



## Full wwPDB EM Validation Report ⓘ

Feb 20, 2025 – 07:47 AM EST

PDB ID : 1TVK  
Title : The binding mode of epothilone A on  $\alpha$ , $\beta$ -tubulin by electron crystallography  
Authors : Nettles, J.H.; Li, H.; Cornett, B.; Krahn, J.M.; Snyder, J.P.; Downing, K.H.  
Deposited on : 2004-06-29  
Resolution : 2.89 Å (reported)  
Based on initial model : 1JFF

This is a Full wwPDB EM Validation Report for a publicly released PDB/EMDB 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/EMValidationReportHelp>

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)  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.004 (Gargrove)  
Density-Fitness : 1.0.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.41.4

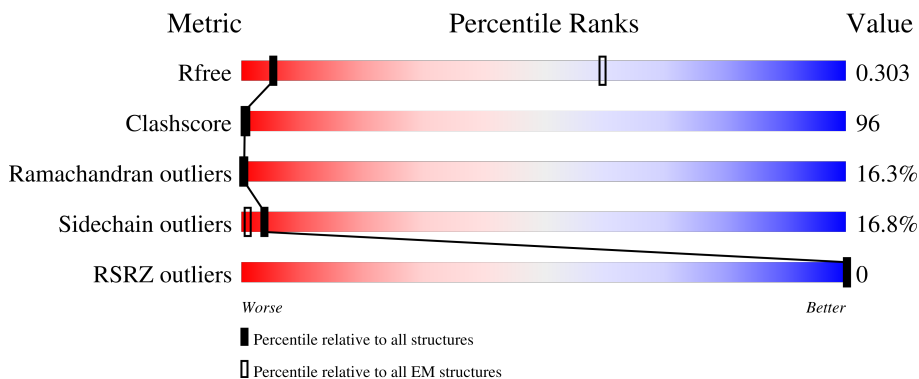
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON CRYSTALLOGRAPHY*

The reported resolution of this entry is 2.89 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)	EM structures (#Entries)
$R_{free}$	164678	53
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RSRZ outliers	164674	54

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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  $\leq 5\%$ .

Mol	Chain	Length	Quality of chain
1	A	440	 9% 61% 22% 6%
2	B	427	 14% 61% 23%

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 6672 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 Tubulin alpha chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	412	3227	2043	551	613	20	0	0

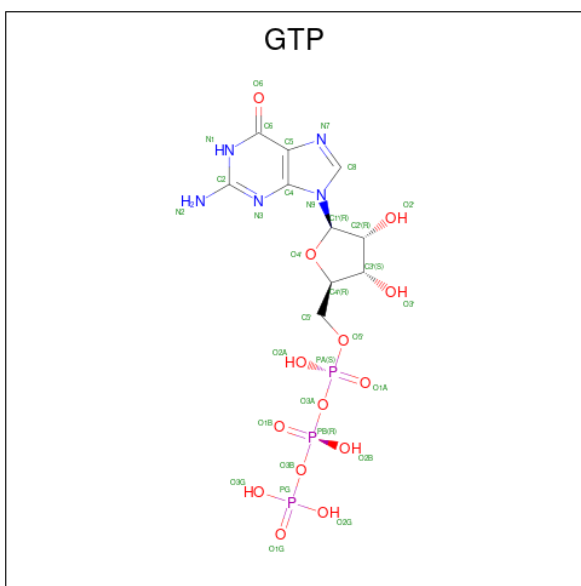
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	265	GLY	ALA	conflict	UNP P02550

- Molecule 2 is a protein called Tubulin beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	426	3351	2105	575	646	25	0	0

- Molecule 3 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula:  $C_{10}H_{16}N_5O_{14}P_3$ ).





Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
5	B	1	34	26	1	6	1	0



L187	A248	R309	N370
S188	D249	Y310	S371
V189	L250	L311	T372
H190	R251	T312	A373
Q191	K252	V313	I374
L192	L253	A314	Q375
V193	A254	A315	E376
E194	V255		L377
M195	N256	R318	F378
T196	M257	G319	K379
D197	V258	R320	R380
E198	P259	M321	I381
T199	F260	S322	S382
Y200	P261	M323	E383
C201	R262	K324	Q384
I202	L263	E325	F385
D203	H264	V326	T386
E205	F265	D327	A387
A206	F266	E328	M388
L207	M267	Q329	F389
Y208	P268	M330	R390
D209	G269	L331	R391
Y210	F270	N332	K392
I210	A271	V333	A393
C211	P272	G334	F394
E212	L273	N335	L395
R213	T274	K336	
T214	S275	N337	Y398
L215	R276	S338	T399
K216		S339	G400
L217		Y340	E401
		F341	G402
		V342	M403
		E343	D404
		W344	E405
		I345	M406
		P346	E407
		N347	F408
		M348	T409
		V349	E410
		K350	A411
		T351	E412
		A352	S413
		V353	N414
		C354	M415
		D355	N416
		I356	D417
		P357	L418
		A296	L419
		K297	V419
		M298	S420
		M299	E421
		M300	Y422
		A301	
		A302	Y425
		C303	Q426
		D304	D427
		A305	
		E386	
		F367	
		I368	
		G369	
		H307	
		R306	
		P305	
		D304	
		A305	
		C303	
		A302	
		A301	
		M300	
		M299	
		M298	
		K297	
		A296	
		D295	
		F294	
		M293	
		Q291	
		L289	
		E288	
		P287	
		V286	
		T285	
		L284	
		A283	
		R282	
		Y281	
		Q279	
		O280	
		Y280	
		R221	
		T221	
		Y222	
		G223	
		D224	
		L225	
		N226	
		R227	
		L228	
		V229	
		S230	
		A231	
		T232	
		M233	
		S234	
		G235	
		V236	
		T237	
		E238	
		C239	
		L240	
		R241	
		F242	
		P243	
		G244	
		Q245	
		L246	
		N247	

## 4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	81.20Å 93.50Å 90.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	91.29 – 2.89 90.00 – 2.89	Depositor EDS
% Data completeness (in resolution range)	67.0 (91.29-2.89) 63.7 (90.00-2.89)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	0.43 (at 2.89Å)	Xtrriage
Refinement program	unknown	Depositor
R, $R_{free}$	0.333 , 0.321 0.314 , 0.303	Depositor DCC
$R_{free}$ test set	967 reflections (4.78%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	49.8	Xtrriage
Anisotropy	0.761	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.26 , 3.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.41$ , $\langle L^2 \rangle = 0.24$	Xtrriage
Estimated twinning fraction	0.096 for -h,-l,-k 0.070 for -h,l,k 0.118 for h,-k,-l	Xtrriage
$F_o, F_c$ correlation	0.88	EDS
Total number of atoms	6672	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	79.0	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 65.67 % 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 6.8280e-06. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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: GTP, EP, GDP

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	0.48	0/3300	0.71	2/4482 (0.0%)
2	B	0.51	0/3426	0.76	3/4642 (0.1%)
All	All	0.50	0/6726	0.73	5/9124 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	152	LEU	CA-CB-CG	6.52	130.30	115.30
2	B	282	ARG	CG-CD-NE	-6.12	98.96	111.80
1	A	142	GLY	N-CA-C	5.35	126.46	113.10
2	B	227	HIS	CG-CD2-NE2	-5.22	99.27	109.20
2	B	282	ARG	N-CA-CB	-5.22	101.20	110.60

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	3227	0	3143	668	0
2	B	3351	0	3229	620	0
3	A	32	0	12	4	0
4	B	28	0	12	8	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	34	0	39	4	0
All	All	6672	0	6435	1260	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 96.

