARG:HB2	1:A:423:TRP:CZ3	2.51	0.45
1:A:229:THR:HG23	1:A:231:GLU:H	1.82	0.45
1:B:273:LEU:HD12	1:B:274:PHE:C	2.36	0.45
1:A:373:GLN:O	1:A:377:VAL:HG23	2.17	0.45
1:A:382:GLN:O	1:A:385:PRO:HG3	2.17	0.45
1:B:211:ILE:HG12	1:B:243:VAL:HG21	1.99	0.45
1:B:356:LEU:HB3	1:B:425:PHE:HB2	1.99	0.45
1:A:305:ARG:NH2	1:B:137:HIS:O	2.50	0.45
1:A:485:LEU:HD23	1:A:485:LEU:HA	1.79	0.45
1:B:38:VAL:HG23	1:B:57:SER:O	2.17	0.45
1:A:229:THR:C	1:A:231:GLU:H	2.21	0.44
1:A:290:MSE:HE1	1:A:293:GLN:OE1	2.16	0.44
1:B:185:TYR:CD1	1:B:188:LEU:HD12	2.39	0.44
1:B:261[B]:SER:HB3	2:B:900[B]:BLA:O2A	2.17	0.44
1:A:162:ALA:HB3	1:A:175:ALA:HB3	1.99	0.44
1:B:134:VAL:CG1	1:B:302:ILE:HG12	2.47	0.44
1:A:221:VAL:O	1:A:221:VAL:CG2	2.64	0.44
1:B:51:PHE:CD1	1:B:63:GLN:CB	3.01	0.44
1:B:466:VAL:O	1:B:470:HIS:CD2	2.71	0.44
1:B:266:VAL:HG21	1:B:271:TRP:HD1	1.82	0.44
2:B:900[A]:BLA:HBD2	2:B:900[A]:BLA:CMD	2.31	0.44
2:B:900[A]:BLA:HMB3	2:B:900[A]:BLA:HMA2	1.98	0.44
1:A:127:ALA:O	1:A:131:ILE:HG13	2.17	0.44
1:A:199:ALA:O	1:A:203[B]:TYR:CD2	2.71	0.44
1:A:313:GLU:O	1:A:317:VAL:HG13	2.17	0.44
1:A:314:LEU:N	1:A:314:LEU:CD2	2.76	0.44
1:B:119:SER:C	1:B:121:THR:N	2.71	0.44
1:B:225:LEU:O	1:B:227:PRO:HD3	2.18	0.44
1:B:341:HIS:O	1:B:343:ASP:N	2.50	0.44
1:A:208:ILE:HA	1:A:261:SER:O	2.18	0.44
1:A:379:GLN:O	1:A:379:GLN:HG2	2.16	0.44
1:A:51:PHE:HB3	1:A:63:GLN:HG2	1.98	0.44
1:A:416:PHE:O	1:A:416:PHE:CD2	2.70	0.44
1:B:379:GLN:HA	1:B:382:GLN:CG	2.47	0.44
1:A:253:ASN:HD21	1:A:449:PRO:HB3	1.83	0.44
1:A:454:LEU:HD23	1:A:454:LEU:N	2.33	0.43
1:B:409:CYS:HB2	1:B:430:GLU:OE2	2.18	0.43
1:A:147:VAL:HG21	1:A:295:PHE:HZ	1.83	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:202:LEU:CD2	1:B:236:SER:HB3	2.49	0.43
1:B:217:THR:HG23	1:B:217:THR:O	2.17	0.43
1:B:346:ILE:CD1	1:B:424:ILE:HG23	2.48	0.43
1:B:350:ILE:HG23	1:B:351:PRO:HD2	2.00	0.43
1:A:432:VAL:O	1:A:433:HIS:CB	2.66	0.43
1:A:266:VAL:HG22	1:A:271:TRP:HB2	2.00	0.43
2:A:900[A]:BLA:NA	3:A:506:HOH:O	2.36	0.43
1:B:217:THR:O	1:B:217:THR:CG2	2.66	0.43
1:B:453:ARG:O	1:B:453:ARG:CG	2.64	0.43
1:A:134:VAL:O	1:A:134:VAL:CG1	2.67	0.43
1:B:298:VAL:O	1:B:302:ILE:HD13	2.18	0.43
1:B:330:ARG:HB2	1:B:492:LEU:HD11	1.99	0.43
1:A:64:VAL:HG13	1:A:64:VAL:O	2.18	0.43
1:A:250[B]:TYR:CE1	2:A:900[B]:BLA:OC	2.72	0.43
1:A:294:ILE:HD11	1:B:294:ILE:HD13	1.99	0.43
1:A:215:ALA:HB3	1:A:257:ARG:HH12	1.84	0.43
1:A:428:ARG:NE	1:A:474:TRP:CZ3	2.86	0.43
1:B:315:LEU:HD12	1:B:315:LEU:HA	1.83	0.43
1:B:17:ILE:HD13	2:B:900[B]:BLA:HAD1	2.00	0.43
1:B:17:ILE:HD11	1:B:199:ALA:HA	2.00	0.43
1:A:188:LEU:HB3	1:A:190[B]:TYR:CE2	2.53	0.43
1:A:240:LEU:O	1:A:241:ARG:C	2.57	0.43
1:A:273:LEU:C	1:A:273:LEU:HD12	2.39	0.43
1:A:313:GLU:O	1:A:316:ARG:N	2.45	0.43
1:B:45:ILE:HG13	1:B:45:ILE:H	1.64	0.43
1:B:159:ARG:HB3	1:B:277:HIS:HB2	2.00	0.43
1:B:298:VAL:HG12	1:B:299:CYS:N	2.32	0.43
1:A:160:VAL:HG12	1:A:177:SER:O	2.18	0.42
1:B:190[B]:TYR:CD1	1:B:459:SER:HB2	2.54	0.42
1:B:250[B]:TYR:CE1	2:B:900[B]:BLA:OC	2.72	0.42
1:B:262:ILE:HD12	1:B:292:PHE:HB3	2.00	0.42
1:A:389:ILE:HG22	1:A:390:TYR:N	2.34	0.42
1:B:262:ILE:HG22	1:B:296:SER:HB2	2.00	0.42
1:B:273:LEU:HD12	1:B:273:LEU:C	2.39	0.42
1:B:284:ILE:CG2	1:B:288:VAL:HB	2.49	0.42
1:A:172:GLU:HG2	1:A:174:VAL:CG1	2.49	0.42
1:A:416:PHE:HE1	1:A:424:ILE:CG1	2.24	0.42
1:B:190[B]:TYR:HD1	1:B:194[B]:ASP:OD1	2.03	0.42
1:A:134:VAL:HA	1:A:143:LEU:CD2	2.49	0.42
1:A:283:LEU:C	1:A:283:LEU:CD2	2.88	0.42
