



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 11, 2021 – 03:57 AM EDT

PDB ID : 3B78
Title : Structure of the eEF2-ExoA(R551H)-NAD⁺ complex
Authors : Jorgensen, R.; Merrill, A.R.
Deposited on : 2007-10-30
Resolution : 2.50 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

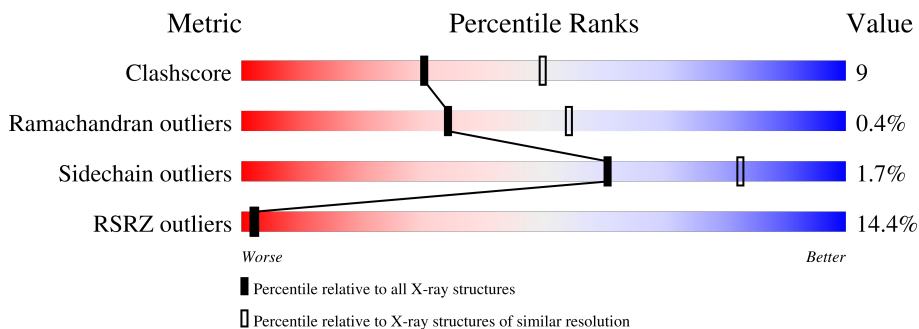
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	842	
1	C	842	
1	E	842	
2	B	207	
2	D	207	
2	F	207	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 24616 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 Elongation factor 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	823	6405	4075	1093	1207	30	0	0	0
1	C	823	6415	4082	1095	1208	30	0	0	0
1	E	823	6405	4075	1093	1207	30	0	0	0

- Molecule 2 is a protein called Exotoxin A.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	B	207	1587	1001	282	304	0	0	0
2	D	207	1587	1001	282	304	0	0	0
2	F	207	1587	1001	282	304	0	0	0

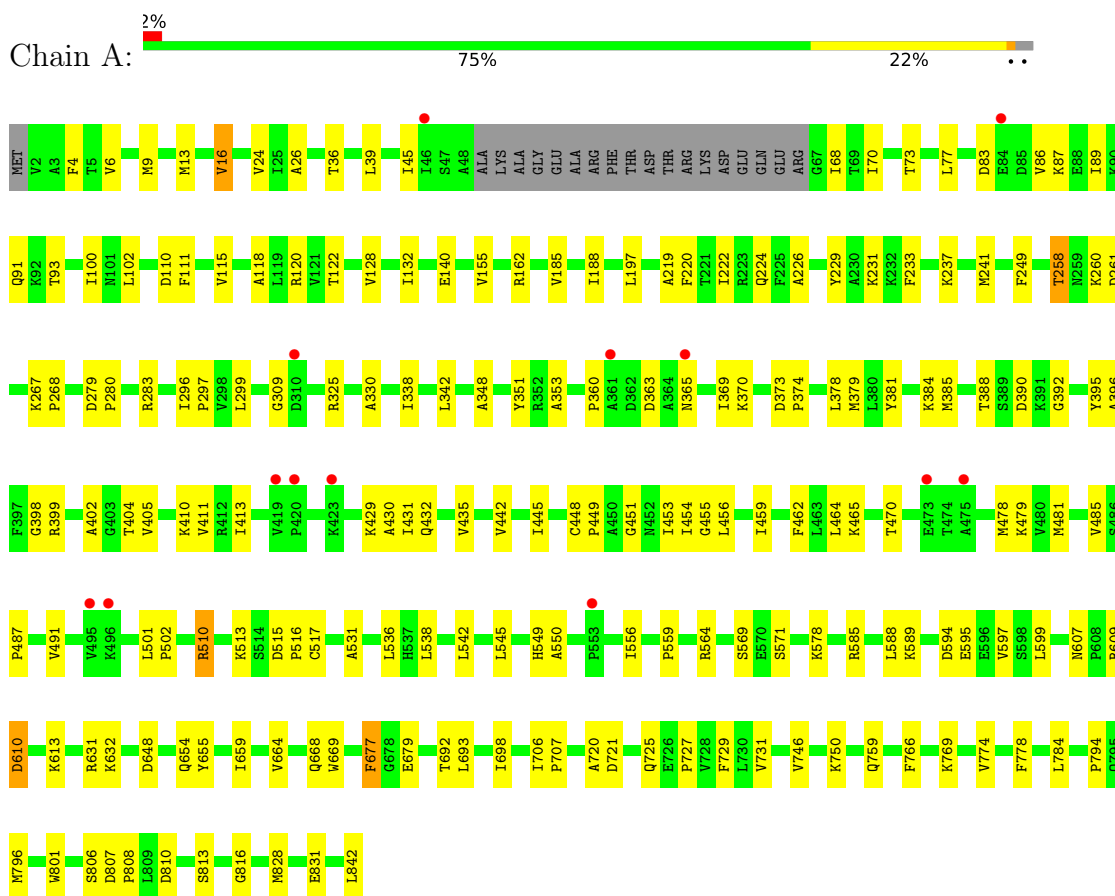
There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	399	ALA	-	expression tag	UNP P11439
B	407	VAL	ILE	SEE REMARK 999	UNP P11439
B	515	SER	GLY	SEE REMARK 999	UNP P11439
B	551	HIS	ARG	engineered mutation	UNP P11439
D	399	ALA	-	expression tag	UNP P11439
D	407	VAL	ILE	SEE REMARK 999	UNP P11439
D	515	SER	GLY	SEE REMARK 999	UNP P11439
D	551	HIS	ARG	engineered mutation	UNP P11439
F	399	ALA	-	expression tag	UNP P11439
F	407	VAL	ILE	SEE REMARK 999	UNP P11439
F	515	SER	GLY	SEE REMARK 999	UNP P11439
F	551	HIS	ARG	engineered mutation	UNP P11439

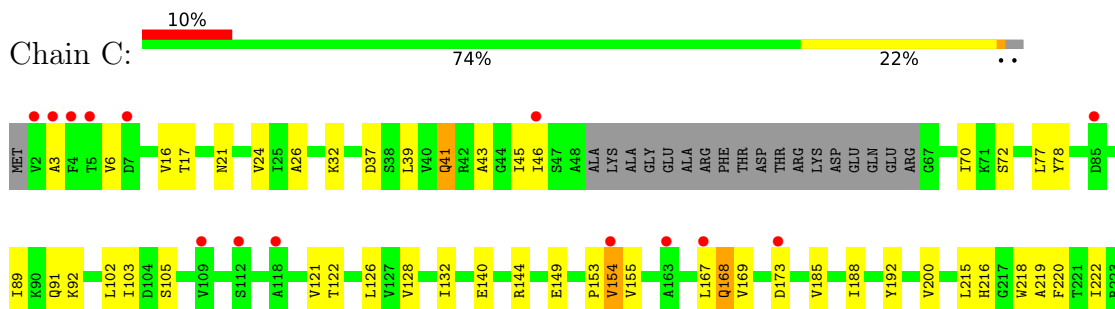
3 Residue-property plots

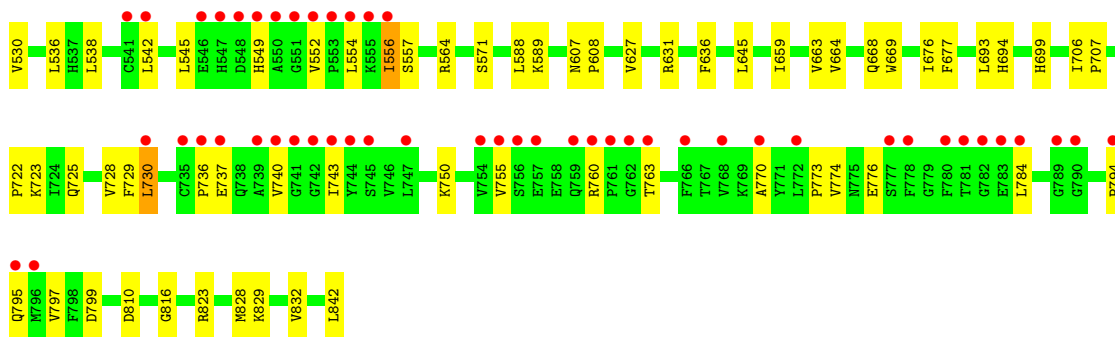
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Elongation factor 2

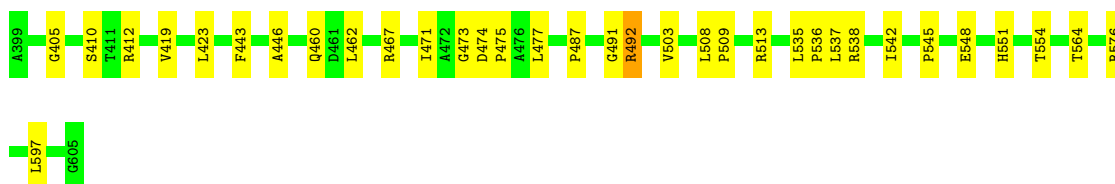
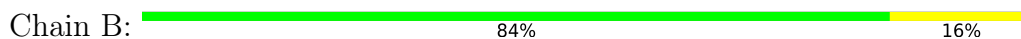


• Molecule 1: Elongation factor 2

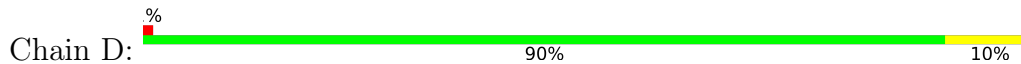




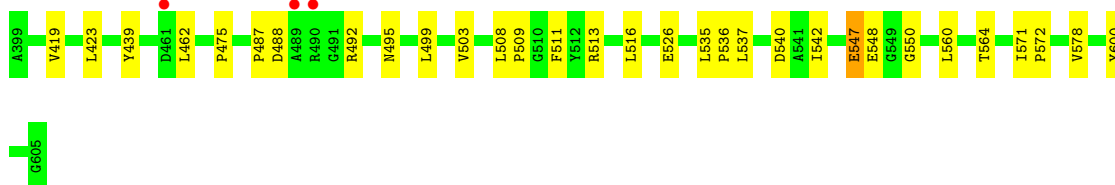
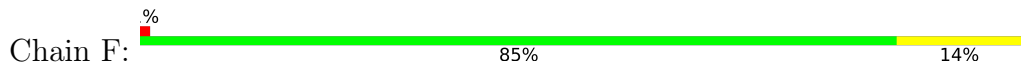
• Molecule 2: Exotoxin A



• Molecule 2: Exotoxin A



• Molecule 2: Exotoxin A



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	327.14Å 68.13Å 190.58Å 90.00° 102.99° 90.00°	Depositor
Resolution (Å)	46.55 – 2.50 46.55 – 2.48	Depositor EDS
% Data completeness (in resolution range)	93.3 (46.55-2.50) 92.0 (46.55-2.48)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.85 (at 2.48Å)	Xtrriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.206 , 0.242 0.200 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	41.5	Xtrriage
Anisotropy	0.358	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 60.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	24616	wwPDB-VP
Average B, all atoms (Å ²)	71.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 38.77 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.5087e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NAD, DDE

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	0.21	0/6517	0.39	0/8823
1	C	0.21	0/6517	0.38	0/8823
1	E	0.21	0/6517	0.37	0/8823
2	B	0.21	0/1627	0.40	0/2217
2	D	0.21	0/1627	0.40	0/2217
2	F	0.21	0/1627	0.38	0/2217
All	All	0.21	0/24432	0.38	0/33120

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 [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6405	0	6472	113	0
1	C	6415	0	6488	128	0
1	E	6405	0	6472	167	0
2	B	1587	0	1536	21	0
2	D	1587	0	1536	10	0
2	F	1587	0	1536	14	0
3	B	44	0	26	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	D	44	0	26	2	0
3	F	44	0	26	0	0
4	A	94	0	0	0	0
4	B	103	0	0	1	0
4	C	84	0	0	0	0
4	D	106	0	0	0	0
4	E	35	0	0	0	0
4	F	76	0	0	0	0
All	All	24616	0	24118	448	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 9.