All (1260) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:11:GLN:HG2	1:A:15:GLN:HE21	1.04	1.12
2:B:172:SER:HB3	2:B:205:GLU:HG2	1.16	1.10
2:B:286:VAL:H	2:B:287:PRO:HD2	1.11	1.09
1:A:229:ARG:HD3	1:A:363:VAL:HG21	1.33	1.08
2:B:285:THR:HB	2:B:287:PRO:HD2	1.31	1.07
1:A:242:LEU:HD12	1:A:250:VAL:HB	1.39	1.04
1:A:119:LEU:HD21	1:A:156:ARG:HB3	1.38	1.03
2:B:377:LEU:HG	2:B:381:ILE:HD11	1.40	1.00
2:B:40:SER:HB3	2:B:43:GLN:HG3	1.41	1.00
1:A:331:ALA:O	1:A:335:ILE:HG12	1.64	0.98
1:A:69:ASP:HB2	1:A:75:ILE:HD11	1.46	0.97
2:B:5:VAL:HG13	2:B:62:ARG:HG2	1.43	0.96
1:A:79:ARG:HA	1:A:84:ARG:HG3	1.47	0.95
1:A:217:LEU:HD12	1:A:277:SER:HA	1.47	0.95
2:B:113:VAL:HG21	2:B:150:LEU:HD23	1.46	0.95
1:A:276:ILE:HD11	1:A:281:ALA:HB3	1.48	0.93
1:A:23:LEU:HD12	1:A:26:LEU:HD23	1.49	0.93
2:B:139:LEU:HD13	2:B:168:SER:HB2	1.51	0.93
1:A:247:ALA:HB3	1:A:355:ILE:HB	1.47	0.93
2:B:286:VAL:H	2:B:287:PRO:CD	1.79	0.93
1:A:11:GLN:HG2	1:A:15:GLN:NE2	1.83	0.92
2:B:211:CYS:SG	2:B:220:PRO:HB3	2.08	0.92
2:B:356:ILE:HD12	2:B:357:PRO:HD2	1.52	0.92
1:A:107:HIS:CE1	1:A:152:LEU:HB3	2.06	0.91
2:B:329:GLN:O	2:B:333:VAL:HG23	1.71	0.91
2:B:241:ARG:HG3	2:B:241:ARG:HH11	1.36	0.91
2:B:236:VAL:HG22	2:B:368:ILE:HD11	1.52	0.91
1:A:359:PRO:HB3	1:A:372:GLN:O	1.71	0.90
1:A:259:LEU:HD21	1:A:316:CYS:HB2	1.53	0.90
2:B:3:GLU:HG3	2:B:130:LEU:HA	1.54	0.90
2:B:228:LEU:HD11	2:B:273:LEU:HD21	1.52	0.90
2:B:172:SER:CB	2:B:205:GLU:HG2	2.01	0.89

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:242:LEU:CD1	1:A:250:VAL:HB	2.03	0.89
1:A:179:THR:HG21	2:B:246:LEU:HD21	1.55	0.89
2:B:172:SER:HB3	2:B:205:GLU:CG	2.02	0.89
1:A:210:TYR:OH	2:B:323:MET:HB2	1.73	0.89
1:A:229:ARG:CD	1:A:363:VAL:HG21	2.02	0.89
2:B:226:ASN:ND2	4:B:1500:GDP:HN1	1.70	0.89
1:A:145:THR:O	1:A:149:PHE:HB3	1.74	0.88
2:B:254:ALA:O	2:B:258:VAL:HG22	1.72	0.88
2:B:271:ALA:CB	2:B:365:ALA:HB3	2.04	0.88
1:A:7:ILE:HG21	1:A:153:LEU:HD21	1.56	0.88
2:B:226:ASN:HD21	4:B:1500:GDP:HN1	0.88	0.87
2:B:77:ARG:HD3	2:B:90:PHE:CE2	2.09	0.87
2:B:287:PRO:O	2:B:291:GLN:HB2	1.72	0.87
2:B:221:THR:HG22	2:B:222:TYR:H	1.40	0.86
2:B:308:GLY:CA	2:B:426:GLN:HE21	1.89	0.86
1:A:178:SER:HB3	2:B:347:ASN:ND2	1.91	0.86
1:A:188:ILE:HG23	1:A:421:ALA:O	1.75	0.85
1:A:179:THR:O	2:B:350:LYS:HA	1.76	0.85
1:A:111:GLY:O	1:A:114:ILE:HD13	1.76	0.85
2:B:14:ASN:HD21	2:B:65:LEU:HB3	1.41	0.84
2:B:46:ARG:O	2:B:49:VAL:HG23	1.77	0.84
2:B:358:PRO:HB2	2:B:361:LEU:HB3	1.57	0.84
1:A:223:THR:HB	1:A:225:THR:HG22	1.58	0.83
1:A:115:ILE:HG13	1:A:152:LEU:CD1	2.08	0.83
2:B:190:HIS:ND1	2:B:411:ALA:HA	1.94	0.82
2:B:121:ARG:HD3	2:B:158:GLU:OE1	1.79	0.82
1:A:294:ALA:O	1:A:297:GLU:HG2	1.79	0.82
2:B:6:HIS:HB3	2:B:63:ALA:HB2	1.60	0.82
1:A:155:GLU:HG2	1:A:197:HIS:NE2	1.94	0.82
1:A:276:ILE:HG23	1:A:369:ALA:HB3	1.61	0.81
1:A:278:ALA:HA	1:A:369:ALA:HB2	1.60	0.81
2:B:132:GLY:HA3	2:B:163:ILE:HD12	1.62	0.81
2:B:32:PRO:O	2:B:84:ILE:HB	1.79	0.81
1:A:243:ARG:NH2	1:A:252:LEU:HG	1.95	0.81
1:A:9:VAL:HG23	1:A:145:THR:HG22	1.63	0.81
1:A:262:TYR:HB3	1:A:263:PRO:HD2	1.63	0.81
2:B:361:LEU:HB2	5:B:1001:EP:H432	1.63	0.80
2:B:24:ILE:HD11	2:B:238:THR:HG21	1.64	0.80
1:A:167:LEU:HD23	1:A:200:CYS:HB3	1.62	0.80
1:A:234:ILE:HD13	1:A:234:ILE:O	1.81	0.80
1:A:339:ARG:C	1:A:341:ILE:H	1.83	0.80

