



# Full wwPDB X-ray Structure Validation Report ⓘ

Nov 9, 2024 – 08:31 PM EST

PDB ID : 1EFK  
Title : STRUCTURE OF HUMAN MALIC ENZYME IN COMPLEX WITH KETOMALONATE  
Authors : Yang, Z.; Floyd, D.L.; Loeber, G.; Tong, L.  
Deposited on : 2000-02-09  
Resolution : 2.60 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](mailto: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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

---

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

MolProbity : 4.02b-467  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.39

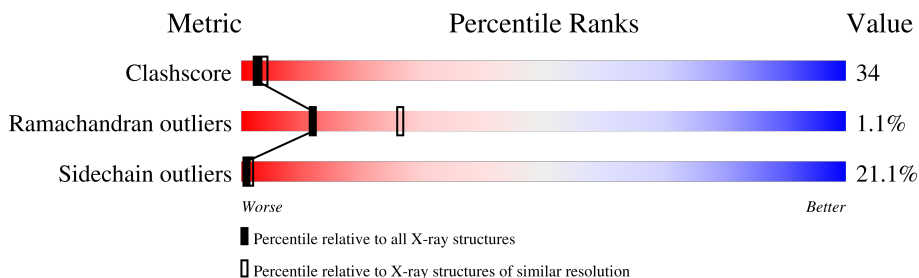
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.60 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	180529	4181 (2.60-2.60)
Ramachandran outliers	177936	4129 (2.60-2.60)
Sidechain outliers	177891	4129 (2.60-2.60)

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  $\geq 3$ , 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  $\leq 5\%$ .

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	584	
1	B	584	
1	C	584	
1	D	584	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	MAK	A	603	-	X	-	-
4	MAK	C	2603	-	X	-	-
4	MAK	D	3603	-	X	-	-

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 17931 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 MALIC ENZYME.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	553	4367	2796	744	804	9	14	0	0	0
1	B	553	4367	2796	744	804	9	14	0	0	0
1	C	553	4367	2796	744	804	9	14	0	0	0
1	D	553	4367	2796	744	804	9	14	0	0	0

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	29	MSE	MET	modified residue	UNP P23368
A	38	MSE	MET	modified residue	UNP P23368
A	47	MSE	MET	modified residue	UNP P23368
A	75	MSE	MET	modified residue	UNP P23368
A	86	MSE	MET	modified residue	UNP P23368
A	108	MSE	MET	modified residue	UNP P23368
A	177	MSE	MET	modified residue	UNP P23368
A	219	MSE	MET	modified residue	UNP P23368
A	239	MSE	MET	modified residue	UNP P23368
A	325	MSE	MET	modified residue	UNP P23368
A	327	MSE	MET	modified residue	UNP P23368
A	343	MSE	MET	modified residue	UNP P23368
A	407	MSE	MET	modified residue	UNP P23368
A	539	MSE	MET	modified residue	UNP P23368
B	29	MSE	MET	modified residue	UNP P23368
B	38	MSE	MET	modified residue	UNP P23368
B	47	MSE	MET	modified residue	UNP P23368
B	75	MSE	MET	modified residue	UNP P23368
B	86	MSE	MET	modified residue	UNP P23368
B	108	MSE	MET	modified residue	UNP P23368
B	177	MSE	MET	modified residue	UNP P23368

*Continued on next page...*

*Continued from previous page...*

Chain	Residue	Modelled	Actual	Comment	Reference
B	219	MSE	MET	modified residue	UNP P23368
B	239	MSE	MET	modified residue	UNP P23368
B	325	MSE	MET	modified residue	UNP P23368
B	327	MSE	MET	modified residue	UNP P23368
B	343	MSE	MET	modified residue	UNP P23368
B	407	MSE	MET	modified residue	UNP P23368
B	539	MSE	MET	modified residue	UNP P23368
C	29	MSE	MET	modified residue	UNP P23368
C	38	MSE	MET	modified residue	UNP P23368
C	47	MSE	MET	modified residue	UNP P23368
C	75	MSE	MET	modified residue	UNP P23368
C	86	MSE	MET	modified residue	UNP P23368
C	108	MSE	MET	modified residue	UNP P23368
C	177	MSE	MET	modified residue	UNP P23368
C	219	MSE	MET	modified residue	UNP P23368
C	239	MSE	MET	modified residue	UNP P23368
C	325	MSE	MET	modified residue	UNP P23368
C	327	MSE	MET	modified residue	UNP P23368
C	343	MSE	MET	modified residue	UNP P23368
C	407	MSE	MET	modified residue	UNP P23368
C	539	MSE	MET	modified residue	UNP P23368
D	29	MSE	MET	modified residue	UNP P23368
D	38	MSE	MET	modified residue	UNP P23368
D	47	MSE	MET	modified residue	UNP P23368
D	75	MSE	MET	modified residue	UNP P23368
D	86	MSE	MET	modified residue	UNP P23368
D	108	MSE	MET	modified residue	UNP P23368
D	177	MSE	MET	modified residue	UNP P23368
D	219	MSE	MET	modified residue	UNP P23368
D	239	MSE	MET	modified residue	UNP P23368
D	325	MSE	MET	modified residue	UNP P23368
D	327	MSE	MET	modified residue	UNP P23368
D	343	MSE	MET	modified residue	UNP P23368
D	407	MSE	MET	modified residue	UNP P23368
D	539	MSE	MET	modified residue	UNP P23368

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

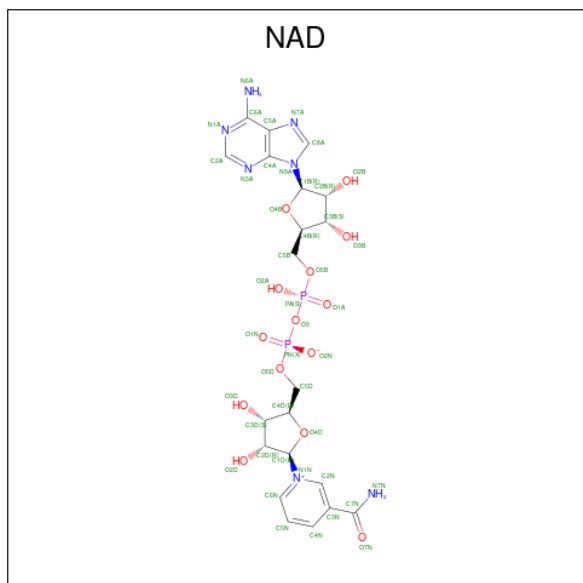
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0

*Continued on next page...*

Continued from previous page...

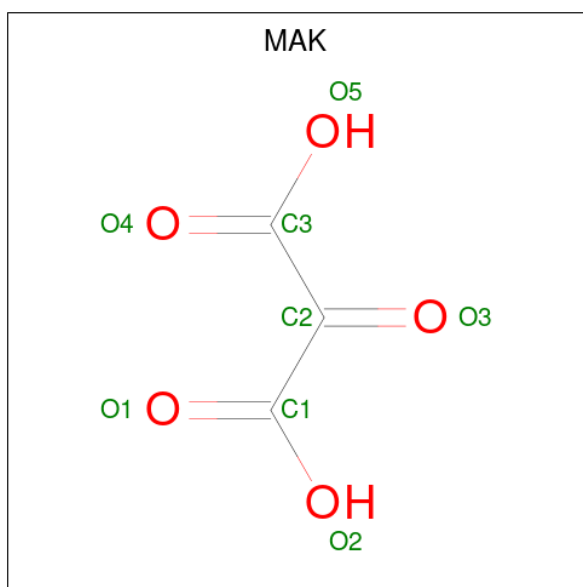
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total Mg 1 1	0	0
2	D	1	Total Mg 1 1	0	0

- Molecule 3 is NICOTINAMIDE-ADENINE-DINUCLEOTIDE (three-letter code: NAD) (formula:  $C_{21}H_{27}N_7O_{14}P_2$ ).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O P 44 21 7 14 2	0	0
3	A	1	Total C N O P 44 21 7 14 2	9	0
3	B	1	Total C N O P 44 21 7 14 2	0	0
3	B	1	Total C N O P 44 21 7 14 2	9	0
3	C	1	Total C N O P 44 21 7 14 2	0	0
3	C	1	Total C N O P 44 21 7 14 2	9	0
3	D	1	Total C N O P 44 21 7 14 2	0	0
3	D	1	Total C N O P 44 21 7 14 2	9	0

- Molecule 4 is ALPHA-KETOMALONIC ACID (three-letter code: MAK) (formula:  $C_3H_2O_5$ ).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 8 3 5	0	0
4	B	1	Total C O 8 3 5	0	0
4	C	1	Total C O 8 3 5	0	0
4	D	1	Total C O 8 3 5	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	25	Total O 25 25	0	0
5	B	18	Total O 18 18	0	0
5	C	16	Total O 16 16	0	0
5	D	16	Total O 16 16	0	0

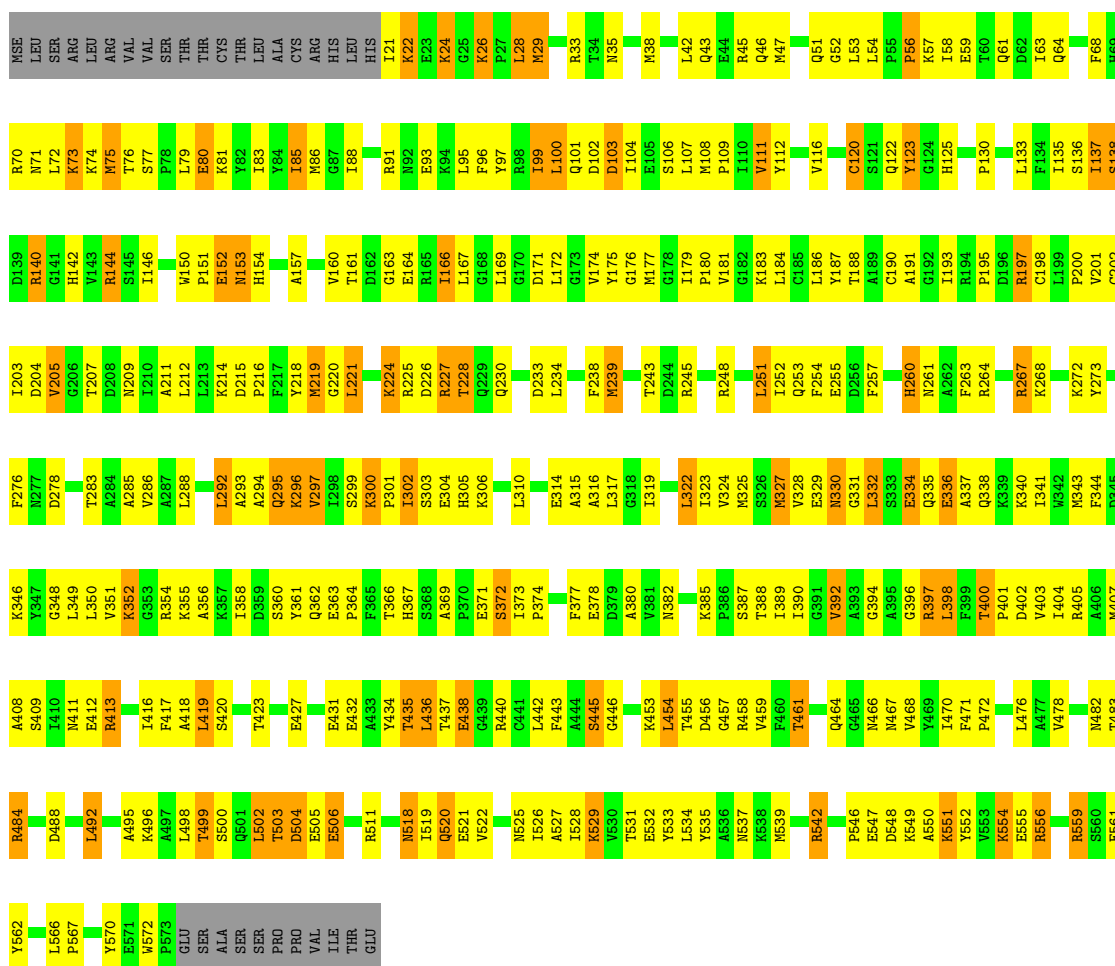
### 3 Residue-property plots

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

Note EDS was not executed.

- Molecule 1: MALIC ENZYME

Chain A: 

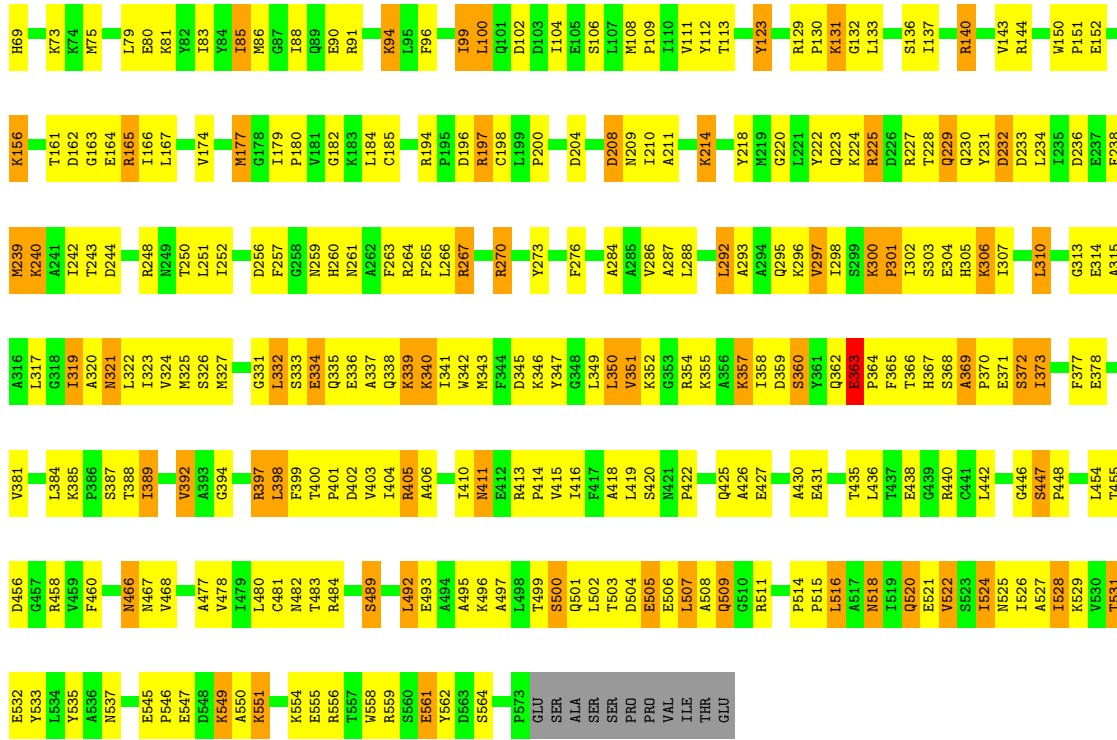


- Molecule 1: MALIC ENZYME

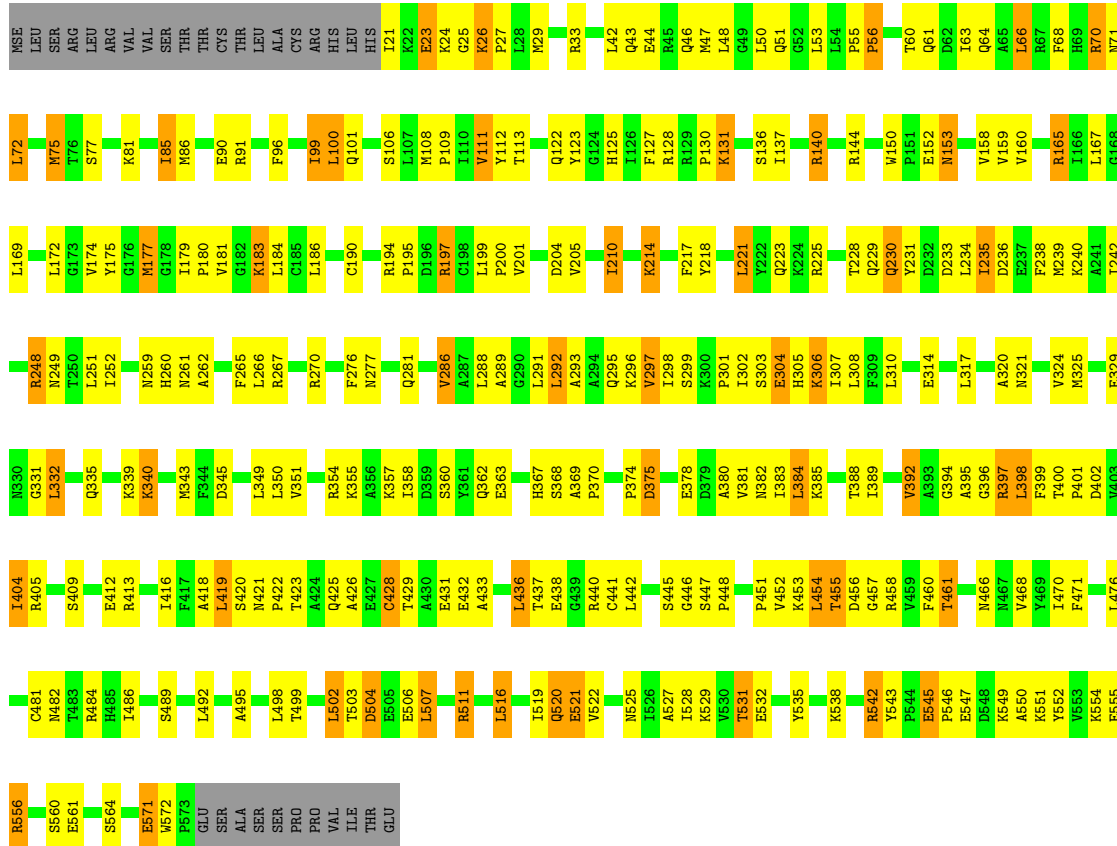
Chain B: 







● Molecule 1: MALIC ENZYME



• Molecule 1: MALIC ENZYME

Chain D: 41% 39% 14% 5%

MSE	LEU	SER	ARG	LEU	ARG	VAL	VAL	SER	SER	THR	THR	CYS	THR	THR	LEU	ALA	CYS	ARG	HIS	HIS	LEU	HIS	I21	K22	E23	K24	G25	K26	P27	M29	R33	K36	G37	M38	T41	L42	Q43	E44	R45	Q46	M47	Q51	P55	P56	K57	I58	E59	T60	Q61	D62	I63	Q64	A65	L66	R67	F68				
H69	R70	N71	L72	K73	K74	M75	T76	S77		K81	Y82	I83	Y84	M85	M86		Q89	F90	R91	N92	E93	K94	L95	F96	Y97	R98	I99	L100		D103	I104	E105	S106	L107	M108	P109	I110	V111	T115		C120	Y123	G124	H125	I126		K131	G132	L133	F134	I135	S136	I137		R140	V143				
R144		W150	P151	E152	M153	K156	A157		T161	D162	G163	E164	R165	I166		L169	G170	D171	L172	G173	V174	Y175	G176	M177	G178	I179	P180	V181	G182	K183	L184	C185	L186		C190	A191	G192	I193	R194		R197	C198	L199	P200	V201	C202	I203	D204	V205	G206	T207	D208	W209	I210	A211		K214			
F217	Y218	M219	G220	L221		K224	R225	D226	R227	T228	Q229	Q230		D233		D236	E237	F238	M239		T243	D244	R245		R248	N249	T250	L251		F254		P257		N261		R264	F265	L266	R267	K268	Y269	R270	E271	K272		I280		T283		V286	A287	L288		L291	W292	A293	A294	Q295	K296	
V297	I298	S299	K300	P301	I302	S303	E304	H305	K306	I307	L308		G313	E314	A315	A316		I319	A320	N321	L322	I323	V324	M325	S326	M327	V328	E329	N330	G331	L332	S333	E334	Q335	E336	A337	Q338	K339	K340	I341	A406	M407	M343	F344	D345	K346	Y347	G348	L349	L350	V351	K352	G353	R354	K355		I388	D389	S390	Y361
Q362	E363	P364	F365	T366	H367	S368	A369	P370	E371		P374	D375	T376	F377	E378	D379	A380	V381	M382	I383	L384		S387	T388	I389	V392	A393	G394		R397	L398	F399	T400	P401	D402	V403	I404	R405	A406	M407	A408	S409		E412	R413	P414	V415	I416		S420		T423		A426	E427	C428	T429	A430		
E431	E432		T435	L436	T437	E438	G439	R440	C441	L442	F443	A444	S445	G446	S447	P448		V452	K453	L454	T455	D456	G457	R458	V459	P460	T461		Q464	G465	M466	M467	V468		F471	P472	G473	V474	A475	L476	A477	V478	I479		S489		L492	E493		S500	Q501	L502	T503	D504	E505	E506	L507	A508	Q509	
G510	R511	L512		L516	A517	M518	I519	Q520	E521	V522		M525	I526	A527	I528	K529	V530	T531	E532	F533	L534	Y535	A536	M537	K538		R542	Y543		P546	E547	D548	K549	A550		K551	Y552	E553	K554	E555	R556	T557	W558	R559	S560	E561	Y562		L566	P567	D568		E571	W572	P573	GLU	SER	ALA	SER	SER

## 4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	229.60Å 118.60Å 113.10Å 90.00° 109.60° 90.00°	Depositor
Resolution (Å)	20.00 – 2.60	Depositor
% Data completeness (in resolution range)	94.0 (20.00-2.60)	Depositor
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
Refinement program	X-PLOR 3.851	Depositor
R, $R_{free}$	0.218 , 0.301	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	17931	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	28.0	wwPDB-VP

## 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, MAK, MG

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	0.44	0/4447	0.64	0/5998
1	B	0.45	0/4447	0.64	0/5998
1	C	0.46	0/4447	0.65	0/5998
1	D	0.45	1/4447 (0.0%)	0.64	0/5998
All	All	0.45	1/17788 (0.0%)	0.64	0/23992

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	185	CYS	CB-SG	-5.57	1.72	1.81

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	4367	0	4407	359	0
1	B	4367	0	4407	313	0
1	C	4367	0	4407	217	0
1	D	4367	0	4407	334	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	88	0	52	4	0
3	B	88	0	52	5	0
3	C	88	0	52	3	0
3	D	88	0	52	3	0
4	A	8	0	0	1	0
4	B	8	0	0	1	0
4	C	8	0	0	1	0
4	D	8	0	0	2	0
5	A	25	0	0	4	0
5	B	18	0	0	4	0
5	C	16	0	0	3	0
5	D	16	0	0	1	0
All	All	17931	0	17836	1198	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 34.