All (448) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:699:DDE:HAB2	1:C:699:DDE:HAT2	1.39	1.04
1:C:699:DDE:HAA1	3:D:701:NAD:H4D	1.52	0.89
1:E:488:VAL:HG11	1:E:774:VAL:HG21	1.55	0.88
1:E:77:LEU:HB2	1:E:100:ILE:HB	1.55	0.88
1:C:404:THR:HG22	1:C:449:PRO:HA	1.59	0.84
1:C:568:GLU:HB2	1:C:723:LYS:HD3	1.58	0.84
1:A:571:SER:HB2	1:A:589:LYS:HG3	1.61	0.83
1:C:216:HIS:HD2	1:C:321:LYS:HG2	1.42	0.82
1:C:784:LEU:HD23	1:C:794:PRO:HG3	1.61	0.82
1:E:391:LYS:HG3	1:E:392:GLY:H	1.44	0.82
1:A:513:LYS:HA	1:A:513:LYS:HE2	1.62	0.80
1:C:283:ARG:HB3	1:C:299:LEU:HD21	1.65	0.79
1:C:132:ILE:HD12	1:C:132:ILE:H	1.46	0.79
1:C:507:GLY:HA3	1:C:549:HIS:HB3	1.64	0.79
1:E:147:LEU:HD13	1:E:192:TYR:HB2	1.65	0.77
1:E:149:GLU:HA	1:E:355:GLN:HE22	1.48	0.76
1:A:784:LEU:HD23	1:A:794:PRO:HG3	1.68	0.76
1:C:258:THR:HG22	1:C:260:LYS:H	1.51	0.75
1:A:360:PRO:HG2	1:A:363:ASP:HB2	1.69	0.74
1:A:404:THR:HG22	1:A:449:PRO:HA	1.69	0.74
1:E:404:THR:HG22	1:E:449:PRO:HA	1.67	0.74
1:C:699:DDE:HAT2	1:C:699:DDE:CAB	2.16	0.73
1:E:45:ILE:HD11	1:E:78:TYR:HB3	1.71	0.73
1:E:27:HIS:HB3	1:E:30:HIS:CD2	2.24	0.72
1:A:226:ALA:HB2	1:A:241:MET:HB3	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:503:VAL:HG12	2:F:564:THR:HG22	1.72	0.71
1:A:70:ILE:HG22	1:A:388:THR:HG22	1.74	0.68
1:A:464:LEU:HD21	1:A:485:VAL:HB	1.75	0.68
1:A:491:VAL:HG21	1:A:542:LEU:HD11	1.76	0.68
1:C:216:HIS:CD2	1:C:321:LYS:HG2	2.28	0.67
2:B:503:VAL:HG12	2:B:564:THR:HG22	1.76	0.67
1:E:571:SER:HB2	1:E:589:LYS:HG2	1.76	0.66
1:E:556:ILE:HG22	1:E:557:SER:H	1.61	0.66
1:E:26:ALA:HB2	1:E:128:VAL:HB	1.77	0.66
1:E:520:THR:HG22	1:E:530:VAL:HG22	1.77	0.66
1:E:43:ALA:HB1	1:E:78:TYR:H	1.61	0.65
1:E:30:HIS:ND1	1:E:130:ASP:HB2	2.12	0.64
1:E:220:PHE:HB3	1:E:328:LEU:HD13	1.79	0.64
1:C:216:HIS:HB2	1:C:218:TRP:CD1	2.33	0.64
2:D:503:VAL:HG12	2:D:564:THR:HG22	1.79	0.63
1:E:338:ILE:HG23	1:E:342:LEU:HD12	1.80	0.63
1:A:578:LYS:HG2	1:A:585:ARG:HG2	1.81	0.62
1:C:433:ARG:HB3	1:C:457:VAL:HB	1.81	0.62
1:E:391:LYS:HB3	1:E:393:ARG:HG2	1.82	0.62
1:E:659:ILE:HD13	1:E:693:LEU:HD21	1.80	0.62
1:C:495:VAL:HG21	1:C:501:LEU:HD12	1.80	0.62
2:F:516:LEU:HD12	2:F:526:GLU:HG2	1.81	0.62
1:A:435:VAL:HB	1:A:442:VAL:HG13	1.80	0.61
1:C:216:HIS:HB2	1:C:218:TRP:HD1	1.66	0.61
1:E:379:MET:HB2	1:E:402:ALA:HB3	1.82	0.61
1:E:743:ILE:HD13	1:E:784:LEU:HD11	1.81	0.61
1:E:810:ASP:O	1:E:816:GLY:HA3	2.00	0.61
1:C:379:MET:HB2	1:C:402:ALA:HB3	1.82	0.61
1:C:759:GLN:HG2	1:C:760:ARG:H	1.67	0.60
1:E:545:LEU:HD12	1:E:549:HIS:HB2	1.84	0.60
1:E:279:ASP:HB3	1:E:280:PRO:HD3	1.84	0.60
1:C:89:ILE:HG22	1:C:91:GLN:HG2	1.82	0.60
1:C:464:LEU:HD23	1:C:483:PHE:HE1	1.67	0.59
1:A:510:ARG:HG3	1:A:549:HIS:HD2	1.66	0.59
1:A:810:ASP:O	1:A:816:GLY:HA3	2.01	0.59
1:A:399:ARG:HB2	1:A:453:ILE:HD13	1.84	0.59
1:C:699:DDE:HAA3	1:C:699:DDE:NAD	2.16	0.59
1:E:285:PHE:CD1	1:E:320:LEU:HD21	2.38	0.58
1:C:103:ILE:HD12	1:C:122:THR:HG22	1.86	0.58
1:E:121:VAL:HG11	1:E:383:SER:OG	2.02	0.58
1:A:405:VAL:HG12	1:A:448:CYS:HB3	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:607:ASN:HB2	1:C:610:ASP:HB2	1.86	0.58
2:D:537:LEU:HD11	2:D:542:ILE:HG22	1.86	0.58
1:C:103:ILE:HD13	1:C:121:VAL:HG23	1.85	0.58
1:C:744:TYR:HE1	1:C:754:VAL:HG21	1.68	0.58
1:A:431:ILE:HD12	1:A:459:ILE:HD11	1.86	0.57
1:E:291:PHE:HD1	1:E:315:GLU:HB3	1.69	0.57
2:B:405:GLY:HA2	1:C:627:VAL:HG12	1.84	0.57
1:E:26:ALA:CB	1:E:128:VAL:HB	2.34	0.57
1:A:237:LYS:O	1:A:241:MET:HG2	2.04	0.57
1:A:296:ILE:HB	1:A:297:PRO:HD3	1.86	0.57
1:C:496:LYS:H	1:C:554:LEU:HD22	1.70	0.57
1:C:744:TYR:CE1	1:C:754:VAL:HG21	2.39	0.57
1:E:429:LYS:HG3	1:E:462:PHE:CZ	2.40	0.57
1:A:569:SER:O	1:A:720:ALA:HB1	2.05	0.57
1:A:654:GLN:HG2	1:A:655:TYR:CD1	2.38	0.57
1:C:723:LYS:HA	1:C:808:PRO:HG3	1.87	0.57
1:E:71:LYS:HB3	1:E:386:VAL:HG23	1.86	0.57
1:E:31:GLY:HA3	1:E:158:ASN:ND2	2.19	0.57
1:E:464:LEU:HG	1:E:465:LYS:HG3	1.87	0.57
1:C:45:ILE:HD11	1:C:78:TYR:HB2	1.87	0.56
2:B:477:LEU:HD22	2:B:551:HIS:HB3	1.87	0.56
1:E:694:HIS:CE1	1:E:699:DDE:HD2	2.41	0.56
1:E:120:ARG:NH1	1:E:479:LYS:HB3	2.21	0.56
1:E:465:LYS:HD2	1:E:517:CYS:SG	2.45	0.56
1:C:664:VAL:O	1:C:668:GLN:HG2	2.06	0.56
1:A:429:LYS:HE3	1:A:462:PHE:CE1	2.41	0.55
1:E:71:LYS:HE3	1:E:387:PRO:HD2	1.88	0.55
1:C:706:ILE:HB	1:C:707:PRO:HD3	1.87	0.55
1:C:288:ILE:HG23	1:C:319:LEU:HD23	1.87	0.55
1:C:659:ILE:HD13	1:C:693:LEU:HD21	1.89	0.55
1:A:6:VAL:HG13	1:A:445:ILE:HG22	1.89	0.55
1:A:68:ILE:HD13	1:A:390:ASP:HB2	1.89	0.55
1:E:291:PHE:CD1	1:E:315:GLU:HB3	2.42	0.55
2:B:473:GLY:HA3	2:B:597:LEU:HD11	1.89	0.54
1:E:501:LEU:HB3	1:E:502:PRO:HD3	1.88	0.54
1:A:381:TYR:O	1:A:398:GLY:HA3	2.07	0.54
1:E:784:LEU:HD23	1:E:794:PRO:HG3	1.89	0.54
1:A:510:ARG:HG3	1:A:549:HIS:CD2	2.42	0.54
1:E:706:ILE:HB	1:E:707:PRO:HD3	1.88	0.54
1:E:391:LYS:HG3	1:E:392:GLY:N	2.20	0.54
1:A:501:LEU:N	1:A:502:PRO:HD2	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:433:ARG:HE	1:E:444:PRO:HB3	1.72	0.54
1:E:9:MET:O	1:E:13:MET:HG3	2.07	0.53
1:E:35:LEU:HD22	1:E:334:LEU:HD11	1.90	0.53
1:E:488:VAL:HG12	1:E:774:VAL:HG11	1.91	0.53
1:E:755:VAL:HG23	1:E:770:ALA:HA	1.91	0.53
1:A:24:VAL:HG23	1:A:102:LEU:HD11	1.89	0.53
1:C:609:ARG:H	1:C:609:ARG:HD2	1.73	0.53
1:A:279:ASP:HB3	1:A:280:PRO:HD3	1.89	0.53
1:C:39:LEU:HB3	1:C:77:LEU:HD21	1.91	0.53
1:C:699:DDE:CAA	3:D:701:NAD:H4D	2.33	0.53
1:A:258:THR:HG22	1:A:260:LYS:H	1.74	0.53
1:C:564:ARG:HB2	1:C:725:GLN:HB2	1.91	0.53
1:E:413:ILE:HD13	1:E:459:ILE:HG23	1.91	0.53
1:C:374:PRO:O	1:C:404:THR:HG23	2.08	0.52
1:C:727:PRO:HB2	1:C:774:VAL:HG21	1.92	0.52
1:C:699:DDE:HAA3	1:C:699:DDE:HAD2	1.75	0.52
1:C:17:THR:HB	1:C:92:LYS:O	2.09	0.52
1:E:564:ARG:HB2	1:E:725:GLN:HB2	1.90	0.52
1:C:279:ASP:HB3	1:C:280:PRO:HD3	1.91	0.52
1:C:6:VAL:HG13	1:C:445:ILE:HG22	1.91	0.52
1:A:410:LYS:HG2	1:A:430:ALA:HB2	1.92	0.52
1:E:296:ILE:O	1:E:300:LEU:HD13	2.10	0.52
1:E:495:VAL:HG13	1:E:504:LEU:HD22	1.91	0.52
1:E:464:LEU:HD21	1:E:485:VAL:HB	1.92	0.52
2:B:537:LEU:HD11	2:B:542:ILE:HG22	1.91	0.51
1:E:207:GLY:O	1:E:337:MET:HG2	2.09	0.51
1:E:45:ILE:HD11	1:E:78:TYR:CB	2.39	0.51
1:E:210:ALA:HB2	1:E:221:THR:HG22	1.91	0.51
1:E:348:ALA:HA	1:E:351:TYR:CE2	2.45	0.51
1:E:478:MET:O	1:E:479:LYS:C	2.49	0.51
1:A:197:LEU:HD21	1:A:351:TYR:CD1	2.45	0.51
2:D:535:LEU:HB3	2:D:536:PRO:HA	1.92	0.51
1:E:360:PRO:HB2	1:E:363:ASP:HB2	1.93	0.51
1:E:385:MET:HG2	1:E:465:LYS:HA	1.92	0.51
1:A:585:ARG:HB2	1:A:692:THR:OG1	2.11	0.51
1:C:70:ILE:HG22	1:C:388:THR:HG22	1.91	0.51
1:A:379:MET:HB2	1:A:402:ALA:HB3	1.92	0.50
1:E:120:ARG:HG3	1:E:356:LEU:HD22	1.93	0.50
1:A:632:LYS:HD3	1:A:648:ASP:O	2.11	0.50
1:E:411:VAL:HG11	1:E:469:LEU:HB3	1.93	0.50
1:A:365:ASN:O	1:A:369:ILE:HG13	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:74:ALA:HA	1:E:102:LEU:O	2.12	0.50
1:E:243:ARG:O	1:E:248:SER:HB2	2.10	0.50