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:170:VAL:HB	2:B:377:LEU:HD11	1.63	0.80
1:A:141:PHE:HB2	1:A:173:PRO:HD3	1.63	0.80
1:A:238:ILE:HG12	1:A:378:LEU:CD2	2.12	0.79
2:B:8:GLN:CD	2:B:65:LEU:HD22	2.03	0.79
1:A:123:ARG:HB2	1:A:123:ARG:HH11	1.48	0.79
1:A:151:SER:HB3	1:A:193:THR:HG21	1.65	0.79
1:A:195:LEU:HD11	1:A:264:ARG:HD2	1.63	0.79
2:B:271:ALA:HB3	2:B:365:ALA:HB3	1.66	0.78
1:A:148:GLY:O	1:A:151:SER:HB2	1.83	0.78
2:B:104:GLY:O	2:B:109:GLY:HA3	1.83	0.78
1:A:7:ILE:HD12	1:A:137:VAL:HG22	1.66	0.78
1:A:278:ALA:O	1:A:279:GLU:HG2	1.84	0.78
2:B:286:VAL:HG22	2:B:321:MET:HE3	1.65	0.78
2:B:102:ALA:O	2:B:106:TYR:HB2	1.83	0.77
1:A:84:ARG:HH12	1:A:85:GLN:HG2	1.48	0.77
1:A:182:VAL:HG23	1:A:186:ASN:HD21	1.49	0.77
1:A:250:VAL:HA	1:A:254:GLU:OE1	1.83	0.77
1:A:238:ILE:C	1:A:242:LEU:HD23	2.04	0.77
1:A:308:ARG:O	1:A:309:HIS:HB3	1.84	0.77
2:B:237:THR:HG22	2:B:238:THR:H	1.49	0.77
1:A:276:ILE:CD1	1:A:281:ALA:HB3	2.14	0.77
2:B:293:MET:SD	2:B:365:ALA:HB1	2.24	0.77
2:B:152:ILE:HB	2:B:164:MET:HE1	1.67	0.77
1:A:420:GLU:O	1:A:422:ARG:N	2.18	0.76
2:B:282:ARG:NH1	5:B:1001:EP:O49	2.18	0.76
2:B:197:ASP:HA	2:B:263:LEU:HB2	1.67	0.76
1:A:167:LEU:HD13	1:A:252:LEU:HD22	1.67	0.76
1:A:243:ARG:HH21	1:A:252:LEU:HG	1.50	0.76
1:A:278:ALA:HB2	1:A:369:ALA:N	2.01	0.76
1:A:120:ASP:HA	1:A:123:ARG:HH12	1.48	0.76
2:B:110:ALA:O	2:B:112:LEU:N	2.17	0.76
1:A:69:ASP:HA	1:A:145:THR:HG21	1.67	0.76
1:A:391:LEU:HD23	1:A:391:LEU:O	1.85	0.76
2:B:55:ALA:HB3	2:B:58:LYS:HB2	1.67	0.76
2:B:287:PRO:HB3	2:B:329:GLN:OE1	1.85	0.76
2:B:221:THR:HG22	2:B:222:TYR:N	2.01	0.76
1:A:412:GLY:O	1:A:413:MET:HG2	1.86	0.75
2:B:166:THR:HG22	2:B:199:THR:HG23	1.67	0.75
1:A:201:ALA:HB3	1:A:267:PHE:HB3	1.68	0.75
2:B:177:ASP:HB2	4:B:1500:GDP:O3'	1.87	0.75
1:A:151:SER:HB3	1:A:193:THR:CG2	2.16	0.75

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:4:ILE:CD1	2:B:131:GLN:HB3	2.16	0.75
2:B:240:LEU:HD22	2:B:248:ALA:O	1.86	0.75
2:B:196:THR:O	2:B:263:LEU:HB2	1.86	0.75
2:B:139:LEU:CD1	2:B:168:SER:HB2	2.17	0.75
1:A:241:SER:OG	1:A:242:LEU:HD22	1.87	0.74
2:B:154:LYS:NZ	2:B:154:LYS:HB3	2.02	0.74
2:B:183:TYR:HA	2:B:385:PHE:HE1	1.53	0.74
2:B:315:ALA:HB3	2:B:330:MET:HE1	1.69	0.74
2:B:19:LYS:O	2:B:23:VAL:HG23	1.88	0.73
2:B:145:SER:O	2:B:149:THR:HG23	1.88	0.73
1:A:237:SER:O	1:A:239:THR:N	2.22	0.73
1:A:296:PHE:CD2	1:A:341:ILE:HD11	2.24	0.73
1:A:184:PRO:HG2	1:A:398:MET:CE	2.19	0.73
2:B:315:ALA:HB3	2:B:330:MET:CE	2.17	0.73
1:A:368:LEU:O	1:A:370:LYS:N	2.21	0.73
1:A:362:VAL:HG21	1:A:368:LEU:O	1.88	0.73
2:B:206:ALA:O	2:B:210:ILE:HG13	1.87	0.73
1:A:155:GLU:O	1:A:159:VAL:HG12	1.89	0.72
1:A:183:GLU:HB3	1:A:184:PRO:CD	2.19	0.72
2:B:286:VAL:N	2:B:287:PRO:HD2	1.96	0.72
1:A:79:ARG:CA	1:A:84:ARG:HG3	2.19	0.72
1:A:271:THR:CG2	1:A:272:TYR:N	2.51	0.72
2:B:132:GLY:HA3	2:B:163:ILE:CD1	2.19	0.72
1:A:420:GLU:C	1:A:422:ARG:H	1.90	0.72
2:B:308:GLY:HA2	2:B:426:GLN:HE21	1.53	0.72
1:A:238:ILE:O	1:A:242:LEU:HD23	1.89	0.72
1:A:271:THR:HG23	1:A:272:TYR:H	1.55	0.72
2:B:221:THR:O	2:B:225:LEU:HD23	1.89	0.72
1:A:311:LYS:H	1:A:382:THR:HB	1.55	0.72
2:B:310:TYR:HB2	2:B:340:TYR:O	1.90	0.72
1:A:229:ARG:HD3	1:A:363:VAL:CG2	2.18	0.72
1:A:238:ILE:HG12	1:A:378:LEU:HD22	1.72	0.71
2:B:308:GLY:HA3	2:B:426:GLN:HE21	1.52	0.71
1:A:88:HIS:H	1:A:91:GLN:NE2	1.87	0.71
1:A:195:LEU:HD21	1:A:264:ARG:NH1	2.05	0.71
1:A:402:ARG:O	1:A:405:VAL:HG23	1.88	0.71
2:B:77:ARG:HD3	2:B:90:PHE:HE2	1.54	0.71
2:B:164:MET:HB3	2:B:196:THR:HA	1.70	0.71
2:B:240:LEU:CD2	2:B:248:ALA:H	2.02	0.71
2:B:258:VAL:HG23	2:B:258:VAL:O	1.90	0.71
2:B:64:ILE:HD13	2:B:120:VAL:HG12	1.71	0.71