1:B:15:GLU:HA	1:B:16:PRO:HD3	1.89	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:325:LEU:HD11	1:B:339:LEU:HD23	2.01	0.42
1:A:302:ILE:HG22	1:A:303:VAL:N	2.35	0.42
1:B:97:VAL:HG22	1:B:110:PHE:CD2	2.54	0.42
1:B:388:ASP:HB3	1:B:486:ARG:HE	1.85	0.42
1:B:139:ASP:HB3	1:B:142:SER:OG	2.19	0.42
1:B:358:MSE:O	1:B:423:TRP:N	2.46	0.42
1:A:188:LEU:CD2	1:A:189:ARG:H	2.26	0.42
1:A:414:ILE:HG21	1:A:482:ALA:O	2.19	0.42
1:B:209[A]:ARG:NH1	1:B:209[A]:ARG:HG2	2.32	0.42
1:A:284:ILE:HA	1:A:285:PRO:HD3	1.94	0.42
1:B:284:ILE:N	1:B:284:ILE:HD12	2.34	0.42
1:A:172:GLU:HG2	1:A:174:VAL:HG12	2.02	0.42
1:A:195:ILE:HB	1:A:200:ARG:NH2	2.34	0.42
1:B:83:SER:O	1:B:84:ASN:HB2	2.19	0.42
1:B:254:MSE:HE2	1:B:256:VAL:HG21	2.02	0.42
1:A:288:VAL:O	1:A:289:ARG:C	2.58	0.42
1:B:54:SER:HA	1:B:55:PRO:HD3	1.87	0.42
1:B:176:GLU:HG2	1:B:177:SER:N	2.34	0.42
1:B:308:GLN:O	1:B:311:ILE:HD13	2.19	0.42
1:A:180:GLU:C	1:A:182:LEU:H	2.22	0.41
1:A:293:GLN:O	1:A:296:SER:HB3	2.20	0.41
1:A:352:CYS:HB2	1:A:427:PHE:O	2.20	0.41
1:A:492:LEU:N	1:A:492:LEU:CD1	2.83	0.41
1:B:384:ASP:OD1	1:B:387:ARG:HG2	2.20	0.41
1:A:415:ARG:HB2	1:A:423:TRP:CH2	2.55	0.41
2:A:900[A]:BLA:OB	2:A:900[A]:BLA:HBB1	2.19	0.41
1:B:190[A]:TYR:CD1	1:B:190[A]:TYR:N	2.87	0.41
1:A:481:ILE:O	1:A:485:LEU:HB2	2.21	0.41
1:B:339:LEU:HD21	1:B:489:LEU:HD21	2.01	0.41
1:B:372:ARG:C	1:B:374:ALA:N	2.74	0.41
1:B:373:GLN:HE21	1:B:406:GLY:CA	2.34	0.41
1:A:168:ASP:OD1	1:A:168:ASP:N	2.44	0.41
1:A:306:LEU:HD13	1:B:305:ARG:HD3	2.03	0.41
1:B:12[A]:CYS:SG	1:B:13:GLU:HG3	2.61	0.41
1:A:25:PRO:HB3	1:A:219:MSE:CE	2.41	0.41
1:B:222:PHE:HA	1:B:223:PRO:C	2.40	0.41
2:B:900[A]:BLA:HBC1	2:B:900[A]:BLA:CMC	2.21	0.41
1:A:15:GLU:HA	1:A:16:PRO:HD3	1.94	0.41
1:B:92:GLU:HB3	1:B:93:HIS:NE2	2.35	0.41
2:B:900[A]:BLA:HMA1	2:B:900[A]:BLA:C1B	2.51	0.41
1:A:394:ASN:HA	1:A:469:GLY:O	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:206:ASN:HA	1:A:207:PRO:HD3	1.94	0.41
1:A:394:ASN:OD1	1:A:394:ASN:C	2.59	0.41
1:B:240:LEU:O	1:B:241:ARG:C	2.59	0.41
1:B:254:MSE:HE1	1:B:277:HIS:HD2	1.86	0.41
1:B:324:ALA:HB1	1:B:328:ARG:CZ	2.51	0.41
1:B:335:LEU:CD1	1:B:492:LEU:HD23	2.46	0.41
1:A:39:LEU:HD22	1:A:227:PRO:HD2	2.03	0.41
1:A:98:ILE:CG2	1:A:286:TYR:CE1	3.03	0.41
1:B:188:LEU:HD23	1:B:189:ARG:N	2.36	0.41
1:B:215:ALA:H	1:B:257:ARG:HH12	1.68	0.41
1:B:266:VAL:CG2	1:B:271:TRP:CD1	3.04	0.41
1:A:157:TYR:CE1	1:A:284:ILE:HD11	2.56	0.40
1:A:321:ARG:O	1:A:322:ARG:C	2.60	0.40
1:A:409:CYS:SG	1:A:430:GLU:CD	2.99	0.40
1:B:44:ASN:HB3	1:B:219:MSE:HG2	2.03	0.40
1:B:161:MSE:HE1	2:B:900[B]:BLA:OB	2.21	0.40
1:B:166:ARG:HA	1:B:166:ARG:HD3	1.90	0.40
1:A:261:SER:HA	1:A:274:PHE:O	2.21	0.40
1:B:51:PHE:HD2	1:B:52:VAL:N	2.18	0.40
1:A:217:THR:HA	1:A:218:PRO:HD3	1.65	0.40
1:A:379:GLN:HA	1:A:382:GLN:HG3	2.03	0.40
2:A:900[A]:BLA:HBD2	2:A:900[A]:BLA:CMD	2.46	0.40
1:B:163[B]:TYR:CE1	1:B:172:GLU:C	2.95	0.40
1:B:116:ASP:CG	1:B:117:THR:H	2.24	0.40
1:B:163[A]:TYR:OH	1:B:275:SER:CB	2.68	0.40
1:B:191:PRO:HD2	1:B:194[A]:ASP:CG	2.42	0.40
2:B:900[A]:BLA:OB	2:B:900[A]:BLA:HBB1	2.20	0.40
1:A:19:VAL:HG12	1:A:233:PHE:O	2.22	0.40
1:A:189:ARG:C	1:A:190[B]:TYR:CD2	2.95	0.40
1:A:244:SER:HB3	2:A:900[A]:BLA:HMD2	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	453/505 (90%)	409 (90%)	42 (9%)	2 (0%)	34	70
1	B	456/505 (90%)	403 (88%)	52 (11%)	1 (0%)	47	80
All	All	909/1010 (90%)	812 (89%)	94 (10%)	3 (0%)	41	74