1:A:26:ALA:HB2	1:A:128:VAL:HB	1.93	0.50
1:A:564:ARG:HB2	1:A:725:GLN:HB2	1.93	0.50
1:E:111:PHE:HB3	1:E:114:GLU:HG2	1.94	0.50
1:E:109:VAL:CG2	1:E:138:GLN:HG3	2.41	0.50
1:E:750:LYS:HD2	1:E:776:GLU:O	2.12	0.50
1:A:110:ASP:HB3	1:A:536:LEU:HD22	1.93	0.50
1:A:729:PHE:CE2	1:A:774:VAL:HG22	2.47	0.49
1:E:81:MET:HB3	1:E:85:ASP:HB2	1.95	0.49
1:E:482:LYS:HB3	1:E:797:VAL:HG11	1.94	0.49
1:C:200:VAL:HG12	1:C:200:VAL:O	2.13	0.49
1:E:109:VAL:HG21	1:E:138:GLN:HG3	1.94	0.49
1:C:495:VAL:HG11	1:C:501:LEU:HG	1.94	0.49
1:E:225:PHE:CZ	1:E:328:LEU:HD11	2.48	0.49
1:E:281:ILE:HG12	1:E:327:PHE:HE2	1.77	0.49
1:E:419:VAL:HG12	1:E:421:GLY:H	1.77	0.49
2:F:535:LEU:HB3	2:F:536:PRO:HA	1.94	0.49
1:E:312:LYS:HD2	1:E:312:LYS:O	2.13	0.49
1:E:219:ALA:HB3	1:E:330:ALA:HA	1.93	0.49
1:C:515:ASP:O	1:C:518:VAL:HG12	2.13	0.49
1:A:249:PHE:CZ	1:A:261:ASP:HB3	2.48	0.49
1:C:699:DDE:CAB	1:C:699:DDE:CAT	2.86	0.49
1:E:369:ILE:HD13	1:E:402:ALA:HB2	1.95	0.48
1:C:429:LYS:HE3	1:C:462:PHE:CE1	2.48	0.48
1:A:378:LEU:O	1:A:470:THR:HA	2.12	0.48
1:A:706:ILE:HB	1:A:707:PRO:HD3	1.95	0.48
1:C:522:MET:HG2	1:C:528:HIS:CE1	2.48	0.48
1:E:10:ARG:HD3	1:E:445:ILE:HD11	1.95	0.48
1:E:365:ASN:HD21	1:E:472:SER:HB3	1.77	0.48
1:E:78:TYR:HE1	1:E:97:SER:HB3	1.78	0.48
1:A:89:ILE:HG22	1:A:91:GLN:HG2	1.95	0.48
1:C:538:LEU:O	1:C:542:LEU:HB2	2.14	0.48
1:C:627:VAL:O	1:C:631:ARG:HB2	2.14	0.48
1:A:9:MET:O	1:A:13:MET:HG3	2.14	0.48
1:C:508:LEU:HD23	1:C:545:LEU:HD11	1.96	0.48
1:E:101:ASN:N	1:E:101:ASN:HD22	2.12	0.48
1:C:571:SER:HB2	1:C:589:LYS:HG2	1.95	0.48
1:E:292:LYS:O	1:E:296:ILE:HG13	2.14	0.48
1:A:348:ALA:HA	1:A:351:TYR:CZ	2.49	0.47
1:C:254:THR:HG22	1:C:256:LYS:HB2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:546:GLU:HA	1:C:550:ALA:HB3	1.95	0.47
1:E:823:ARG:HE	1:E:832:VAL:HG22	1.79	0.47
2:B:467:ARG:NH1	2:B:536:PRO:HG3	2.28	0.47
1:C:24:VAL:HG23	1:C:102:LEU:HD11	1.95	0.47
1:A:487:PRO:HB3	1:A:531:ALA:HB1	1.97	0.47
1:A:828:MET:HG2	2:B:576:ARG:NE	2.29	0.47
1:C:472:SER:HB3	1:C:475:ALA:HB2	1.95	0.47
1:E:257:TRP:HZ3	1:E:272:ALA:HB2	1.79	0.47
1:E:515:ASP:HB3	1:E:518:VAL:HG12	1.97	0.47
1:A:746:VAL:O	1:A:750:LYS:HD3	2.15	0.47
1:E:82:SER:O	1:E:86:VAL:HG23	2.14	0.47
1:A:607:ASN:HB3	1:A:610:ASP:HB2	1.97	0.47
1:C:296:ILE:N	1:C:297:PRO:HD2	2.29	0.47
1:C:321:LYS:O	1:C:325:ARG:HG3	2.15	0.47
1:C:465:LYS:HE3	1:C:517:CYS:SG	2.55	0.47
1:C:501:LEU:HB3	1:C:502:PRO:HD3	1.97	0.47
2:D:538:ARG:HD2	2:D:538:ARG:HA	1.69	0.47
1:A:338:ILE:O	1:A:342:LEU:HB2	2.15	0.47
1:E:321:LYS:O	1:E:325:ARG:HG3	2.14	0.47
1:E:627:VAL:O	1:E:631:ARG:HB2	2.14	0.47
1:A:111:PHE:O	1:A:115:VAL:HG23	2.15	0.47
1:A:731:VAL:HG22	1:A:796:MET:HB3	1.97	0.47
1:C:37:ASP:O	1:C:41:GLN:HB2	2.15	0.47
1:C:736:PRO:O	1:C:740:VAL:HG23	2.15	0.47
1:E:39:LEU:HD12	1:E:39:LEU:H	1.79	0.47
2:B:419:VAL:O	2:B:423:LEU:HG	2.14	0.47
1:C:219:ALA:HB3	1:C:330:ALA:HA	1.96	0.47
1:C:727:PRO:HB2	1:C:774:VAL:CG2	2.45	0.47
2:F:547:GLU:HG3	2:F:550:GLY:HA3	1.97	0.47
1:E:391:LYS:CG	1:E:392:GLY:H	2.22	0.46
1:C:21:ASN:ND2	1:C:345:PRO:HG3	2.30	0.46
1:C:515:ASP:HB3	1:C:518:VAL:HG12	1.96	0.46
1:A:454:ILE:HG13	1:A:455:GLY:H	1.80	0.46
2:B:545:PRO:HA	2:B:551:HIS:O	2.15	0.46
1:C:140:GLU:HG3	1:C:188:ILE:HD13	1.98	0.46
1:E:30:HIS:CE1	1:E:130:ASP:HB2	2.50	0.46
1:E:459:ILE:O	1:E:459:ILE:HG22	2.16	0.46
1:A:6:VAL:CG1	1:A:445:ILE:HG22	2.45	0.46
1:A:86:VAL:HG13	1:A:93:THR:HG21	1.97	0.46
1:A:478:MET:O	1:A:479:LYS:C	2.54	0.46
1:C:226:ALA:HB2	1:C:241:MET:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:676:ILE:HG22	1:E:677:PHE:HD2	1.80	0.46
1:A:222:ILE:HG22	1:A:241:MET:HB2	1.97	0.46
1:A:731:VAL:O	1:A:769:LYS:HA	2.15	0.46
1:E:111:PHE:O	1:E:115:VAL:HG23	2.16	0.46
1:C:169:VAL:HG22	1:C:173:ASP:HB2	1.98	0.46
1:E:296:ILE:N	1:E:297:PRO:HD2	2.31	0.46
1:E:349:GLN:O	1:E:370:LYS:HA	2.15	0.46
1:A:385:MET:HG2	1:A:465:LYS:HA	1.97	0.46
1:A:828:MET:HG2	2:B:576:ARG:CZ	2.45	0.46
1:C:672:LYS:C	1:C:673:GLU:HG2	2.36	0.46
1:E:823:ARG:HG2	1:E:828:MET:HE3	1.98	0.46
1:E:324:MET:HE2	1:E:324:MET:HA	1.98	0.45
1:E:552:VAL:O	1:E:554:LEU:HG	2.16	0.45
1:A:118:ALA:O	1:A:122:THR:HG23	2.17	0.45
1:C:126:LEU:HD12	1:C:154:VAL:HG12	1.97	0.45
1:E:39:LEU:HD23	1:E:335:LEU:HD23	1.99	0.45
1:E:185:VAL:O	1:E:189:VAL:HG23	2.16	0.45
1:A:197:LEU:HD21	1:A:351:TYR:CE1	2.52	0.45
1:C:149:GLU:HA	1:C:355:GLN:HE22	1.82	0.45
1:C:387:PRO:HG3	1:C:394:PHE:HE1	1.82	0.45
1:C:585:ARG:HB2	1:C:692:THR:OG1	2.17	0.45
1:A:338:ILE:HG23	1:A:342:LEU:HD12	1.98	0.45
1:E:183:GLU:HA	1:E:186:ASN:OD1	2.17	0.45
1:E:156:VAL:HG11	1:E:334:LEU:HD21	1.98	0.45
1:E:204:PRO:HA	1:E:209:VAL:HB	1.98	0.45
1:E:500:ASP:HB3	1:E:552:VAL:HG21	1.99	0.45
1:A:411:VAL:HG21	1:A:431:ILE:HD11	1.99	0.45
1:E:46:ILE:N	1:E:46:ILE:HD12	2.32	0.45
1:E:538:LEU:O	1:E:542:LEU:HG	2.17	0.45
2:B:535:LEU:HB3	2:B:536:PRO:HA	1.99	0.45
1:E:208:THR:HG23	1:E:341:HIS:CE1	2.52	0.45
1:E:659:ILE:O	1:E:663:VAL:HG23	2.17	0.45
1:E:760:ARG:HD3	1:E:763:THR:OG1	2.17	0.45
1:C:89:ILE:CG2	1:C:91:GLN:HG2	2.46	0.45
1:C:539:GLU:O	1:C:543:GLN:HG3	2.17	0.45
1:E:155:VAL:CG2	1:E:202:VAL:HG21	2.46	0.45
1:E:729:PHE:CE2	1:E:774:VAL:HG22	2.51	0.45
1:E:2:VAL:HG12	1:E:4:PHE:CE1	2.52	0.45
1:E:129:VAL:HG12	1:E:130:ASP:N	2.32	0.45
1:E:730:LEU:HB2	1:E:799:ASP:HB2	1.97	0.45
1:A:16:VAL:HG21	1:A:451:GLY:HA3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:664:VAL:O	1:A:668:GLN:HG2	2.16	0.45
1:E:556:ILE:HG22	1:E:557:SER:N	2.29	0.45
2:F:571:ILE:HA	2:F:572:PRO:HD3	1.85	0.45
1:A:465:LYS:HE3	1:A:517:CYS:SG	2.57	0.44
1:C:380:LEU:HB3	1:C:469:LEU:HB2	1.99	0.44
1:A:807:ASP:HA	1:A:808:PRO:HD2	1.85	0.44
1:C:220:PHE:HA	1:C:224:GLN:OE1	2.16	0.44
1:C:464:LEU:HD23	1:C:483:PHE:CE1	2.50	0.44
2:F:487:PRO:HA	2:F:492:ARG:O	2.18	0.44
1:C:32:LYS:NZ	1:C:105:SER:HB2	2.33	0.44
1:A:231:LYS:HB3	1:A:231:LYS:HE2	1.81	0.44
2:B:487:PRO:HB2	2:B:491:GLY:HA2	1.99	0.44
1:E:344:SER:HB2	1:E:345:PRO:HD2	1.99	0.44
1:E:459:ILE:HD12	1:E:459:ILE:N	2.33	0.44
1:A:353:ALA:HB3	1:A:370:LYS:HG2	1.99	0.44
1:A:727:PRO:HD3	1:A:801:TRP:HZ3	1.82	0.44
2:B:474:ASP:HA	2:B:475:PRO:HD2	1.87	0.44
1:C:498:ALA:HA	1:C:501:LEU:HB2	2.00	0.44
1:C:729:PHE:CE2	1:C:774:VAL:HG22	2.53	0.44
1:C:760:ARG:HD3	1:C:763:THR:OG1	2.18	0.44
1:E:103:ILE:HD12	1:E:103:ILE:N	2.32	0.44
1:A:283:ARG:HB3	1:A:299:LEU:HD21	1.99	0.44
1:C:395:TYR:CD1	1:C:457:VAL:HG22	2.53	0.44
1:E:285:PHE:CE1	1:E:320:LEU:HD21	2.53	0.44
2:B:471:ILE:CG1	2:B:554:THR:HB	2.47	0.44
1:C:557:SER:HB2	1:C:558:PRO:HD2	2.00	0.44
2:D:574:ASP:HA	2:D:575:PRO:HD2	1.79	0.44
1:E:132:ILE:HD12	1:E:132:ILE:N	2.33	0.44
1:E:365:ASN:O	1:E:369:ILE:HG12	2.16	0.44
1:E:369:ILE:HD12	1:E:401:PHE:HB3	2.00	0.44
1:A:220:PHE:HA	1:A:224:GLN:OE1	2.18	0.43
1:A:491:VAL:HG13	1:A:538:LEU:HD21	2.00	0.43
1:A:515:ASP:HA	1:A:516:PRO:HD2	1.87	0.43