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:265:PHE:CE1	2:B:418:LEU:HD21	2.26	0.71
1:A:16:ILE:HD11	1:A:138:PHE:HD2	1.56	0.71
1:A:115:ILE:HG13	1:A:152:LEU:HD12	1.71	0.70
2:B:326:VAL:HG11	2:B:351:THR:HG21	1.73	0.70
2:B:11:GLN:HG3	2:B:72:THR:OG1	1.91	0.70
1:A:252:LEU:O	1:A:255:PHE:HB2	1.92	0.70
1:A:84:ARG:NH1	1:A:85:GLN:HG2	2.05	0.70
2:B:48:ASN:HD22	2:B:48:ASN:N	1.89	0.70
2:B:66:VAL:HA	2:B:91:VAL:HG23	1.74	0.70
1:A:132:LEU:HD23	1:A:132:LEU:H	1.57	0.70
1:A:141:PHE:O	1:A:147:SER:HB3	1.90	0.70
2:B:285:THR:CB	2:B:287:PRO:HD2	2.15	0.70
1:A:264:ARG:C	1:A:266:HIS:H	1.95	0.70
2:B:181:GLU:HB3	2:B:182:PRO:CD	2.22	0.70
1:A:393:HIS:HA	1:A:396:ASP:OD2	1.92	0.70
2:B:10:GLY:HA2	2:B:67:ASP:OD1	1.91	0.70
1:A:102:ASN:HD21	1:A:411:GLU:HG2	1.57	0.69
1:A:106:GLY:O	1:A:111:GLY:HA3	1.92	0.69
1:A:404:PHE:HZ	2:B:312:THR:HG21	1.57	0.69
1:A:267:PHE:CD1	1:A:267:PHE:N	2.60	0.69
1:A:239:THR:HG22	1:A:240:ALA:N	2.07	0.69
2:B:253:LEU:O	2:B:257:MET:N	2.25	0.69
1:A:62:VAL:CG2	1:A:63:PRO:HD2	2.22	0.69
1:A:69:ASP:HB2	1:A:75:ILE:CD1	2.20	0.69
1:A:381:THR:HG23	1:A:383:ALA:HB3	1.73	0.69
2:B:66:VAL:HA	2:B:91:VAL:O	1.92	0.69
1:A:221:ARG:N	1:A:222:PRO:HD3	2.07	0.69
2:B:117:LEU:O	2:B:120:VAL:HG22	1.93	0.69
1:A:11:GLN:HA	1:A:74:VAL:HG11	1.75	0.69
1:A:217:LEU:HA	1:A:277:SER:HB2	1.75	0.69
1:A:384:ILE:HD13	1:A:384:ILE:H	1.58	0.69
2:B:64:ILE:C	2:B:65:LEU:HD23	2.13	0.69
1:A:14:VAL:HG21	1:A:75:ILE:HD13	1.74	0.69
1:A:311:LYS:CD	1:A:342:GLN:HE22	2.06	0.69
1:A:319:TYR:O	1:A:355:ILE:HA	1.93	0.69
2:B:36:TYR:CE1	2:B:38:GLY:HA3	2.28	0.69
1:A:73:THR:HG23	1:A:77:GLU:OE2	1.93	0.68
1:A:279:GLU:HA	1:A:279:GLU:OE1	1.94	0.68
2:B:177:ASP:OD2	4:B:1500:GDP:H2'	1.94	0.68
1:A:272:TYR:CE2	1:A:274:PRO:HG2	2.29	0.68
2:B:356:ILE:HD12	2:B:357:PRO:CD	2.23	0.68

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:19:LYS:HE2	2:B:223:GLY:HA2	1.75	0.68
2:B:103:LYS:HE3	2:B:108:GLU:OE2	1.93	0.68
1:A:220:GLU:C	1:A:222:PRO:HD3	2.14	0.68
2:B:154:LYS:HB3	2:B:154:LYS:HZ2	1.59	0.68
1:A:167:LEU:HD11	1:A:252:LEU:HB3	1.74	0.68
2:B:183:TYR:HA	2:B:385:PHE:CE1	2.29	0.68
2:B:149:THR:HB	2:B:191:GLN:HG2	1.75	0.67
2:B:149:THR:HB	2:B:191:GLN:CB	2.24	0.67
1:A:291:ILE:HG21	1:A:373:ARG:HD2	1.74	0.67
1:A:241:SER:O	1:A:244:PHE:N	2.25	0.67
1:A:284:GLU:O	1:A:286:LEU:N	2.27	0.67
1:A:306:ASP:O	1:A:308:ARG:N	2.26	0.67
2:B:60:VAL:HG11	2:B:86:ARG:HG2	1.77	0.67
2:B:185:ALA:O	2:B:188:SER:N	2.26	0.67
2:B:130:LEU:HD23	2:B:162:ARG:NH1	2.10	0.67
1:A:120:ASP:HA	1:A:123:ARG:NH1	2.10	0.67
1:A:195:LEU:HG	1:A:196:GLU:OE1	1.93	0.67
1:A:291:ILE:CD1	1:A:375:VAL:HG22	2.25	0.67
1:A:297:GLU:OE2	1:A:299:ALA:HB3	1.94	0.67
2:B:392:LYS:O	2:B:393:ALA:O	2.12	0.67
1:A:2:ARG:O	1:A:2:ARG:HG2	1.94	0.67
1:A:406:HIS:HA	1:A:409:VAL:HG23	1.76	0.67
2:B:248:ALA:HA	2:B:252:LYS:HD3	1.77	0.67
2:B:178:THR:HG22	2:B:179:VAL:H	1.60	0.66
2:B:290:THR:HA	2:B:293:MET:CE	2.25	0.66
2:B:333:VAL:O	2:B:337:ASN:HB3	1.95	0.66
2:B:47:ILE:C	2:B:49:VAL:H	1.98	0.66
2:B:227:HIS:O	2:B:229:VAL:N	2.27	0.66
1:A:235:VAL:C	1:A:237:SER:H	1.96	0.66
1:A:252:LEU:HA	1:A:255:PHE:CD1	2.29	0.66
2:B:6:HIS:HE1	2:B:8:GLN:HB3	1.61	0.66
1:A:242:LEU:HB3	1:A:250:VAL:O	1.94	0.66
1:A:276:ILE:CG1	1:A:281:ALA:HB3	2.25	0.66
2:B:115:SER:O	2:B:119:VAL:HG23	1.96	0.66
2:B:184:ASN:O	2:B:188:SER:HB2	1.94	0.66
2:B:217:LEU:HD21	2:B:224:ASP:OD2	1.95	0.66
1:A:234:ILE:HG13	1:A:270:ALA:HB1	1.77	0.66
2:B:193:VAL:HG22	2:B:262:ARG:HH11	1.58	0.66
1:A:105:ARG:O	1:A:110:ILE:HG12	1.95	0.66
1:A:371:VAL:HG12	1:A:372:GLN:H	1.59	0.66
1:A:14:VAL:HG21	1:A:75:ILE:CD1	2.26	0.66