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	456	PRO
1	A	342	PRO
1	A	20	PRO

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	394/419 (94%)	344 (87%)	50 (13%)	4	18
1	B	397/419 (95%)	350 (88%)	47 (12%)	5	21
All	All	791/838 (94%)	694 (88%)	97 (12%)	5	19

All (97) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	7	VAL
1	A	13	GLU
1	A	32	LEU
1	A	43	GLU
1	A	54	SER
1	A	57	SER
1	A	59	LEU
1	A	64	VAL
1	A	76	LEU
1	A	83	SER

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	89	ARG
1	A	98	ILE
1	A	119	SER
1	A	120	ILE
1	A	125	LEU
1	A	130	ILE
1	A	134	VAL
1	A	140	THR
1	A	142	SER
1	A	147	VAL
1	A	181	ASP
1	A	186	LEU
1	A	188	LEU
1	A	209[A]	ARG
1	A	209[B]	ARG
1	A	210	LEU
1	A	221	VAL
1	A	242	SER
1	A	257	ARG
1	A	260	MSE
1	A	280	SER
1	A	294	ILE
1	A	302	ILE
1	A	311	ILE
1	A	314	LEU
1	A	318	SER
1	A	319	THR
1	A	334	ASP
1	A	346	ILE
1	A	363	THR
1	A	365	SER
1	A	366	ILE
1	A	393	ASP
1	A	409	CYS
1	A	412	LEU
1	A	426	TRP
1	A	453	ARG
1	A	485	LEU
1	A	489	LEU
1	A	492	LEU
1	B	12[A]	CYS
1	B	12[B]	CYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	13	GLU
1	B	32	LEU
1	B	45	ILE
1	B	51	PHE
1	B	59	LEU
1	B	64	VAL
1	B	76	LEU
1	B	94	LEU
1	B	98	ILE
1	B	119	SER
1	B	130	ILE
1	B	134	VAL
1	B	143	LEU
1	B	146	ASN
1	B	147	VAL
1	B	160	VAL
1	B	181	ASP
1	B	182	LEU
1	B	186	LEU
1	B	188	LEU
1	B	190[A]	TYR
1	B	190[B]	TYR
1	B	198	GLN
1	B	236	SER
1	B	260	MSE
1	B	277	HIS
1	B	280	SER
1	B	291	SER
1	B	294	ILE
1	B	311	ILE
1	B	317	VAL
1	B	318	SER
1	B	343	ASP
1	B	366	ILE
1	B	380	ARG
1	B	393	ASP
1	B	409	CYS
1	B	412	LEU
1	B	426	TRP
1	B	430	GLU
1	B	431	GLU
1	B	483	GLU

Continued from previous page...

Mol	Chain	Res	Type
1	B	485	LEU
1	B	490	MSE
1	B	493	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	138	ASN
1	A	167	HIS
1	A	206	ASN
1	A	373	GLN
1	B	135	GLN
1	B	206	ASN
1	B	308	GLN
1	B	373	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	BLA	A	900[B]	-	36,46,46	3.15	17 (47%)	47,67,67	2.10	12 (25%)
2	BLA	A	900[A]	-	36,46,46	3.12	16 (44%)	47,67,67	1.99	9 (19%)
2	BLA	B	900[B]	-	36,46,46	3.20	15 (41%)	47,67,67	2.08	14 (29%)
2	BLA	B	900[A]	-	36,46,46	3.01	16 (44%)	47,67,67	2.02	8 (17%)

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	BLA	A	900[B]	-	-	1/22/74/74	0/4/4/4
2	BLA	A	900[A]	-	-	7/22/74/74	0/4/4/4
2	BLA	B	900[B]	-	-	5/22/74/74	0/4/4/4
2	BLA	B	900[A]	-	-	8/22/74/74	0/4/4/4

All (64) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	900[A]	BLA	CHB-C1B	9.51	1.54	1.34
2	A	900[B]	BLA	CHB-C1B	9.02	1.53	1.34
2	B	900[A]	BLA	CHB-C1B	8.94	1.53	1.34
2	B	900[B]	BLA	CHB-C1B	8.75	1.52	1.34
2	B	900[B]	BLA	CHA-C4D	7.35	1.41	1.35
2	B	900[B]	BLA	CHD-C4C	6.98	1.54	1.38
2	A	900[B]	BLA	CHA-C4D	6.97	1.40	1.35
2	A	900[A]	BLA	CHD-C4C	6.97	1.54	1.38
2	B	900[B]	BLA	CHD-C1D	6.54	1.55	1.40
2	A	900[B]	BLA	CHD-C4C	6.44	1.53	1.38
2	B	900[A]	BLA	CHD-C4C	6.35	1.53	1.38
2	A	900[B]	BLA	CHD-C1D	5.93	1.54	1.40
2	A	900[A]	BLA	CHD-C1D	5.82	1.54	1.40
2	B	900[A]	BLA	CHD-C1D	5.46	1.53	1.40
2	A	900[A]	BLA	CHA-C4D	5.46	1.39	1.35
2	B	900[A]	BLA	CHA-C4D	5.35	1.39	1.35
2	A	900[A]	BLA	CBC-CAC	4.75	1.53	1.30
2	B	900[B]	BLA	CBC-CAC	4.75	1.53	1.30
2	A	900[B]	BLA	CBC-CAC	4.70	1.53	1.30
2	B	900[A]	BLA	CBC-CAC	4.63	1.53	1.30
2	A	900[B]	BLA	C4D-C3D	-4.03	1.39	1.45
2	B	900[B]	BLA	C4D-C3D	-3.91	1.39	1.45

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	900[A]	BLA	C4D-C3D	-3.87	1.39	1.45
2	B	900[B]	BLA	C1B-C2B	-3.69	1.38	1.45
2	A	900[B]	BLA	C1B-C2B	-3.66	1.38	1.45
2	B	900[B]	BLA	C1C-C2C	-3.55	1.38	1.47
2	B	900[A]	BLA	C4A-CHB	3.53	1.54	1.41
2	A	900[B]	BLA	C1D-C2D	-3.50	1.38	1.45
2	B	900[A]	BLA	C4D-C3D	-3.48	1.40	1.45
2	B	900[A]	BLA	C1C-C2C	-3.47	1.38	1.47
2	A	900[A]	BLA	C4A-CHB	3.45	1.54	1.41
2	B	900[B]	BLA	C1D-C2D	-3.44	1.38	1.45
2	A	900[A]	BLA	C1C-C2C	-3.36	1.38	1.47
2	B	900[B]	BLA	C3B-C4B	-3.36	1.37	1.47
2	A	900[A]	BLA	C1D-C2D	-3.31	1.38	1.45
2	A	900[B]	BLA	C1C-C2C	-3.30	1.38	1.47
2	B	900[A]	BLA	C1D-C2D	-3.14	1.39	1.45
2	A	900[B]	BLA	C4A-CHB	3.10	1.53	1.41
2	B	900[B]	BLA	CAB-C3B	-3.09	1.39	1.47
2	B	900[A]	BLA	CAB-C3B	-3.02	1.39	1.47
2	A	900[A]	BLA	C3B-C4B	-3.02	1.38	1.47
2	A	900[B]	BLA	C3B-C4B	-3.01	1.38	1.47
2	B	900[A]	BLA	C1B-C2B	-2.99	1.39	1.45
2	B	900[B]	BLA	C4A-CHB	2.97	1.52	1.41
2	A	900[B]	BLA	CAB-C3B	-2.94	1.39	1.47
2	B	900[A]	BLA	C3C-C4C	-2.91	1.40	1.45
2	A	900[A]	BLA	CAC-C3C	2.83	1.55	1.47
2	A	900[A]	BLA	C1B-C2B	-2.82	1.40	1.45
2	A	900[A]	BLA	CAB-C3B	-2.81	1.39	1.47
2	B	900[B]	BLA	C3C-C4C	-2.81	1.40	1.45
2	A	900[A]	BLA	C3C-C4C	-2.80	1.40	1.45
2	B	900[A]	BLA	C3B-C4B	-2.79	1.39	1.47
2	A	900[B]	BLA	CAC-C3C	2.62	1.54	1.47
2	A	900[B]	BLA	C3C-C4C	-2.57	1.41	1.45
2	B	900[A]	BLA	CAC-C3C	2.53	1.54	1.47
2	B	900[B]	BLA	CAC-C3C	2.42	1.54	1.47
2	A	900[B]	BLA	C1C-NC	-2.38	1.32	1.38
2	A	900[B]	BLA	C4C-NC	-2.35	1.33	1.37
2	B	900[A]	BLA	C4C-NC	-2.21	1.34	1.37
2	B	900[A]	BLA	C1C-NC	-2.20	1.33	1.38
2	B	900[B]	BLA	C1B-NB	-2.11	1.34	1.37
2	A	900[B]	BLA	C1B-NB	-2.07	1.34	1.37
2	A	900[A]	BLA	C4B-NB	-2.05	1.33	1.38
2	A	900[A]	BLA	C1C-NC	-2.01	1.33	1.38