All (1198) 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:210:ILE:H	1:C:210:ILE:HD13	1.00	1.10
1:D:140:ARG:HH22	1:D:233:ASP:HB3	1.15	1.09
1:D:177:MSE:HE1	1:D:181:VAL:HG23	1.34	1.06
1:A:327:MSE:HE3	1:A:337:ALA:HB1	1.38	1.06
1:B:354:ARG:HE	1:B:358:ILE:HD11	1.21	1.06
1:D:300:LYS:HE3	1:D:304:GLU:HB2	1.37	1.03
1:D:302:ILE:HG12	1:D:332:LEU:HD11	1.41	1.00
1:C:210:ILE:H	1:C:210:ILE:CD1	1.73	0.96
1:C:378:GLU:O	1:C:381:VAL:HG12	1.65	0.96
1:B:354:ARG:NE	1:B:358:ILE:HD11	1.81	0.96
1:A:86:MSE:HE1	1:A:111:VAL:HG23	1.48	0.95
1:A:492:LEU:HD22	1:A:496:LYS:HE3	1.49	0.94
1:A:227:ARG:HH11	1:A:227:ARG:HG2	1.32	0.94
1:B:339:LYS:HA	1:B:367:HIS:CE1	2.03	0.94
1:D:123:TYR:HD2	1:D:219:MSE:HE1	1.32	0.93
1:B:351:VAL:HG11	1:B:369:ALA:HA	1.50	0.93
1:D:374:PRO:HG3	1:D:383:ILE:HG13	1.49	0.92
1:C:454:LEU:HD11	1:C:460:PHE:HE2	1.32	0.91
1:D:137:ILE:HD12	1:D:205:VAL:HG12	1.51	0.91

Continued on next page...

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:210:ILE:HD13	1:C:210:ILE:N	1.86	0.91
1:D:327:MSE:HG2	1:D:332:LEU:HD22	1.49	0.91
1:A:137:ILE:HB	1:A:205:VAL:HG12	1.53	0.90
1:D:261:ASN:HD22	1:D:264:ARG:NH2	1.68	0.90
1:D:527:ALA:O	1:D:531:THR:HG22	1.72	0.90
1:C:61:GLN:HA	1:C:64:GLN:HE21	1.38	0.89
1:D:371:GLU:CD	1:D:371:GLU:H	1.73	0.89
1:B:29:MSE:HE2	1:B:50:LEU:HD22	1.56	0.88
1:B:266:LEU:O	1:B:270:ARG:HG2	1.74	0.87
1:C:527:ALA:O	1:C:531:THR:HG22	1.72	0.87
1:A:389:ILE:HB	1:A:407:MSE:HE2	1.57	0.87
1:C:81:LYS:O	1:C:85:ILE:HG23	1.74	0.87
1:A:261:ASN:ND2	1:A:264:ARG:HH21	1.72	0.86
1:B:339:LYS:HA	1:B:367:HIS:HE1	1.42	0.85
1:D:379:ASP:O	1:D:383:ILE:HG12	1.75	0.85
1:D:327:MSE:HE3	1:D:337:ALA:HB1	1.56	0.85
1:D:85:ILE:HD11	1:D:111:VAL:HG12	1.58	0.85
1:C:453:LYS:HE3	1:C:457:GLY:HA2	1.58	0.85
1:D:332:LEU:HD23	1:D:340:LYS:HE3	1.58	0.85
1:A:220:GLY:HA2	1:B:56:PRO:HG2	1.59	0.84
1:A:211:ALA:O	1:A:214:LYS:HG2	1.76	0.84
1:A:377:PHE:HE2	1:A:389:ILE:HD11	1.42	0.84
1:D:140:ARG:NH2	1:D:233:ASP:HB3	1.92	0.84
1:A:408:ALA:HB2	1:A:437:THR:HG22	1.57	0.84
1:C:520:GLN:H	1:C:520:GLN:HE21	1.24	0.84
1:B:520:GLN:H	1:B:520:GLN:HE21	1.23	0.84
1:D:72:LEU:HD12	1:D:75:MSE:HE2	1.60	0.83
1:A:184:LEU:HD22	1:A:198:CYS:HB3	1.61	0.83
1:B:506:GLU:OE2	1:B:515:PRO:HD3	1.78	0.82
1:D:261:ASN:HD22	1:D:264:ARG:HH22	1.25	0.82
1:B:527:ALA:O	1:B:531:THR:HG23	1.80	0.82
1:C:23:GLU:OE1	1:C:23:GLU:HA	1.80	0.82
1:C:239:MSE:HE1	1:C:252:ILE:HD13	1.62	0.82
1:B:478:VAL:HG13	1:B:483:THR:HB	1.61	0.81
1:B:546:PRO:HG2	1:B:549:LYS:HD2	1.60	0.81
1:D:75:MSE:CE	1:D:81:LYS:HA	2.10	0.81
1:D:392:VAL:HG13	1:D:392:VAL:O	1.80	0.81
1:A:177:MSE:HE1	1:A:180:PRO:HB2	1.63	0.81
1:A:163:GLY:HA2	1:A:166:ILE:HD11	1.61	0.81
1:D:468:VAL:HA	1:D:471:PHE:CE2	2.15	0.80
1:C:397:ARG:HH21	1:C:426:ALA:HB3	1.46	0.80

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:140:ARG:NH2	1:A:233:ASP:HB3	1.95	0.80
1:B:81:LYS:O	1:B:85:ILE:HG23	1.80	0.80
1:B:371:GLU:CD	1:B:371:GLU:H	1.84	0.80
1:C:349:LEU:HD22	1:C:374:PRO:HG2	1.63	0.80
1:B:466:ASN:HB3	1:B:468:VAL:HG12	1.62	0.80
1:D:123:TYR:CD2	1:D:219:MSE:HE1	2.17	0.80
1:A:38:MSE:HE3	1:A:59:GLU:CD	2.02	0.80
1:D:437:THR:O	1:D:440:ARG:HG3	1.82	0.79
1:B:505:GLU:CD	1:B:505:GLU:H	1.85	0.79
1:D:324:VAL:O	1:D:328:VAL:HG23	1.83	0.79
1:B:528:ILE:O	1:B:532:GLU:HG3	1.81	0.79
1:A:556:ARG:HH11	1:A:556:ARG:HG2	1.45	0.79
1:B:51:GLN:HE21	1:B:51:GLN:HA	1.48	0.79
1:D:556:ARG:CG	1:D:556:ARG:HH11	1.96	0.78
1:D:177:MSE:CE	1:D:181:VAL:HG23	2.13	0.78
1:A:518:ASN:HA	1:A:520:GLN:OE1	1.84	0.78
1:D:91:ARG:HG3	1:D:91:ARG:HH11	1.48	0.78
1:B:208:ASP:O	1:B:210:ILE:HD12	1.83	0.77
1:B:377:PHE:O	1:B:381:VAL:HG23	1.84	0.77
1:A:123:TYR:HD2	1:A:219:MSE:HE1	1.46	0.77
1:B:342:TRP:CE3	1:B:349:LEU:HD21	2.19	0.77
1:C:140:ARG:HB2	1:C:140:ARG:NH1	2.00	0.77
1:D:261:ASN:ND2	1:D:264:ARG:NH2	2.33	0.77
1:B:229:GLN:NE2	1:B:232:ASP:HB2	1.99	0.77
1:C:422:PRO:HD2	1:C:425:GLN:NE2	2.00	0.77
1:B:79:LEU:O	1:B:83:ILE:HG13	1.84	0.77
1:D:377:PHE:HZ	1:D:389:ILE:HD11	1.49	0.77
1:A:43:GLN:HG2	1:A:566:LEU:HD11	1.67	0.76
1:D:548:ASP:OD2	1:D:551:LYS:HB2	1.85	0.76
1:A:260:HIS:O	1:A:264:ARG:HB2	1.85	0.76
1:D:301:PRO:HB2	1:D:304:GLU:HG3	1.65	0.76
1:D:177:MSE:HG2	1:D:202:CYS:HB2	1.67	0.76
1:D:302:ILE:CG1	1:D:332:LEU:HD11	2.14	0.76
1:C:454:LEU:HD11	1:C:460:PHE:CE2	2.18	0.76
1:B:239:MSE:HE1	1:B:252:ILE:HD13	1.68	0.75
1:A:85:ILE:HG12	1:A:86:MSE:HE2	1.68	0.75
1:A:552:TYR:HE1	1:A:556:ARG:NH2	1.85	0.74
1:C:433:ALA:O	1:C:437:THR:HG23	1.87	0.74
1:D:60:THR:O	1:D:63:ILE:HG22	1.87	0.74
1:A:535:TYR:OH	1:A:542:ARG:HB3	1.87	0.74
1:D:43:GLN:OE1	1:D:47:MSE:HE1	1.87	0.74

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:422:PRO:HD2	1:B:425:GLN:HE21	1.53	0.74
1:D:175:TYR:CE2	1:D:218:TYR:HA	2.21	0.74
1:D:397:ARG:NH2	1:D:426:ALA:HB3	2.03	0.74
1:D:294:ALA:O	1:D:297:VAL:HG22	1.88	0.74
1:B:229:GLN:HE21	1:B:229:GLN:HA	1.53	0.73
1:C:395:ALA:HB3	1:C:398:LEU:HD21	1.71	0.73
1:D:538:LYS:H	1:D:538:LYS:HZ3	1.34	0.73
1:B:305:HIS:O	1:B:340:LYS:HD3	1.89	0.73
1:B:505:GLU:CD	1:B:505:GLU:N	2.40	0.73
1:D:75:MSE:HE3	1:D:81:LYS:HA	1.70	0.73
1:D:400:THR:OG1	1:D:403:VAL:HG23	1.89	0.73
1:A:56:PRO:HG2	1:B:220:GLY:HA2	1.69	0.73
1:C:60:THR:OG1	1:C:63:ILE:HG13	1.88	0.73
1:D:377:PHE:CZ	1:D:389:ILE:HD11	2.23	0.73
1:A:392:VAL:O	1:A:392:VAL:HG13	1.88	0.72
1:B:334:GLU:O	1:B:338:GLN:HG3	1.89	0.72
1:A:525:ASN:O	1:A:529:LYS:HG2	1.89	0.72
1:B:177:MSE:O	1:B:180:PRO:HD2	1.89	0.72
1:A:520:GLN:NE2	1:A:521:GLU:N	2.37	0.72
1:B:349:LEU:HD11	1:B:384:LEU:HD11	1.71	0.72
1:B:351:VAL:CG1	1:B:369:ALA:HA	2.19	0.72
1:A:495:ALA:O	1:A:499:THR:HG22	1.89	0.72
1:D:556:ARG:HH11	1:D:556:ARG:HG2	1.52	0.72
1:B:29:MSE:HE2	1:B:50:LEU:CD2	2.19	0.72
1:C:248:ARG:HG3	1:C:248:ARG:HH11	1.54	0.72
1:A:52:GLY:O	1:B:133:LEU:HD23	1.89	0.72
1:B:334:GLU:HG3	1:B:338:GLN:NE2	2.04	0.72
1:B:446:GLY:O	1:B:466:ASN:ND2	2.23	0.72
1:D:249:ASN:C	1:D:249:ASN:HD22	1.92	0.72
1:C:378:GLU:OE1	1:C:402:ASP:HB3	1.90	0.72
1:A:225:ARG:HB2	5:A:4041:HOH:O	1.90	0.71
1:A:227:ARG:HG2	1:A:227:ARG:NH1	2.03	0.71
1:B:287:ALA:HB3	1:B:319:ILE:HG21	1.72	0.71
1:B:298:ILE:CG2	1:B:300:LYS:HB2	2.21	0.71
1:A:164:GLU:HG3	1:A:225:ARG:CZ	2.20	0.71
1:B:358:ILE:HG12	1:B:366:THR:HG21	1.72	0.71
1:D:94:LYS:HE3	1:D:558:TRP:CZ2	2.25	0.71
1:A:164:GLU:HG3	1:A:225:ARG:NE	2.05	0.71
1:B:184:LEU:HD22	1:B:198:CYS:HB3	1.73	0.71
1:C:382:ASN:O	1:C:385:LYS:HD2	1.91	0.71
1:C:542:ARG:HD2	1:C:552:TYR:OH	1.91	0.71

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:153:ASN:H	1:D:153:ASN:ND2	1.87	0.71
1:A:369:ALA:HB1	1:A:373:ILE:HD11	1.72	0.71
1:A:319:ILE:O	1:A:323:ILE:HG13	1.90	0.70
1:A:33:ARG:HD3	1:A:93:GLU:OE2	1.92	0.70
1:A:343:MSE:HB2	1:A:350:LEU:HD12	1.71	0.70
1:B:307:ILE:HD13	1:B:323:ILE:HD13	1.73	0.70
1:B:406:ALA:O	1:B:410:ILE:HD12	1.92	0.70
1:A:177:MSE:CE	1:A:180:PRO:HB2	2.21	0.70
1:A:431:GLU:O	1:A:435:THR:OG1	2.09	0.70
1:B:137:ILE:O	1:B:140:ARG:HG2	1.91	0.70
1:B:401:PRO:HB2	1:B:405:ARG:HH21	1.56	0.70
1:C:47:MSE:O	1:C:48:LEU:HD23	1.91	0.70
1:D:137:ILE:HB	1:D:205:VAL:HG12	1.73	0.70
1:C:451:PRO:HG3	1:C:461:THR:HG23	1.73	0.70
1:A:86:MSE:CE	1:A:111:VAL:HG23	2.21	0.70
1:A:138:SER:OG	1:A:221:LEU:HD21	1.92	0.70
1:A:261:ASN:HD22	1:A:264:ARG:HE	1.38	0.69
1:A:315:ALA:O	1:A:319:ILE:HD12	1.93	0.69
1:D:288:LEU:HG	1:D:292:LEU:HD22	1.73	0.69
1:B:397:ARG:HH21	1:B:426:ALA:HB3	1.58	0.69
1:B:489:SER:HB2	1:B:533:TYR:OH	1.91	0.69
1:A:144:ARG:NH2	1:A:245:ARG:HB2	2.08	0.69
1:A:295:GLN:HE22	1:A:300:LYS:N	1.91	0.69
1:B:315:ALA:O	1:B:319:ILE:HG13	1.91	0.69
1:C:235:ILE:HD13	1:C:265:PHE:CZ	2.28	0.69
1:A:401:PRO:HB3	1:A:436:LEU:HD21	1.73	0.69
1:B:267:ARG:HB2	5:B:4022:HOH:O	1.91	0.69
1:B:295:GLN:HA	1:B:295:GLN:OE1	1.93	0.69
1:A:327:MSE:CE	1:A:337:ALA:HB1	2.21	0.68
1:B:518:ASN:O	1:B:522:VAL:HG23	1.93	0.68
1:A:81:LYS:O	1:A:85:ILE:HG23	1.94	0.68
1:B:397:ARG:NH2	1:B:426:ALA:HB3	2.08	0.68
1:D:68:PHE:CD2	1:D:99:ILE:HG13	2.28	0.68
1:D:401:PRO:HB3	1:D:436:LEU:HD21	1.74	0.68
1:D:381:VAL:HG21	1:D:403:VAL:HG13	1.75	0.68
1:A:334:GLU:O	1:A:338:GLN:HG3	1.94	0.68
1:C:454:LEU:HD12	1:C:458:ARG:HB2	1.75	0.68
1:B:108:MSE:CE	1:B:516:LEU:HD11	2.24	0.68
1:B:522:VAL:O	1:B:526:ILE:HG13	1.92	0.68
1:C:429:THR:OG1	1:C:432:GLU:HG3	1.93	0.68
1:B:422:PRO:HD2	1:B:425:GLN:NE2	2.09	0.68

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:535:TYR:CE2	1:C:545:GLU:HB2	2.29	0.68
1:D:85:ILE:HD11	1:D:111:VAL:CG1	2.24	0.67
1:D:194:ARG:HE	1:D:197:ARG:NH1	1.92	0.67
1:B:96:PHE:O	1:B:100:LEU:HD13	1.94	0.67
1:B:392:VAL:O	1:B:392:VAL:HG22	1.95	0.67
1:B:342:TRP:HE3	1:B:349:LEU:HD21	1.56	0.67
1:D:327:MSE:HE3	1:D:337:ALA:CB	2.24	0.67
1:A:267:ARG:NH1	1:A:361:TYR:OH	2.27	0.67
1:A:300:LYS:HZ3	1:A:304:GLU:HB2	1.59	0.67
1:A:350:LEU:HD22	1:A:358:ILE:HD11	1.77	0.67
1:C:528:ILE:HD13	1:C:550:ALA:HA	1.75	0.67
1:A:186:LEU:O	1:A:190:CYS:HB2	1.94	0.67
1:D:397:ARG:NH2	1:D:423:THR:O	2.27	0.67
1:A:492:LEU:O	1:A:496:LYS:HG3	1.95	0.67
1:D:556:ARG:HG2	1:D:556:ARG:NH1	2.09	0.67
1:A:389:ILE:HG22	1:A:416:ILE:HA	1.77	0.67
1:B:492:LEU:O	1:B:496:LYS:HG3	1.94	0.67
1:B:527:ALA:O	1:B:531:THR:CG2	2.43	0.67
1:C:325:MSE:O	1:C:329:GLU:HG3	1.95	0.67
1:A:140:ARG:NH2	1:A:230:GLN:HA	2.10	0.67
1:B:349:LEU:HD23	1:B:350:LEU:N	2.10	0.67
1:B:400:THR:OG1	1:B:403:VAL:HG23	1.95	0.67
1:D:535:TYR:O	1:D:538:LYS:NZ	2.28	0.66
1:A:432:GLU:O	1:A:436:LEU:HB2	1.94	0.66
1:A:64:GLN:NE2	1:A:562:TYR:OH	2.25	0.66
1:A:226:ASP:OD1	1:A:228:THR:HG23	1.95	0.66
1:B:179:ILE:HB	1:B:180:PRO:HD3	1.77	0.66
1:B:239:MSE:HE1	1:B:252:ILE:CD1	2.25	0.66
1:A:520:GLN:NE2	1:A:521:GLU:H	1.91	0.66
1:C:546:PRO:HG2	1:C:549:LYS:HD3	1.77	0.66
1:A:288:LEU:HD23	1:A:322:LEU:HD23	1.78	0.66
1:A:61:GLN:HA	1:A:64:GLN:HE21	1.59	0.66
1:D:22:LYS:O	1:D:22:LYS:HD3	1.96	0.66
1:D:75:MSE:HE1	1:D:81:LYS:HA	1.78	0.66
1:A:123:TYR:CD2	1:A:219:MSE:HE1	2.29	0.66
1:B:297:VAL:HG22	1:B:298:ILE:HD12	1.78	0.66
1:D:298:ILE:CG2	1:D:300:LYS:HB2	2.25	0.66
1:B:414:PRO:O	1:B:442:LEU:HD12	1.96	0.66
1:B:298:ILE:HG22	1:B:300:LYS:N	2.11	0.65
1:A:468:VAL:HA	1:A:471:PHE:CE2	2.31	0.65
1:D:177:MSE:HE3	1:D:177:MSE:O	1.95	0.65

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:559:ARG:HG3	1:D:561:GLU:OE1	1.97	0.65
1:A:45:ARG:NH2	1:A:58:ILE:HD13	2.11	0.65
1:A:556:ARG:HH11	1:A:556:ARG:CG	2.09	0.65
1:A:144:ARG:NH2	1:A:245:ARG:HG3	2.11	0.65
1:C:131:LYS:O	1:C:177:MSE:HE3	1.96	0.65
1:B:331:GLY:O	1:B:332:LEU:O	2.15	0.65
1:B:346:LYS:HG2	3:B:1601:NAD:O2B	1.97	0.64
1:B:301:PRO:HG2	1:B:304:GLU:HG3	1.79	0.64
1:D:266:LEU:HD12	1:D:280:ILE:HD12	1.78	0.64
1:A:467:ASN:O	1:A:471:PHE:HD2	1.81	0.64
1:D:363:GLU:HB3	1:D:364:PRO:HD3	1.79	0.64
1:C:317:LEU:HD23	1:C:343:MSE:HE1	1.79	0.64
1:B:261:ASN:ND2	1:B:264:ARG:NH2	2.46	0.64
1:C:331:GLY:O	1:C:332:LEU:O	2.15	0.64
1:A:550:ALA:O	1:A:554:LYS:HG2	1.98	0.64
1:B:29:MSE:HE1	1:B:53:LEU:CD1	2.28	0.64
1:C:546:PRO:O	1:C:549:LYS:NZ	2.31	0.64
1:A:552:TYR:CE1	1:A:556:ARG:NH2	2.65	0.64
1:B:505:GLU:N	1:B:505:GLU:OE2	2.31	0.64
1:A:394:GLY:HA2	1:A:420:SER:HB3	1.81	0.63
1:D:342:TRP:CZ3	1:D:367:HIS:HB2	2.33	0.63
1:A:160:VAL:HG21	1:A:203:ILE:HD11	1.80	0.63
1:C:140:ARG:HH22	1:C:233:ASP:HB2	1.63	0.63
1:D:33:ARG:NH1	1:D:93:GLU:OE2	2.31	0.63
1:B:240:LYS:HE3	1:B:244:ASP:OD2	1.98	0.63
1:A:300:LYS:HZ1	1:A:304:GLU:C	2.02	0.63
1:B:112:TYR:CD2	1:B:113:THR:HG22	2.34	0.63
1:C:160:VAL:HG12	1:C:201:VAL:HB	1.80	0.63
1:A:21:ILE:HG22	1:A:21:ILE:O	1.98	0.63
1:A:404:ILE:HG22	1:A:437:THR:HG23	1.81	0.63
1:D:316:ALA:HB2	1:D:392:VAL:HG11	1.80	0.63
1:C:56:PRO:HB2	1:D:221:LEU:HD13	1.81	0.62
1:D:298:ILE:HG23	1:D:300:LYS:HB2	1.81	0.62
1:C:85:ILE:HD12	1:C:96:PHE:HE1	1.63	0.62
1:C:297:VAL:HG21	1:C:442:LEU:HD11	1.80	0.62
1:D:343:MSE:O	1:D:350:LEU:HD23	2.00	0.62
1:A:43:GLN:HG3	1:A:566:LEU:HD21	1.82	0.62
1:A:219:MSE:HG2	1:B:38:MSE:HE1	1.81	0.62
1:D:298:ILE:HD12	1:D:442:LEU:HD11	1.81	0.62
1:D:329:GLU:HG2	1:D:330:ASN:ND2	2.14	0.62
1:D:332:LEU:HD12	1:D:332:LEU:N	2.14	0.62