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:108:TYR:CE1	1:A:413:MET:SD	2.89	0.66
1:A:119:LEU:HD13	1:A:156:ARG:CZ	2.26	0.66
2:B:4:ILE:HD13	2:B:131:GLN:HB3	1.75	0.65
2:B:113:VAL:HG21	2:B:150:LEU:CD2	2.21	0.65
1:A:123:ARG:O	1:A:126:ALA:N	2.28	0.65
1:A:138:PHE:HZ	1:A:235:VAL:HG11	1.61	0.65
2:B:286:VAL:HG22	2:B:321:MET:CE	2.26	0.65
1:A:244:PHE:CB	1:A:356:ASN:HD21	2.08	0.65
1:A:255:PHE:O	1:A:259:LEU:N	2.29	0.65
2:B:137:HIS:CE1	2:B:168:SER:HB3	2.31	0.65
1:A:324:VAL:HG12	1:A:326:LYS:H	1.62	0.65
2:B:205:GLU:O	2:B:208:TYR:HB2	1.96	0.65
2:B:210:ILE:CG2	2:B:298:ASN:HA	2.26	0.65
1:A:173:PRO:HB2	1:A:391:LEU:HD11	1.79	0.65
2:B:290:THR:HA	2:B:293:MET:HE2	1.79	0.65
2:B:199:THR:HB	2:B:265:PHE:CD2	2.32	0.65
2:B:322:SER:HB3	2:B:325:GLU:CD	2.17	0.65
1:A:381:THR:C	1:A:383:ALA:H	2.00	0.64
1:A:273:ALA:H	1:A:274:PRO:HD2	1.62	0.64
1:A:309:HIS:CG	1:A:310:GLY:N	2.64	0.64
1:A:373:ARG:O	1:A:374:ALA:HB2	1.98	0.64
1:A:27:GLU:O	1:A:28:HIS:HD2	1.79	0.64
1:A:114:ILE:O	1:A:118:VAL:HG23	1.97	0.64
1:A:242:LEU:HD22	1:A:242:LEU:H	1.62	0.64
2:B:53:GLU:HG2	2:B:59:TYR:HE2	1.62	0.64
2:B:73:MET:HE1	2:B:92:PHE:HD2	1.63	0.64
2:B:127:CYS:O	2:B:128:ASP:HB2	1.97	0.64
1:A:167:LEU:HD12	1:A:252:LEU:HD13	1.78	0.64
2:B:190:HIS:HA	2:B:414:ASN:HD22	1.63	0.64
2:B:210:ILE:HG23	2:B:298:ASN:HA	1.80	0.64
2:B:211:CYS:O	2:B:215:LEU:HB2	1.97	0.64
1:A:288:VAL:HG22	1:A:323:VAL:HG13	1.77	0.64
2:B:166:THR:CG2	2:B:199:THR:HG23	2.28	0.64
2:B:377:LEU:HG	2:B:381:ILE:CD1	2.24	0.64
1:A:202:PHE:CE2	1:A:378:LEU:HD13	2.32	0.64
1:A:420:GLU:N	1:A:420:GLU:OE2	2.31	0.64
2:B:102:ALA:HB2	2:B:403:MET:SD	2.37	0.64
2:B:200:TYR:HB3	2:B:268:PRO:CG	2.28	0.64
1:A:172:TYR:OH	1:A:388:TRP:CE3	2.51	0.64
1:A:239:THR:O	1:A:240:ALA:C	2.36	0.64
2:B:80:PRO:O	2:B:82:GLY:N	2.31	0.64

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:12:ALA:O	1:A:16:ILE:HG22	1.98	0.63
2:B:249:ASP:H	2:B:252:LYS:HG3	1.64	0.63
1:A:7:ILE:HG21	1:A:153:LEU:CD2	2.25	0.63
1:A:71:GLU:HG2	2:B:2:ARG:NH1	2.12	0.63
1:A:98:ASP:HB3	2:B:251:ARG:HG3	1.80	0.63
1:A:269:LEU:O	1:A:269:LEU:HD12	1.97	0.63
2:B:3:GLU:HG3	2:B:130:LEU:CA	2.28	0.63
1:A:102:ASN:HD21	1:A:105:ARG:HB2	1.64	0.63
1:A:132:LEU:HD23	1:A:132:LEU:N	2.14	0.63
2:B:14:ASN:ND2	2:B:65:LEU:HB3	2.12	0.63
1:A:208:ALA:HB2	1:A:304:LYS:N	2.14	0.63
1:A:311:LYS:HD3	1:A:342:GLN:HE22	1.63	0.63
2:B:245:GLN:O	2:B:246:LEU:HB2	1.99	0.63
1:A:167:LEU:CD1	1:A:252:LEU:HD13	2.29	0.63
2:B:263:LEU:O	2:B:264:HIS:O	2.17	0.63
1:A:66:VAL:HG23	1:A:91:GLN:O	1.99	0.63
1:A:184:PRO:HG2	1:A:398:MET:HE2	1.79	0.63
1:A:336:LYS:O	1:A:341:ILE:HG21	1.99	0.63
2:B:241:ARG:HH11	2:B:241:ARG:CG	2.09	0.63
2:B:344:TRP:CZ3	2:B:345:ILE:HD11	2.34	0.63
2:B:271:ALA:HB2	2:B:365:ALA:HB3	1.80	0.63
2:B:358:PRO:HG2	2:B:364:SER:OG	1.99	0.63
1:A:242:LEU:HD12	1:A:250:VAL:CB	2.25	0.62
2:B:190:HIS:CG	2:B:411:ALA:HA	2.34	0.62
2:B:285:THR:HB	2:B:287:PRO:CD	2.18	0.62
1:A:147:SER:O	1:A:190:THR:HG23	1.98	0.62
2:B:103:LYS:HG3	2:B:401:GLU:HG3	1.81	0.62
2:B:181:GLU:OE2	2:B:181:GLU:HA	1.99	0.62
2:B:231:ALA:O	2:B:234:SER:HB3	1.98	0.62
1:A:2:ARG:N	1:A:131:GLY:O	2.33	0.62
1:A:103:TYR:CE1	1:A:148:GLY:HA2	2.34	0.62
1:A:209:ILE:HG23	1:A:230:LEU:HD23	1.81	0.62
2:B:112:LEU:O	2:B:116:VAL:HG23	1.99	0.62
2:B:275:SER:OG	2:B:279:GLN:HB2	2.00	0.62
2:B:377:LEU:O	2:B:381:ILE:HG12	1.99	0.62
2:B:86:ARG:O	2:B:89:ASN:HB2	2.00	0.62
2:B:137:HIS:HE1	2:B:168:SER:HB3	1.64	0.62
1:A:267:PHE:CZ	1:A:428:LEU:HD21	2.35	0.62
1:A:311:LYS:HE2	1:A:437:VAL:H	1.63	0.62
2:B:171:PRO:HB3	2:B:181:GLU:CG	2.29	0.62
1:A:9:VAL:CG2	1:A:145:THR:HG22	2.30	0.62