1:C:70:ILE:O	1:C:440:ARG:HG2	2.18	0.43
1:E:77:LEU:HD23	1:E:335:LEU:HD21	2.00	0.43
1:E:267:LYS:HA	1:E:268:PRO:HD3	1.90	0.43
2:B:410:SER:OG	2:B:412:ARG:HG3	2.18	0.43
1:E:488:VAL:CG1	1:E:774:VAL:HG11	2.48	0.43
1:E:381:TYR:O	1:E:398:GLY:HA3	2.17	0.43
1:E:399:ARG:HD3	1:E:401:PHE:CZ	2.54	0.43
1:A:374:PRO:O	1:A:404:THR:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:392:GLY:HA3	1:A:513:LYS:HD3	1.99	0.43
1:E:117:ALA:HA	1:E:481:MET:SD	2.57	0.43
1:E:237:LYS:O	1:E:241:MET:HG3	2.18	0.43
1:A:219:ALA:HB3	1:A:330:ALA:HA	2.00	0.43
2:B:508:LEU:N	2:B:509:PRO:CD	2.81	0.43
1:C:807:ASP:HA	1:C:808:PRO:HD2	1.86	0.43
1:C:396:ALA:HB3	1:C:456:LEU:HB2	2.01	0.43
1:E:218:TRP:HB3	1:E:324:MET:HB3	2.00	0.43
1:C:484:SER:HB3	1:C:798:PHE:H	1.84	0.43
2:D:571:ILE:HA	2:D:572:PRO:HD3	1.88	0.43
2:F:511:PHE:HB3	2:F:600:TYR:CD1	2.54	0.43
1:A:36:THR:HG23	1:A:102:LEU:HD21	2.01	0.43
1:A:73:THR:HG21	1:A:384:LYS:HD2	2.01	0.43
1:A:588:LEU:HD12	1:A:588:LEU:C	2.39	0.43
1:A:677:PHE:CZ	1:A:679:GLU:HG3	2.54	0.43
1:A:759:GLN:HB2	1:A:766:PHE:CE2	2.53	0.43
1:C:43:ALA:HB1	1:C:78:TYR:O	2.18	0.43
1:C:723:LYS:HB3	1:C:723:LYS:HE3	1.67	0.43
1:E:737:GLU:HA	1:E:740:VAL:HG23	2.00	0.43
1:A:120:ARG:NH1	1:A:479:LYS:HD2	2.33	0.43
1:A:613:LYS:HG2	1:A:631:ARG:HH11	1.83	0.43
1:A:669:TRP:CZ2	2:B:492:ARG:HB2	2.53	0.43
1:C:26:ALA:HB2	1:C:128:VAL:HB	2.00	0.43
1:C:144:ARG:HD3	1:C:192:TYR:CZ	2.54	0.43
1:E:244:LEU:O	1:E:273:PHE:HB2	2.18	0.43
1:E:279:ASP:O	1:E:283:ARG:HG2	2.18	0.43
1:E:327:PHE:CD2	1:E:328:LEU:HG	2.54	0.43
1:E:338:ILE:O	1:E:342:LEU:HB2	2.18	0.43
1:E:607:ASN:HA	1:E:608:PRO:HD3	1.78	0.43
1:A:831:GLU:CD	1:A:831:GLU:H	2.20	0.43
1:E:110:ASP:HB3	1:E:536:LEU:HD22	1.99	0.43
1:E:395:TYR:CE1	1:E:457:VAL:HG13	2.53	0.43
1:E:485:VAL:HG22	1:E:485:VAL:O	2.18	0.43
2:F:537:LEU:HD11	2:F:542:ILE:HG22	2.00	0.43
1:A:413:ILE:HD13	1:A:459:ILE:HG23	2.00	0.42
1:E:823:ARG:HG2	1:E:828:MET:CE	2.49	0.42
1:A:545:LEU:O	1:A:550:ALA:HB3	2.19	0.42
2:B:477:LEU:HD22	2:B:551:HIS:CB	2.50	0.42
1:C:607:ASN:HA	1:C:608:PRO:HD3	1.83	0.42
1:A:4:PHE:HD2	1:A:45:ILE:HG23	1.83	0.42
1:E:722:PRO:O	1:E:723:LYS:HD2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:155:VAL:HG21	1:A:185:VAL:HG11	2.01	0.42
1:C:809:LEU:O	1:C:811:PRO:HD3	2.20	0.42
1:A:132:ILE:HD12	1:A:162:ARG:HD3	2.01	0.42
2:D:433:GLY:O	2:D:505:ARG:HG3	2.18	0.42
1:C:806:SER:HB2	1:C:813:SER:HB2	2.02	0.42
1:E:39:LEU:HD11	1:E:334:LEU:HD13	2.01	0.42
1:E:262:THR:CG2	1:E:266:GLY:HA2	2.50	0.42
2:F:495:ASN:HB3	2:F:578:VAL:HG22	2.02	0.42
1:A:727:PRO:HB2	1:A:774:VAL:HG21	2.02	0.42
1:C:588:LEU:C	1:C:588:LEU:HD12	2.40	0.42
1:E:664:VAL:O	1:E:668:GLN:HG2	2.19	0.42
2:F:419:VAL:O	2:F:423:LEU:HG	2.19	0.42
2:F:488:ASP:HB3	2:F:492:ARG:HB2	2.01	0.42
1:C:153:PRO:HD2	1:C:200:VAL:CG1	2.50	0.42
1:E:397:PHE:CD1	1:E:437:MET:HG3	2.54	0.42
1:A:806:SER:HB2	1:A:813:SER:HB2	2.02	0.42
1:C:654:GLN:O	1:C:655:TYR:HB2	2.20	0.42
2:D:474:ASP:HA	2:D:475:PRO:HD2	1.87	0.42
1:E:155:VAL:HG21	1:E:202:VAL:HG21	2.02	0.42
1:A:388:THR:HG21	1:A:395:TYR:CG	2.55	0.42
1:C:506:GLU:O	1:C:510:ARG:HG3	2.19	0.42
1:A:140:GLU:HG3	1:A:188:ILE:HD13	2.02	0.41
1:C:3:ALA:HB2	1:C:46:ILE:HG13	2.02	0.41
1:C:501:LEU:C	1:C:501:LEU:HD23	2.41	0.41
2:D:537:LEU:O	2:D:538:ARG:HD3	2.19	0.41
1:E:410:LYS:HA	1:E:430:ALA:HA	2.02	0.41
1:E:608:PRO:HG3	1:E:636:PHE:CG	2.55	0.41
2:B:513:ARG:HD3	4:B:779:HOH:O	2.19	0.41
1:C:285:PHE:CE1	1:C:320:LEU:HD21	2.54	0.41
1:C:546:GLU:OE1	1:C:553:PRO:HD3	2.20	0.41
1:C:241:MET:HA	1:C:244:LEU:HD12	2.02	0.41
1:C:288:ILE:HA	1:C:296:ILE:HD11	2.03	0.41
1:C:509:LYS:O	1:C:513:LYS:HG3	2.19	0.41
1:C:742:GLY:O	1:C:745:SER:HB3	2.19	0.41
1:C:284:LEU:HD23	1:C:299:LEU:HD23	2.01	0.41
1:E:285:PHE:CD2	1:E:320:LEU:HD11	2.55	0.41
1:A:410:LYS:HA	1:A:430:ALA:HA	2.01	0.41
2:B:537:LEU:O	2:B:538:ARG:HD3	2.20	0.41
1:C:26:ALA:CB	1:C:128:VAL:HB	2.51	0.41
1:C:72:SER:HA	1:C:439:GLY:O	2.19	0.41
2:D:508:LEU:N	2:D:509:PRO:CD	2.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:307:LEU:HD13	1:E:311:GLU:O	2.20	0.41
2:F:508:LEU:N	2:F:509:PRO:CD	2.83	0.41
1:A:677:PHE:N	1:A:677:PHE:CD2	2.88	0.41
1:C:454:ILE:HG13	1:C:455:GLY:H	1.85	0.41
1:E:80:GLU:HA	1:E:96:ASN:O	2.20	0.41
1:A:226:ALA:CB	1:A:241:MET:HB3	2.44	0.41
1:A:542:LEU:HD13	1:A:556:ILE:HG21	2.01	0.41
1:C:314:LEU:HD22	1:C:318:ALA:HB1	2.02	0.41
1:C:419:VAL:HG12	1:C:421:GLY:H	1.86	0.41
1:E:3:ALA:HA	1:E:46:ILE:O	2.21	0.41
1:E:109:VAL:O	1:E:109:VAL:HG12	2.21	0.41
1:E:119:LEU:HD11	1:E:146:ALA:HA	2.02	0.41
1:E:212:GLY:HA3	1:E:219:ALA:HA	2.02	0.41
1:E:588:LEU:C	1:E:588:LEU:HD12	2.41	0.41
1:A:83:ASP:O	1:A:87:LYS:HG3	2.20	0.41
1:A:267:LYS:HA	1:A:268:PRO:HD3	1.91	0.41
1:A:454:ILE:HG13	1:A:455:GLY:N	2.36	0.41
1:C:523:SER:OG	1:C:527:GLU:HB2	2.20	0.41
1:C:760:ARG:CG	1:C:761:PRO:HD2	2.51	0.41
1:E:237:LYS:HA	1:E:240:MET:HB3	2.03	0.41
1:A:373:ASP:HA	1:A:374:PRO:HD2	1.85	0.41
1:A:559:PRO:HB2	1:A:778:PHE:CE2	2.56	0.41
1:C:222:ILE:CD1	1:C:245:TRP:HB2	2.51	0.41
1:C:226:ALA:CB	1:C:241:MET:HB3	2.51	0.41
1:E:163:ALA:O	1:E:169:VAL:HG12	2.20	0.41
1:E:345:PRO:HB3	1:E:399:ARG:HH21	1.85	0.41
1:E:636:PHE:CE1	1:E:645:LEU:HD21	2.56	0.41
1:E:728:VAL:HG22	1:E:773:PRO:HA	2.02	0.41
1:E:736:PRO:O	1:E:740:VAL:HG23	2.21	0.41
1:A:229:TYR:HB3	1:A:233:PHE:CD2	2.56	0.40
1:C:167:LEU:O	1:C:168:GLN:C	2.59	0.40
2:F:439:TYR:CE2	2:F:475:PRO:HD3	2.56	0.40
1:A:77:LEU:HB2	1:A:100:ILE:HB	2.03	0.40
1:A:481:MET:HB2	1:A:481:MET:HE2	1.81	0.40
2:B:443:PHE:CZ	2:B:446:ALA:HB2	2.57	0.40
1:C:155:VAL:HG21	1:C:185:VAL:HG11	2.03	0.40
1:C:454:ILE:HG13	1:C:455:GLY:N	2.36	0.40
1:C:610:ASP:OD1	1:C:611:ASP:N	2.55	0.40
1:E:225:PHE:HZ	1:E:328:LEU:HD11	1.84	0.40
1:E:262:THR:HG23	1:E:266:GLY:HA2	2.03	0.40
1:E:352:ARG:O	1:E:356:LEU:HG	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:396:ALA:HB3	1:A:456:LEU:HB2	2.03	0.40
1:A:659:ILE:HD13	1:A:693:LEU:HD21	2.04	0.40
1:C:16:VAL:HG21	1:C:450:ALA:O	2.22	0.40
1:E:454:ILE:HG13	1:E:455:GLY:N	2.36	0.40
1:E:669:TRP:CZ2	2:F:492:ARG:HG3	2.56	0.40
1:A:39:LEU:HB3	1:A:77:LEU:HD21	2.03	0.40
1:A:429:LYS:HG3	1:A:462:PHE:CZ	2.56	0.40
1:C:515:ASP:HA	1:C:516:PRO:HD3	1.90	0.40
1:C:612:PHE:CE1	1:C:631:ARG:HG3	2.57	0.40
1:E:108:HIS:HB2	1:E:111:PHE:CE2	2.56	0.40
1:E:452:ASN:HD22	1:E:452:ASN:N	2.19	0.40
1:A:594:ASP:HB2	1:A:597:VAL:HG23	2.02	0.40
1:E:305:ILE:HG21	1:E:323:VAL:HG13	2.04	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	818/842 (97%)	781 (96%)	34 (4%)	3 (0%)	34 54
1	C	818/842 (97%)	780 (95%)	33 (4%)	5 (1%)	25 43
1	E	818/842 (97%)	763 (93%)	52 (6%)	3 (0%)	34 54
2	B	205/207 (99%)	201 (98%)	4 (2%)	0	100 100
2	D	205/207 (99%)	198 (97%)	6 (3%)	1 (0%)	29 48
2	F	205/207 (99%)	200 (98%)	5 (2%)	0	100 100
All	All	3069/3147 (98%)	2923 (95%)	134 (4%)	12 (0%)	34 54