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	900[A]	BLA	C1A-CHA-C4D	-7.93	119.34	128.81
2	B	900[A]	BLA	C1A-CHA-C4D	-7.91	119.36	128.81
2	A	900[B]	BLA	C4C-CHD-C1D	-7.65	109.39	128.08
2	B	900[A]	BLA	C4C-CHD-C1D	-6.35	112.58	128.08
2	A	900[A]	BLA	C4C-CHD-C1D	-6.01	113.41	128.08
2	A	900[B]	BLA	C1A-CHA-C4D	-5.16	122.64	128.81
2	B	900[B]	BLA	C1A-CHA-C4D	-5.07	122.75	128.81
2	B	900[B]	BLA	CHA-C4D-ND	4.70	135.35	128.83
2	B	900[B]	BLA	CHD-C1D-ND	4.13	133.57	124.93
2	A	900[B]	BLA	CHA-C4D-ND	3.96	134.32	128.83
2	B	900[B]	BLA	CHA-C4D-C3D	-3.77	116.61	125.32
2	A	900[B]	BLA	CHB-C1B-C2B	-3.63	119.80	126.97
2	B	900[B]	BLA	CHB-C1B-C2B	-3.59	119.88	126.97
2	A	900[B]	BLA	CBA-CAA-C2A	3.55	119.04	112.49
2	B	900[B]	BLA	C1D-C2D-C3D	3.52	110.55	106.51
2	B	900[B]	BLA	C3B-C4B-NB	3.47	110.11	106.19
2	B	900[A]	BLA	CBA-CAA-C2A	3.37	118.69	112.49
2	A	900[A]	BLA	CMB-C2B-C1B	3.36	128.36	124.17
2	B	900[B]	BLA	CBC-CAC-C3C	-3.23	111.56	127.62
2	A	900[B]	BLA	CHA-C4D-C3D	-3.20	117.92	125.32
2	A	900[B]	BLA	C3B-C4B-NB	3.10	109.69	106.19
2	B	900[B]	BLA	C4C-CHD-C1D	-2.82	121.18	128.08
2	B	900[A]	BLA	CBC-CAC-C3C	-2.79	113.74	127.62
2	A	900[B]	BLA	CBC-CAC-C3C	-2.76	113.88	127.62
2	B	900[A]	BLA	CHA-C4D-C3D	-2.73	119.00	125.32
2	B	900[B]	BLA	OB-C4B-C3B	-2.69	123.38	129.46
2	B	900[A]	BLA	CMB-C2B-C1B	2.67	127.50	124.17
2	A	900[A]	BLA	CBC-CAC-C3C	-2.64	114.50	127.62
2	A	900[A]	BLA	C1D-C2D-C3D	2.43	109.30	106.51
2	A	900[A]	BLA	CHA-C4D-C3D	-2.42	119.72	125.32
2	A	900[A]	BLA	CHB-C1B-NB	-2.39	122.36	130.40
2	A	900[A]	BLA	C3B-C4B-NB	2.26	108.75	106.19
2	B	900[B]	BLA	C2D-C1D-ND	-2.24	105.73	110.53
2	B	900[A]	BLA	C1D-C2D-C3D	2.21	109.04	106.51
2	A	900[B]	BLA	OB-C4B-C3B	-2.18	124.52	129.46
2	B	900[B]	BLA	CHD-C4C-C3C	-2.16	122.35	127.91
2	A	900[A]	BLA	C4D-ND-C1D	2.15	110.56	106.51
2	A	900[B]	BLA	CMC-C2C-C1C	2.14	126.42	121.39
2	B	900[B]	BLA	C4D-ND-C1D	2.12	110.50	106.51
2	B	900[A]	BLA	CHA-C4D-ND	2.09	131.73	128.83
2	A	900[B]	BLA	CAC-C3C-C4C	2.08	129.58	123.54
2	A	900[B]	BLA	C4D-ND-C1D	2.07	110.41	106.51

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	900[B]	BLA	C4B-C3B-C2B	-2.05	105.29	107.92

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	900[A]	BLA	NA-C4A-CHB-C1B
2	A	900[A]	BLA	NB-C1B-CHB-C4A
2	A	900[A]	BLA	C2B-C1B-CHB-C4A
2	A	900[A]	BLA	C2D-C3D-CAD-CBD
2	A	900[A]	BLA	C4D-C3D-CAD-CBD
2	A	900[B]	BLA	NA-C4A-CHB-C1B
2	B	900[A]	BLA	NA-C4A-CHB-C1B
2	B	900[A]	BLA	C3A-C4A-CHB-C1B
2	B	900[A]	BLA	NB-C1B-CHB-C4A
2	B	900[A]	BLA	C2B-C1B-CHB-C4A
2	B	900[A]	BLA	C2D-C3D-CAD-CBD
2	B	900[A]	BLA	C4D-C3D-CAD-CBD
2	B	900[B]	BLA	NA-C4A-CHB-C1B
2	B	900[B]	BLA	C3A-C4A-CHB-C1B
2	B	900[A]	BLA	NC-C4C-CHD-C1D
2	B	900[A]	BLA	C3C-C4C-CHD-C1D
2	A	900[A]	BLA	NC-C4C-CHD-C1D
2	B	900[B]	BLA	C2C-C3C-CAC-CBC
2	B	900[B]	BLA	NC-C4C-CHD-C1D
2	B	900[B]	BLA	C4C-C3C-CAC-CBC
2	A	900[A]	BLA	C3C-C4C-CHD-C1D

There are no ring outliers.