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:199:THR:HB	2:B:265:PHE:HD2	1.64	0.62
1:A:138:PHE:CE2	1:A:235:VAL:HG21	2.35	0.62
1:A:237:SER:O	1:A:238:ILE:C	2.37	0.62
1:A:244:PHE:HB3	1:A:356:ASN:HD21	1.65	0.62
1:A:290:GLU:CD	1:A:290:GLU:H	2.04	0.62
2:B:87:PRO:HG2	2:B:88:ASP:H	1.63	0.61
1:A:354:GLY:O	1:A:355:ILE:HG13	2.00	0.61
1:A:115:ILE:HG23	1:A:116:ASP:N	2.15	0.61
2:B:88:ASP:OD2	2:B:88:ASP:N	2.34	0.61
2:B:180:VAL:HG12	2:B:183:TYR:HD1	1.66	0.61
2:B:193:VAL:HG13	2:B:194:GLU:CG	2.30	0.61
1:A:362:VAL:CG2	1:A:370:LYS:HB2	2.29	0.61
1:A:429:GLU:C	1:A:431:ASP:H	2.02	0.61
2:B:248:ALA:HA	2:B:252:LYS:CD	2.31	0.61
1:A:273:ALA:O	1:A:275:VAL:HG23	2.00	0.61
2:B:50:TYR:OH	2:B:134:GLN:HG3	2.01	0.61
1:A:172:TYR:CZ	1:A:391:LEU:HD13	2.35	0.61
1:A:101:ASN:OD1	2:B:252:LYS:HE3	2.01	0.61
1:A:109:THR:HG22	1:A:110:ILE:HG23	1.83	0.61
2:B:280:GLN:O	2:B:282:ARG:HG3	2.01	0.61
1:A:16:ILE:HD11	1:A:138:PHE:CD2	2.36	0.61
1:A:133:GLN:O	1:A:164:LYS:HB3	2.00	0.61
2:B:395:LEU:O	2:B:395:LEU:HD13	2.01	0.61
2:B:101:TRP:HB2	2:B:184:ASN:OD1	2.01	0.61
1:A:178:SER:HB3	2:B:347:ASN:CG	2.20	0.61
2:B:131:GLN:O	2:B:163:ILE:HG13	2.01	0.61
1:A:256:GLN:O	1:A:260:VAL:HG12	2.01	0.60
2:B:2:ARG:HD2	2:B:131:GLN:NE2	2.16	0.60
2:B:244:GLY:C	2:B:246:LEU:H	2.05	0.60
1:A:264:ARG:O	1:A:266:HIS:N	2.32	0.60
2:B:52:ASN:HB3	2:B:60:VAL:HG23	1.83	0.60
2:B:210:ILE:HD12	2:B:300:MET:HE3	1.83	0.60
2:B:116:VAL:O	2:B:120:VAL:HG13	2.01	0.60
2:B:375:GLN:O	2:B:379:LYS:HB2	2.02	0.60
2:B:193:VAL:HG13	2:B:194:GLU:HG3	1.83	0.60
1:A:315:CYS:HG	1:A:343:PHE:HZ	1.47	0.60
2:B:36:TYR:C	2:B:38:GLY:H	2.04	0.60
2:B:322:SER:HB3	2:B:325:GLU:HG2	1.83	0.60
1:A:71:GLU:HG2	2:B:2:ARG:HH12	1.66	0.60
1:A:93:ILE:HD13	1:A:117:LEU:HG	1.83	0.60
1:A:110:ILE:O	1:A:113:GLU:HB2	2.02	0.60

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:LEU:H	1:A:132:LEU:CD2	2.14	0.60
1:A:404:PHE:N	1:A:404:PHE:CD1	2.67	0.60
1:A:214:ARG:HG3	1:A:220:GLU:OE1	2.01	0.60
2:B:240:LEU:HD22	2:B:248:ALA:H	1.64	0.60
1:A:72:PRO:O	1:A:74:VAL:N	2.34	0.60
1:A:227:LEU:O	1:A:231:ILE:HG12	2.01	0.60
1:A:294:ALA:HB1	1:A:300:ASN:HD21	1.66	0.60
1:A:242:LEU:HD21	1:A:318:LEU:CD1	2.31	0.59
1:A:249:ASN:H	1:A:249:ASN:HD22	1.49	0.59
1:A:376:CYS:O	1:A:377:MET:C	2.38	0.59
2:B:177:ASP:HB2	4:B:1500:GDP:C3'	2.33	0.59
2:B:341:PHE:O	2:B:348:ASN:ND2	2.35	0.59
2:B:105:HIS:CD2	2:B:150:LEU:HB2	2.37	0.59
1:A:298:PRO:HB3	1:A:307:PRO:HD2	1.85	0.59
1:A:303:VAL:C	1:A:305:CYS:H	2.06	0.59
1:A:316:CYS:SG	1:A:318:LEU:HD21	2.43	0.59
1:A:434:GLU:O	1:A:436:GLY:O	2.20	0.59
1:A:339:ARG:C	1:A:341:ILE:N	2.55	0.59
1:A:371:VAL:HG12	1:A:372:GLN:N	2.17	0.59
2:B:68:LEU:O	2:B:97:ALA:HB2	2.03	0.59
1:A:103:TYR:O	1:A:105:ARG:N	2.36	0.59
1:A:177:VAL:HB	2:B:327:ASP:HB3	1.85	0.59
1:A:359:PRO:HB2	1:A:360:PRO:HD2	1.85	0.59
2:B:23:VAL:HG21	2:B:230:SER:HB3	1.83	0.59
2:B:100:ASN:HB3	2:B:103:LYS:HB2	1.85	0.59
2:B:335:ASN:C	2:B:337:ASN:H	2.04	0.59
2:B:394:PHE:HD1	2:B:394:PHE:H	1.49	0.59
1:A:16:ILE:CD1	1:A:138:PHE:HD2	2.16	0.59
2:B:121:ARG:HA	2:B:124:SER:HB2	1.85	0.59
1:A:101:ASN:O	1:A:182:VAL:HG21	2.03	0.59
2:B:4:ILE:HD11	2:B:131:GLN:HB3	1.84	0.59
1:A:362:VAL:HB	1:A:370:LYS:HB2	1.84	0.59
1:A:384:ILE:HD13	1:A:384:ILE:N	2.18	0.59
2:B:42:LEU:C	2:B:44:LEU:H	2.06	0.59
2:B:121:ARG:O	2:B:125:GLU:HG2	2.01	0.59
2:B:163:ILE:HD12	2:B:163:ILE:O	2.03	0.59
1:A:61:HIS:CD2	1:A:62:VAL:HG12	2.37	0.58
2:B:46:ARG:HG2	2:B:241:ARG:O	2.03	0.58
2:B:149:THR:HB	2:B:191:GLN:CG	2.32	0.58
1:A:62:VAL:HG23	1:A:63:PRO:HD2	1.85	0.58
1:A:142:GLY:H	1:A:173:PRO:HG3	1.68	0.58