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	309	GLY
1	E	479	LYS
1	A	432	GLN
1	C	168	GLN
1	C	479	LYS
2	D	488	ASP
1	E	556	ILE
1	E	795	GLN
1	C	554	LEU
1	C	215	LEU
1	A	721	ASP
1	C	309	GLY

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	699/714 (98%)	688 (98%)	11 (2%)	62	84
1	C	699/714 (98%)	688 (98%)	11 (2%)	62	84
1	E	699/714 (98%)	691 (99%)	8 (1%)	73	89
2	B	161/161 (100%)	157 (98%)	4 (2%)	47	73
2	D	161/161 (100%)	158 (98%)	3 (2%)	57	80
2	F	161/161 (100%)	154 (96%)	7 (4%)	29	53
All	All	2580/2625 (98%)	2536 (98%)	44 (2%)	60	82

All (44) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	VAL
1	A	258	THR
1	A	325	ARG
1	A	510	ARG
1	A	595	GLU
1	A	599	LEU
1	A	609	ARG

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Mol	Chain	Res	Type
1	A	610	ASP
1	A	677	PHE
1	A	698	ILE
1	A	842	LEU
2	B	460	GLN
2	B	462	LEU
2	B	492	ARG
2	B	548	GLU
1	C	41	GLN
1	C	154	VAL
1	C	236	ASP
1	C	240	MET
1	C	256	LYS
1	C	312	LYS
1	C	609	ARG
1	C	723	LYS
1	C	831	GLU
1	C	837	GLU
1	C	842	LEU
2	D	462	LEU
2	D	499	LEU
2	D	540	ASP
1	E	101	ASN
1	E	186	ASN
1	E	312	LYS
1	E	332	ASP
1	E	494	GLU
1	E	730	LEU
1	E	829	LYS
1	E	842	LEU
2	F	462	LEU
2	F	499	LEU
2	F	513	ARG
2	F	540	ASP
2	F	547	GLU
2	F	548	GLU
2	F	560	LEU

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	549	HIS

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Mol	Chain	Res	Type
2	B	485	GLN
1	C	216	HIS
2	D	428	GLN
1	E	355	GLN
1	E	476	HIS
2	F	428	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

3 non-standard protein/DNA/RNA residues 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
1	DDE	A	699	1	5,10,21	0.62	0	3,12,30	1.31	0
1	DDE	E	699	1	5,10,21	0.63	0	3,12,30	1.35	0
1	DDE	C	699	1	14,20,21	1.02	1 (7%)	14,28,30	1.32	1 (7%)

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
1	DDE	A	699	1	-	1/5/6/23	0/1/1/1
1	DDE	E	699	1	-	2/5/6/23	0/1/1/1
1	DDE	C	699	1	-	4/20/21/23	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	699	DDE	CAT-CE1	2.40	1.53	1.50

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	699	DDE	CAU-CBW-CBI	-2.92	105.41	111.20

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	699	DDE	O-C-CA-CB
1	C	699	DDE	O-C-CA-CB
1	E	699	DDE	O-C-CA-CB
1	E	699	DDE	CA-CB-CG-ND1
1	C	699	DDE	NAD-CBI-CBW-NCB
1	C	699	DDE	OAG-CBI-CBW-NCB
1	C	699	DDE	CAU-CAT-CE1-NE2

There are no ring outliers.

2 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	E	699	DDE	1	0
1	C	699	DDE	7	0

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

3 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
3	NAD	F	702	-	42,48,48	0.67	0	50,73,73	1.32	5 (10%)
3	NAD	B	700	-	42,48,48	0.66	0	50,73,73	1.33	3 (6%)
3	NAD	D	701	-	42,48,48	0.69	0	50,73,73	1.30	4 (8%)

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
3	NAD	F	702	-	-	6/26/62/62	0/5/5/5
3	NAD	B	700	-	-	6/26/62/62	0/5/5/5
3	NAD	D	701	-	-	7/26/62/62	0/5/5/5

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	700	NAD	N3A-C2A-N1A	-4.90	121.03	128.68
3	F	702	NAD	N3A-C2A-N1A	-4.80	121.17	128.68
3	D	701	NAD	N3A-C2A-N1A	-4.79	121.18	128.68
3	D	701	NAD	C3D-C2D-C1D	3.72	106.57	100.98
3	B	700	NAD	C3D-C2D-C1D	3.66	106.49	100.98
3	F	702	NAD	C3D-C2D-C1D	3.61	106.41	100.98
3	D	701	NAD	PN-O3-PA	-3.14	122.04	132.83
3	B	700	NAD	PN-O3-PA	-2.76	123.35	132.83
3	F	702	NAD	PN-O3-PA	-2.68	123.63	132.83
3	F	702	NAD	C4A-C5A-N7A	-2.10	107.21	109.40
3	D	701	NAD	C4A-C5A-N7A	-2.04	107.28	109.40
3	F	702	NAD	C5D-C4D-C3D	-2.03	107.58	115.18

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	700	NAD	O4D-C4D-C5D-O5D
3	B	700	NAD	C3D-C4D-C5D-O5D
3	D	701	NAD	O4D-C4D-C5D-O5D
3	D	701	NAD	C3D-C4D-C5D-O5D
3	F	702	NAD	C3D-C4D-C5D-O5D