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:350:LEU:HD22	1:D:354:ARG:HH12	1.63	0.62
1:D:538:LYS:HZ3	1:D:538:LYS:N	1.97	0.62
1:D:537:ASN:C	1:D:538:LYS:HG2	2.20	0.61
1:A:177:MSE:HE3	1:A:180:PRO:HD2	1.82	0.61
1:B:238:PHE:CE1	1:B:242:ILE:HG13	2.36	0.61
1:B:288:LEU:HG	1:B:292:LEU:HD22	1.81	0.61
1:C:466:ASN:HB3	1:C:468:VAL:HG12	1.82	0.61
1:D:81:LYS:O	1:D:85:ILE:HG23	1.99	0.61
1:D:327:MSE:CE	1:D:337:ALA:HB1	2.28	0.61
1:D:432:GLU:O	1:D:436:LEU:HB2	2.00	0.61
1:D:555:GLU:HB3	1:D:556:ARG:NH1	2.15	0.61
1:A:324:VAL:HA	1:A:327:MSE:HE2	1.81	0.61
1:B:352:LYS:HE3	1:B:366:THR:O	2.00	0.61
1:D:538:LYS:NZ	1:D:538:LYS:N	2.48	0.61
1:B:75:MSE:HG2	1:B:80:GLU:OE1	1.99	0.61
1:B:370:PRO:HD2	1:B:373:ILE:HD12	1.81	0.61
1:B:496:LYS:O	1:B:500:SER:HB3	1.99	0.61
1:C:194:ARG:HB2	1:C:197:ARG:HG3	1.81	0.61
1:A:108:MSE:N	1:A:109:PRO:HD2	2.16	0.61
1:A:504:ASP:OD2	1:A:504:ASP:N	2.33	0.61
1:B:301:PRO:HG2	1:B:304:GLU:CD	2.21	0.61
1:B:64:GLN:NE2	1:B:562:TYR:OH	2.34	0.61
1:A:150:TRP:HE1	1:A:152:GLU:CD	2.03	0.61
1:D:137:ILE:CD1	1:D:205:VAL:HG12	2.29	0.61
1:D:538:LYS:H	1:D:538:LYS:NZ	1.99	0.61
1:B:301:PRO:HG2	1:B:304:GLU:CG	2.31	0.61
1:C:432:GLU:O	1:C:436:LEU:HB2	2.00	0.61
1:C:389:ILE:HG22	1:C:416:ILE:HA	1.82	0.61
1:D:23:GLU:O	1:D:28:LEU:HD21	2.01	0.61
1:A:332:LEU:HD12	1:A:332:LEU:H	1.66	0.60
1:A:548:ASP:OD2	1:A:551:LYS:HB2	2.00	0.60
1:B:239:MSE:HE3	1:B:239:MSE:HA	1.83	0.60
1:D:332:LEU:HD12	1:D:332:LEU:H	1.66	0.60
1:A:324:VAL:HA	1:A:327:MSE:CE	2.30	0.60
1:A:363:GLU:HB3	1:A:364:PRO:HD3	1.82	0.60
1:A:570:TYR:HE1	1:A:572:TRP:HE1	1.49	0.60
1:C:140:ARG:NH2	1:C:233:ASP:HB2	2.16	0.60
1:A:525:ASN:HA	1:A:528:ILE:HD12	1.82	0.60
1:B:229:GLN:NE2	1:B:229:GLN:HA	2.15	0.60
1:D:137:ILE:HD12	1:D:205:VAL:CG1	2.29	0.60
1:D:33:ARG:HD3	1:D:93:GLU:OE2	2.02	0.60

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:174:VAL:HG12	1:D:219:MSE:HE2	1.83	0.60
1:B:36:LYS:NZ	1:B:562:TYR:HB3	2.17	0.60
1:D:506:GLU:HG2	1:D:511:ARG:HD2	1.83	0.60
1:D:297:VAL:HG21	1:D:442:LEU:HD21	1.82	0.60
1:D:506:GLU:CB	1:D:511:ARG:HD2	2.32	0.60
1:B:108:MSE:HE2	1:B:516:LEU:HD11	1.84	0.59
1:C:551:LYS:O	1:C:555:GLU:HB2	2.01	0.59
1:D:36:LYS:HE3	1:D:562:TYR:HB3	1.84	0.59
1:D:89:GLN:HG2	1:D:131:LYS:HZ3	1.67	0.59
1:D:153:ASN:H	1:D:153:ASN:HD22	1.48	0.59
1:A:344:PHE:CZ	1:A:348:GLY:HA2	2.37	0.59
1:B:346:LYS:HZ3	1:B:346:LYS:HB2	1.66	0.59
1:B:480:LEU:HD22	1:B:556:ARG:HD3	1.85	0.59
1:D:59:GLU:HB3	1:D:63:ILE:HG21	1.83	0.59
1:B:315:ALA:HB3	1:B:392:VAL:HG21	1.82	0.59
1:A:472:PRO:HG2	5:A:4021:HOH:O	2.03	0.59
1:A:401:PRO:HA	1:A:404:ILE:HD12	1.83	0.59
1:B:29:MSE:HE1	1:B:53:LEU:HD12	1.85	0.59
1:B:310:LEU:HD21	1:B:398:LEU:HD23	1.84	0.59
1:D:261:ASN:ND2	1:D:264:ARG:HH21	2.01	0.59
1:A:79:LEU:O	1:A:83:ILE:HG13	2.02	0.59
1:A:144:ARG:NH2	1:A:245:ARG:CB	2.65	0.59
1:C:546:PRO:HG2	1:C:549:LYS:CD	2.32	0.59
1:A:47:MSE:SE	1:C:47:MSE:HE2	2.53	0.59
1:B:400:THR:HB	1:B:401:PRO:HD2	1.83	0.59
1:C:140:ARG:NH2	1:C:230:GLN:O	2.34	0.59
1:C:286:VAL:HG11	1:C:466:ASN:O	2.03	0.59
1:A:466:ASN:HB3	1:A:468:VAL:HG12	1.84	0.59
1:B:60:THR:OG1	1:B:63:ILE:HG13	2.03	0.59
1:B:287:ALA:HB3	1:B:319:ILE:CG2	2.31	0.59
1:B:503:THR:HA	5:B:4040:HOH:O	2.01	0.59
1:C:85:ILE:HG13	1:C:86:MSE:N	2.17	0.59
1:C:289:ALA:CB	1:C:498:LEU:HD23	2.33	0.59
1:D:186:LEU:HD13	1:D:468:VAL:HG23	1.85	0.59
1:C:43:GLN:O	1:C:47:MSE:HB2	2.02	0.58
1:D:286:VAL:HG11	1:D:466:ASN:O	2.03	0.58
1:D:412:GLU:HG3	1:D:413:ARG:HG2	1.85	0.58
1:A:316:ALA:HB2	1:A:392:VAL:HG11	1.85	0.58
1:B:307:ILE:HG23	1:B:388:THR:HB	1.85	0.58
1:C:305:HIS:O	1:C:340:LYS:HB3	2.03	0.58
1:D:374:PRO:HB3	1:D:379:ASP:HB2	1.84	0.58

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:389:ILE:HG22	1:D:416:ILE:HA	1.84	0.58
1:B:136:SER:HA	1:B:204:ASP:O	2.04	0.58
1:C:179:ILE:HB	1:C:180:PRO:HD3	1.85	0.58
1:D:331:GLY:O	1:D:332:LEU:O	2.21	0.58
1:C:42:LEU:O	1:C:46:GLN:HG3	2.03	0.58
1:D:175:TYR:HE2	1:D:218:TYR:HA	1.67	0.58
1:A:38:MSE:HE3	1:A:59:GLU:OE1	2.03	0.58
1:C:66:LEU:HD22	1:C:70:ARG:NH1	2.18	0.58
1:C:481:CYS:O	1:C:482:ASN:HB2	2.02	0.58
1:D:506:GLU:HB3	1:D:511:ARG:HD2	1.85	0.58
1:B:131:LYS:O	1:B:177:MSE:HE3	2.03	0.58
1:B:323:ILE:HG22	1:B:324:VAL:N	2.18	0.58
1:B:351:VAL:HG11	1:B:370:PRO:HD3	1.85	0.58
1:C:301:PRO:O	1:C:304:GLU:HG2	2.04	0.58
1:D:324:VAL:HA	1:D:327:MSE:HE2	1.86	0.58
1:D:392:VAL:O	1:D:392:VAL:CG1	2.52	0.58
1:A:154:HIS:O	1:A:197:ARG:HG3	2.04	0.58
1:A:239:MSE:HE1	1:A:254:PHE:HE1	1.68	0.58
1:C:33:ARG:HH21	1:C:152:GLU:HG3	1.69	0.58
1:D:502:LEU:CD1	1:D:507:LEU:HG	2.34	0.58
1:A:85:ILE:HA	1:A:88:ILE:HD12	1.86	0.58
1:B:363:GLU:HG2	1:B:364:PRO:N	2.19	0.58
1:B:418:ALA:HB1	1:B:427:GLU:HB2	1.85	0.58
1:D:551:LYS:O	1:D:555:GLU:HB2	2.04	0.58
1:A:332:LEU:HD23	1:A:340:LYS:NZ	2.19	0.58
1:D:41:THR:O	1:D:45:ARG:HG3	2.04	0.58
1:A:295:GLN:HE22	1:A:299:SER:CA	2.17	0.58
1:A:300:LYS:HB3	1:A:300:LYS:HZ2	1.68	0.58
1:B:260:HIS:CE1	1:B:264:ARG:NE	2.72	0.58
1:C:392:VAL:HG13	1:C:392:VAL:O	2.03	0.58
1:D:329:GLU:HG2	1:D:330:ASN:HD22	1.69	0.58
1:D:456:ASP:OD1	1:D:458:ARG:HG3	2.04	0.58
1:D:550:ALA:O	1:D:554:LYS:HG2	2.04	0.57
1:A:310:LEU:HD21	1:A:398:LEU:HB2	1.84	0.57
1:B:152:GLU:HG2	1:B:196:ASP:HB2	1.85	0.57
1:B:210:ILE:O	1:B:214:LYS:HG2	2.04	0.57
1:B:504:ASP:HB2	1:B:505:GLU:OE2	2.03	0.57
1:C:401:PRO:HB2	1:C:405:ARG:NH2	2.20	0.57
1:D:269:TYR:O	1:D:271:GLU:N	2.37	0.57
1:A:343:MSE:HE3	1:A:350:LEU:CD1	2.34	0.57
1:A:343:MSE:HE3	1:A:350:LEU:HD11	1.86	0.57

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:322:LEU:HG	1:B:492:LEU:HD23	1.86	0.57
1:D:300:LYS:HE3	1:D:304:GLU:CB	2.24	0.57
1:A:325:MSE:HE1	1:A:488:ASP:HB2	1.85	0.57
1:D:316:ALA:HB2	1:D:392:VAL:CG1	2.35	0.57
1:A:166:ILE:HG13	1:A:172:LEU:HB2	1.86	0.57
1:A:503:THR:OG1	1:A:506:GLU:HG2	2.03	0.57
1:B:229:GLN:HE21	1:B:229:GLN:CA	2.18	0.57
1:D:191:ALA:HB3	1:D:193:ILE:HD12	1.87	0.57
1:A:295:GLN:NE2	1:A:299:SER:HA	2.19	0.57
1:B:358:ILE:HG23	1:B:362:GLN:HB2	1.86	0.57
1:C:504:ASP:HA	1:C:507:LEU:HB2	1.85	0.57
1:D:388:THR:HG23	1:D:415:VAL:HB	1.86	0.57
1:A:413:ARG:HH21	1:A:440:ARG:C	2.08	0.57
1:A:293:ALA:O	1:A:296:LYS:HB2	2.05	0.56
1:B:431:GLU:O	1:B:435:THR:HG23	2.04	0.56
1:D:165:ARG:NH2	4:D:3603:MAK:O1	2.38	0.56
1:A:157:ALA:HB1	1:A:187:TYR:HE2	1.71	0.56
1:A:179:ILE:HB	1:A:180:PRO:HD3	1.87	0.56
1:A:392:VAL:O	1:A:392:VAL:CG1	2.52	0.56
1:B:456:ASP:OD2	1:B:458:ARG:NH1	2.38	0.56
1:D:431:GLU:HA	1:D:452:VAL:HG11	1.86	0.56
1:A:140:ARG:O	1:A:140:ARG:HG3	2.05	0.56
1:B:24:LYS:O	1:D:22:LYS:NZ	2.36	0.56
1:B:229:GLN:HE21	1:B:232:ASP:HB2	1.69	0.56
1:D:153:ASN:ND2	1:D:153:ASN:N	2.50	0.56
1:D:352:LYS:HG3	1:D:366:THR:HG22	1.86	0.56
1:D:471:PHE:CG	1:D:472:PRO:HD3	2.40	0.56
1:C:277:ASN:N	1:C:281:GLN:OE1	2.25	0.56
1:D:229:GLN:O	1:D:229:GLN:HG2	2.05	0.56
1:D:333:SER:HB3	1:D:336:GLU:HG3	1.87	0.56
1:D:363:GLU:OE1	1:D:363:GLU:C	2.43	0.56
1:B:430:ALA:HB3	5:B:4069:HOH:O	2.04	0.56
1:A:26:LYS:HG3	1:B:151:PRO:HG2	1.87	0.56
1:A:160:VAL:CG2	1:A:203:ILE:HD11	2.35	0.56
1:C:422:PRO:HD2	1:C:425:GLN:HE21	1.69	0.56
1:A:468:VAL:HA	1:A:471:PHE:HE2	1.71	0.56
1:B:86:MSE:CE	1:B:111:VAL:HG23	2.36	0.56
1:B:306:LYS:NZ	1:B:384:LEU:O	2.38	0.56
1:C:167:LEU:HD22	1:C:421:ASN:HB2	1.86	0.56
1:D:150:TRP:NE1	1:D:152:GLU:HG2	2.21	0.56
1:D:293:ALA:HA	1:D:296:LYS:HE2	1.86	0.56

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:219:MSE:HG2	1:B:38:MSE:CE	2.35	0.56
1:A:344:PHE:CE2	1:A:348:GLY:HA2	2.40	0.56
1:B:293:ALA:O	1:B:296:LYS:HB2	2.05	0.56
1:B:298:ILE:HG21	1:B:300:LYS:HB2	1.87	0.56
1:D:184:LEU:HD12	1:D:200:PRO:HG3	1.88	0.56
1:C:295:GLN:OE1	1:C:295:GLN:HA	2.06	0.56
1:D:186:LEU:HD12	1:D:471:PHE:HZ	1.71	0.56
1:A:183:LYS:HA	1:A:186:LEU:HD12	1.89	0.56
1:A:552:TYR:CE1	1:A:556:ARG:CZ	2.89	0.56
1:B:332:LEU:HD12	1:B:332:LEU:H	1.70	0.56
1:D:334:GLU:O	1:D:338:GLN:HG3	2.06	0.56
1:A:527:ALA:O	1:A:531:THR:HG23	2.05	0.55
1:A:106:SER:OG	1:A:107:LEU:HD12	2.06	0.55
1:A:528:ILE:O	1:A:532:GLU:HG3	2.05	0.55
1:D:298:ILE:HD11	1:D:413:ARG:HB2	1.88	0.55
1:B:284:ALA:HA	1:B:319:ILE:HG23	1.87	0.55
1:C:455:THR:HG22	5:C:4002:HOH:O	2.06	0.55
1:A:22:LYS:HD2	1:A:22:LYS:O	2.06	0.55
1:A:227:ARG:HH11	1:A:227:ARG:CG	2.11	0.55
1:D:143:VAL:HG21	1:D:237:GLU:HG2	1.88	0.55
1:D:179:ILE:HB	1:D:180:PRO:HD3	1.89	0.55
1:A:120:CYS:O	1:A:175:TYR:HB3	2.06	0.55
1:A:300:LYS:NZ	1:A:305:HIS:HD2	2.04	0.55
1:A:542:ARG:HD2	1:A:552:TYR:OH	2.06	0.55
1:B:551:LYS:O	1:B:555:GLU:HB2	2.06	0.55
1:D:530:VAL:O	1:D:534:LEU:HG	2.07	0.55
1:A:140:ARG:HH22	1:A:230:GLN:HA	1.70	0.55
1:C:140:ARG:HB2	1:C:140:ARG:HH11	1.72	0.55
1:B:36:LYS:HZ3	1:B:562:TYR:HB3	1.72	0.55
1:B:75:MSE:HG2	1:B:80:GLU:CD	2.26	0.55
1:B:335:GLN:O	1:B:339:LYS:HD2	2.07	0.55
1:D:332:LEU:HA	1:D:336:GLU:OE2	2.06	0.55
1:C:358:ILE:HG23	1:C:362:GLN:HB2	1.89	0.55
1:D:528:ILE:O	1:D:531:THR:HG23	2.07	0.55
1:A:104:ILE:HD13	1:A:519:ILE:HG21	1.89	0.55
1:A:215:ASP:OD1	1:A:216:PRO:HD2	2.06	0.55
1:A:261:ASN:ND2	1:A:264:ARG:NH2	2.50	0.55
1:A:332:LEU:HG	1:A:336:GLU:CD	2.28	0.55
1:A:401:PRO:CB	1:A:436:LEU:HD21	2.37	0.55
1:D:370:PRO:HB2	1:D:371:GLU:OE1	2.07	0.55
1:D:530:VAL:HG12	1:D:534:LEU:HD21	1.90	0.55

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:343:MSE:HB2	1:A:350:LEU:CD1	2.35	0.54
1:B:45:ARG:HA	1:B:50:LEU:HD12	1.89	0.54
1:B:69:HIS:HE1	1:B:102:ASP:OD2	1.90	0.54
1:C:535:TYR:HE2	1:C:545:GLU:HB2	1.70	0.54
1:A:146:ILE:HG23	1:B:52:GLY:HA3	1.90	0.54
1:A:496:LYS:O	1:A:500:SER:HB3	2.07	0.54
1:D:207:THR:O	1:D:224:LYS:HA	2.07	0.54
1:D:371:GLU:CD	1:D:371:GLU:N	2.51	0.54
1:D:401:PRO:HA	1:D:436:LEU:HD23	1.89	0.54
1:A:350:LEU:HD23	1:A:354:ARG:NH1	2.23	0.54
1:D:166:ILE:HG13	1:D:172:LEU:HB2	1.89	0.54
1:B:518:ASN:HB3	1:B:521:GLU:OE2	2.07	0.54
1:A:419:LEU:O	3:A:601:NAD:H2N	2.08	0.54
1:B:21:ILE:HG13	1:B:23:GLU:H	1.73	0.54
1:B:130:PRO:O	1:B:131:LYS:HG3	2.07	0.54
1:A:358:ILE:HD12	1:A:366:THR:OG1	2.08	0.54
1:B:467:ASN:ND2	4:B:1603:MAK:O5	2.41	0.54
1:C:33:ARG:HH21	1:C:152:GLU:CG	2.21	0.54
1:C:91:ARG:NE	5:C:4011:HOH:O	2.39	0.54
1:C:276:PHE:HB3	1:C:486:ILE:HD12	1.90	0.54
1:C:388:THR:HG22	1:C:389:ILE:N	2.23	0.54
1:C:571:GLU:OE2	1:C:572:TRP:O	2.26	0.54
1:D:461:THR:HB	1:D:509:GLN:HB3	1.90	0.54
1:A:177:MSE:HE1	1:A:200:PRO:HB2	1.90	0.54
1:A:187:TYR:HE1	1:A:471:PHE:HD1	1.54	0.54
1:D:64:GLN:NE2	1:D:562:TYR:OH	2.24	0.54
1:A:534:LEU:CD2	1:A:539:MSE:HE2	2.38	0.54
1:A:546:PRO:HG3	1:A:552:TYR:CD2	2.43	0.54
1:C:127:PHE:CD2	1:D:38:MSE:HE2	2.43	0.54
1:B:516:LEU:HD12	1:B:516:LEU:O	2.08	0.54
1:C:153:ASN:C	1:C:153:ASN:HD22	2.11	0.54
1:D:51:GLN:HE21	1:D:51:GLN:HA	1.72	0.54
1:D:59:GLU:HB3	1:D:63:ILE:CG2	2.37	0.54
1:A:456:ASP:CG	1:A:458:ARG:HH11	2.10	0.53
1:B:373:ILE:O	1:B:373:ILE:HG22	2.08	0.53
1:A:175:TYR:CE2	1:A:218:TYR:HA	2.42	0.53
1:A:177:MSE:O	1:A:177:MSE:HG3	2.08	0.53
1:C:61:GLN:HA	1:C:64:GLN:NE2	2.15	0.53
1:C:140:ARG:HE	1:C:230:GLN:HG2	1.73	0.53
1:D:453:LYS:HG3	1:D:459:VAL:HG22	1.89	0.53
1:A:183:LYS:HG3	1:A:471:PHE:CZ	2.43	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:387:SER:HA	1:A:411:ASN:OD1	2.08	0.53
1:C:248:ARG:HH11	1:C:248:ARG:CG	2.20	0.53
1:C:546:PRO:HG2	1:C:549:LYS:HE3	1.91	0.53
1:D:75:MSE:HE3	1:D:81:LYS:HG2	1.91	0.53
1:D:248:ARG:NH1	1:D:272:LYS:O	2.41	0.53
1:A:302:ILE:HG21	1:A:332:LEU:HD13	1.91	0.53
1:C:140:ARG:HB2	1:C:140:ARG:CZ	2.36	0.53
1:C:350:LEU:HD23	1:C:354:ARG:NH1	2.23	0.53
1:A:297:VAL:CG2	1:A:442:LEU:HD11	2.39	0.53
1:A:300:LYS:HZ2	1:A:305:HIS:HD2	1.57	0.53
1:B:324:VAL:HG13	1:B:337:ALA:HB3	1.91	0.53
1:B:354:ARG:HE	1:B:358:ILE:CD1	2.09	0.53
1:C:56:PRO:HG2	1:D:220:GLY:HA2	1.89	0.53
1:C:174:VAL:HG12	1:C:174:VAL:O	2.09	0.53
1:D:177:MSE:SE	5:D:4017:HOH:O	2.76	0.53
1:D:531:THR:HA	1:D:534:LEU:HG	1.90	0.53
1:A:153:ASN:HB3	1:A:245:ARG:HH21	1.74	0.53
1:A:518:ASN:OD1	1:A:518:ASN:N	2.42	0.53
1:C:503:THR:OG1	1:C:506:GLU:HG3	2.09	0.53
1:D:38:MSE:HE3	1:D:59:GLU:CD	2.28	0.53
1:D:399:PHE:HB2	1:D:428:CYS:HB3	1.90	0.53
1:D:466:ASN:HB3	1:D:468:VAL:HG12	1.91	0.53
1:B:86:MSE:HE2	1:B:111:VAL:HG23	1.90	0.53
1:B:525:ASN:HA	1:B:528:ILE:HG13	1.91	0.53
1:D:120:CYS:O	1:D:175:TYR:HB3	2.09	0.53
1:D:295:GLN:HE21	1:D:305:HIS:HE1	1.57	0.53
1:A:153:ASN:H	1:A:153:ASN:ND2	2.07	0.53
1:D:83:ILE:HD11	1:D:126:ILE:CG2	2.38	0.53
1:B:43:GLN:HG2	1:B:47:MSE:HE1	1.89	0.52
1:B:324:VAL:HG13	1:B:337:ALA:CB	2.39	0.52
1:C:351:VAL:CG1	1:C:369:ALA:HA	2.39	0.52
1:A:97:TYR:HA	1:A:100:LEU:HD22	1.91	0.52
1:B:112:TYR:CE2	1:B:113:THR:HG22	2.43	0.52
1:B:389:ILE:HG23	1:B:399:PHE:CE1	2.45	0.52
1:D:26:LYS:HB3	1:D:27:PRO:HD3	1.91	0.52
1:A:177:MSE:CE	1:A:200:PRO:HB2	2.39	0.52
1:C:418:ALA:O	1:C:445:SER:HA	2.10	0.52
1:A:288:LEU:CD2	1:A:322:LEU:HD23	2.40	0.52
1:B:75:MSE:HG2	1:B:80:GLU:HG2	1.91	0.52
1:B:310:LEU:HD12	1:B:377:PHE:CD1	2.44	0.52
1:B:349:LEU:CD1	1:B:384:LEU:HD11	2.38	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:166:ILE:HA	1:B:256:ASP:OD2	2.09	0.52
1:C:288:LEU:O	1:C:292:LEU:HD22	2.09	0.52
1:D:61:GLN:OE1	1:D:98:ARG:NH1	2.42	0.52
1:D:150:TRP:O	1:D:245:ARG:NH2	2.41	0.52
1:D:374:PRO:HB3	1:D:380:ALA:N	2.24	0.52
1:A:456:ASP:OD2	1:A:458:ARG:NH1	2.41	0.52
1:B:26:LYS:HA	1:B:29:MSE:HE3	1.91	0.52
1:B:194:ARG:HB2	1:B:197:ARG:HG3	1.92	0.52
1:D:363:GLU:OE1	1:D:363:GLU:O	2.28	0.52
1:C:90:GLU:OE1	1:C:131:LYS:HD2	2.09	0.52
1:D:94:LYS:HG3	1:D:560:SER:O	2.09	0.52
1:D:161:THR:HA	1:D:257:PHE:CE1	2.45	0.52
1:D:327:MSE:HE3	1:D:337:ALA:CA	2.40	0.52
1:B:298:ILE:HG22	1:B:300:LYS:H	1.73	0.52
1:C:137:ILE:O	1:C:140:ARG:HG2	2.10	0.52
1:C:504:ASP:N	1:C:504:ASP:OD2	2.42	0.52
1:A:46:GLN:HG3	1:A:51:GLN:HG3	1.92	0.52
1:A:377:PHE:CE2	1:A:389:ILE:HD11	2.33	0.52
1:A:552:TYR:HE1	1:A:556:ARG:CZ	2.23	0.52
1:D:307:ILE:HD13	1:D:388:THR:OG1	2.10	0.52
1:D:518:ASN:ND2	1:D:518:ASN:N	2.57	0.52
1:C:144:ARG:HD2	1:C:144:ARG:O	2.10	0.52
1:A:374:PRO:HB3	1:A:380:ALA:N	2.25	0.51
1:A:518:ASN:O	1:A:522:VAL:HG23	2.10	0.51
1:B:177:MSE:C	1:B:180:PRO:HD2	2.28	0.51
1:C:297:VAL:CG2	1:C:442:LEU:HD11	2.39	0.51
1:D:140:ARG:NH2	1:D:230:GLN:O	2.43	0.51
1:A:183:LYS:HG3	1:A:471:PHE:CE1	2.45	0.51
1:A:251:LEU:HD22	1:A:252:ILE:N	2.25	0.51
1:C:218:TYR:O	1:D:57:LYS:HE2	2.11	0.51
1:B:196:ASP:OD1	1:B:197:ARG:HG2	2.11	0.51
1:B:533:TYR:CZ	1:B:537:ASN:ND2	2.78	0.51
1:C:374:PRO:HG3	1:C:383:ILE:HD12	1.92	0.51
1:D:551:LYS:HD2	1:D:555:GLU:OE1	2.11	0.51
1:A:389:ILE:O	1:A:390:ILE:HD13	2.10	0.51
1:A:533:TYR:O	1:A:537:ASN:ND2	2.43	0.51
1:B:493:GLU:HG3	1:B:533:TYR:CD1	2.45	0.51
1:A:297:VAL:HG21	1:A:442:LEU:HD11	1.93	0.51
1:C:528:ILE:HA	1:C:531:THR:CG2	2.40	0.51
1:D:501:GLN:HE22	1:D:525:ASN:HB2	1.74	0.51
1:B:228:THR:OG1	1:B:230:GLN:HG3	2.10	0.51