4 monomers are involved in 67 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	900[B]	BLA	16	0
2	A	900[A]	BLA	16	0
2	B	900[B]	BLA	20	0
2	B	900[A]	BLA	15	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand BLA A 900 (B)

Bond lengths

Bond angles

Torsions

Rings

Ligand BLA A 900 (A)

Bond lengths

Bond angles

Torsions

Rings

Ligand BLA B 900 (B)

Bond lengths

Bond angles

Torsions

Rings

Ligand BLA B 900 (A)

Bond lengths

Bond angles

Torsions

Rings
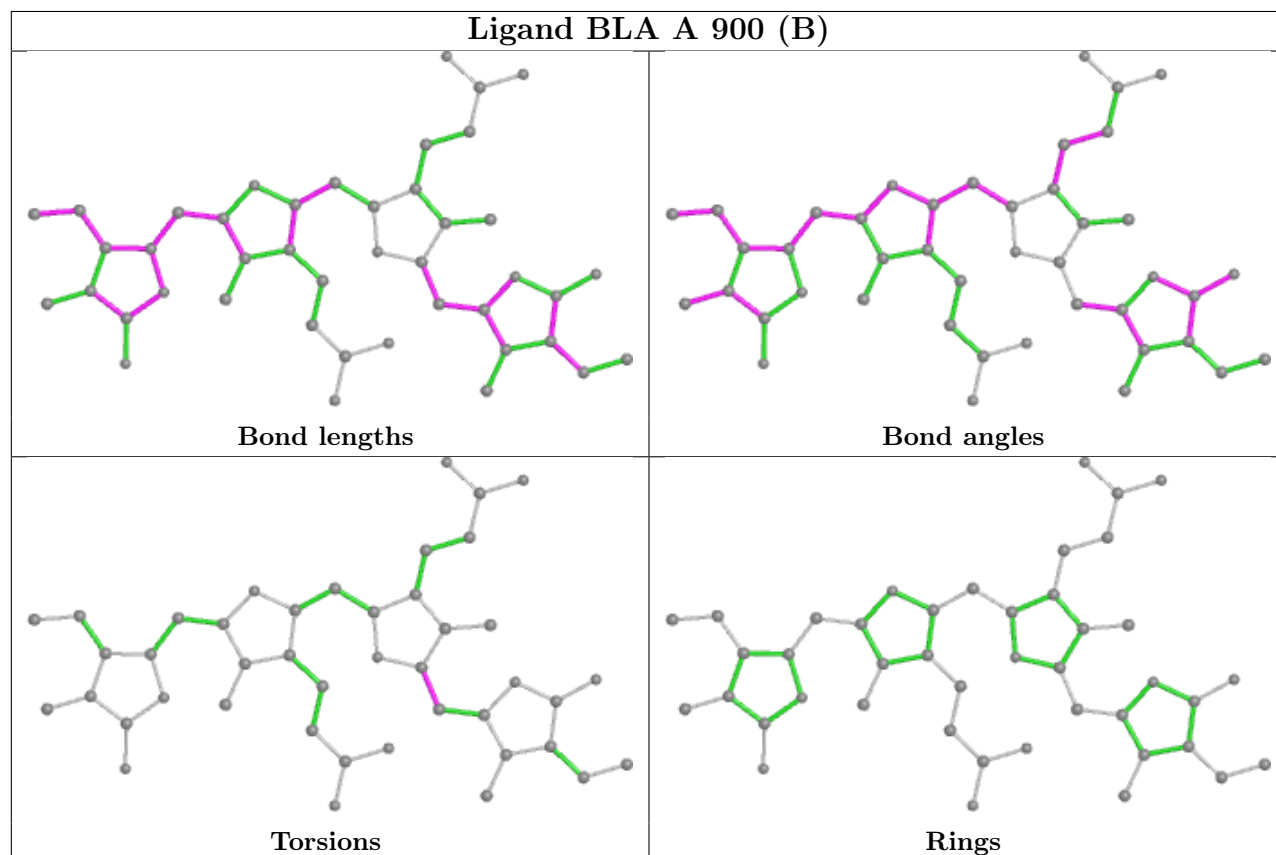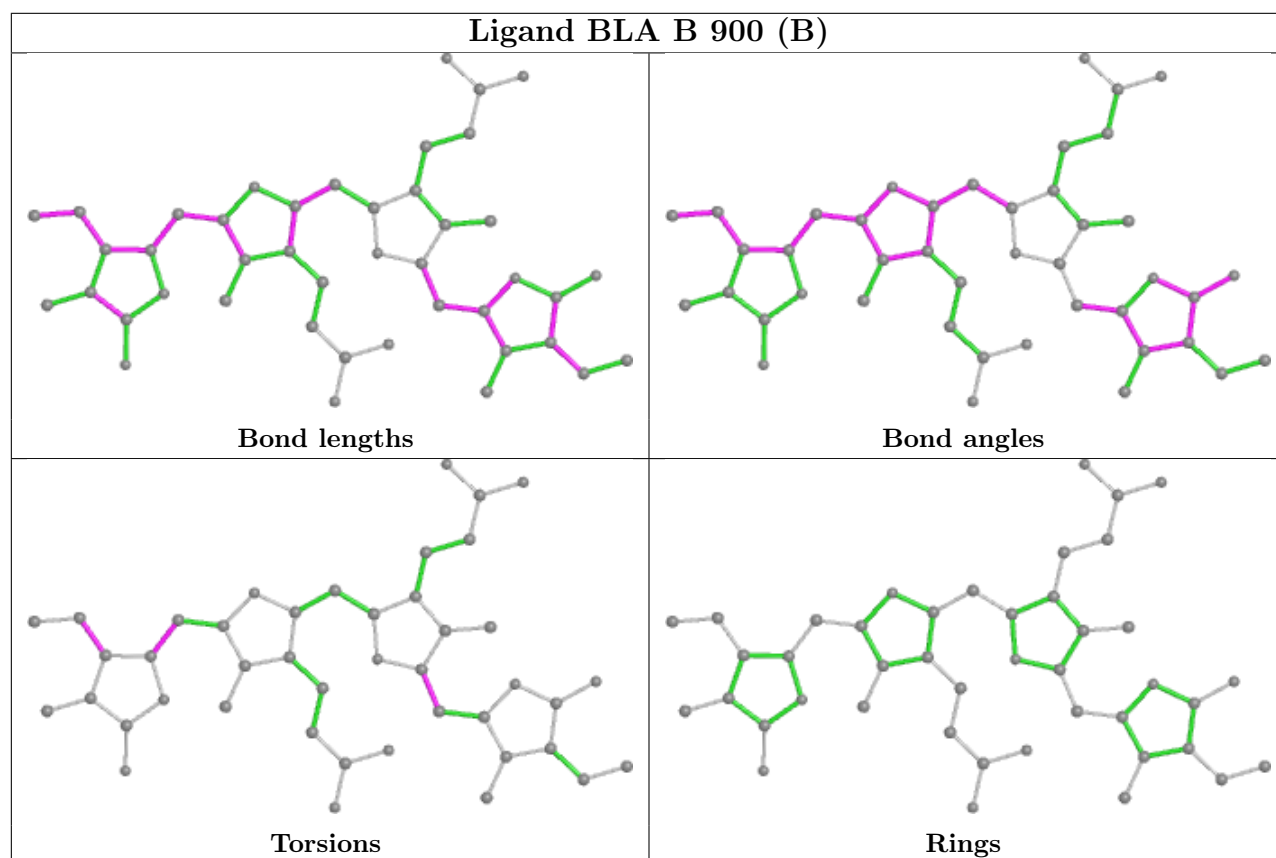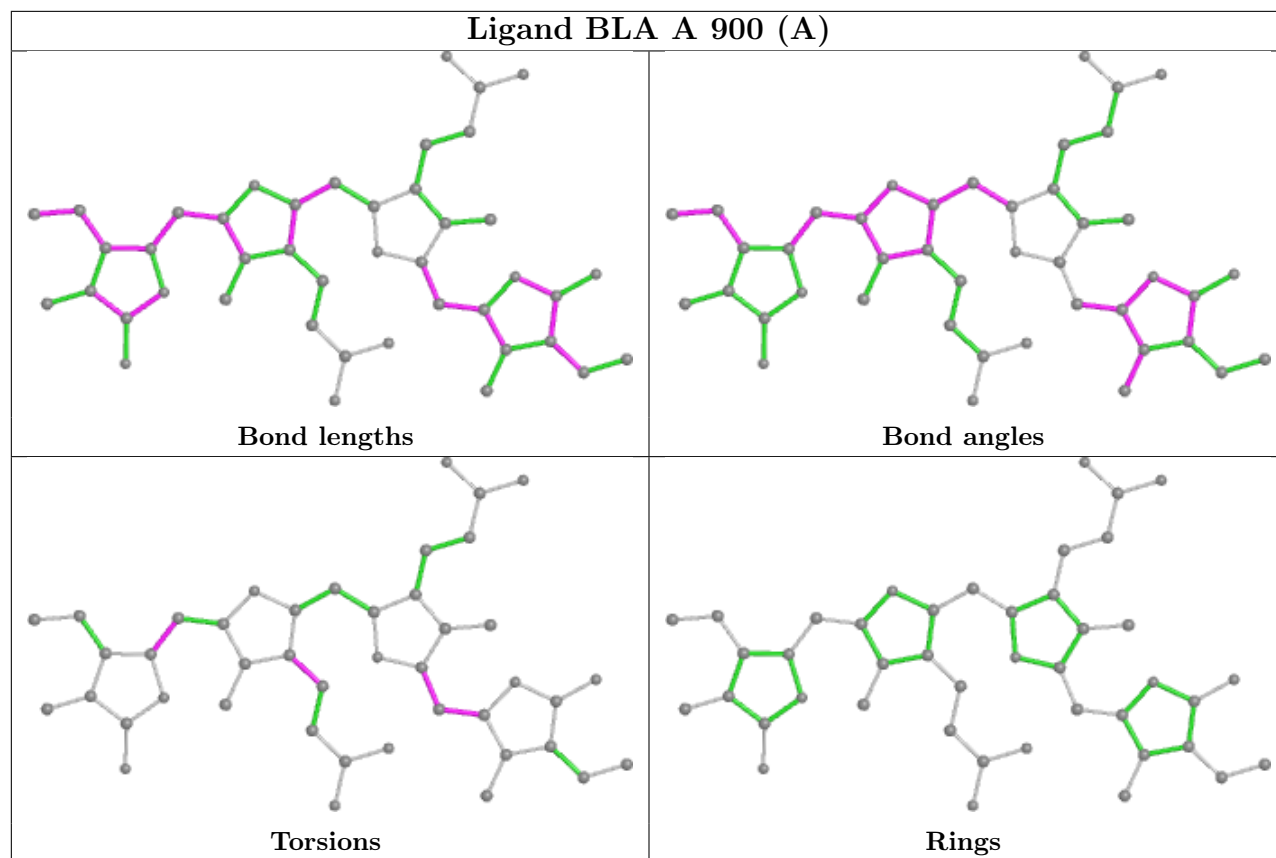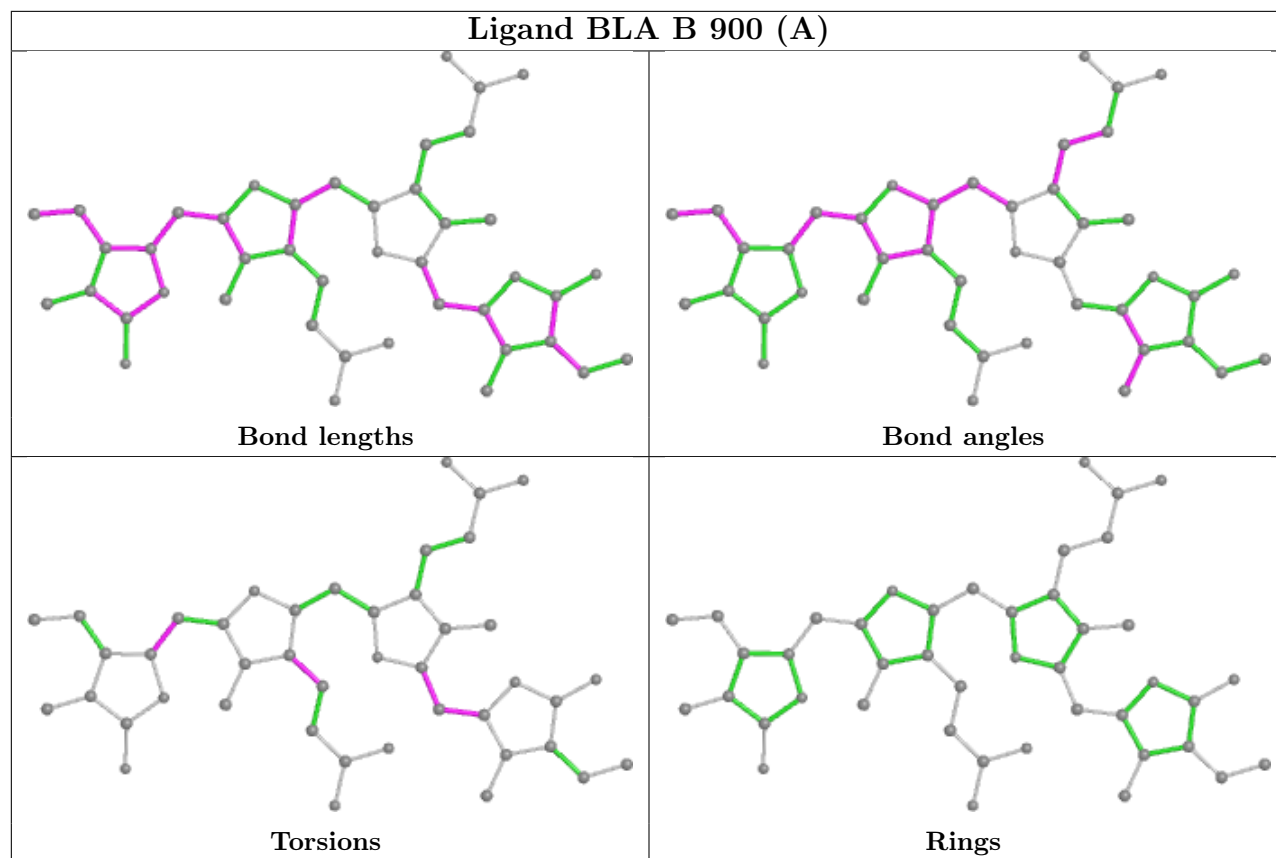
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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(Å^2)	Q<0.9
1	A	446/505 (88%)	0.23	39 (8%)	10	5	60, 115, 249, 498	0
1	B	446/505 (88%)	0.19	37 (8%)	11	5	52, 113, 268, 462	0
All	All	892/1010 (88%)	0.21	76 (8%)	10	5	52, 114, 258, 498	0