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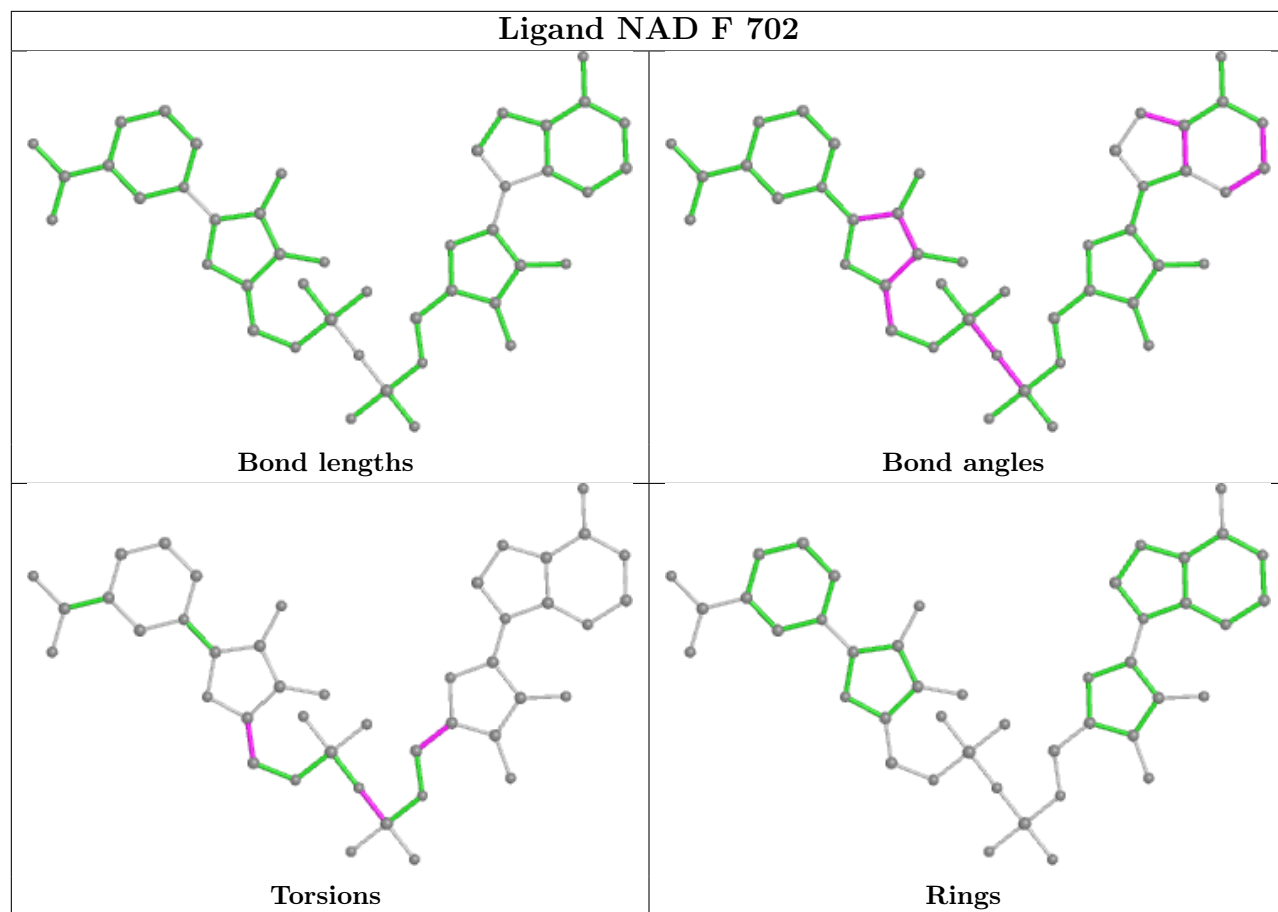
Mol	Chain	Res	Type	Atoms
3	F	702	NAD	O4D-C4D-C5D-O5D
3	B	700	NAD	O4B-C4B-C5B-O5B
3	F	702	NAD	O4B-C4B-C5B-O5B
3	B	700	NAD	C3B-C4B-C5B-O5B
3	F	702	NAD	C3B-C4B-C5B-O5B
3	D	701	NAD	PA-O3-PN-O1N
3	D	701	NAD	O4B-C4B-C5B-O5B
3	B	700	NAD	PN-O3-PA-O1A
3	D	701	NAD	PN-O3-PA-O1A
3	F	702	NAD	PN-O3-PA-O1A
3	B	700	NAD	PN-O3-PA-O2A
3	D	701	NAD	PN-O3-PA-O2A
3	D	701	NAD	PA-O3-PN-O2N
3	F	702	NAD	PN-O3-PA-O2A

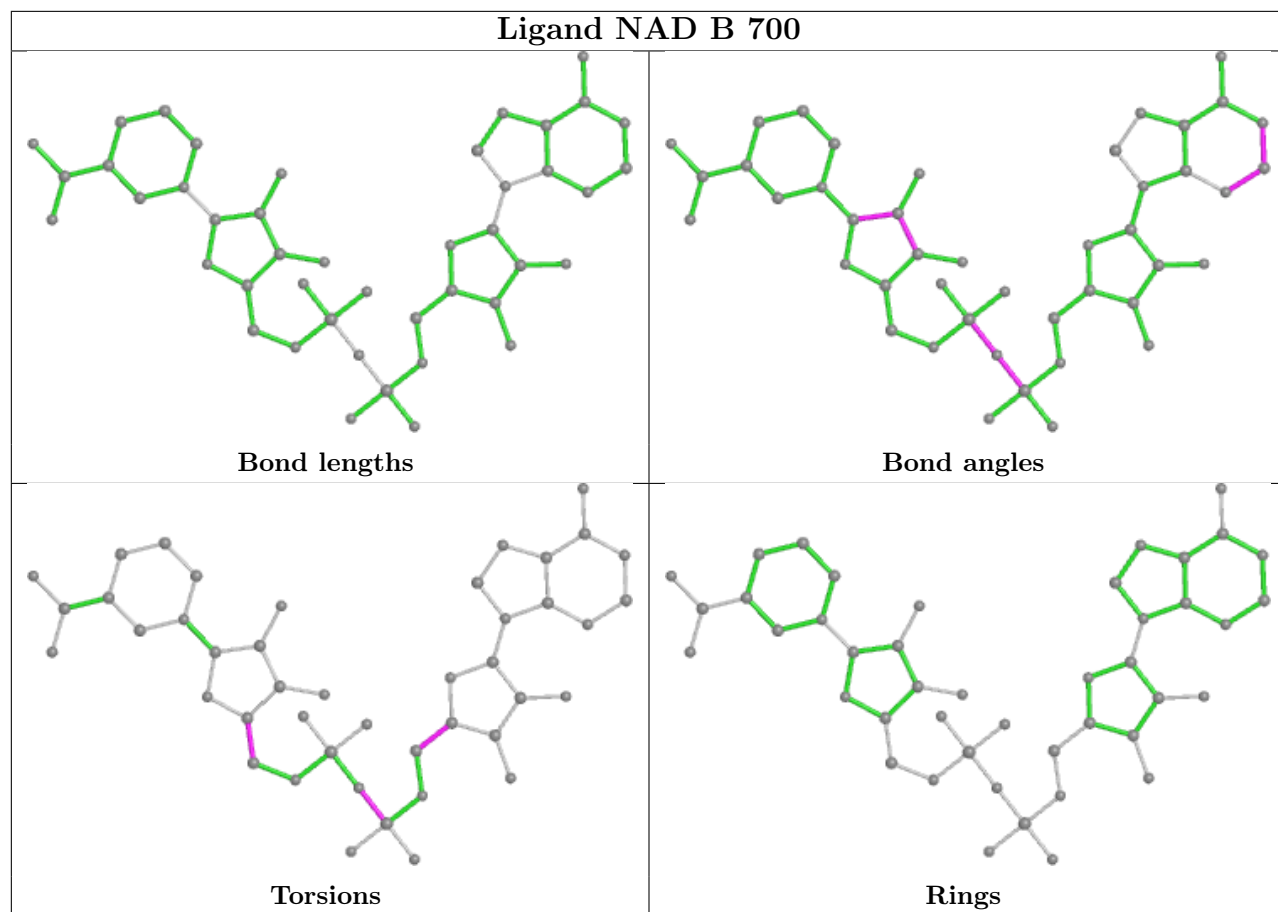
There are no ring outliers.

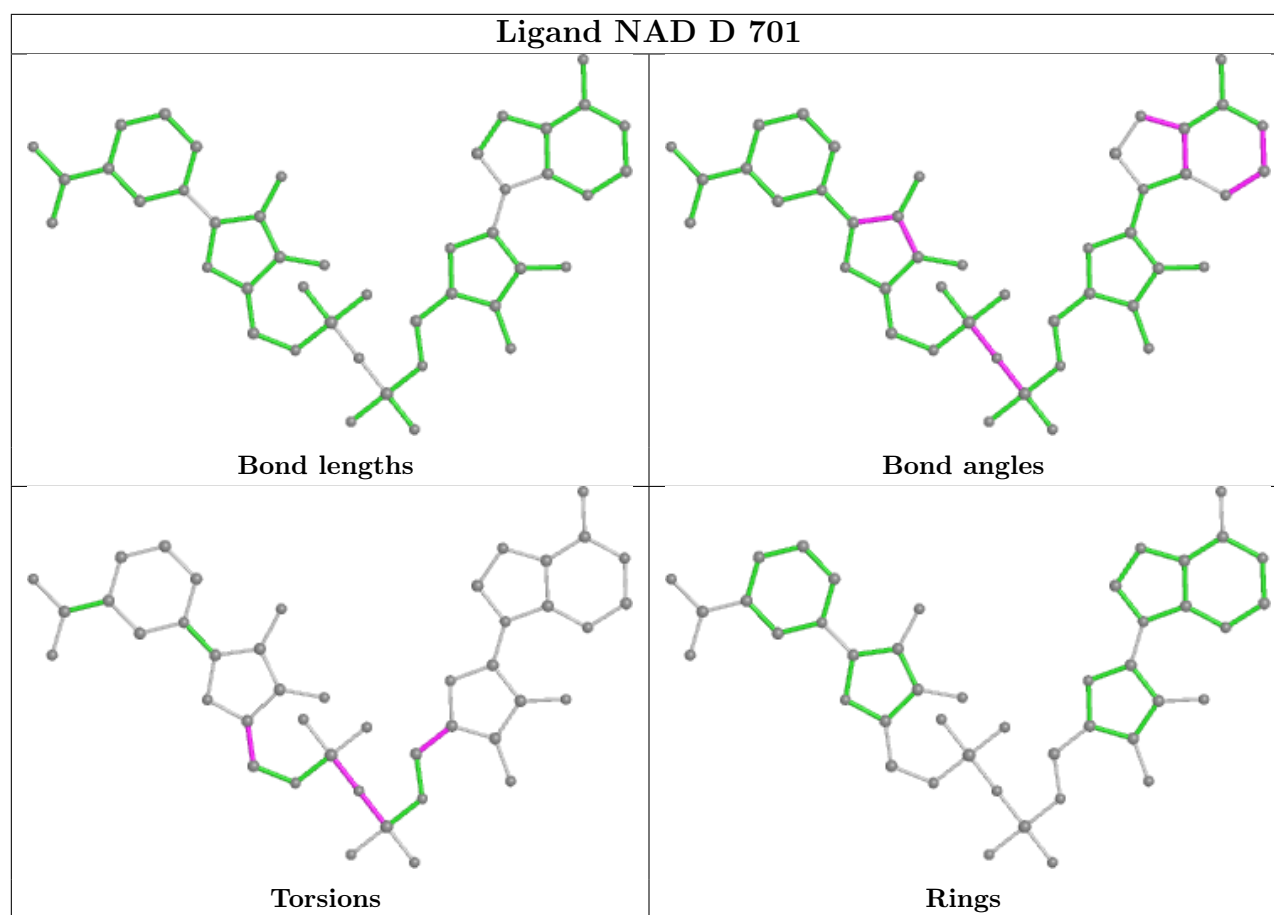
1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	701	NAD	2	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 than 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.