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:453:LYS:NZ	1:A:457:GLY:HA2	2.24	0.51
1:B:43:GLN:O	1:B:47:MSE:HE3	2.11	0.51
1:B:354:ARG:CD	1:B:358:ILE:HD11	2.40	0.51
1:D:163:GLY:HA2	1:D:166:ILE:HD11	1.93	0.51
1:A:144:ARG:HH21	1:A:245:ARG:HG3	1.75	0.51
1:B:137:ILE:HA	1:B:234:LEU:HD22	1.93	0.51
1:B:401:PRO:HB3	1:B:436:LEU:HD21	1.92	0.51
1:C:167:LEU:HD23	4:C:2603:MAK:C1	2.41	0.51
1:C:288:LEU:HG	1:C:292:LEU:HD22	1.93	0.51
1:A:263:PHE:CZ	1:A:314:GLU:HA	2.46	0.51
1:B:296:LYS:NZ	1:B:507:LEU:HD11	2.25	0.51
1:D:226:ASP:C	1:D:226:ASP:OD1	2.49	0.51
1:B:505:GLU:O	1:B:509:GLN:HG2	2.11	0.51
1:D:283:THR:HA	1:D:286:VAL:HG23	1.92	0.51
1:A:61:GLN:HG3	1:A:562:TYR:CE1	2.46	0.50
1:A:239:MSE:O	1:A:243:THR:HG23	2.12	0.50
1:B:182:GLY:O	1:B:185:CYS:HB2	2.11	0.50
1:B:431:GLU:N	5:B:4069:HOH:O	2.44	0.50
1:A:350:LEU:HD22	1:A:358:ILE:CD1	2.40	0.50
1:C:441:CYS:O	1:C:442:LEU:HD23	2.11	0.50
1:D:108:MSE:HA	1:D:111:VAL:HG22	1.93	0.50
1:D:140:ARG:HG3	1:D:140:ARG:O	2.11	0.50
1:A:68:PHE:CD2	1:A:99:ILE:HD11	2.47	0.50
1:A:305:HIS:O	1:A:340:LYS:HD2	2.12	0.50
1:A:412:GLU:O	1:A:440:ARG:NH1	2.44	0.50
1:A:418:ALA:O	1:A:445:SER:HA	2.11	0.50
1:B:447:SER:HB3	1:B:448:PRO:HD2	1.93	0.50
1:C:160:VAL:HG11	1:C:238:PHE:CZ	2.46	0.50
1:D:191:ALA:O	1:D:476:LEU:HD22	2.10	0.50
1:B:251:LEU:HD23	1:B:252:ILE:N	2.27	0.50
1:B:418:ALA:CB	1:B:427:GLU:HB2	2.41	0.50
1:C:446:GLY:O	1:C:466:ASN:ND2	2.42	0.50
1:A:319:ILE:HG22	1:A:323:ILE:HD11	1.93	0.50
1:C:127:PHE:CE2	1:D:38:MSE:HE2	2.47	0.50
1:C:286:VAL:HG13	1:C:470:ILE:HG12	1.93	0.50
1:A:354:ARG:NE	1:A:356:ALA:O	2.44	0.50
1:A:413:ARG:HA	1:A:440:ARG:O	2.12	0.50
1:B:144:ARG:HH12	1:B:244:ASP:HB3	1.75	0.50
1:D:300:LYS:HE2	1:D:301:PRO:N	2.26	0.50
1:D:351:VAL:HB	1:D:369:ALA:HB2	1.94	0.50
1:A:26:LYS:HG3	1:B:151:PRO:CG	2.41	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:165:ARG:HH21	1:B:167:LEU:CA	2.24	0.50
1:C:358:ILE:HG23	1:C:362:GLN:HE21	1.76	0.50
1:C:396:GLY:HA2	1:C:425:GLN:HA	1.93	0.50
1:D:314:GLU:HB2	3:D:3601:NAD:O1N	2.12	0.50
1:D:437:THR:O	1:D:438:GLU:HB2	2.12	0.50
1:B:94:LYS:HE2	1:B:558:TRP:CZ2	2.46	0.50
1:B:287:ALA:CB	1:B:319:ILE:HG21	2.39	0.50
1:A:404:ILE:HD13	1:A:436:LEU:HD23	1.94	0.49
1:C:456:ASP:OD1	1:C:456:ASP:C	2.50	0.49
1:D:194:ARG:HE	1:D:197:ARG:HH11	1.59	0.49
1:D:404:ILE:CG2	1:D:436:LEU:HB3	2.42	0.49
1:A:226:ASP:OD1	1:A:226:ASP:C	2.48	0.49
1:A:295:GLN:HE22	1:A:299:SER:HA	1.77	0.49
1:C:210:ILE:O	1:C:214:LYS:HG2	2.12	0.49
1:D:394:GLY:HA2	1:D:420:SER:HB3	1.94	0.49
1:D:557:THR:O	1:D:559:ARG:NH2	2.45	0.49
1:A:243:THR:HG21	1:A:273:TYR:CE2	2.46	0.49
1:A:551:LYS:HB3	1:A:551:LYS:HZ2	1.76	0.49
1:D:186:LEU:HD13	1:D:468:VAL:CG2	2.42	0.49
1:A:294:ALA:O	1:A:297:VAL:HG13	2.12	0.49
1:B:174:VAL:HG12	1:B:174:VAL:O	2.10	0.49
1:B:370:PRO:HD2	1:B:373:ILE:CD1	2.42	0.49
1:D:177:MSE:HE1	1:D:181:VAL:CG2	2.24	0.49
1:A:61:GLN:HA	1:A:64:GLN:NE2	2.26	0.49
1:A:332:LEU:CD2	1:A:340:LYS:NZ	2.75	0.49
1:A:529:LYS:NZ	1:A:532:GLU:OE1	2.46	0.49
1:D:321:ASN:O	1:D:325:MSE:HG3	2.13	0.49
1:D:447:SER:HB3	1:D:448:PRO:HD2	1.95	0.49
1:A:482:ASN:HD21	3:A:602:NAD:H4B	1.78	0.49
1:D:91:ARG:HH11	1:D:91:ARG:CG	2.23	0.49
1:A:174:VAL:HG12	1:A:219:MSE:HE2	1.95	0.49
1:A:461:THR:O	1:A:511:ARG:HG2	2.12	0.49
1:B:334:GLU:HG3	1:B:338:GLN:HE21	1.74	0.49
1:B:370:PRO:HG2	1:B:372:SER:O	2.12	0.49
1:D:132:GLY:HA2	1:D:200:PRO:HD2	1.93	0.49
1:D:329:GLU:C	1:D:330:ASN:HD22	2.16	0.49
1:A:478:VAL:HG13	1:A:483:THR:HB	1.95	0.49
1:C:47:MSE:C	1:C:48:LEU:HD23	2.33	0.49
1:B:75:MSE:HG2	1:B:80:GLU:CG	2.43	0.49
1:B:320:ALA:O	1:B:324:VAL:HG23	2.13	0.49
1:C:128:ARG:HG2	1:D:91:ARG:HD3	1.95	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:238:PHE:CE1	1:C:242:ILE:HG13	2.47	0.49
1:C:306:LYS:HZ3	1:C:306:LYS:HB2	1.77	0.49
1:C:476:LEU:HD23	1:C:527:ALA:CB	2.43	0.49
1:C:495:ALA:O	1:C:499:THR:HG22	2.13	0.49
1:C:552:TYR:CD1	1:C:556:ARG:NH1	2.81	0.49
1:D:287:ALA:HB3	1:D:319:ILE:HG23	1.95	0.48
1:D:506:GLU:O	1:D:511:ARG:HG2	2.13	0.48
1:C:529:LYS:O	1:C:532:GLU:HB2	2.14	0.48
1:D:239:MSE:O	1:D:243:THR:HG23	2.12	0.48
1:A:64:GLN:HB3	1:A:95:LEU:HD22	1.94	0.48
1:A:227:ARG:NH1	1:A:227:ARG:CG	2.71	0.48
1:B:144:ARG:HH12	1:B:244:ASP:CB	2.26	0.48
1:B:481:CYS:SG	1:B:531:THR:HB	2.53	0.48
1:C:351:VAL:HG11	1:C:369:ALA:HA	1.96	0.48
1:D:104:ILE:O	1:D:108:MSE:HB2	2.13	0.48
1:D:115:THR:HG22	1:D:115:THR:O	2.13	0.48
1:D:174:VAL:C	1:D:176:GLY:H	2.17	0.48
1:A:174:VAL:C	1:A:176:GLY:H	2.16	0.48
1:A:261:ASN:HD22	1:A:264:ARG:NE	2.09	0.48
1:A:261:ASN:HD21	1:A:264:ARG:HH21	1.59	0.48
1:A:300:LYS:NZ	1:A:304:GLU:HB2	2.28	0.48
1:A:300:LYS:NZ	1:A:304:GLU:O	2.44	0.48
1:B:323:ILE:HG21	1:B:341:ILE:HD11	1.95	0.48
1:C:33:ARG:NH2	1:C:152:GLU:HG3	2.27	0.48
1:C:184:LEU:HD12	1:C:200:PRO:HG3	1.95	0.48
1:C:441:CYS:C	1:C:442:LEU:HD23	2.34	0.48
1:D:208:ASP:OD1	1:D:225:ARG:HG3	2.14	0.48
1:D:287:ALA:CB	1:D:319:ILE:HD13	2.43	0.48
1:D:397:ARG:HA	1:D:427:GLU:O	2.12	0.48
1:A:166:ILE:HG23	1:A:179:ILE:HG13	1.96	0.48
1:A:369:ALA:HB1	1:A:373:ILE:CD1	2.41	0.48
1:C:46:GLN:HG2	1:C:51:GLN:HG3	1.95	0.48
1:C:351:VAL:HA	1:C:367:HIS:O	2.14	0.48
1:C:400:THR:O	1:C:404:ILE:HG12	2.13	0.48
1:D:502:LEU:HD11	1:D:507:LEU:HG	1.95	0.48
1:A:285:ALA:HB1	1:A:470:ILE:HD12	1.94	0.48
1:A:332:LEU:CD2	1:A:340:LYS:HZ3	2.26	0.48
1:B:276:PHE:CD1	1:B:276:PHE:C	2.87	0.48
1:D:197:ARG:HH11	1:D:197:ARG:HG2	1.78	0.48
1:D:211:ALA:HA	1:D:214:LYS:HE3	1.95	0.48
1:D:404:ILE:HG21	1:D:436:LEU:HB3	1.95	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:474:VAL:O	1:D:478:VAL:HG23	2.14	0.48
1:D:506:GLU:CG	1:D:511:ARG:HD2	2.43	0.48
1:A:177:MSE:HE2	1:A:181:VAL:HG23	1.96	0.48
1:B:297:VAL:HG21	1:B:442:LEU:HD21	1.95	0.48
1:D:91:ARG:HG3	1:D:91:ARG:NH1	2.23	0.48
1:A:144:ARG:NH2	1:A:245:ARG:CG	2.77	0.48
1:A:331:GLY:O	1:A:332:LEU:O	2.31	0.48
1:D:157:ALA:HB2	1:D:479:ILE:HD11	1.96	0.48
1:D:506:GLU:O	1:D:511:ARG:CG	2.62	0.48
1:B:533:TYR:CE1	1:B:537:ASN:ND2	2.80	0.48
1:C:447:SER:HB3	1:C:448:PRO:HD2	1.96	0.48
1:A:204:ASP:OD2	1:A:221:LEU:HB2	2.14	0.48
1:B:389:ILE:HG22	1:B:416:ILE:HA	1.96	0.48
1:D:555:GLU:HB3	1:D:556:ARG:HH11	1.79	0.48
1:A:253:GLN:HB2	1:A:276:PHE:CE2	2.49	0.47
1:A:396:GLY:O	1:A:398:LEU:HD23	2.14	0.47
1:B:69:HIS:CE1	1:B:102:ASP:OD2	2.67	0.47
1:B:401:PRO:HA	1:B:436:LEU:CD2	2.44	0.47
1:D:344:PHE:CZ	1:D:348:GLY:HA2	2.49	0.47
1:A:295:GLN:HE22	1:A:299:SER:C	2.17	0.47
1:B:415:VAL:C	1:B:416:ILE:HD12	2.34	0.47
1:B:549:LYS:HD3	1:B:549:LYS:N	2.28	0.47
1:C:177:MSE:O	1:C:181:VAL:HG23	2.14	0.47
1:D:144:ARG:HH12	1:D:244:ASP:HB2	1.79	0.47
1:D:329:GLU:CG	1:D:330:ASN:ND2	2.78	0.47
1:B:51:GLN:HA	1:B:51:GLN:NE2	2.24	0.47
1:B:416:ILE:HD12	1:B:416:ILE:N	2.29	0.47
1:C:521:GLU:HG3	1:C:522:VAL:N	2.28	0.47
1:D:204:ASP:OD2	1:D:221:LEU:HD22	2.13	0.47
1:D:249:ASN:C	1:D:249:ASN:ND2	2.65	0.47
1:D:557:THR:OG1	1:D:559:ARG:NH1	2.47	0.47
1:A:108:MSE:HG3	1:A:112:TYR:HB3	1.96	0.47
1:A:549:LYS:H	1:A:549:LYS:HD3	1.79	0.47
1:B:497:ALA:O	1:B:501:GLN:HG3	2.14	0.47
1:C:228:THR:OG1	1:C:230:GLN:HB2	2.14	0.47
1:C:546:PRO:O	1:C:549:LYS:CE	2.63	0.47
1:D:438:GLU:O	1:D:458:ARG:NH2	2.47	0.47
1:D:530:VAL:CG1	1:D:534:LEU:HD21	2.45	0.47
1:B:301:PRO:HB2	1:B:304:GLU:HG3	1.97	0.47
1:D:104:ILE:HG13	1:D:108:MSE:HE2	1.96	0.47
1:D:186:LEU:O	1:D:190:CYS:HB2	2.13	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:404:ILE:HG23	1:A:416:ILE:HD13	1.97	0.47
1:B:163:GLY:HA2	1:B:166:ILE:HD11	1.96	0.47
1:B:231:TYR:HE2	1:B:265:PHE:CZ	2.33	0.47
1:B:504:ASP:O	1:B:508:ALA:N	2.47	0.47
1:B:506:GLU:HA	1:B:509:GLN:HG3	1.97	0.47
1:C:400:THR:HB	1:C:401:PRO:HD2	1.96	0.47
1:C:525:ASN:O	1:C:529:LYS:HG2	2.15	0.47
1:D:43:GLN:O	1:D:47:MSE:HE3	2.14	0.47
1:D:136:SER:HB2	1:D:221:LEU:HD22	1.96	0.47
1:A:57:LYS:HD3	1:B:218:TYR:O	2.15	0.47
1:A:209:ASN:OD1	1:A:211:ALA:HB3	2.15	0.47
1:D:288:LEU:HG	1:D:292:LEU:CD2	2.42	0.47
1:A:93:GLU:O	1:A:96:PHE:HB3	2.15	0.47
1:A:392:VAL:CG1	5:A:4006:HOH:O	2.63	0.47
1:A:556:ARG:CG	1:A:556:ARG:NH1	2.71	0.47
1:C:165:ARG:NH1	3:C:2601:NAD:O1N	2.45	0.47
1:D:68:PHE:CG	1:D:99:ILE:HG13	2.49	0.47
1:D:107:LEU:O	1:D:111:VAL:HG13	2.15	0.47
1:B:550:ALA:O	1:B:554:LYS:HG3	2.14	0.47
1:C:394:GLY:HA2	1:C:420:SER:HB3	1.97	0.47
1:B:302:ILE:HG13	1:B:332:LEU:HD11	1.97	0.46
1:B:419:LEU:O	3:B:1601:NAD:H2N	2.15	0.46
1:B:559:ARG:HB3	1:B:561:GLU:OE1	2.15	0.46
1:C:150:TRP:CE2	1:C:199:LEU:HD13	2.50	0.46
1:C:259:ASN:O	1:C:262:ALA:HB3	2.15	0.46
1:D:339:LYS:HA	1:D:367:HIS:NE2	2.31	0.46
1:A:96:PHE:O	1:A:100:LEU:HD22	2.15	0.46
1:B:23:GLU:HG3	1:B:24:LYS:N	2.30	0.46
1:B:165:ARG:HH21	1:B:167:LEU:HA	1.80	0.46
1:D:184:LEU:HD12	1:D:200:PRO:CG	2.44	0.46
1:A:175:TYR:CZ	1:A:218:TYR:HA	2.50	0.46
1:A:255:GLU:OE2	1:A:278:ASP:HB3	2.15	0.46
1:A:349:LEU:HD23	1:A:351:VAL:CG1	2.45	0.46
1:C:396:GLY:O	1:C:398:LEU:HD22	2.14	0.46
1:D:267:ARG:CZ	1:D:267:ARG:HB2	2.46	0.46
1:D:330:ASN:HD22	1:D:330:ASN:N	2.13	0.46
1:B:211:ALA:O	1:B:214:LYS:HG3	2.16	0.46
1:C:68:PHE:CD2	1:C:99:ILE:CG1	2.99	0.46
1:C:302:ILE:HG23	1:C:303:SER:N	2.31	0.46
1:C:516:LEU:HD12	1:C:516:LEU:O	2.16	0.46
1:A:142:HIS:HB3	1:D:568:ASP:OD1	2.16	0.46