All (76) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	363	THR	22.8
1	A	430	GLU	18.7
1	A	471	SER	14.2
1	B	389	ILE	13.5
1	A	360	GLY	11.6
1	A	431	GLU	11.4
1	A	452	PRO	11.3
1	A	389	ILE	7.9
1	B	353	ASP	7.5
1	B	360	GLY	7.2
1	B	426	TRP	6.8
1	B	361	GLY	6.8
1	B	430	GLU	6.7
1	B	412	LEU	6.5
1	A	357	VAL	6.2
1	A	367	ARG	6.2
1	A	366	ILE	6.1
1	B	383	ARG	5.8
1	B	332	ALA	5.7
1	B	372	ARG	5.7
1	A	361	GLY	5.5
1	A	336	PHE	5.4
1	B	378	LEU	5.2
1	B	366	ILE	4.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	363	THR	4.6
1	A	364	LEU	4.5
1	A	479	LEU	4.4
1	B	336	PHE	4.3
1	A	412	LEU	4.2
1	A	388	ASP	4.2
1	A	470	HIS	4.2
1	B	387	ARG	4.1
1	A	468	ARG	4.0
1	A	423	TRP	3.9
1	B	425	PHE	3.8
1	B	356	LEU	3.7
1	B	471	SER	3.6
1	A	356	LEU	3.5
1	A	11	ASN	3.4
1	B	380	ARG	3.3
1	B	395	TRP	3.3
1	B	470	HIS	3.3
1	A	426	TRP	3.2
1	A	477	THR	3.2
1	A	425	PHE	3.2
1	A	337	GLY	3.1
1	A	6	PRO	3.0
1	B	431	GLU	3.0
1	A	448	GLY	3.0
1	A	215	ALA	3.0
1	B	381	LEU	3.0
1	A	359	LEU	3.0
1	A	453	ARG	2.9
1	B	367	ARG	2.9
1	B	357	VAL	2.8
1	B	476	GLU	2.8
1	B	340	ALA	2.8
1	B	423	TRP	2.7
1	B	355	ALA	2.7
1	A	386	GLU	2.7
1	B	452	PRO	2.7
1	A	429	HIS	2.7
1	A	381	LEU	2.5
1	A	472	THR	2.4
1	A	365	SER	2.4
1	B	429	HIS	2.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	347	ALA	2.3
1	B	354	GLY	2.3
1	A	340	ALA	2.3
1	B	6	PRO	2.1
1	B	388	ASP	2.1
1	B	11	ASN	2.1
1	A	383	ARG	2.1
1	B	386	GLU	2.1
1	A	465	GLU	2.0
1	B	483	GLU	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, 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	BLA	A	900[A]	43/43	0.90	0.32	104,133,154,159	43
2	BLA	A	900[B]	43/43	0.90	0.32	69,122,152,156	43
2	BLA	B	900[A]	43/43	0.92	0.27	85,111,135,158	43
2	BLA	B	900[B]	43/43	0.92	0.27	63,100,136,157	43

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.
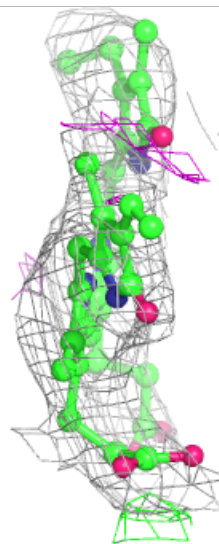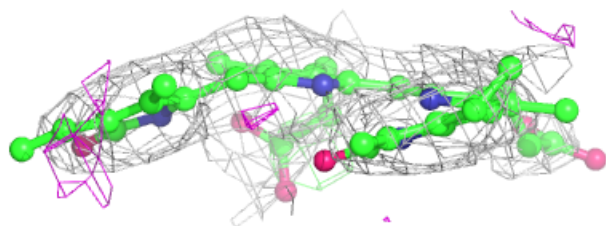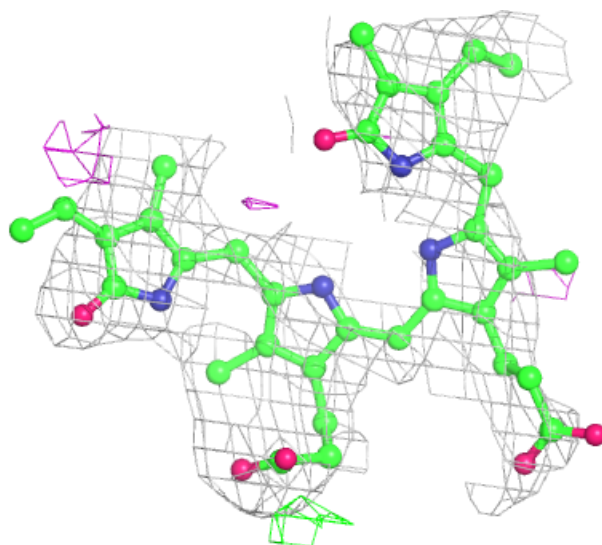
Electron density around BLA A 900 (A):