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 i

6.1 Protein, DNA and RNA chains i

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	822/842 (97%)	0.11	13 (1%) 72 74	17, 53, 92, 120	0
1	C	822/842 (97%)	0.52	82 (9%) 7 6	18, 60, 134, 199	0
1	E	822/842 (97%)	2.00	346 (42%) 0 0	19, 131, 186, 266	0
2	B	207/207 (100%)	-0.01	0 100 100	16, 33, 80, 99	0
2	D	207/207 (100%)	-0.09	2 (0%) 82 84	16, 30, 66, 88	0
2	F	207/207 (100%)	-0.03	3 (1%) 75 77	20, 36, 82, 118	0
All	All	3087/3147 (98%)	0.69	446 (14%) 2 2	16, 57, 165, 266	0

All (446) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	195	GLU	10.8
1	E	231	LYS	9.8
1	E	311	GLU	9.6
1	E	314	LEU	9.5
1	E	307	LEU	9.5
1	E	78	TYR	9.3
1	C	550	ALA	9.2
1	C	495	VAL	9.2
1	E	179	ALA	8.8
1	E	766	PHE	8.4
1	E	303	LEU	8.4
1	E	277	ILE	8.4
1	E	167	LEU	8.1
1	E	280	PRO	8.0
1	E	310	ASP	7.8
1	E	239	LYS	7.7
1	E	193	ALA	7.7
1	E	88	GLU	7.6
1	E	107	GLY	7.5

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Mol	Chain	Res	Type	RSRZ
1	E	553	PRO	7.4
1	E	308	LYS	7.4
1	C	493	VAL	7.3
1	E	299	LEU	7.3
1	E	332	ASP	7.3
1	E	339	VAL	7.3
1	E	420	PRO	7.2
1	E	320	LEU	7.1
1	E	175	TYR	7.1
1	E	86	VAL	7.1
1	E	99	LEU	7.0
1	E	276	PHE	6.9
1	E	210	ALA	6.9
1	E	315	GLU	6.8
1	E	554	LEU	6.8
1	E	108	HIS	6.6
1	E	81	MET	6.5
1	E	240	MET	6.5
1	E	26	ALA	6.5
1	E	504	LEU	6.4
1	E	321	LYS	6.4
1	C	523	SER	6.4
1	E	316	GLY	6.3
1	E	194	ASP	6.3
1	E	366	CYS	6.3
1	E	289	MET	6.3
1	E	323	VAL	6.2
1	C	522	MET	6.2
1	E	233	PHE	6.2
1	E	492	ALA	6.2
1	E	745	SER	6.2
1	E	312	LYS	6.2
1	E	789	GLY	6.2
1	E	495	VAL	6.1
1	E	278	LEU	6.1
1	E	132	ILE	6.1
1	E	23	SER	6.1
1	E	743	ILE	6.0
1	E	98	PHE	6.0
1	E	282	PHE	5.8
1	E	442	VAL	5.8
1	E	770	ALA	5.7

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Mol	Chain	Res	Type	RSRZ
1	C	551	GLY	5.7
1	E	97	SER	5.7
1	A	475	ALA	5.6
1	E	273	PHE	5.6
1	E	269	LEU	5.6
1	E	555	LYS	5.6
1	E	128	VAL	5.6
1	E	498	ALA	5.6
1	E	500	ASP	5.6
1	C	549	HIS	5.5
1	E	232	LYS	5.5
1	C	496	LYS	5.5
1	E	419	VAL	5.4
1	C	494	GLU	5.4
1	E	245	TRP	5.4
1	E	367	ILE	5.4
1	E	196	VAL	5.3
1	C	499	ASN	5.3
1	E	164	LEU	5.3
1	E	298	VAL	5.2
1	E	163	ALA	5.2
1	E	284	LEU	5.2
1	C	502	PRO	5.2
1	E	242	ASP	5.2
1	E	501	LEU	5.2
1	E	288	ILE	5.2
1	E	19	VAL	5.2
1	E	525	SER	5.2
1	E	360	PRO	5.1
1	E	192	TYR	5.1
1	E	761	PRO	5.1
1	E	739	ALA	5.1
1	C	501	LEU	5.1
1	E	80	GLU	5.1
1	E	418	TYR	5.0
1	E	89	ILE	5.0
1	E	77	LEU	5.0
1	E	476	HIS	5.0
1	E	335	LEU	4.9
1	E	777	SER	4.9
1	E	317	LYS	4.9
1	C	506	GLU	4.9

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Mol	Chain	Res	Type	RSRZ
1	C	508	LEU	4.9
1	C	546	GLU	4.8
1	C	552	VAL	4.8
1	E	154	VAL	4.8
1	E	76	SER	4.8
1	E	551	GLY	4.8
1	E	45	ILE	4.8
1	E	496	LYS	4.8
1	E	24	VAL	4.8
1	C	498	ALA	4.8
1	E	227	THR	4.7
1	E	226	ALA	4.7
1	E	129	VAL	4.7
1	E	474	THR	4.7
1	C	291	PHE	4.7
1	E	290	ASN	4.6
1	E	83	ASP	4.6
1	E	257	TRP	4.5
1	E	306	VAL	4.5
1	E	309	GLY	4.5
1	E	143	LEU	4.5
1	E	105	SER	4.5
1	E	322	VAL	4.5
1	E	329	PRO	4.5
1	E	169	VAL	4.5
1	E	126	LEU	4.5
1	E	362	ASP	4.5
1	E	25	ILE	4.4
1	E	759	GLN	4.4
1	E	497	ASN	4.4
1	E	48	ALA	4.4
1	E	741	GLY	4.4
1	E	31	GLY	4.4
1	C	505	VAL	4.3
1	E	166	GLU	4.3
1	E	67	GLY	4.3
1	E	760	ARG	4.3
1	C	500	ASP	4.3
1	E	79	SER	4.3
1	E	222	ILE	4.3
1	E	319	LEU	4.3
1	E	343	PRO	4.3

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Mol	Chain	Res	Type	RSRZ
1	E	305	ILE	4.2
1	E	762	GLY	4.2
1	E	493	VAL	4.2
1	E	499	ASN	4.2
1	E	747	LEU	4.2
1	C	553	PRO	4.2
1	E	421	GLY	4.2
1	C	528	HIS	4.2
1	E	556	ILE	4.2
1	E	506	GLU	4.2
1	E	297	PRO	4.2
1	E	740	VAL	4.2
1	E	361	ALA	4.2
1	E	441	PHE	4.2
1	A	420	PRO	4.1
1	E	794	PRO	4.1
1	E	475	ALA	4.1
1	E	296	ILE	4.1
1	E	176	GLN	4.1
1	C	504	LEU	4.1
1	E	294	ASP	4.1
1	E	258	THR	4.1
1	E	96	ASN	4.1
1	E	229	TYR	4.1
1	C	4	PHE	4.1
1	C	300	LEU	4.0
1	E	241	MET	4.0
1	C	2	VAL	4.0
1	E	180	ARG	4.0
1	E	365	ASN	4.0
1	E	131	THR	4.0
1	E	127	VAL	4.0
1	C	311	GLU	4.0
1	E	230	ALA	4.0
1	E	287	ALA	4.0
1	A	495	VAL	4.0
1	E	9	MET	4.0
1	E	187	VAL	4.0
1	E	254	THR	3.9
1	E	338	ILE	3.9
1	E	216	HIS	3.9
1	E	223	ARG	3.9

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Mol	Chain	Res	Type	RSRZ
1	E	205	ALA	3.9
1	E	182	VAL	3.9
1	C	524	GLU	3.9
1	E	301	GLU	3.9
1	E	358	GLU	3.9
1	C	497	ASN	3.8
1	E	188	ILE	3.8
1	E	165	LEU	3.8
1	E	422	LYS	3.8
1	E	292	LYS	3.8
1	E	185	VAL	3.8
1	E	203	TYR	3.8
1	E	550	ALA	3.8
1	E	503	LYS	3.8
1	E	295	GLU	3.7
1	E	268	PRO	3.7
1	E	737	GLU	3.7
1	E	795	GLN	3.7
1	E	796	MET	3.7
1	E	304	GLU	3.7
1	E	324	MET	3.7
1	E	736	PRO	3.6
1	E	730	LEU	3.6
1	E	144	ARG	3.6
1	E	260	LYS	3.6
1	E	781	THR	3.6
1	E	4	PHE	3.6
1	E	218	TRP	3.6
1	E	744	TYR	3.6
1	E	286	THR	3.6
1	E	757	GLU	3.6
1	E	106	PRO	3.6
1	E	293	LYS	3.6
1	E	134	GLY	3.6
1	E	155	VAL	3.6
1	C	3	ALA	3.5
1	E	494	GLU	3.5
1	E	754	VAL	3.5
1	E	47	SER	3.5
1	E	32	LYS	3.5
1	E	46	ILE	3.5
1	E	780	PHE	3.5