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:328:VAL:C	1:A:330:ASN:H	2.19	0.46
1:A:372:SER:O	1:A:374:PRO:HD3	2.16	0.46
1:B:43:GLN:O	1:B:47:MSE:HB2	2.16	0.46
1:A:42:LEU:HD11	1:A:46:GLN:NE2	2.30	0.46
1:A:108:MSE:N	1:A:109:PRO:CD	2.78	0.46
1:B:57:LYS:HZ3	1:B:59:GLU:HG2	1.81	0.46
1:B:333:SER:H	1:B:336:GLU:CG	2.28	0.46
1:C:293:ALA:O	1:C:296:LYS:HB2	2.16	0.46
1:A:183:LYS:HE2	1:A:255:GLU:OE1	2.15	0.46
1:B:401:PRO:HA	1:B:436:LEU:HD23	1.97	0.46
1:C:298:ILE:HD11	1:C:413:ARG:O	2.16	0.46
1:D:535:TYR:OH	1:D:542:ARG:HB3	2.15	0.46
1:A:207:THR:O	1:A:224:LYS:HA	2.16	0.46
1:A:251:LEU:HD22	1:A:252:ILE:H	1.81	0.46
1:C:72:LEU:HA	1:C:75:MSE:HG3	1.97	0.46
1:C:106:SER:O	1:C:109:PRO:HD2	2.16	0.46
1:C:308:LEU:HD13	1:C:384:LEU:HD23	1.97	0.46
1:D:55:PRO:HA	1:D:56:PRO:HD3	1.86	0.46
1:D:520:GLN:H	1:D:520:GLN:HE21	1.64	0.46
1:A:171:ASP:OD1	1:A:207:THR:OG1	2.30	0.46
1:A:177:MSE:HE3	1:A:177:MSE:O	2.15	0.46
1:A:177:MSE:HE3	1:A:180:PRO:CG	2.45	0.46
1:B:32:PRO:HG3	1:B:90:GLU:O	2.15	0.46
1:B:404:ILE:HD12	1:B:436:LEU:HD22	1.98	0.46
1:A:72:LEU:HA	1:A:75:MSE:HG3	1.97	0.46
1:A:420:SER:HA	3:A:601:NAD:H1D	1.98	0.46
1:C:158:VAL:HG12	1:C:160:VAL:HG13	1.98	0.46
1:C:320:ALA:O	1:C:324:VAL:HG23	2.15	0.45
1:C:431:GLU:HA	1:C:452:VAL:HG11	1.98	0.45
1:D:502:LEU:HD13	1:D:507:LEU:HG	1.99	0.45
1:A:161:THR:HA	1:A:257:PHE:CE1	2.52	0.45
1:A:188:THR:HG21	1:A:195:PRO:HG3	1.99	0.45
1:A:295:GLN:NE2	1:A:299:SER:CA	2.79	0.45
1:B:36:LYS:HB2	1:B:40:PHE:CE1	2.51	0.45
1:B:156:LYS:HG3	1:B:197:ARG:CD	2.46	0.45
1:B:504:ASP:HA	1:B:507:LEU:HB2	1.98	0.45
1:D:338:GLN:HB2	1:D:339:LYS:NZ	2.31	0.45
1:D:397:ARG:H	1:D:397:ARG:HG2	1.63	0.45
1:A:295:GLN:HE22	1:A:300:LYS:H	1.63	0.45
1:A:332:LEU:H	1:A:332:LEU:CD1	2.28	0.45
1:A:522:VAL:O	1:A:526:ILE:HG12	2.17	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:323:ILE:HG23	1:B:327:MSE:HE3	1.99	0.45
1:D:358:ILE:HG12	1:D:366:THR:OG1	2.16	0.45
1:D:552:TYR:CE1	1:D:556:ARG:CZ	2.99	0.45
1:A:167:LEU:HD23	4:A:603:MAK:O1	2.17	0.45
1:A:382:ASN:O	1:A:385:LYS:NZ	2.42	0.45
1:A:404:ILE:CD1	1:A:436:LEU:HD23	2.46	0.45
1:B:194:ARG:HG3	3:B:1602:NAD:C6A	2.45	0.45
1:D:77:SER:O	1:D:81:LYS:HG3	2.16	0.45
1:A:43:GLN:OE1	1:A:43:GLN:HA	2.17	0.45
1:A:95:LEU:O	1:A:95:LEU:HD12	2.17	0.45
1:A:140:ARG:HB3	1:A:234:LEU:HD13	1.98	0.45
1:C:310:LEU:HD21	1:C:398:LEU:HD23	1.99	0.45
1:D:191:ALA:HB1	1:D:476:LEU:HD22	1.97	0.45
1:D:534:LEU:N	1:D:534:LEU:HD23	2.31	0.45
1:A:392:VAL:O	3:A:601:NAD:H51N	2.17	0.45
1:A:467:ASN:O	1:A:471:PHE:CD2	2.67	0.45
1:B:229:GLN:NE2	1:B:232:ASP:CB	2.74	0.45
1:B:387:SER:HA	1:B:411:ASN:OD1	2.16	0.45
1:B:397:ARG:HA	1:B:427:GLU:O	2.15	0.45
1:B:210:ILE:HD12	1:B:210:ILE:H	1.81	0.45
1:B:359:ASP:O	1:B:360:SER:C	2.54	0.45
1:B:524:ILE:O	1:B:528:ILE:CG1	2.64	0.45
1:A:438:GLU:O	1:A:458:ARG:NH2	2.50	0.45
1:C:375:ASP:N	1:C:375:ASP:OD1	2.49	0.45
1:D:89:GLN:HG2	1:D:131:LYS:NZ	2.31	0.45
1:D:171:ASP:OD2	1:D:225:ARG:NE	2.43	0.45
1:D:471:PHE:N	1:D:472:PRO:CD	2.80	0.45
1:A:551:LYS:O	1:A:555:GLU:HG3	2.16	0.45
1:B:298:ILE:HG22	1:B:300:LYS:HB2	1.97	0.45
1:B:302:ILE:HD12	1:B:305:HIS:ND1	2.32	0.45
1:B:456:ASP:OD1	1:B:458:ARG:HD3	2.17	0.45
1:B:524:ILE:O	1:B:528:ILE:HG12	2.17	0.45
1:C:325:MSE:HE1	1:C:489:SER:HA	1.99	0.45
1:D:22:LYS:O	1:D:22:LYS:CD	2.65	0.45
1:D:108:MSE:N	1:D:109:PRO:CD	2.80	0.45
1:A:160:VAL:CG2	1:A:203:ILE:CD1	2.95	0.44
1:A:400:THR:O	1:A:403:VAL:HB	2.17	0.44
1:B:373:ILE:O	1:B:373:ILE:CG2	2.65	0.44
1:D:313:GLY:HA3	3:D:3601:NAD:O5B	2.17	0.44
1:D:374:PRO:HB3	1:D:379:ASP:CB	2.47	0.44
1:A:177:MSE:HE3	1:A:180:PRO:CD	2.45	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:305:HIS:O	1:A:340:LYS:CD	2.65	0.44
1:B:65:ALA:HA	1:B:99:ILE:HD11	1.98	0.44
1:B:259:ASN:OD1	1:B:263:PHE:HE1	2.00	0.44
1:B:298:ILE:HD11	1:B:442:LEU:CD1	2.47	0.44
1:B:342:TRP:CZ3	1:B:349:LEU:HD21	2.50	0.44
1:B:349:LEU:HD22	1:B:351:VAL:HG13	2.00	0.44
1:C:85:ILE:HD12	1:C:85:ILE:C	2.38	0.44
1:C:546:PRO:O	1:C:549:LYS:HE3	2.18	0.44
1:D:554:LYS:HG2	1:D:554:LYS:H	1.59	0.44
1:A:97:TYR:HA	1:A:100:LEU:CD2	2.47	0.44
1:A:177:MSE:CE	1:A:177:MSE:O	2.66	0.44
1:A:261:ASN:ND2	1:A:264:ARG:HE	2.10	0.44
1:A:554:LYS:HB3	1:A:554:LYS:HE2	1.61	0.44
1:B:36:LYS:HB2	1:B:40:PHE:CD1	2.53	0.44
1:C:388:THR:CG2	1:C:389:ILE:N	2.80	0.44
1:D:266:LEU:O	1:D:270:ARG:HG2	2.18	0.44
1:A:96:PHE:O	1:A:99:ILE:HG22	2.17	0.44
1:B:321:ASN:O	1:B:325:MSE:HG3	2.17	0.44
1:B:358:ILE:HA	1:B:362:GLN:HE21	1.81	0.44
1:C:295:GLN:O	1:C:299:SER:N	2.45	0.44
1:C:412:GLU:O	1:C:440:ARG:HD2	2.17	0.44
1:D:83:ILE:HD11	1:D:126:ILE:HG21	1.99	0.44
1:D:346:LYS:HG2	3:D:3601:NAD:O2B	2.16	0.44
1:A:29:MSE:HE2	1:A:29:MSE:HB3	1.83	0.44
1:A:108:MSE:HE2	1:A:108:MSE:HB2	1.94	0.44
1:A:150:TRP:CD2	1:A:151:PRO:HD2	2.53	0.44
1:A:398:LEU:N	1:A:398:LEU:CD2	2.80	0.44
1:B:29:MSE:HE1	1:B:53:LEU:HD13	2.00	0.44
1:B:132:GLY:HA3	1:B:200:PRO:HG2	2.00	0.44
1:C:186:LEU:HD13	1:C:468:VAL:CG2	2.48	0.44
1:D:23:GLU:OE1	1:D:24:LYS:N	2.44	0.44
1:D:150:TRP:CE2	1:D:199:LEU:HD13	2.53	0.44
1:A:174:VAL:HG23	1:A:204:ASP:OD1	2.18	0.44
1:B:108:MSE:N	1:B:109:PRO:HD2	2.33	0.44
1:B:447:SER:HB3	1:B:448:PRO:CD	2.48	0.44
1:C:502:LEU:HD13	1:C:507:LEU:HG	2.00	0.44
1:D:293:ALA:O	1:D:296:LYS:HB2	2.18	0.44
1:D:559:ARG:HA	1:D:559:ARG:HD3	1.82	0.44
1:A:219:MSE:HE2	1:A:219:MSE:HB2	1.84	0.44
1:B:91:ARG:HG3	1:B:91:ARG:HH11	1.82	0.44
1:C:248:ARG:CG	1:C:248:ARG:NH1	2.80	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:46:GLN:HG3	1:A:51:GLN:CG	2.47	0.44
1:A:239:MSE:HE1	1:A:254:PHE:CE1	2.52	0.44
1:C:130:PRO:C	1:C:131:LYS:HG2	2.38	0.44
1:C:172:LEU:O	1:C:175:TYR:HB2	2.17	0.44
1:C:186:LEU:O	1:C:190:CYS:HB2	2.18	0.44
1:C:455:THR:CG2	5:C:4002:HOH:O	2.66	0.44
1:D:75:MSE:HE1	1:D:84:TYR:CB	2.48	0.44
1:A:174:VAL:C	1:A:176:GLY:N	2.71	0.44
1:B:229:GLN:NE2	1:B:229:GLN:CA	2.79	0.44
1:B:401:PRO:O	1:B:405:ARG:HB2	2.18	0.44
1:B:477:ALA:CB	1:B:531:THR:HG22	2.47	0.44
1:C:136:SER:HB2	1:C:221:LEU:HD22	2.00	0.44
1:A:498:LEU:HB2	1:A:526:ILE:HD11	2.00	0.43
1:B:288:LEU:O	1:B:292:LEU:HD22	2.17	0.43
1:B:319:ILE:HG13	1:B:319:ILE:H	1.55	0.43
1:D:467:ASN:OD1	4:D:3603:MAK:O5	2.36	0.43
1:A:85:ILE:HG12	1:A:86:MSE:N	2.33	0.43
1:A:188:THR:HG23	1:A:193:ILE:O	2.18	0.43
1:C:261:ASN:HB3	1:C:265:PHE:CE1	2.54	0.43
1:C:286:VAL:HG11	1:C:466:ASN:C	2.38	0.43
1:D:197:ARG:NH1	1:D:197:ARG:HG2	2.33	0.43
1:A:332:LEU:HD23	1:A:340:LYS:HZ3	1.84	0.43
1:A:341:ILE:O	1:A:367:HIS:NE2	2.50	0.43
1:A:549:LYS:O	1:A:552:TYR:HB3	2.18	0.43
1:B:350:LEU:N	1:B:350:LEU:HD23	2.33	0.43
1:B:357:LYS:H	1:B:357:LYS:HG2	1.36	0.43
1:D:328:VAL:HA	1:D:332:LEU:O	2.18	0.43
1:D:359:ASP:O	1:D:360:SER:C	2.56	0.43
1:A:388:THR:CG2	1:A:390:ILE:HD11	2.48	0.43
1:C:68:PHE:CG	1:C:99:ILE:HG12	2.53	0.43
1:D:413:ARG:HA	1:D:440:ARG:O	2.18	0.43
1:A:46:GLN:CG	1:A:51:GLN:HG3	2.49	0.43
1:A:453:LYS:HE2	1:A:459:VAL:HG22	2.01	0.43
1:B:350:LEU:HD22	1:B:354:ARG:NH2	2.33	0.43
1:C:266:LEU:O	1:C:270:ARG:HG2	2.19	0.43
1:D:177:MSE:O	1:D:180:PRO:HD2	2.19	0.43
1:D:350:LEU:HD22	1:D:354:ARG:NH1	2.29	0.43
1:A:103:ASP:O	1:A:107:LEU:HD13	2.18	0.43
1:C:229:GLN:O	1:C:229:GLN:HG3	2.18	0.43
1:C:260:HIS:C	1:C:260:HIS:CD2	2.92	0.43
1:C:288:LEU:HG	1:C:292:LEU:CD2	2.48	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:381:VAL:CG1	1:C:382:ASN:N	2.81	0.43
1:C:453:LYS:HE3	1:C:457:GLY:CA	2.38	0.43
1:C:506:GLU:HB3	1:C:511:ARG:CD	2.49	0.43
1:D:286:VAL:HG21	1:D:467:ASN:HA	1.99	0.43
1:D:323:ILE:HG22	1:D:324:VAL:N	2.33	0.43
1:A:343:MSE:HE1	1:A:362:GLN:HG2	2.01	0.43
1:A:503:THR:HG23	1:A:506:GLU:CD	2.39	0.43
1:B:482:ASN:HD22	1:B:482:ASN:HA	1.61	0.43
1:B:524:ILE:N	1:B:524:ILE:CD1	2.80	0.43
1:C:26:LYS:HD3	1:D:151:PRO:CG	2.49	0.43
1:D:137:ILE:HB	1:D:205:VAL:CG1	2.46	0.43
1:D:298:ILE:O	1:D:299:SER:C	2.57	0.43
1:D:551:LYS:HE2	1:D:551:LYS:HB3	1.79	0.43
1:A:316:ALA:HB2	1:A:392:VAL:CG1	2.48	0.43
1:B:250:THR:O	1:B:252:ILE:HD12	2.19	0.43
1:B:288:LEU:HG	1:B:292:LEU:CD2	2.46	0.43
1:B:345:ASP:HB2	3:B:1601:NAD:O2B	2.19	0.43
1:C:304:GLU:HG2	1:C:304:GLU:H	1.55	0.43
1:D:75:MSE:HE3	1:D:81:LYS:CA	2.45	0.43
1:A:352:LYS:N	1:A:367:HIS:O	2.42	0.43
1:B:343:MSE:HB2	1:B:350:LEU:HG	2.01	0.43
1:B:410:ILE:HG22	1:B:411:ASN:CG	2.39	0.43
1:C:159:VAL:HG23	1:C:184:LEU:HD21	2.00	0.43
1:C:401:PRO:HA	1:C:404:ILE:HG13	2.01	0.43
1:D:308:LEU:O	1:D:389:ILE:HD13	2.18	0.43
1:D:389:ILE:HD13	1:D:389:ILE:HA	1.82	0.43
1:A:71:ASN:ND2	1:A:74:LYS:NZ	2.66	0.43
1:A:412:GLU:HG3	1:A:413:ARG:HG2	2.00	0.43
1:B:43:GLN:HG2	1:B:47:MSE:CE	2.49	0.43
1:B:184:LEU:HD12	1:B:200:PRO:HB3	2.01	0.43
1:D:301:PRO:O	1:D:302:ILE:C	2.57	0.43
1:D:546:PRO:HG2	1:D:552:TYR:CD2	2.54	0.43
1:A:29:MSE:O	1:A:35:ASN:ND2	2.51	0.42
1:A:177:MSE:O	1:A:180:PRO:HD2	2.19	0.42
1:A:389:ILE:CG2	1:A:416:ILE:HA	2.48	0.42
1:B:91:ARG:HH11	1:B:91:ARG:CG	2.32	0.42
1:B:161:THR:HA	1:B:257:PHE:CE1	2.54	0.42
1:B:286:VAL:HG11	1:B:466:ASN:O	2.19	0.42
1:C:68:PHE:CD2	1:C:99:ILE:HG13	2.54	0.42
1:C:136:SER:HA	1:C:204:ASP:O	2.19	0.42
1:D:174:VAL:C	1:D:176:GLY:N	2.71	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:315:ALA:O	1:D:319:ILE:HG13	2.19	0.42
1:D:552:TYR:O	1:D:556:ARG:NH1	2.52	0.42
1:A:73:LYS:HD2	1:A:73:LYS:HA	1.79	0.42
1:A:77:SER:OG	1:A:80:GLU:HB3	2.19	0.42
1:A:137:ILE:HG13	1:A:137:ILE:O	2.18	0.42
1:A:310:LEU:HD21	1:A:398:LEU:CB	2.49	0.42
1:A:503:THR:HG23	1:A:506:GLU:CG	2.49	0.42
1:B:46:GLN:HG2	1:B:51:GLN:HG3	2.01	0.42
1:B:301:PRO:CG	1:B:304:GLU:HG3	2.47	0.42
1:B:535:TYR:HE2	1:B:545:GLU:HB2	1.84	0.42
1:C:29:MSE:SE	1:C:50:LEU:HD22	2.70	0.42
1:C:546:PRO:HG2	1:C:549:LYS:CE	2.49	0.42
1:D:85:ILE:HG13	1:D:86:MSE:N	2.31	0.42
1:A:295:GLN:OE1	1:A:295:GLN:HA	2.20	0.42
1:A:559:ARG:HA	1:A:559:ARG:HD3	1.84	0.42
1:B:260:HIS:CE1	1:B:264:ARG:HE	2.37	0.42
1:B:483:THR:CG2	1:B:484:ARG:N	2.82	0.42
1:B:524:ILE:HG22	1:B:528:ILE:HD11	2.01	0.42
1:C:194:ARG:HA	1:C:195:PRO:HD3	1.91	0.42
1:D:430:ALA:HA	1:D:443:PHE:CE2	2.55	0.42
1:D:456:ASP:OD1	1:D:458:ARG:NH1	2.53	0.42
1:B:143:VAL:HG11	1:B:238:PHE:HA	2.02	0.42
1:B:243:THR:HG21	1:B:273:TYR:CE2	2.55	0.42
1:B:300:LYS:HA	1:B:301:PRO:HD2	1.91	0.42
1:B:325:MSE:HE2	1:B:325:MSE:HB3	1.91	0.42
1:B:528:ILE:HG23	1:B:550:ALA:HA	2.01	0.42
1:C:23:GLU:CD	1:C:24:LYS:H	2.22	0.42
1:C:25:GLY:C	1:C:27:PRO:HD2	2.40	0.42
1:D:431:GLU:O	1:D:435:THR:HB	2.20	0.42
1:D:566:LEU:HA	1:D:567:PRO:HD3	1.86	0.42
1:A:22:LYS:HE3	1:C:24:LYS:O	2.19	0.42
1:A:43:GLN:HG3	1:A:47:MSE:CE	2.50	0.42
1:A:172:LEU:HD23	1:A:172:LEU:HA	1.89	0.42
1:A:390:ILE:CD1	1:A:417:PHE:HB2	2.50	0.42
1:A:484:ARG:CZ	1:D:543:TYR:CD2	3.02	0.42
1:B:166:ILE:O	1:B:167:LEU:HB2	2.20	0.42
1:B:260:HIS:ND1	1:B:264:ARG:NE	2.67	0.42
1:C:128:ARG:HE	1:C:128:ARG:HB2	1.64	0.42
1:D:66:LEU:HD22	1:D:70:ARG:CD	2.50	0.42
1:D:412:GLU:HG3	1:D:413:ARG:CG	2.48	0.42
1:A:253:GLN:NE2	1:A:278:ASP:OD2	2.52	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:94:LYS:HE2	1:B:558:TRP:HZ2	1.84	0.42
1:B:150:TRP:HA	1:B:151:PRO:HD3	1.82	0.42
1:B:400:THR:O	1:B:403:VAL:HB	2.19	0.42
1:B:520:GLN:O	1:B:524:ILE:HD13	2.18	0.42
1:D:104:ILE:O	1:D:104:ILE:HG13	2.19	0.42
1:D:136:SER:HB2	1:D:221:LEU:CD2	2.49	0.42
1:D:344:PHE:C	1:D:344:PHE:CD2	2.92	0.42
1:A:53:LEU:N	1:A:53:LEU:HD23	2.34	0.42
1:A:201:VAL:HG12	1:A:202:CYS:N	2.35	0.42
1:B:345:ASP:OD2	1:B:347:TYR:N	2.49	0.42
1:B:397:ARG:H	1:B:397:ARG:HG2	1.40	0.42
1:C:128:ARG:CG	1:D:91:ARG:NE	2.81	0.42
1:D:63:ILE:CG2	1:D:64:GLN:N	2.83	0.42
1:A:24:LYS:HA	1:A:28:LEU:CD1	2.50	0.42
1:A:209:ASN:OD1	1:A:209:ASN:C	2.58	0.42
1:A:434:TYR:CZ	1:A:443:PHE:HB3	2.55	0.42
1:A:566:LEU:HA	1:A:567:PRO:HD3	1.91	0.42
1:B:313:GLY:O	1:B:317:LEU:HD12	2.20	0.42
1:B:314:GLU:HB2	3:B:1601:NAD:O1N	2.19	0.42
1:B:518:ASN:N	1:B:518:ASN:ND2	2.67	0.42
1:B:520:GLN:H	1:B:520:GLN:NE2	2.04	0.42
1:C:420:SER:HA	3:C:2601:NAD:H1D	2.02	0.42
1:D:407:MSE:HG3	1:D:414:PRO:HB3	2.01	0.42
1:B:252:ILE:O	1:B:252:ILE:HG22	2.20	0.42
1:B:288:LEU:HD23	1:B:495:ALA:CB	2.49	0.42
1:B:358:ILE:CG2	1:B:359:ASP:N	2.82	0.42
1:C:60:THR:O	1:C:64:GLN:HG3	2.20	0.42
1:D:239:MSE:HE1	1:D:254:PHE:HE1	1.85	0.42
1:C:307:ILE:HG22	1:C:308:LEU:N	2.34	0.42
1:C:419:LEU:O	3:C:2601:NAD:H2N	2.19	0.42
1:D:68:PHE:CZ	1:D:72:LEU:HD13	2.55	0.42
1:D:72:LEU:HD12	1:D:75:MSE:CE	2.42	0.42
1:D:75:MSE:HE1	1:D:84:TYR:HB3	2.02	0.42
1:D:239:MSE:HE1	1:D:254:PHE:CE1	2.55	0.42
1:D:530:VAL:O	1:D:533:TYR:HB3	2.20	0.42
1:C:44:GLU:O	1:C:48:LEU:HG	2.20	0.41
1:C:165:ARG:O	1:C:165:ARG:NE	2.53	0.41
1:D:115:THR:O	1:D:115:THR:CG2	2.68	0.41
1:D:217:PHE:O	1:D:218:TYR:C	2.59	0.41
1:A:43:GLN:HG3	1:A:47:MSE:HE3	2.02	0.41
1:A:47:MSE:HE3	1:A:47:MSE:HB2	1.82	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:300:LYS:HB3	1:A:300:LYS:NZ	2.28	0.41
1:A:518:ASN:HB3	1:A:521:GLU:OE2	2.20	0.41
1:B:162:ASP:OD2	1:B:257:PHE:CD2	2.73	0.41
1:D:22:LYS:HD3	1:D:22:LYS:C	2.40	0.41
1:A:57:LYS:HE3	1:B:222:TYR:OH	2.20	0.41
1:A:394:GLY:HA2	1:A:420:SER:CB	2.50	0.41
1:A:398:LEU:N	1:A:398:LEU:HD22	2.34	0.41
1:C:108:MSE:N	1:C:109:PRO:HD2	2.35	0.41
1:C:549:LYS:HD3	1:C:549:LYS:HA	1.76	0.41
1:D:36:LYS:NZ	1:D:44:GLU:OE2	2.53	0.41
1:A:135:ILE:O	1:A:203:ILE:HA	2.20	0.41
1:A:136:SER:HA	1:A:204:ASP:O	2.19	0.41
1:A:292:LEU:HD12	1:A:292:LEU:HA	1.93	0.41
1:A:454:LEU:HD22	1:A:454:LEU:HA	1.72	0.41
1:B:345:ASP:OD1	1:B:350:LEU:HD21	2.20	0.41
1:B:365:PHE:O	1:B:367:HIS:CD2	2.73	0.41
1:C:85:ILE:HD11	1:C:111:VAL:CG1	2.50	0.41
1:C:369:ALA:HA	1:C:370:PRO:HD3	1.82	0.41
1:D:133:LEU:HD23	1:D:133:LEU:HA	1.82	0.41
1:A:268:LYS:O	1:A:268:LYS:HG2	2.20	0.41
1:B:501:GLN:NE2	1:B:522:VAL:HG12	2.36	0.41
1:C:109:PRO:HA	1:C:113:THR:O	2.20	0.41
1:C:205:VAL:HG11	1:C:231:TYR:HD1	1.86	0.41
1:D:85:ILE:HG13	1:D:86:MSE:HE2	2.01	0.41
1:A:45:ARG:CZ	1:A:58:ILE:HD13	2.50	0.41
1:A:122:GLN:O	1:A:125:HIS:HB2	2.21	0.41
1:A:130:PRO:HG3	1:B:54:LEU:HD23	2.02	0.41
1:A:150:TRP:NE1	1:A:152:GLU:CD	2.74	0.41
1:A:301:PRO:O	1:A:302:ILE:C	2.56	0.41
1:A:492:LEU:CD2	1:A:496:LYS:HE3	2.35	0.41
1:B:144:ARG:NH1	1:B:244:ASP:HB2	2.36	0.41
1:B:315:ALA:HB3	1:B:392:VAL:CG2	2.49	0.41
1:B:456:ASP:OD1	1:B:456:ASP:C	2.59	0.41
1:B:503:THR:OG1	1:B:506:GLU:OE1	2.38	0.41
1:D:43:GLN:O	1:D:47:MSE:HB2	2.21	0.41
1:D:105:GLU:HG3	1:D:516:LEU:HD23	2.02	0.41
1:D:177:MSE:HG2	1:D:202:CYS:CB	2.43	0.41
1:A:29:MSE:HE1	1:A:54:LEU:CD2	2.51	0.41
1:A:191:ALA:O	1:A:476:LEU:HD22	2.21	0.41
1:A:392:VAL:HG13	5:A:4006:HOH:O	2.20	0.41
1:B:152:GLU:CG	1:B:196:ASP:HB2	2.50	0.41