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
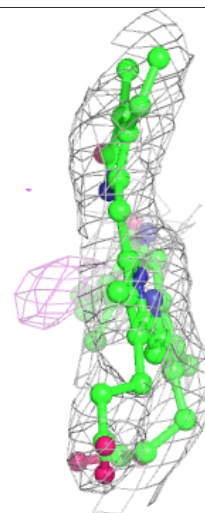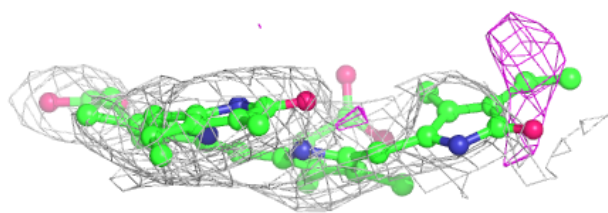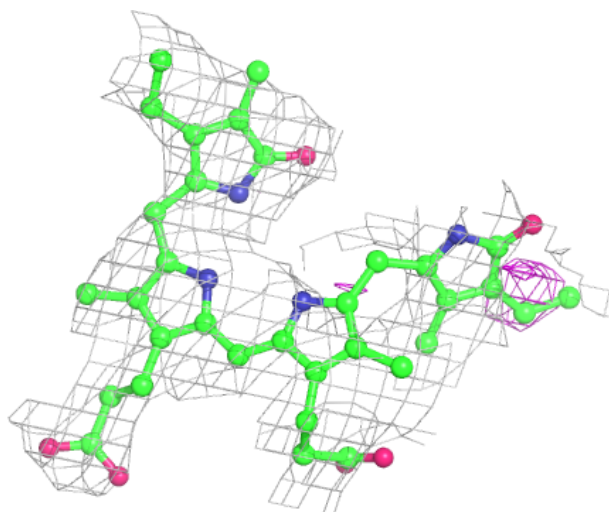
Electron density around BLA A 900 (B):

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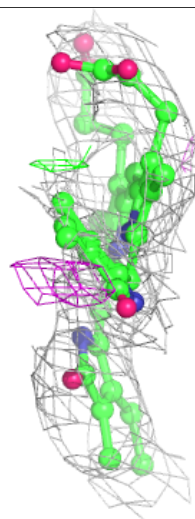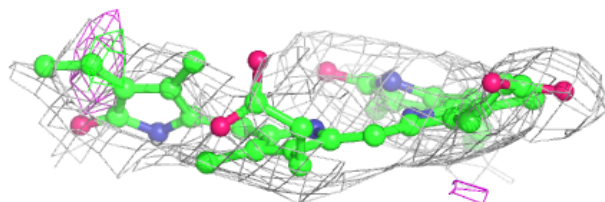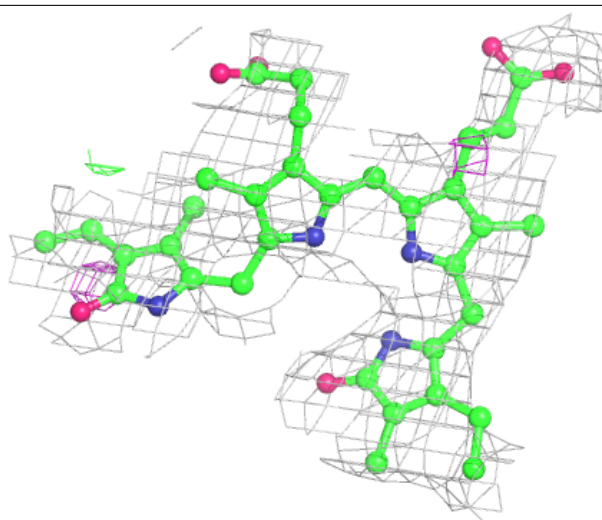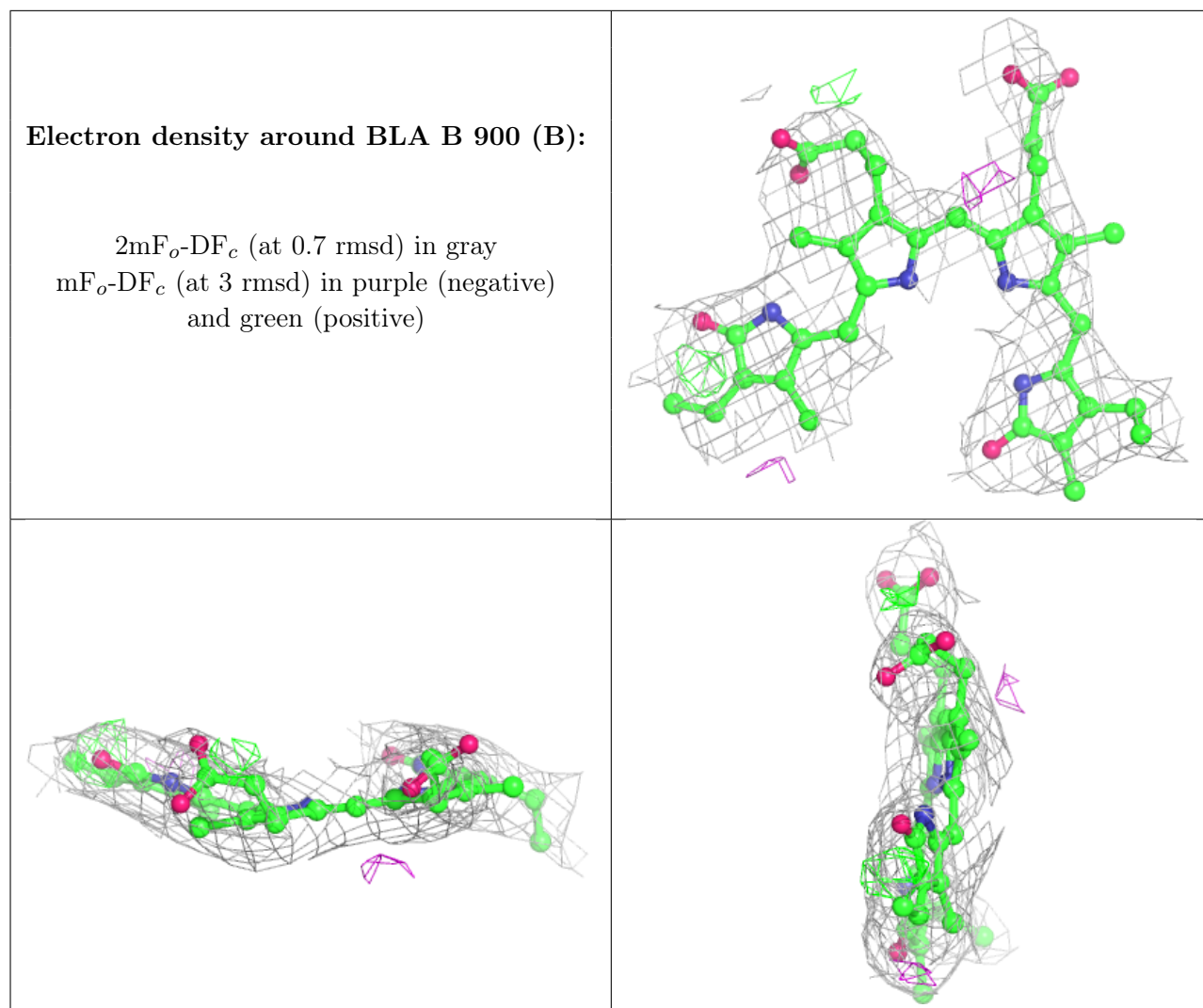and green (positive)

Electron density around BLA B 900 (A):

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

Electron density around BLA B 900 (B):

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

6.5 Other polymers (i)

There are no such residues in this entry.