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:221:THR:CG2	2:B:222:TYR:H	2.15	0.58
2:B:248:ALA:HA	2:B:252:LYS:CE	2.33	0.58
1:A:210:TYR:CE2	1:A:227:LEU:HD11	2.38	0.58
2:B:335:ASN:O	2:B:337:ASN:N	2.36	0.58
1:A:104:ALA:CB	1:A:413:MET:HG3	2.34	0.58
1:A:184:PRO:HG2	1:A:398:MET:HE1	1.85	0.58
1:A:188:ILE:HD11	1:A:392:ASP:HA	1.85	0.58
1:A:209:ILE:CG2	1:A:227:LEU:HD22	2.32	0.58
1:A:276:ILE:HD13	1:A:277:SER:C	2.24	0.58
1:A:287:SER:HA	1:A:373:ARG:HH21	1.68	0.58
1:A:398:MET:O	1:A:400:ALA:N	2.36	0.58
2:B:377:LEU:HD23	2:B:378:PHE:N	2.18	0.58
1:A:11:GLN:HG3	1:A:74:VAL:CG1	2.34	0.58
1:A:309:HIS:NE2	1:A:382:THR:O	2.37	0.58
2:B:206:ALA:HB3	2:B:300:MET:O	2.02	0.58
1:A:192:HIS:ND1	1:A:193:THR:N	2.52	0.58
1:A:195:LEU:HD21	1:A:264:ARG:CZ	2.34	0.58
1:A:277:SER:HB3	1:A:280:LYS:HB3	1.84	0.58
1:A:278:ALA:O	1:A:279:GLU:CG	2.52	0.58
1:A:362:VAL:HG22	1:A:368:LEU:HD12	1.86	0.58
1:A:381:THR:O	1:A:383:ALA:N	2.33	0.58
2:B:261:PRO:O	2:B:263:LEU:N	2.36	0.58
2:B:359:ARG:CA	2:B:359:ARG:HH11	2.16	0.58
1:A:24:TYR:CE2	1:A:240:ALA:HB2	2.38	0.58
1:A:11:GLN:HG3	1:A:74:VAL:HG11	1.85	0.58
1:A:71:GLU:HB2	1:A:99:ALA:HB2	1.86	0.58
1:A:138:PHE:HZ	1:A:235:VAL:CG1	2.16	0.58
1:A:189:LEU:HD23	1:A:421:ALA:CB	2.33	0.58
2:B:23:VAL:HG21	2:B:230:SER:CB	2.34	0.58
2:B:399:THR:O	2:B:402:GLY:N	2.37	0.58
1:A:70:LEU:HG	1:A:145:THR:OG1	2.03	0.58
1:A:404:PHE:HD1	1:A:404:PHE:H	1.52	0.58
2:B:262:ARG:C	2:B:264:HIS:H	2.06	0.58
1:A:7:ILE:HD13	1:A:153:LEU:HD21	1.84	0.57
1:A:7:ILE:CD1	1:A:157:LEU:HD11	2.34	0.57
2:B:19:LYS:HG2	2:B:226:ASN:HB2	1.84	0.57
2:B:36:TYR:CD2	2:B:44:LEU:HD22	2.39	0.57
2:B:152:ILE:CB	2:B:164:MET:HE1	2.32	0.57
2:B:192:LEU:O	2:B:194:GLU:N	2.37	0.57
2:B:253:LEU:O	2:B:257:MET:HB2	2.04	0.57
2:B:319:GLY:O	2:B:320:ARG:O	2.22	0.57

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:82:THR:HG22	1:A:83:TYR:CD1	2.40	0.57
1:A:141:PHE:CE2	1:A:191:THR:HB	2.40	0.57
2:B:19:LYS:HB2	2:B:226:ASN:HB3	1.87	0.57
1:A:195:LEU:O	1:A:197:HIS:N	2.36	0.57
1:A:195:LEU:HD12	1:A:265:GLY:H	1.68	0.57
1:A:420:GLU:C	1:A:422:ARG:N	2.58	0.57
1:A:12:ALA:O	1:A:15:GLN:N	2.38	0.57
1:A:241:SER:O	1:A:244:PHE:HB2	2.04	0.57
1:A:291:ILE:CG2	1:A:373:ARG:HD2	2.34	0.57
1:A:344:VAL:HG23	1:A:347:CYS:HB3	1.86	0.57
2:B:24:ILE:CD1	2:B:238:THR:HG21	2.33	0.57
2:B:164:MET:O	2:B:197:ASP:OD2	2.21	0.57
2:B:136:THR:HG23	2:B:233:MET:CE	2.35	0.57
2:B:237:THR:O	2:B:239:CYS:N	2.38	0.57
2:B:263:LEU:O	2:B:263:LEU:HD12	2.05	0.57
1:A:88:HIS:HB2	1:A:91:GLN:HE21	1.69	0.57
1:A:138:PHE:HE2	1:A:235:VAL:HG21	1.69	0.57
1:A:319:TYR:HB3	1:A:323:VAL:HG21	1.87	0.57
1:A:260:VAL:HG23	1:A:266:HIS:HB2	1.87	0.56
2:B:113:VAL:CG2	2:B:150:LEU:HD23	2.30	0.56
2:B:164:MET:HG3	2:B:195:ASN:O	2.05	0.56
1:A:270:ALA:O	1:A:302:MET:HB2	2.05	0.56
1:A:427:ALA:C	1:A:429:GLU:H	2.07	0.56
2:B:44:LEU:HD11	2:B:47:ILE:HD13	1.87	0.56
1:A:179:THR:CG2	2:B:246:LEU:HD21	2.32	0.56
2:B:54:ALA:C	2:B:56:GLY:H	2.08	0.56
1:A:182:VAL:CG2	1:A:186:ASN:HD21	2.17	0.56
1:A:310:GLY:HA2	1:A:382:THR:O	2.05	0.56
2:B:106:TYR:HE2	2:B:403:MET:SD	2.28	0.56
2:B:216:LYS:HD3	2:B:275:SER:HB3	1.86	0.56
2:B:241:ARG:HG3	2:B:241:ARG:NH1	2.15	0.56
2:B:337:ASN:O	2:B:337:ASN:ND2	2.39	0.56
2:B:384:GLN:O	2:B:387:ALA:HB3	2.06	0.56
1:A:71:GLU:O	1:A:71:GLU:OE2	2.24	0.56
2:B:270:PHE:CE2	2:B:272:PRO:HG2	2.41	0.56
1:A:384:ILE:H	1:A:384:ILE:CD1	2.15	0.56
1:A:406:HIS:C	1:A:408:TYR:H	2.07	0.56
2:B:170:VAL:CB	2:B:377:LEU:HD11	2.34	0.56
2:B:236:VAL:CG2	2:B:368:ILE:HD11	2.31	0.56
1:A:77:GLU:HG2	2:B:243:PRO:HB3	1.88	0.56
1:A:104:ALA:HB1	1:A:413:MET:HG3	1.85	0.56