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:358:ILE:HA	1:B:362:GLN:NE2	2.36	0.41
1:D:504:ASP:OD1	1:D:504:ASP:N	2.51	0.41
1:A:26:LYS:HA	1:A:29:MSE:HG3	2.02	0.41
1:A:300:LYS:HZ2	1:A:305:HIS:CD2	2.36	0.41
1:A:332:LEU:HD23	1:A:340:LYS:HZ1	1.86	0.41
1:A:371:GLU:OE2	1:A:371:GLU:N	2.36	0.41
1:B:164:GLU:OE1	1:B:225:ARG:HD3	2.21	0.41
1:B:394:GLY:HA2	1:B:420:SER:HB3	2.02	0.41
1:C:50:LEU:HA	1:C:53:LEU:HD12	2.02	0.41
1:C:90:GLU:OE1	1:C:131:LYS:CD	2.68	0.41
1:C:99:ILE:HG22	1:C:100:LEU:HD13	2.03	0.41
1:C:112:TYR:CG	1:C:113:THR:N	2.89	0.41
1:C:374:PRO:HB3	1:C:380:ALA:N	2.35	0.41
1:C:397:ARG:NH2	1:C:423:THR:O	2.54	0.41
1:D:407:MSE:HE2	1:D:407:MSE:HB2	1.92	0.41
1:D:493:GLU:HG2	1:D:533:TYR:CD1	2.55	0.41
1:A:79:LEU:O	1:A:79:LEU:HG	2.19	0.41
1:A:221:LEU:HD12	1:A:221:LEU:HA	1.92	0.41
1:A:401:PRO:O	1:A:405:ARG:HG3	2.21	0.41
1:A:446:GLY:O	1:A:466:ASN:ND2	2.46	0.41
1:A:502:LEU:HD21	1:A:506:GLU:HB2	2.03	0.41
1:B:478:VAL:CG1	1:B:483:THR:HB	2.40	0.41
1:B:528:ILE:CG2	1:B:550:ALA:HA	2.51	0.41
1:C:358:ILE:CG2	1:C:362:GLN:HB2	2.51	0.41
1:D:93:GLU:O	1:D:96:PHE:HB3	2.20	0.41
1:D:302:ILE:HD11	1:D:332:LEU:CD2	2.50	0.41
1:D:518:ASN:O	1:D:522:VAL:HG23	2.21	0.41
1:A:317:LEU:HD13	1:A:361:TYR:HB2	2.03	0.41
1:A:343:MSE:CE	1:A:362:GLN:HG2	2.51	0.41
1:B:535:TYR:CE2	1:B:545:GLU:HB2	2.56	0.41
1:C:183:LYS:HG3	1:C:471:PHE:CZ	2.55	0.41
1:D:376:THR:HG23	1:D:379:ASP:OD2	2.21	0.41
1:D:458:ARG:HB2	1:D:460:PHE:HE2	1.86	0.41
1:A:29:MSE:HE1	1:A:54:LEU:HD21	2.03	0.40
1:A:85:ILE:HG12	1:A:86:MSE:CE	2.45	0.40
1:C:55:PRO:HG3	1:D:134:PHE:CZ	2.56	0.40
1:C:546:PRO:CD	1:C:549:LYS:HE3	2.51	0.40
1:D:522:VAL:HG12	1:D:526:ILE:HD12	2.03	0.40
1:A:112:TYR:O	1:A:116:VAL:HG12	2.21	0.40
1:A:303:SER:OG	1:A:304:GLU:HG3	2.22	0.40
1:A:503:THR:HG23	1:A:506:GLU:OE1	2.21	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:85:ILE:HA	1:B:88:ILE:HG13	2.03	0.40
1:B:270:ARG:HE	1:B:270:ARG:HB2	1.65	0.40
1:B:454:LEU:HD11	1:B:460:PHE:HE2	1.86	0.40
1:C:137:ILE:HD12	1:C:234:LEU:HD22	2.02	0.40
1:A:68:PHE:CG	1:A:99:ILE:HG13	2.55	0.40
1:A:71:ASN:ND2	1:A:74:LYS:HZ1	2.20	0.40
1:A:329:GLU:O	1:A:329:GLU:HG3	2.20	0.40
1:B:112:TYR:CG	1:B:113:THR:N	2.90	0.40
1:B:298:ILE:HD11	1:B:442:LEU:HD13	2.03	0.40
1:B:346:LYS:HB2	1:B:346:LYS:NZ	2.32	0.40
1:D:91:ARG:CG	1:D:91:ARG:NH1	2.82	0.40
1:D:366:THR:HG22	1:D:366:THR:O	2.21	0.40
1:D:533:TYR:C	1:D:533:TYR:CD2	2.95	0.40
1:A:153:ASN:ND2	1:A:153:ASN:N	2.70	0.40
1:A:534:LEU:HD23	1:A:539:MSE:HE2	2.04	0.40
1:C:186:LEU:HD13	1:C:468:VAL:HG23	2.03	0.40
1:C:399:PHE:HB2	1:C:428:CYS:HB3	2.04	0.40
1:D:134:PHE:CE2	1:D:177:MSE:HG3	2.56	0.40
1:D:144:ARG:HD2	1:D:144:ARG:O	2.20	0.40
1:D:219:MSE:HE2	1:D:219:MSE:HB2	1.88	0.40
1:D:329:GLU:CG	1:D:330:ASN:HD22	2.32	0.40
1:D:339:LYS:HA	1:D:339:LYS:HD3	1.79	0.40
1:D:552:TYR:CD1	1:D:556:ARG:CZ	3.04	0.40
1:A:38:MSE:CB	1:A:59:GLU:HG3	2.51	0.40
1:A:397:ARG:HG3	1:A:427:GLU:O	2.20	0.40
1:B:520:GLN:HE21	1:B:520:GLN:N	2.03	0.40
1:C:217:PHE:O	1:C:218:TYR:C	2.59	0.40
1:C:301:PRO:HD2	1:C:304:GLU:OE1	2.21	0.40
1:C:511:ARG:HH11	1:C:511:ARG:HB3	1.86	0.40
1:D:194:ARG:HH21	1:D:197:ARG:NE	2.20	0.40
1:D:359:ASP:OD2	1:D:362:GLN:HG3	2.22	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	551/584 (94%)	512 (93%)	34 (6%)	5 (1%)	14	31
1	B	551/584 (94%)	512 (93%)	32 (6%)	7 (1%)	10	21
1	C	551/584 (94%)	513 (93%)	34 (6%)	4 (1%)	19	38
1	D	551/584 (94%)	499 (91%)	43 (8%)	9 (2%)	8	17
All	All	2204/2336 (94%)	2036 (92%)	143 (6%)	25 (1%)	12	26

All (25) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	332	LEU
1	B	332	LEU
1	C	332	LEU
1	D	270	ARG
1	D	332	LEU
1	B	360	SER
1	D	397	ARG
1	A	103	ASP
1	B	123	TYR
1	B	209	ASN
1	C	392	VAL
1	D	56	PRO
1	D	103	ASP
1	A	56	PRO
1	B	369	ALA
1	D	218	TYR
1	D	335	GLN
1	C	56	PRO
1	C	360	SER
1	A	302	ILE
1	B	392	VAL
1	D	302	ILE
1	A	166	ILE
1	B	363	GLU
1	D	392	VAL

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	469/483 (97%)	371 (79%)	98 (21%)	1	1
1	B	469/483 (97%)	374 (80%)	95 (20%)	1	1
1	C	469/483 (97%)	380 (81%)	89 (19%)	1	2
1	D	469/483 (97%)	356 (76%)	113 (24%)	0	1
All	All	1876/1932 (97%)	1481 (79%)	395 (21%)	1	1

All (395) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	LYS
1	A	24	LYS
1	A	26	LYS
1	A	28	LEU
1	A	29	MSE
1	A	63	ILE
1	A	70	ARG
1	A	73	LYS
1	A	75	MSE
1	A	76	THR
1	A	80	GLU
1	A	85	ILE
1	A	91	ARG
1	A	99	ILE
1	A	100	LEU
1	A	101	GLN
1	A	102	ASP
1	A	111	VAL
1	A	120	CYS
1	A	123	TYR
1	A	133	LEU
1	A	137	ILE
1	A	138	SER
1	A	140	ARG

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	144	ARG
1	A	152	GLU
1	A	153	ASN
1	A	169	LEU
1	A	197	ARG
1	A	205	VAL
1	A	212	LEU
1	A	219	MSE
1	A	221	LEU
1	A	224	LYS
1	A	227	ARG
1	A	228	THR
1	A	238	PHE
1	A	239	MSE
1	A	248	ARG
1	A	251	LEU
1	A	260	HIS
1	A	267	ARG
1	A	272	LYS
1	A	283	THR
1	A	286	VAL
1	A	292	LEU
1	A	295	GLN
1	A	296	LYS
1	A	297	VAL
1	A	300	LYS
1	A	306	LYS
1	A	322	LEU
1	A	327	MSE
1	A	330	ASN
1	A	334	GLU
1	A	335	GLN
1	A	336	GLU
1	A	346	LYS
1	A	352	LYS
1	A	355	LYS
1	A	360	SER
1	A	372	SER
1	A	378	GLU
1	A	392	VAL
1	A	397	ARG
1	A	398	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	400	THR
1	A	402	ASP
1	A	409	SER
1	A	413	ARG
1	A	419	LEU
1	A	423	THR
1	A	435	THR
1	A	436	LEU
1	A	438	GLU
1	A	445	SER
1	A	454	LEU
1	A	455	THR
1	A	461	THR
1	A	464	GLN
1	A	484	ARG
1	A	492	LEU
1	A	499	THR
1	A	502	LEU
1	A	503	THR
1	A	504	ASP
1	A	505	GLU
1	A	506	GLU
1	A	518	ASN
1	A	520	GLN
1	A	529	LYS
1	A	542	ARG
1	A	547	GLU
1	A	551	LYS
1	A	554	LYS
1	A	556	ARG
1	A	559	ARG
1	A	561	GLU
1	B	22	LYS
1	B	24	LYS
1	B	43	GLN
1	B	47	MSE
1	B	50	LEU
1	B	51	GLN
1	B	66	LEU
1	B	73	LYS
1	B	85	ILE
1	B	94	LYS

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	99	ILE
1	B	100	LEU
1	B	104	ILE
1	B	106	SER
1	B	123	TYR
1	B	129	ARG
1	B	131	LYS
1	B	140	ARG
1	B	156	LYS
1	B	165	ARG
1	B	177	MSE
1	B	197	ARG
1	B	208	ASP
1	B	214	LYS
1	B	223	GLN
1	B	224	LYS
1	B	225	ARG
1	B	227	ARG
1	B	229	GLN
1	B	232	ASP
1	B	233	ASP
1	B	236	ASP
1	B	239	MSE
1	B	240	LYS
1	B	248	ARG
1	B	267	ARG
1	B	270	ARG
1	B	292	LEU
1	B	297	VAL
1	B	300	LYS
1	B	301	PRO
1	B	303	SER
1	B	306	LYS
1	B	310	LEU
1	B	319	ILE
1	B	321	ASN
1	B	326	SER
1	B	334	GLU
1	B	339	LYS
1	B	340	LYS
1	B	350	LEU
1	B	351	VAL

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	355	LYS
1	B	357	LYS
1	B	363	GLU
1	B	368	SER
1	B	372	SER
1	B	373	ILE
1	B	378	GLU
1	B	385	LYS
1	B	389	ILE
1	B	397	ARG
1	B	398	LEU
1	B	402	ASP
1	B	405	ARG
1	B	411	ASN
1	B	413	ARG
1	B	438	GLU
1	B	440	ARG
1	B	447	SER
1	B	455	THR
1	B	466	ASN
1	B	489	SER
1	B	492	LEU
1	B	499	THR
1	B	500	SER
1	B	502	LEU
1	B	505	GLU
1	B	507	LEU
1	B	509	GLN
1	B	511	ARG
1	B	514	PRO
1	B	516	LEU
1	B	518	ASN
1	B	520	GLN
1	B	522	VAL
1	B	524	ILE
1	B	528	ILE
1	B	529	LYS
1	B	531	THR
1	B	547	GLU
1	B	549	LYS
1	B	551	LYS
1	B	561	GLU

*Continued on next page...*



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	564	SER
1	C	21	ILE
1	C	23	GLU
1	C	26	LYS
1	C	66	LEU
1	C	70	ARG
1	C	71	ASN
1	C	72	LEU
1	C	75	MSE
1	C	77	SER
1	C	85	ILE
1	C	99	ILE
1	C	100	LEU
1	C	101	GLN
1	C	111	VAL
1	C	122	GLN
1	C	123	TYR
1	C	125	HIS
1	C	131	LYS
1	C	140	ARG
1	C	153	ASN
1	C	165	ARG
1	C	169	LEU
1	C	177	MSE
1	C	183	LYS
1	C	197	ARG
1	C	210	ILE
1	C	214	LYS
1	C	221	LEU
1	C	223	GLN
1	C	225	ARG
1	C	230	GLN
1	C	235	ILE
1	C	236	ASP
1	C	240	LYS
1	C	248	ARG
1	C	249	ASN
1	C	251	LEU
1	C	267	ARG
1	C	286	VAL
1	C	291	LEU
1	C	292	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	297	VAL
1	C	304	GLU
1	C	306	LYS
1	C	314	GLU
1	C	321	ASN
1	C	335	GLN
1	C	339	LYS
1	C	340	LYS
1	C	345	ASP
1	C	355	LYS
1	C	357	LYS
1	C	363	GLU
1	C	368	SER
1	C	375	ASP
1	C	384	LEU
1	C	397	ARG
1	C	398	LEU
1	C	404	ILE
1	C	409	SER
1	C	419	LEU
1	C	428	CYS
1	C	436	LEU
1	C	438	GLU
1	C	454	LEU
1	C	455	THR
1	C	461	THR
1	C	484	ARG
1	C	492	LEU
1	C	502	LEU
1	C	504	ASP
1	C	507	LEU
1	C	511	ARG
1	C	516	LEU
1	C	519	ILE
1	C	520	GLN
1	C	521	GLU
1	C	531	THR
1	C	538	LYS
1	C	542	ARG
1	C	543	TYR
1	C	545	GLU
1	C	547	GLU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	554	LYS
1	C	556	ARG
1	C	560	SER
1	C	561	GLU
1	C	564	SER
1	C	571	GLU
1	D	22	LYS
1	D	23	GLU
1	D	24	LYS
1	D	29	MSE
1	D	36	LYS
1	D	51	GLN
1	D	60	THR
1	D	62	ASP
1	D	66	LEU
1	D	70	ARG
1	D	74	LYS
1	D	75	MSE
1	D	85	ILE
1	D	89	GLN
1	D	91	ARG
1	D	94	LYS
1	D	99	ILE
1	D	100	LEU
1	D	120	CYS
1	D	123	TYR
1	D	125	HIS
1	D	133	LEU
1	D	140	ARG
1	D	144	ARG
1	D	152	GLU
1	D	153	ASN
1	D	156	LYS
1	D	165	ARG
1	D	169	LEU
1	D	177	MSE
1	D	183	LYS
1	D	197	ARG
1	D	205	VAL
1	D	210	ILE
1	D	214	LYS
1	D	221	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	227	ARG
1	D	229	GLN
1	D	236	ASP
1	D	237	GLU
1	D	245	ARG
1	D	249	ASN
1	D	251	LEU
1	D	261	ASN
1	D	266	LEU
1	D	267	ARG
1	D	270	ARG
1	D	283	THR
1	D	286	VAL
1	D	291	LEU
1	D	292	LEU
1	D	298	ILE
1	D	299	SER
1	D	300	LYS
1	D	303	SER
1	D	305	HIS
1	D	322	LEU
1	D	327	MSE
1	D	329	GLU
1	D	333	SER
1	D	335	GLN
1	D	336	GLU
1	D	339	LYS
1	D	350	LEU
1	D	355	LYS
1	D	358	ILE
1	D	360	SER
1	D	363	GLU
1	D	371	GLU
1	D	376	THR
1	D	384	LEU
1	D	387	SER
1	D	388	THR
1	D	389	ILE
1	D	392	VAL
1	D	397	ARG
1	D	405	ARG
1	D	409	SER

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	D	412	GLU
1	D	428	CYS
1	D	431	GLU
1	D	436	LEU
1	D	440	ARG
1	D	445	SER
1	D	452	VAL
1	D	455	THR
1	D	456	ASP
1	D	464	GLN
1	D	489	SER
1	D	492	LEU
1	D	500	SER
1	D	502	LEU
1	D	504	ASP
1	D	507	LEU
1	D	509	GLN
1	D	512	LEU
1	D	518	ASN
1	D	520	GLN
1	D	529	LYS
1	D	531	THR
1	D	534	LEU
1	D	535	TYR
1	D	538	LYS
1	D	547	GLU
1	D	549	LYS
1	D	551	LYS
1	D	554	LYS
1	D	555	GLU
1	D	556	ARG
1	D	557	THR
1	D	559	ARG
1	D	561	GLU
1	D	571	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (52) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	51	GLN
1	A	64	GLN
1	A	71	ASN

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	122	GLN
1	A	153	ASN
1	A	261	ASN
1	A	295	GLN
1	A	305	HIS
1	A	330	ASN
1	A	482	ASN
1	A	520	GLN
1	B	43	GLN
1	B	51	GLN
1	B	64	GLN
1	B	69	HIS
1	B	154	HIS
1	B	229	GLN
1	B	338	GLN
1	B	362	GLN
1	B	367	HIS
1	B	425	GLN
1	B	482	ASN
1	B	501	GLN
1	B	518	ASN
1	B	520	GLN
1	C	64	GLN
1	C	69	HIS
1	C	71	ASN
1	C	153	ASN
1	C	229	GLN
1	C	261	ASN
1	C	321	ASN
1	C	335	GLN
1	C	362	GLN
1	C	425	GLN
1	C	482	ASN
1	C	520	GLN
1	D	51	GLN
1	D	64	GLN
1	D	69	HIS
1	D	122	GLN
1	D	153	ASN
1	D	154	HIS
1	D	230	GLN
1	D	249	ASN

*Continued on next page...*

Continued from previous page...

Mol	Chain	Res	Type
1	D	261	ASN
1	D	305	HIS
1	D	330	ASN
1	D	425	GLN
1	D	482	ASN
1	D	518	ASN
1	D	520	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](#)

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	NAD	C	2602	-	42,48,48	2.33	10 (23%)	50,73,73	1.43	5 (10%)
3	NAD	B	1601	-	42,48,48	1.85	9 (21%)	50,73,73	1.57	7 (14%)
3	NAD	D	3601	-	42,48,48	2.16	10 (23%)	50,73,73	1.52	5 (10%)
4	MAK	A	603	2	7,7,7	1.85	3 (42%)	9,9,9	1.92	4 (44%)
4	MAK	C	2603	2	7,7,7	2.08	5 (71%)	9,9,9	1.93	3 (33%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	NAD	C	2601	-	42,48,48	2.01	9 (21%)	50,73,73	1.56	8 (16%)
3	NAD	D	3602	-	42,48,48	2.22	11 (26%)	50,73,73	1.47	5 (10%)
4	MAK	D	3603	2	7,7,7	2.23	5 (71%)	9,9,9	1.96	4 (44%)
4	MAK	B	1603	2	7,7,7	2.47	5 (71%)	9,9,9	1.92	3 (33%)
3	NAD	A	602	-	42,48,48	2.25	9 (21%)	50,73,73	1.45	5 (10%)
3	NAD	B	1602	-	42,48,48	2.33	11 (26%)	50,73,73	1.43	5 (10%)
3	NAD	A	601	-	42,48,48	2.19	12 (28%)	50,73,73	1.46	5 (10%)

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	C	2602	-	-	5/26/62/62	0/5/5/5
3	NAD	B	1601	-	-	5/26/62/62	0/5/5/5
3	NAD	D	3601	-	-	2/26/62/62	0/5/5/5
4	MAK	A	603	2	-	4/8/8/8	-
4	MAK	C	2603	2	-	4/8/8/8	-
3	NAD	C	2601	-	-	7/26/62/62	0/5/5/5
3	NAD	D	3602	-	-	5/26/62/62	0/5/5/5
4	MAK	D	3603	2	-	1/8/8/8	-
4	MAK	B	1603	2	-	1/8/8/8	-
3	NAD	A	602	-	-	6/26/62/62	0/5/5/5
3	NAD	B	1602	-	-	6/26/62/62	0/5/5/5
3	NAD	A	601	-	-	2/26/62/62	0/5/5/5

All (99) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	3602	NAD	C2N-N1N	8.31	1.44	1.35
3	A	602	NAD	C2N-N1N	8.30	1.44	1.35
3	B	1602	NAD	C2N-N1N	8.30	1.44	1.35
3	C	2602	NAD	C2N-N1N	7.91	1.43	1.35
3	C	2601	NAD	C2N-N1N	7.11	1.42	1.35
3	A	601	NAD	C2N-N1N	7.10	1.42	1.35
3	D	3601	NAD	C2N-N1N	6.70	1.42	1.35
3	C	2602	NAD	O4B-C1B	6.12	1.48	1.40

Continued on next page...