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Mol	Chain	Res	Type	RSRZ
1	C	306	VAL	3.5
1	E	243	ARG	3.5
1	C	323	VAL	3.5
1	E	200	VAL	3.5
1	C	513	LYS	3.5
1	E	93	THR	3.4
1	C	555	LYS	3.4
1	C	307	LEU	3.4
1	E	149	GLU	3.4
1	E	123	ASP	3.4
1	E	735	CYS	3.4
1	E	148	GLY	3.4
1	E	790	GLY	3.4
1	C	285	PHE	3.4
2	F	489	ALA	3.4
1	E	326	LYS	3.3
1	E	522	MET	3.3
1	C	556	ILE	3.3
1	E	256	LYS	3.3
1	C	314	LEU	3.3
1	C	554	LEU	3.3
1	E	369	ILE	3.3
1	E	161	ASP	3.3
1	E	125	ALA	3.3
1	E	472	SER	3.2
1	E	552	VAL	3.2
1	E	171	LYS	3.2
1	E	137	VAL	3.2
1	E	510	ARG	3.2
1	E	768	VAL	3.2
1	E	340	LEU	3.2
1	C	112	SER	3.2
1	E	443	GLU	3.2
1	E	523	SER	3.2
1	E	547	HIS	3.2
1	E	70	ILE	3.1
1	E	145	GLN	3.1
1	C	313	ASP	3.1
1	E	402	ALA	3.1
1	E	410	LYS	3.1
1	E	111	PHE	3.1
1	E	511	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	197	LEU	3.0
1	E	423	LYS	3.0
1	E	113	SER	3.0
1	A	361	ALA	3.0
1	E	342	LEU	3.0
1	E	508	LEU	3.0
1	E	302	LYS	3.0
1	C	740	VAL	3.0
1	E	505	VAL	3.0
1	E	94	ASP	3.0
1	E	130	ASP	3.0
1	E	548	ASP	3.0
1	C	305	ILE	2.9
1	E	156	VAL	2.9
1	E	36	THR	2.9
1	E	424	ASP	2.9
1	C	492	ALA	2.9
1	A	419	VAL	2.9
1	E	291	PHE	2.9
1	C	167	LEU	2.9
1	E	546	GLU	2.8
1	E	151	ILE	2.8
1	C	5	THR	2.8
1	E	42	ARG	2.8
1	E	162	ARG	2.8
1	C	547	HIS	2.8
2	F	490	ARG	2.8
1	E	755	VAL	2.8
1	E	103	ILE	2.8
1	C	299	LEU	2.8
1	E	104	ASP	2.8
1	E	255	LYS	2.8
1	E	444	PRO	2.8
1	E	158	ASN	2.8
1	C	509	LYS	2.8
1	E	115	VAL	2.8
1	E	431	ILE	2.8
2	D	489	ALA	2.8
1	E	147	LEU	2.8
1	A	365	ASN	2.7
1	E	34	THR	2.7
1	E	3	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
1	C	320	LEU	2.7
1	E	120	ARG	2.7
1	E	244	LEU	2.7
1	C	265	GLU	2.7
1	E	376	ALA	2.7
1	E	763	THR	2.7
1	E	300	LEU	2.7
1	E	395	TYR	2.7
1	E	502	PRO	2.7
1	E	135	VAL	2.7
1	C	503	LYS	2.7
1	C	545	LEU	2.7
1	E	234	GLY	2.7
1	C	511	LEU	2.7
1	E	437	MET	2.7
1	E	377	ASP	2.7
1	A	46	ILE	2.7
1	E	412	ARG	2.7
1	E	85	ASP	2.7
1	E	68	ILE	2.6
1	C	251	ASN	2.6
1	E	38	SER	2.6
1	E	121	VAL	2.6
1	E	401	PHE	2.6
1	E	325	ARG	2.6
1	E	10	ARG	2.6
1	E	541	CYS	2.6
1	E	784	LEU	2.6
1	E	357	TYR	2.6
1	E	91	GLN	2.6
1	E	356	LEU	2.5
1	C	310	ASP	2.5
1	C	232	LYS	2.5
1	C	267	LYS	2.5
1	E	69	THR	2.5
1	C	235	VAL	2.5
1	E	279	ASP	2.5
1	E	199	ASP	2.5
1	E	82	SER	2.5
1	E	756	SER	2.5
1	E	261	ASP	2.5
1	E	267	LYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	E	41	GLN	2.5
1	E	542	LEU	2.5
1	E	27	HIS	2.5
1	A	553	PRO	2.5
1	E	73	THR	2.5
1	A	84	GLU	2.5
1	E	427	PHE	2.5
1	E	75	ILE	2.4
1	E	549	HIS	2.4
1	E	473	GLU	2.4
1	E	477	ASN	2.4
1	E	390	ASP	2.4
1	E	349	GLN	2.4
1	E	782	GLY	2.4
1	E	388	THR	2.4
2	D	461	ASP	2.4
1	E	445	ILE	2.4
1	E	328	LEU	2.4
1	C	293	LYS	2.4
1	C	7	ASP	2.4
1	C	269	LEU	2.4
1	E	347	THR	2.4
1	E	354	GLU	2.4
1	E	313	ASP	2.3
1	E	337	MET	2.3
1	E	265	GLU	2.3
1	E	177	THR	2.3
1	E	159	LYS	2.3
1	E	136	CYS	2.3
1	C	421	GLY	2.3
1	C	154	VAL	2.3
1	E	481	MET	2.3
1	E	101	ASN	2.3
1	C	510	ARG	2.3
1	C	46	ILE	2.3
1	C	445	ILE	2.3
1	A	473	GLU	2.3
1	E	208	THR	2.3
2	F	461	ASP	2.3
1	E	209	VAL	2.3
1	E	526	GLY	2.3
1	E	30	HIS	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	420	PRO	2.2
1	E	2	VAL	2.2
1	E	189	VAL	2.2
1	C	236	ASP	2.2
1	A	496	LYS	2.2
1	E	90	LYS	2.2
1	C	229	TYR	2.2
1	C	85	ASP	2.2
1	E	438	MET	2.2
1	E	117	ALA	2.2
1	E	772	LEU	2.2
1	E	211	PHE	2.2
1	C	252	PRO	2.2
1	E	274	ASN	2.2
1	C	173	ASP	2.2
1	C	109	VAL	2.2
1	C	766	PHE	2.2
1	C	312	LYS	2.2
1	E	153	PRO	2.2
1	E	122	THR	2.2
1	E	7	ASP	2.2
1	E	84	GLU	2.2
1	C	118	ALA	2.2
1	E	119	LEU	2.2
1	E	783	GLU	2.2
1	E	118	ALA	2.1
1	E	146	ALA	2.1
1	E	207	GLY	2.1
1	E	471	THR	2.1
1	E	201	GLN	2.1
1	E	20	ARG	2.1
1	C	309	GLY	2.1
1	E	249	PHE	2.1
1	C	163	ALA	2.1
1	E	466	THR	2.1
1	C	296	ILE	2.1
1	A	423	LYS	2.1
1	C	507	GLY	2.1
1	E	116	THR	2.1
1	A	310	ASP	2.1
1	E	237	LYS	2.1
1	E	22	MET	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	264	ALA	2.0
1	E	87	LYS	2.0
1	E	458	GLY	2.0
1	E	742	GLY	2.0
1	E	778	PHE	2.0
1	E	327	PHE	2.0
1	E	425	ASP	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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
1	DDE	A	699	10/21	0.94	0.13	43,61,74,78	0
1	DDE	C	699	20/21	0.96	0.21	22,85,126,129	0
1	DDE	E	699	10/21	0.96	0.13	38,49,69,70	0

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

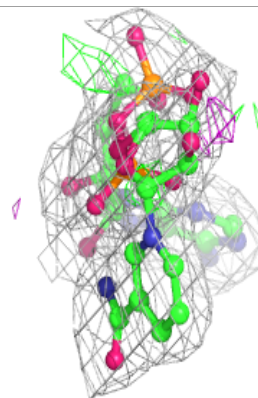
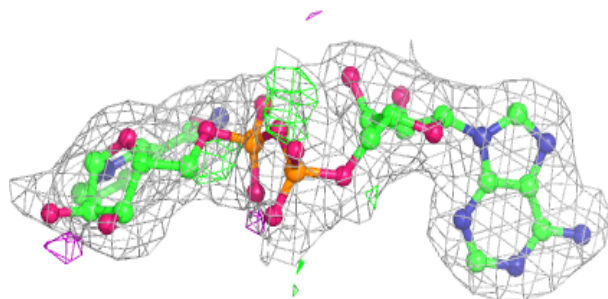
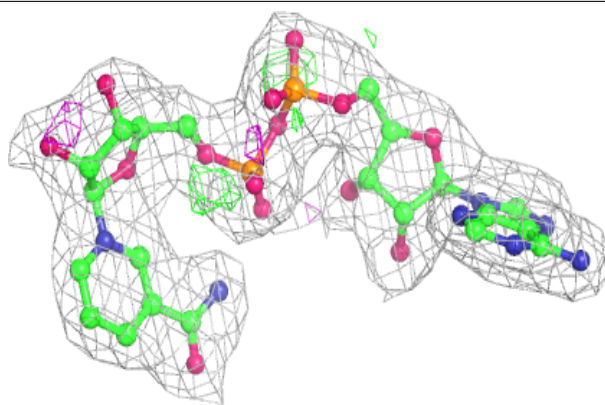
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	NAD	B	700	44/44	0.97	0.16	17,33,54,59	0
3	NAD	D	701	44/44	0.98	0.17	12,29,51,56	0
3	NAD	F	702	44/44	0.98	0.16	7,34,59,62	0

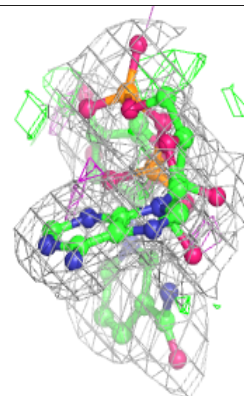
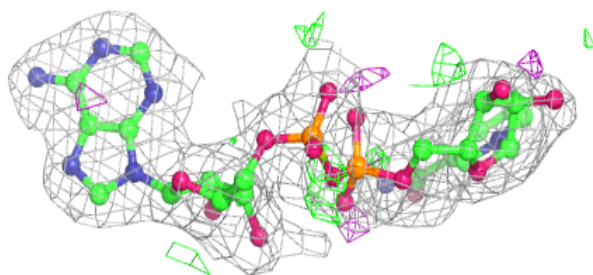
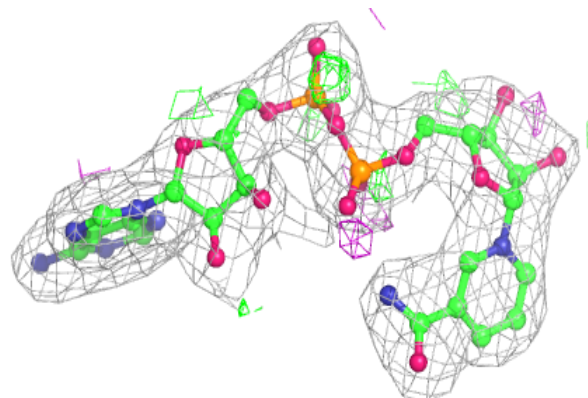
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

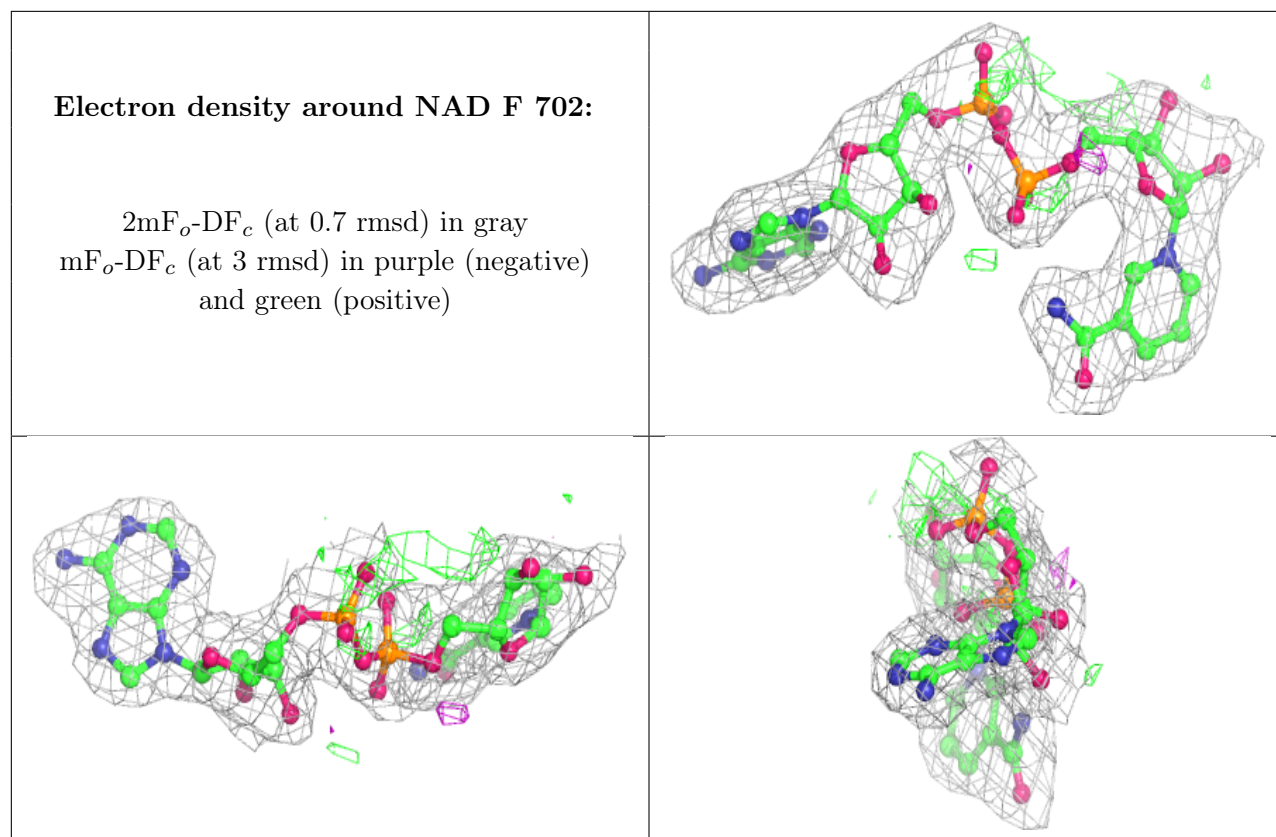
Electron density around NAD B 700:

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

**Electron density around NAD D 701:**

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





6.5 Other polymers [i](#)

There are no such residues in this entry.