*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1602	NAD	O4D-C1D	5.80	1.48	1.40
3	C	2602	NAD	O4D-C1D	5.61	1.48	1.40
3	D	3601	NAD	O4D-C1D	5.32	1.47	1.40
3	C	2601	NAD	C3N-C7N	5.06	1.58	1.50
3	B	1601	NAD	C2N-N1N	4.99	1.40	1.35
3	B	1602	NAD	O4B-C1B	4.88	1.47	1.40
3	D	3601	NAD	O4B-C1B	4.88	1.47	1.40
3	A	602	NAD	O4B-C1B	4.88	1.47	1.40
3	D	3601	NAD	C3N-C7N	4.81	1.57	1.50
3	D	3602	NAD	O4B-C1B	4.79	1.47	1.40
3	A	601	NAD	O4D-C1D	4.60	1.46	1.40
3	D	3602	NAD	O4D-C1D	4.47	1.46	1.40
3	A	601	NAD	O4B-C1B	4.38	1.46	1.40
3	A	602	NAD	O4D-C1D	4.34	1.46	1.40
3	D	3601	NAD	C6N-N1N	4.27	1.45	1.35
4	B	1603	MAK	C3-C2	-4.21	1.50	1.54
3	A	601	NAD	C2A-N3A	4.20	1.38	1.32
3	A	602	NAD	C6N-N1N	4.15	1.44	1.35
3	A	602	NAD	C2A-N3A	4.14	1.38	1.32
3	C	2602	NAD	C6N-N1N	4.14	1.44	1.35
3	C	2602	NAD	C2A-N3A	4.13	1.38	1.32
3	B	1602	NAD	C6N-N1N	4.08	1.44	1.35
3	D	3602	NAD	C6N-N1N	4.04	1.44	1.35
3	B	1601	NAD	C3N-C7N	3.99	1.56	1.50
3	B	1601	NAD	O4B-C1B	3.98	1.46	1.40
3	A	601	NAD	C6N-N1N	3.98	1.44	1.35
3	A	601	NAD	PN-O3	-3.75	1.55	1.59
3	C	2601	NAD	C2A-N3A	3.71	1.37	1.32
3	B	1602	NAD	C2A-N3A	3.66	1.37	1.32
3	B	1601	NAD	C6N-N1N	3.65	1.43	1.35
3	A	601	NAD	C3N-C7N	3.63	1.56	1.50
3	C	2601	NAD	C6N-N1N	3.55	1.43	1.35
3	D	3602	NAD	C2A-N3A	3.53	1.37	1.32
3	D	3601	NAD	C4N-C3N	3.52	1.44	1.39
3	D	3601	NAD	C2A-N3A	3.50	1.37	1.32
3	B	1601	NAD	O4D-C1D	3.45	1.45	1.40
4	D	3603	MAK	C3-C2	-3.39	1.51	1.54
3	B	1601	NAD	C2A-N3A	3.33	1.37	1.32
3	B	1602	NAD	C3N-C7N	3.32	1.55	1.50
3	D	3602	NAD	C3N-C7N	3.30	1.55	1.50
3	A	602	NAD	C3N-C7N	3.28	1.55	1.50
3	C	2602	NAD	C3N-C7N	3.25	1.55	1.50

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	2601	NAD	O4B-C1B	3.04	1.44	1.40
3	C	2601	NAD	O4D-C1D	2.78	1.44	1.40
3	A	601	NAD	C4N-C3N	2.76	1.43	1.39
4	C	2603	MAK	C3-C2	-2.69	1.52	1.54
4	B	1603	MAK	O5-C3	-2.63	1.23	1.30
4	D	3603	MAK	O5-C3	-2.60	1.23	1.30
4	C	2603	MAK	O2-C1	-2.60	1.23	1.30
3	D	3601	NAD	C5A-N7A	-2.59	1.30	1.39
3	A	602	NAD	C5A-N7A	-2.58	1.30	1.39
3	D	3602	NAD	PN-O3	2.58	1.62	1.59
3	B	1602	NAD	PN-O3	2.55	1.62	1.59
3	C	2601	NAD	C5N-C4N	2.54	1.43	1.38
4	B	1603	MAK	O2-C1	-2.49	1.23	1.30
3	A	602	NAD	C4N-C3N	2.48	1.43	1.39
3	C	2601	NAD	C5A-N7A	-2.47	1.31	1.39
4	D	3603	MAK	O2-C1	-2.45	1.23	1.30
4	A	603	MAK	O3-C2	2.44	1.28	1.23
4	A	603	MAK	O2-C1	-2.44	1.23	1.30
4	B	1603	MAK	C1-C2	-2.43	1.52	1.54
3	D	3602	NAD	C5A-N7A	-2.39	1.31	1.39
3	A	601	NAD	PA-O3	-2.38	1.56	1.59
4	C	2603	MAK	O5-C3	-2.37	1.24	1.30
3	B	1602	NAD	C4N-C3N	2.37	1.43	1.39
4	A	603	MAK	O5-C3	-2.37	1.24	1.30
3	C	2602	NAD	C4N-C3N	2.36	1.43	1.39
4	C	2603	MAK	O3-C2	2.33	1.28	1.23
4	B	1603	MAK	O3-C2	2.32	1.28	1.23
3	B	1601	NAD	C5A-N7A	-2.29	1.31	1.39
4	D	3603	MAK	O3-C2	2.28	1.28	1.23
3	A	601	NAD	C2A-N1A	2.28	1.38	1.33
3	C	2602	NAD	C2A-N1A	2.27	1.38	1.33
3	A	601	NAD	C5N-C4N	2.26	1.42	1.38
3	D	3602	NAD	C4N-C3N	2.26	1.42	1.39
3	B	1602	NAD	O4D-C4D	2.26	1.50	1.45
3	C	2602	NAD	C5A-N7A	-2.24	1.31	1.39
3	B	1602	NAD	C2A-N1A	2.24	1.37	1.33
4	D	3603	MAK	C1-C2	-2.21	1.52	1.54
3	A	601	NAD	C5A-N7A	-2.20	1.31	1.39
3	B	1601	NAD	PA-O3	2.10	1.61	1.59
3	A	602	NAD	C2A-N1A	2.09	1.37	1.33
4	C	2603	MAK	C1-C2	-2.08	1.52	1.54
3	C	2602	NAD	C5N-C4N	2.07	1.42	1.38

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	3601	NAD	C5N-C4N	2.07	1.42	1.38
3	D	3601	NAD	C2A-N1A	2.05	1.37	1.33
3	C	2601	NAD	C2A-N1A	2.05	1.37	1.33
3	B	1602	NAD	C5N-C4N	2.05	1.42	1.38
3	D	3602	NAD	C5N-C4N	2.03	1.42	1.38
3	D	3602	NAD	C2A-N1A	2.01	1.37	1.33
3	B	1601	NAD	O4B-C4B	2.01	1.49	1.45

All (59) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1601	NAD	N3A-C2A-N1A	-6.14	120.34	128.67
3	D	3602	NAD	N3A-C2A-N1A	-5.87	120.71	128.67
3	D	3601	NAD	N3A-C2A-N1A	-5.83	120.76	128.67
3	C	2601	NAD	N3A-C2A-N1A	-5.70	120.94	128.67
3	A	602	NAD	N3A-C2A-N1A	-5.68	120.96	128.67
3	A	601	NAD	N3A-C2A-N1A	-5.59	121.09	128.67
3	C	2602	NAD	N3A-C2A-N1A	-5.57	121.11	128.67
3	B	1602	NAD	N3A-C2A-N1A	-5.50	121.21	128.67
3	B	1601	NAD	C4A-C5A-N7A	4.34	113.93	109.34
3	D	3601	NAD	C4A-C5A-N7A	4.31	113.89	109.34
3	A	602	NAD	C4A-C5A-N7A	4.25	113.83	109.34
3	A	601	NAD	C4A-C5A-N7A	4.22	113.80	109.34
3	D	3602	NAD	C4A-C5A-N7A	4.12	113.69	109.34
3	C	2601	NAD	C4A-C5A-N7A	4.12	113.69	109.34
3	B	1602	NAD	C4A-C5A-N7A	4.11	113.68	109.34
3	C	2602	NAD	C4A-C5A-N7A	3.97	113.53	109.34
3	C	2601	NAD	C6A-C5A-C4A	3.38	124.48	117.90
3	D	3601	NAD	C6A-C5A-C4A	3.28	124.29	117.90
3	A	602	NAD	C6A-C5A-C4A	3.19	124.10	117.90
3	D	3601	NAD	C4D-O4D-C1D	-3.18	107.01	109.92
3	A	601	NAD	C6A-C5A-C4A	3.16	124.05	117.90
3	B	1601	NAD	C6A-C5A-C4A	3.13	123.99	117.90
3	C	2602	NAD	C6A-C5A-C4A	3.12	123.97	117.90
3	B	1602	NAD	C6A-C5A-C4A	3.11	123.94	117.90
3	D	3602	NAD	C6A-C5A-C4A	3.05	123.84	117.90
4	C	2603	MAK	O2-C1-C2	2.99	121.33	112.94
3	B	1601	NAD	O4B-C1B-N9A	2.95	112.66	108.75
3	A	602	NAD	C6N-N1N-C2N	-2.95	119.37	121.88
3	C	2601	NAD	C4B-O4B-C1B	-2.93	107.24	109.92
3	C	2601	NAD	O4B-C1B-N9A	2.86	112.53	108.75
4	B	1603	MAK	O2-C1-C2	2.85	120.93	112.94

*Continued on next page...*

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	3602	NAD	C6N-N1N-C2N	-2.81	119.49	121.88
4	A	603	MAK	O2-C1-C2	2.79	120.77	112.94
3	A	601	NAD	C4D-O4D-C1D	-2.76	107.40	109.92
3	C	2601	NAD	C4D-O4D-C1D	-2.75	107.41	109.92
3	B	1602	NAD	C6N-N1N-C2N	-2.74	119.54	121.88
4	D	3603	MAK	O2-C1-C2	2.65	120.36	112.94
3	C	2602	NAD	C6N-N1N-C2N	-2.57	119.69	121.88
4	D	3603	MAK	O5-C3-C2	2.51	119.97	112.94
3	B	1601	NAD	C3N-C7N-N7N	-2.46	114.71	117.74
4	D	3603	MAK	O3-C2-C1	2.45	123.78	117.79
4	B	1603	MAK	O3-C2-C1	2.45	123.77	117.79
3	B	1601	NAD	C4D-O4D-C1D	-2.43	107.70	109.92
4	A	603	MAK	O5-C3-C2	2.42	119.72	112.94
3	C	2601	NAD	C3N-C7N-N7N	-2.33	114.87	117.74
4	C	2603	MAK	O5-C3-C2	2.33	119.47	112.94
4	B	1603	MAK	O5-C3-C2	2.30	119.39	112.94
3	D	3601	NAD	O4B-C1B-N9A	2.27	111.76	108.75
4	A	603	MAK	O3-C2-C1	2.27	123.32	117.79
4	C	2603	MAK	O3-C2-C1	2.27	123.32	117.79
3	B	1602	NAD	C2D-C3D-C4D	2.26	106.98	102.61
3	A	601	NAD	C4B-O4B-C1B	-2.23	107.88	109.92
3	A	602	NAD	C2D-C3D-C4D	2.16	106.79	102.61
3	C	2601	NAD	O7N-C7N-C3N	2.16	122.24	119.60
3	C	2602	NAD	C2D-C3D-C4D	2.16	106.78	102.61
4	D	3603	MAK	O3-C2-C3	2.13	123.00	117.79
3	D	3602	NAD	C2D-C3D-C4D	2.07	106.60	102.61
3	B	1601	NAD	C4B-O4B-C1B	-2.03	108.07	109.92
4	A	603	MAK	O3-C2-C3	2.02	122.73	117.79

There are no chirality outliers.

All (48) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	601	NAD	O4D-C1D-N1N-C6N
3	A	602	NAD	C5B-O5B-PA-O2A
3	A	602	NAD	C5B-O5B-PA-O3
3	A	602	NAD	PA-O3-PN-O5D
3	B	1601	NAD	O4D-C1D-N1N-C2N
3	B	1601	NAD	O4D-C1D-N1N-C6N
3	B	1602	NAD	C5B-O5B-PA-O2A
3	B	1602	NAD	C5B-O5B-PA-O3
3	C	2601	NAD	O4D-C1D-N1N-C2N

Continued on next page...

*Continued from previous page...*

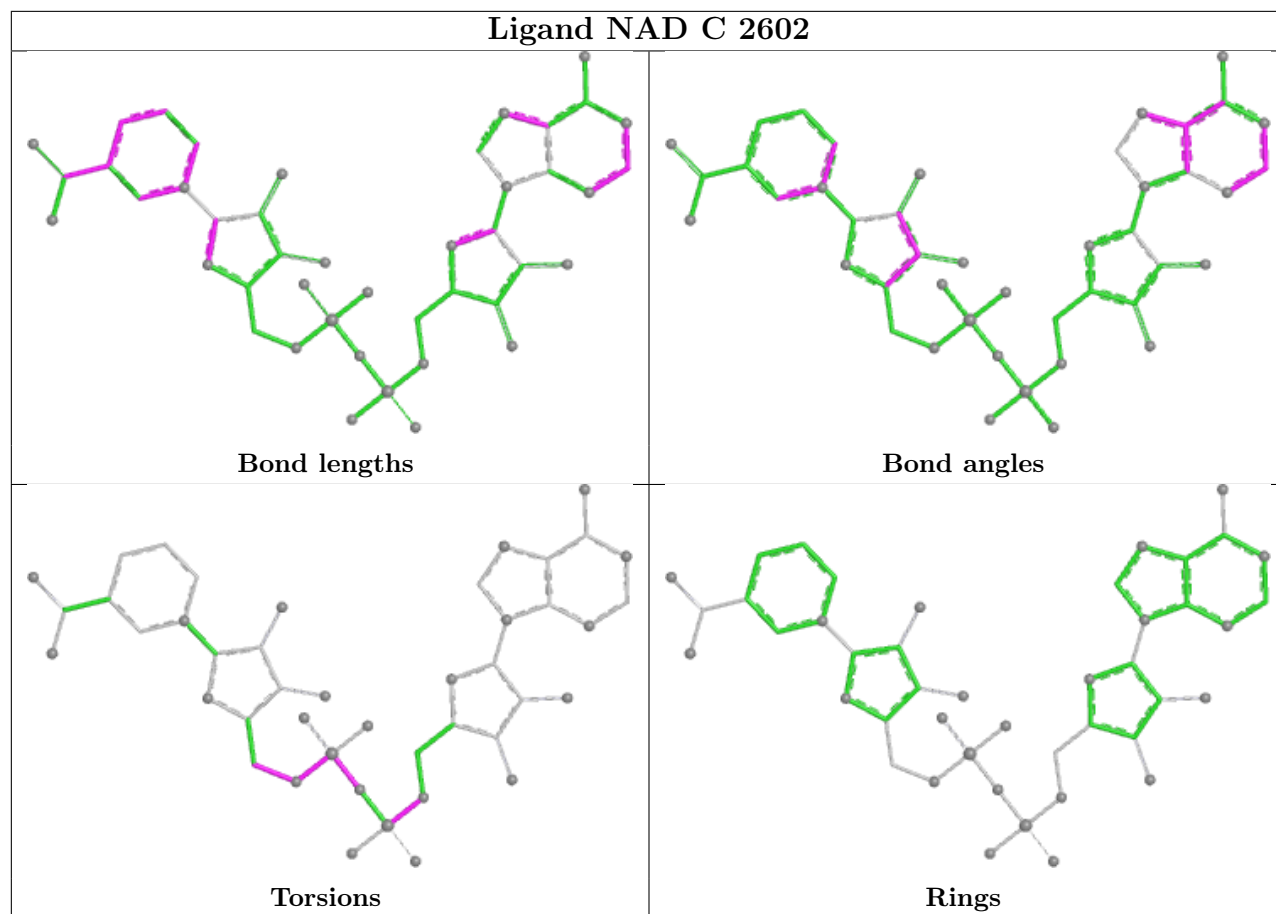
Mol	Chain	Res	Type	Atoms
3	C	2601	NAD	O4D-C1D-N1N-C6N
3	C	2601	NAD	C2D-C1D-N1N-C2N
3	C	2601	NAD	C2D-C1D-N1N-C6N
3	C	2602	NAD	C5B-O5B-PA-O2A
3	C	2602	NAD	C5B-O5B-PA-O3
3	C	2602	NAD	C5D-O5D-PN-O1N
3	D	3601	NAD	O4D-C1D-N1N-C2N
3	D	3601	NAD	O4D-C1D-N1N-C6N
3	D	3602	NAD	C5B-O5B-PA-O2A
3	D	3602	NAD	C5B-O5B-PA-O3
3	D	3602	NAD	PA-O3-PN-O5D
3	B	1601	NAD	O4B-C4B-C5B-O5B
3	B	1601	NAD	C3B-C4B-C5B-O5B
3	B	1602	NAD	C4D-C5D-O5D-PN
3	B	1602	NAD	PA-O3-PN-O5D
3	C	2602	NAD	PA-O3-PN-O5D
4	A	603	MAK	O1-C1-C2-C3
4	C	2603	MAK	O1-C1-C2-C3
3	B	1602	NAD	C5D-O5D-PN-O1N
3	D	3602	NAD	C5D-O5D-PN-O1N
3	A	602	NAD	C4D-C5D-O5D-PN
3	C	2602	NAD	C4D-C5D-O5D-PN
3	D	3602	NAD	C4D-C5D-O5D-PN
4	A	603	MAK	O2-C1-C2-O3
4	C	2603	MAK	O2-C1-C2-O3
4	A	603	MAK	O2-C1-C2-C3
4	C	2603	MAK	O2-C1-C2-C3
3	B	1601	NAD	C2D-C1D-N1N-C2N
4	B	1603	MAK	O1-C1-C2-O3
4	D	3603	MAK	O1-C1-C2-O3
3	A	601	NAD	O4D-C1D-N1N-C2N
3	C	2601	NAD	PN-O3-PA-O1A
4	A	603	MAK	O1-C1-C2-O3
4	C	2603	MAK	O1-C1-C2-O3
3	C	2601	NAD	O4B-C4B-C5B-O5B
3	C	2601	NAD	PN-O3-PA-O2A
3	A	602	NAD	PN-O3-PA-O2A
3	A	602	NAD	PA-O3-PN-O2N
3	B	1602	NAD	PA-O3-PN-O2N

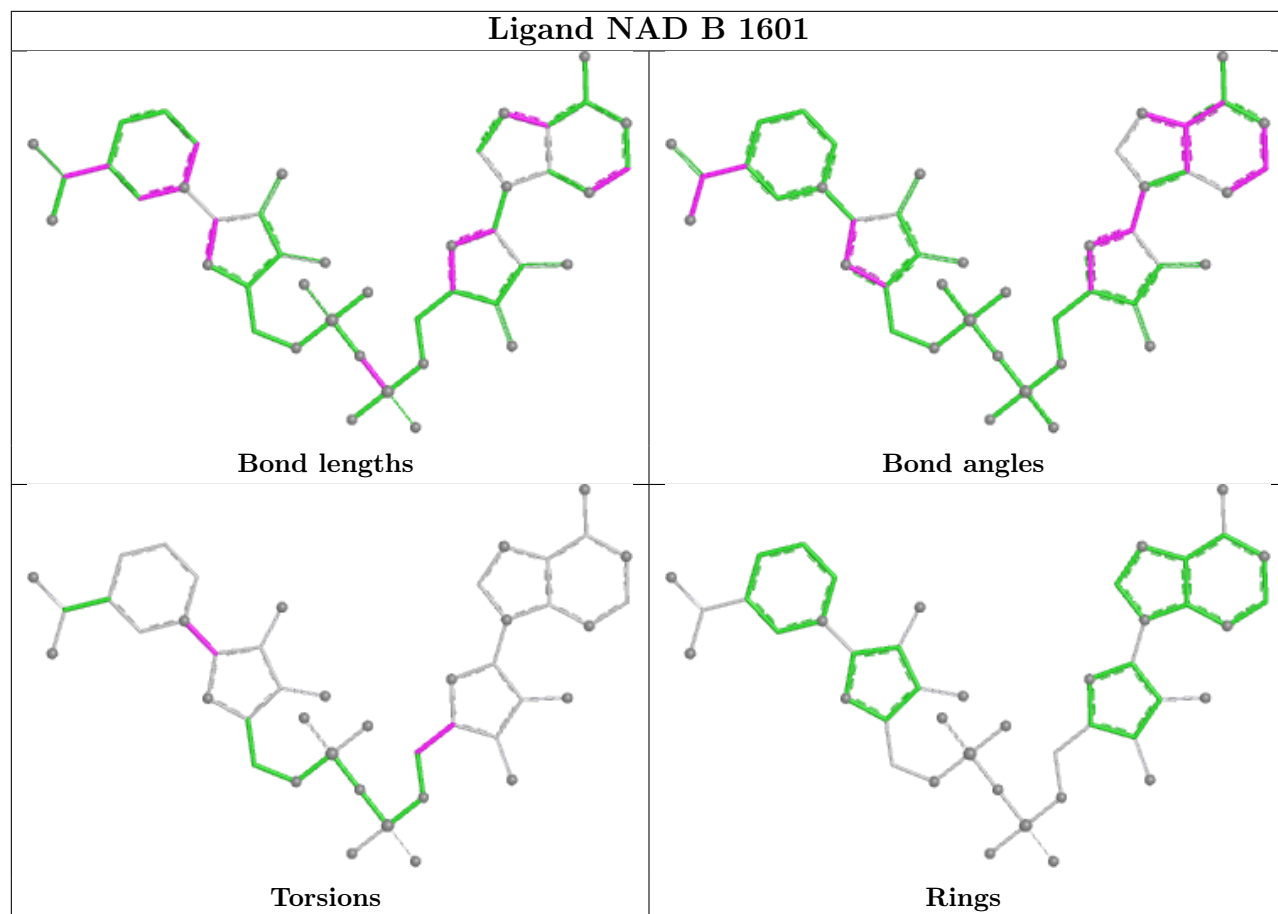
There are no ring outliers.

10 monomers are involved in 20 short contacts:

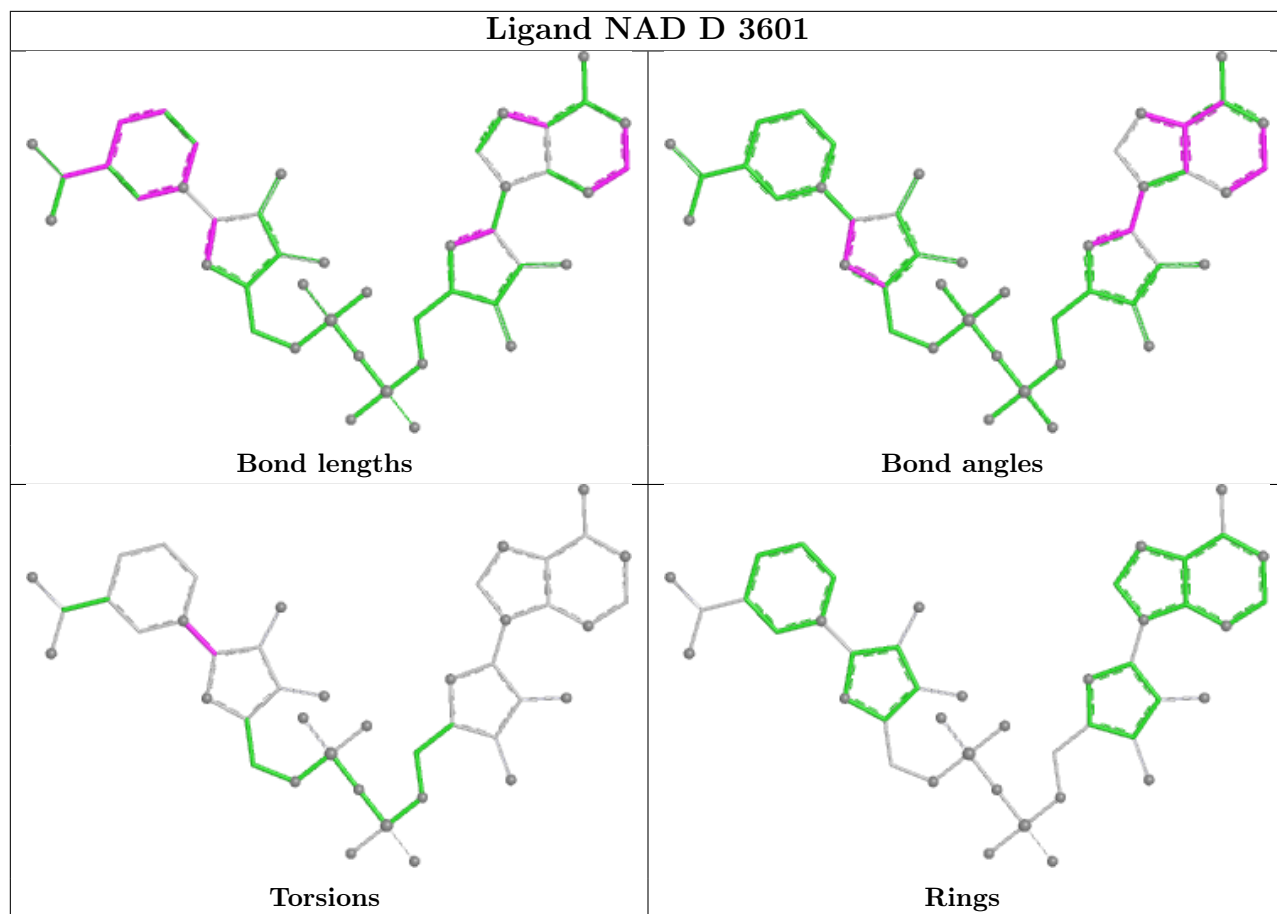
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1601	NAD	4	0
3	D	3601	NAD	3	0
4	A	603	MAK	1	0
4	C	2603	MAK	1	0
3	C	2601	NAD	3	0
4	D	3603	MAK	2	0
4	B	1603	MAK	1	0
3	A	602	NAD	1	0
3	B	1602	NAD	1	0
3	A	601	NAD	3	0

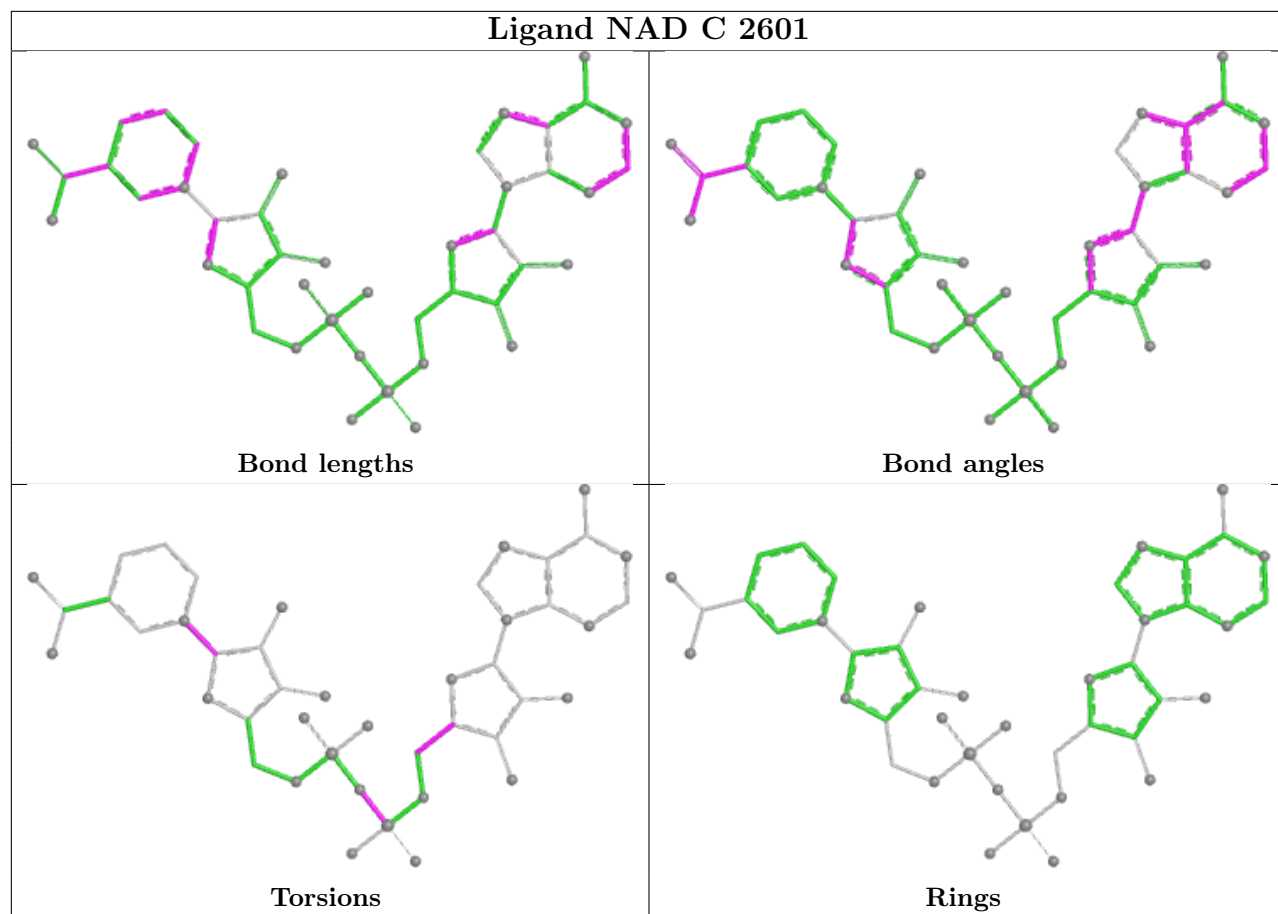
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

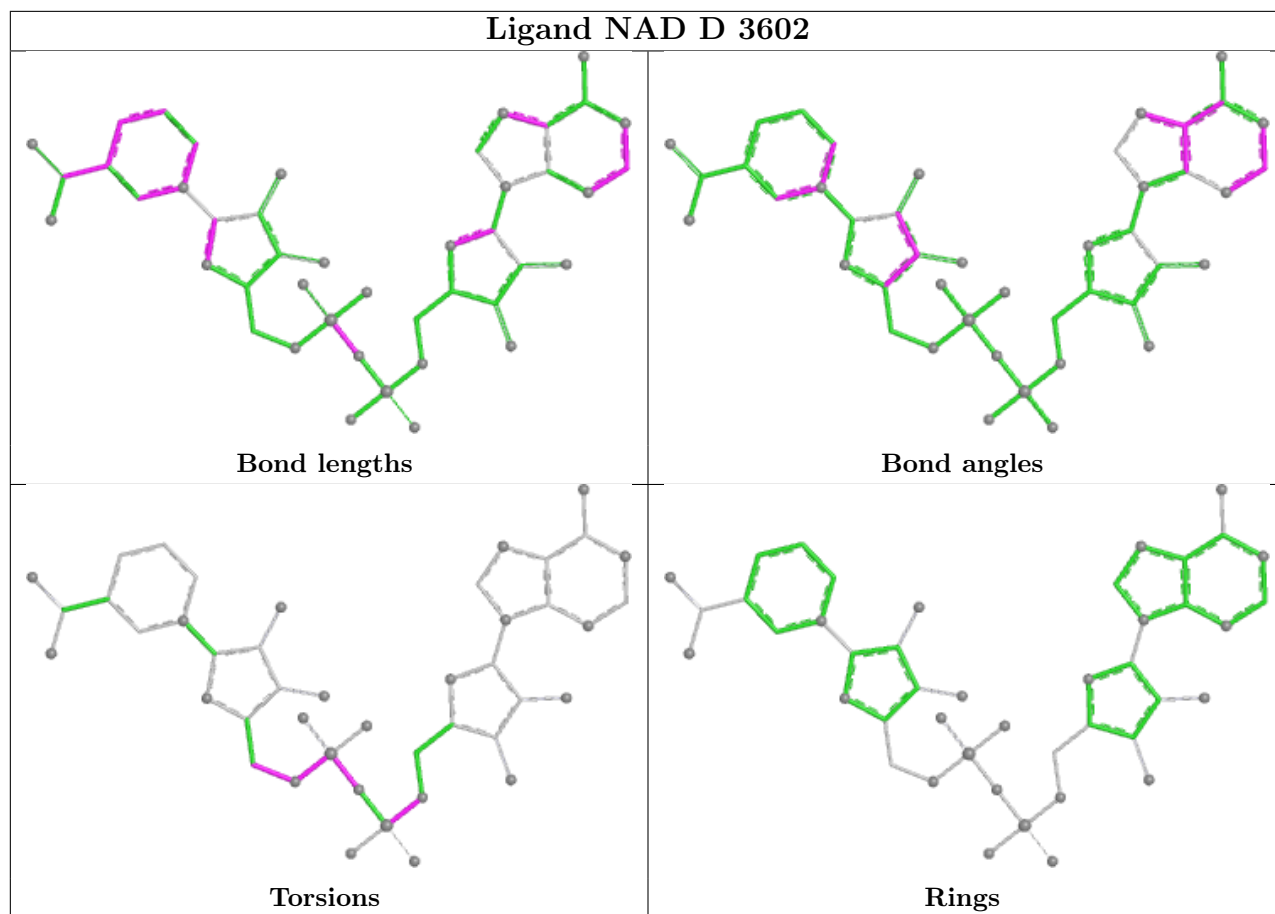


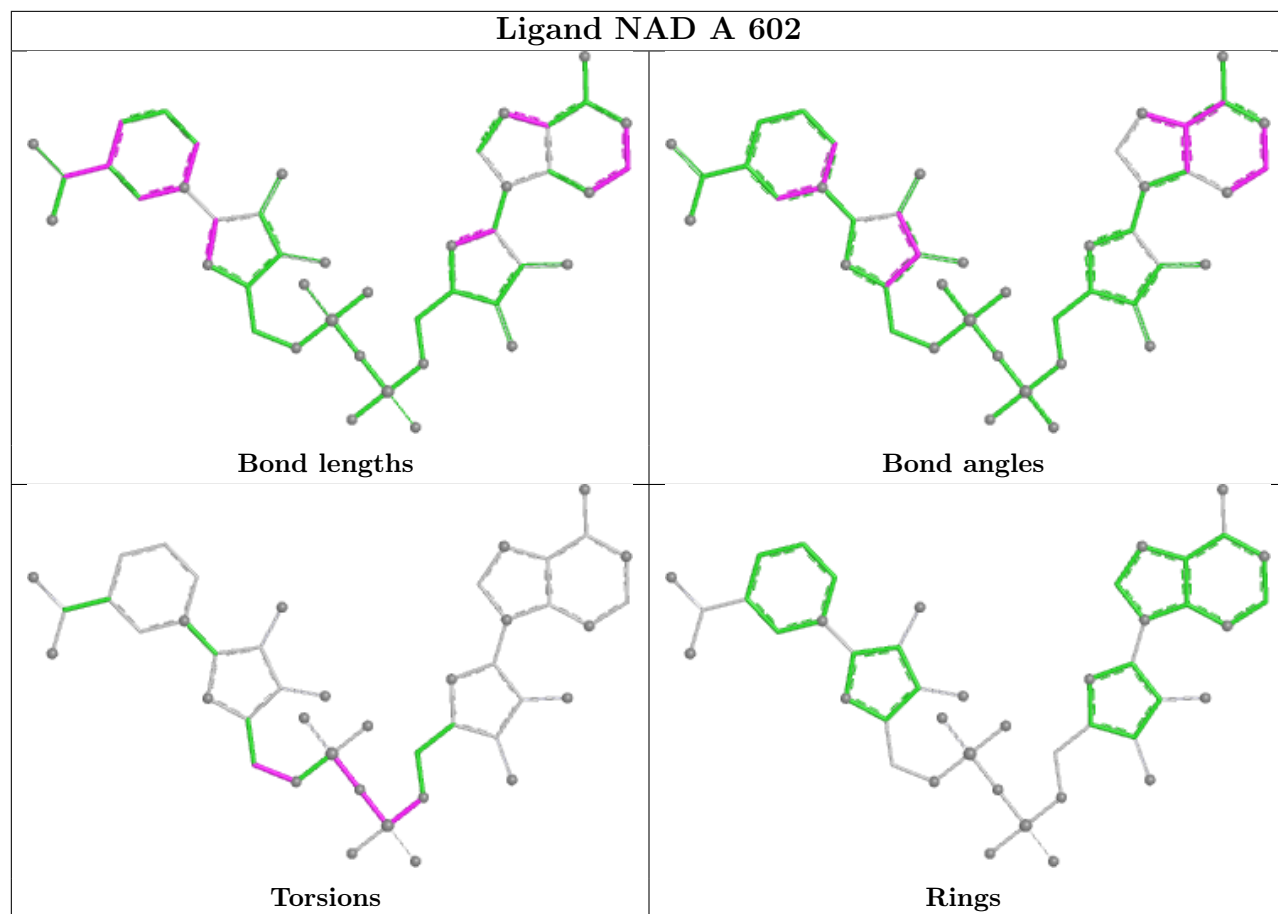


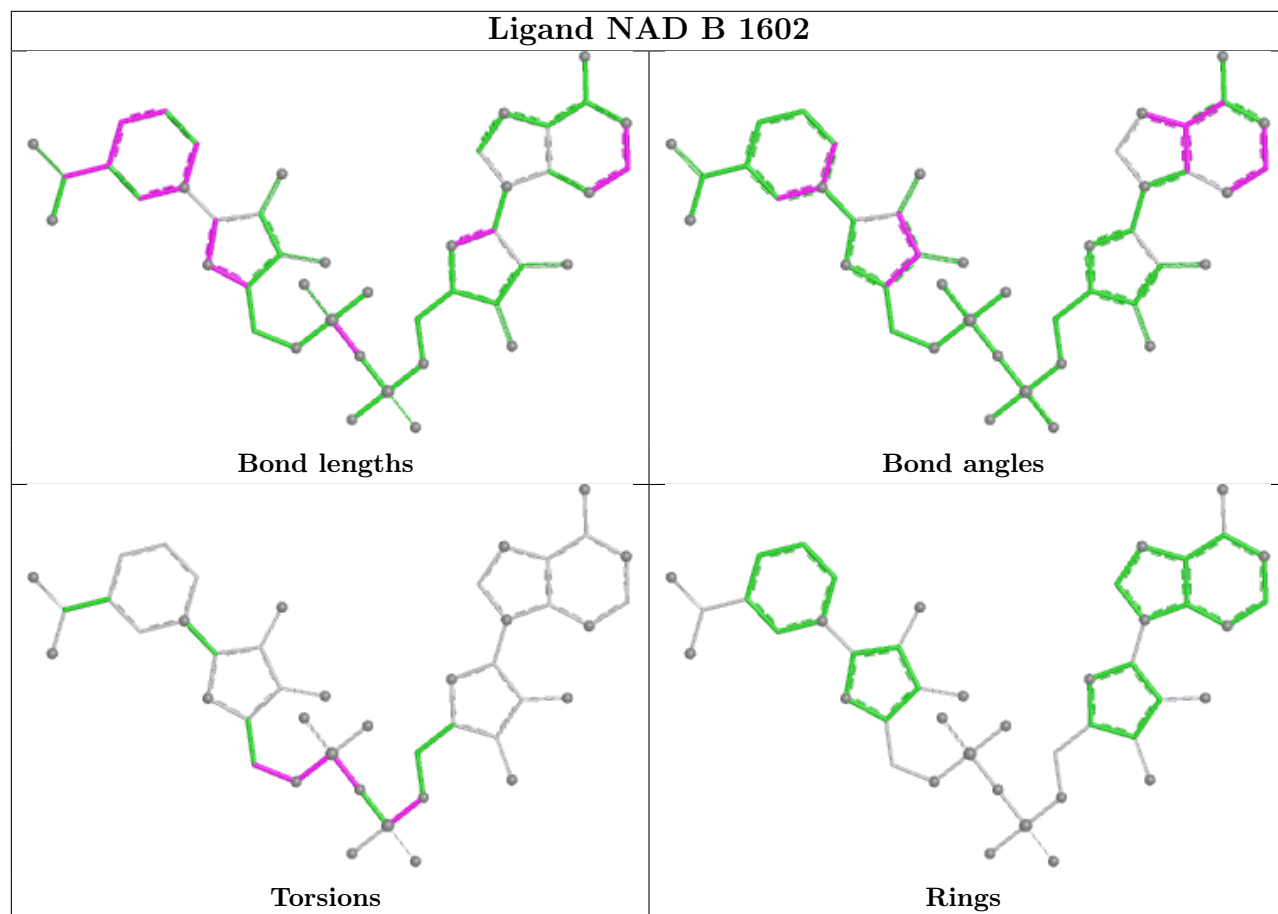


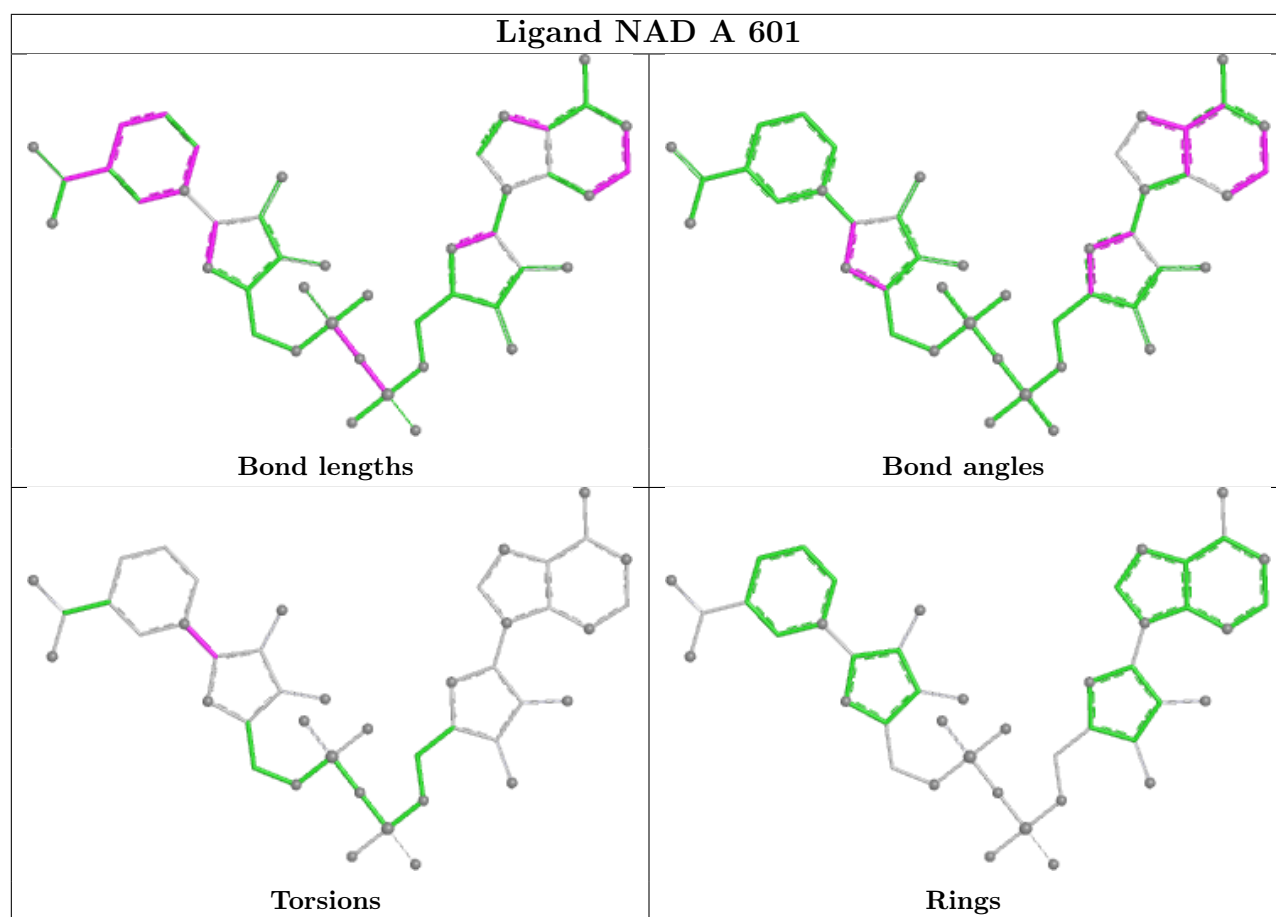












## 5.7 Other polymers [i](#)

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](#)

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

### 6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.