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:12:CYS:SG	2:B:138:SER:HB3	2.46	0.56
1:A:247:ALA:CB	1:A:355:ILE:HB	2.29	0.56
2:B:173:PRO:O	2:B:380:ARG:NH2	2.39	0.56
2:B:190:HIS:CE1	2:B:411:ALA:HA	2.40	0.56
1:A:119:LEU:HD13	1:A:156:ARG:NH2	2.21	0.56
1:A:241:SER:OG	1:A:242:LEU:N	2.38	0.56
1:A:362:VAL:HG22	1:A:368:LEU:HB2	1.87	0.56
2:B:44:LEU:CD1	2:B:47:ILE:HD13	2.36	0.56
2:B:375:GLN:HG2	2:B:419:VAL:HG13	1.87	0.56
1:A:419:SER:O	1:A:422:ARG:HB3	2.06	0.56
1:A:195:LEU:C	1:A:197:HIS:H	2.09	0.55
1:A:250:VAL:HG22	1:A:352:LYS:HE3	1.88	0.55
1:A:291:ILE:CG1	1:A:292:THR:N	2.68	0.55
1:A:334:THR:O	1:A:338:LYS:HB2	2.06	0.55
2:B:6:HIS:HB3	2:B:63:ALA:CB	2.32	0.55
2:B:191:GLN:O	2:B:195:ASN:HB2	2.05	0.55
1:A:104:ALA:HB2	1:A:413:MET:CE	2.37	0.55
1:A:308:ARG:NH1	1:A:390:ARG:HH22	2.04	0.55
2:B:152:ILE:CG2	2:B:164:MET:HE1	2.36	0.55
2:B:248:ALA:HA	2:B:252:LYS:HE2	1.88	0.55
2:B:289:LEU:HG	2:B:365:ALA:HB2	1.88	0.55
2:B:375:GLN:CG	2:B:419:VAL:HG13	2.36	0.55
1:A:8:HIS:ND1	1:A:138:PHE:HB2	2.21	0.55
1:A:20:CYS:HA	1:A:232:GLY:HA3	1.89	0.55
1:A:291:ILE:HD12	1:A:375:VAL:HG22	1.87	0.55
2:B:44:LEU:HD21	2:B:59:TYR:OH	2.06	0.55
1:A:115:ILE:CG2	1:A:116:ASP:N	2.69	0.55
2:B:4:ILE:HG21	2:B:134:GLN:HG2	1.88	0.55
2:B:106:TYR:CE2	2:B:403:MET:SD	2.99	0.55
2:B:227:HIS:O	2:B:230:SER:N	2.38	0.55
2:B:241:ARG:HE	2:B:249:ASP:HB3	1.71	0.55
1:A:417:GLU:OE2	1:A:417:GLU:HA	2.07	0.55
2:B:109:GLY:O	2:B:113:VAL:HG23	2.07	0.55
2:B:335:ASN:C	2:B:337:ASN:N	2.59	0.55
1:A:266:HIS:HB3	1:A:380:ASN:HD21	1.70	0.55
1:A:173:PRO:HB2	1:A:391:LEU:CD1	2.36	0.55
1:A:242:LEU:HD21	1:A:318:LEU:HD13	1.88	0.55
1:A:313:MET:HE3	1:A:380:ASN:O	2.07	0.55
2:B:73:MET:O	2:B:77:ARG:HG2	2.06	0.55
2:B:394:PHE:N	2:B:394:PHE:CD1	2.72	0.55
1:A:5:ILE:HB	1:A:135:PHE:CD2	2.42	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:311:LYS:CE	1:A:437:VAL:H	2.20	0.55
1:A:382:THR:O	1:A:382:THR:HG22	2.06	0.55
1:A:419:SER:HB2	1:A:420:GLU:OE2	2.05	0.55
2:B:102:ALA:CB	2:B:403:MET:SD	2.95	0.55
1:A:152:LEU:HD12	1:A:152:LEU:O	2.06	0.55
1:A:308:ARG:O	1:A:309:HIS:CB	2.55	0.55
1:A:102:ASN:ND2	1:A:105:ARG:HB2	2.22	0.55
1:A:138:PHE:CZ	1:A:235:VAL:HG11	2.41	0.55
2:B:149:THR:HB	2:B:191:GLN:HB2	1.88	0.55
1:A:276:ILE:HD13	1:A:277:SER:N	2.21	0.54
1:A:334:THR:HA	1:A:337:THR:OG1	2.07	0.54
2:B:20:PHE:CE2	2:B:233:MET:HG2	2.42	0.54
2:B:88:ASP:C	2:B:90:PHE:H	2.10	0.54
2:B:103:LYS:CG	2:B:401:GLU:HG3	2.37	0.54
1:A:83:TYR:HB3	1:A:87:PHE:HE1	1.71	0.54
1:A:276:ILE:HD13	1:A:277:SER:O	2.07	0.54
1:A:296:PHE:HD2	1:A:341:ILE:HD11	1.72	0.54
2:B:407:GLU:HA	2:B:407:GLU:OE2	2.07	0.54
1:A:6:SER:HA	1:A:136:SER:OG	2.07	0.54
1:A:147:SER:HB2	1:A:190:THR:OG1	2.07	0.54
1:A:210:TYR:C	1:A:212:ILE:H	2.11	0.54
2:B:101:TRP:HD1	2:B:145:SER:HB2	1.73	0.54
2:B:322:SER:HB3	2:B:325:GLU:CG	2.36	0.54
1:A:22:GLU:HG2	1:A:83:TYR:CZ	2.43	0.54
1:A:25:CYS:SG	1:A:83:TYR:HE2	2.30	0.54
1:A:256:GLN:O	1:A:260:VAL:CG1	2.55	0.54
2:B:48:ASN:N	2:B:48:ASN:ND2	2.56	0.54
2:B:207:LEU:CD2	2:B:300:MET:HG3	2.37	0.54
2:B:263:LEU:HD12	2:B:263:LEU:C	2.28	0.54
1:A:305:CYS:SG	1:A:384:ILE:HA	2.47	0.54
1:A:381:THR:C	1:A:383:ALA:N	2.61	0.54
2:B:323:MET:SD	2:B:323:MET:N	2.81	0.54
2:B:358:PRO:HD2	2:B:361:LEU:HD12	1.89	0.54
1:A:319:TYR:CE1	1:A:328:VAL:HG13	2.43	0.54
2:B:202:ILE:HD13	2:B:229:VAL:HG22	1.88	0.54
1:A:14:VAL:HG13	1:A:67:PHE:CD2	2.42	0.54
1:A:126:ALA:O	1:A:129:CYS:SG	2.66	0.54
1:A:190:THR:O	1:A:194:THR:HG22	2.08	0.54
2:B:290:THR:CG2	2:B:333:VAL:HG21	2.38	0.54
2:B:36:TYR:OH	2:B:40:SER:O	2.26	0.54
2:B:67:ASP:HA	2:B:143:THR:OG1	2.06	0.54

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:407:TRP:HE1	2:B:258:VAL:HG23	1.73	0.54
2:B:6:HIS:O	2:B:63:ALA:HA	2.07	0.54
2:B:65:LEU:HD23	2:B:65:LEU:N	2.23	0.54
2:B:171:PRO:HB3	2:B:181:GLU:HG3	1.90	0.54
2:B:201:CYS:SG	2:B:265:PHE:HB3	2.48	0.54
2:B:306:ARG:HG2	2:B:340:TYR:OH	2.08	0.54
1:A:100:ALA:O	1:A:102:ASN:N	2.39	0.53
1:A:168:GLU:OE1	1:A:198:SER:HB3	2.07	0.53
1:A:180:ALA:HA	2:B:350:LYS:HE2	1.89	0.53
1:A:368:LEU:N	1:A:368:LEU:HD23	2.24	0.53
2:B:236:VAL:O	2:B:240:LEU:HB2	2.08	0.53
1:A:159:VAL:O	1:A:159:VAL:HG13	2.08	0.53
1:A:191:THR:HG21	1:A:425:MET:CE	2.37	0.53
1:A:273:ALA:HB1	1:A:294:ALA:HB3	1.89	0.53
2:B:198:GLU:OE1	2:B:254:ALA:HB2	2.09	0.53
1:A:62:VAL:HG22	1:A:63:PRO:HD2	1.89	0.53
2:B:167:PHE:CZ	2:B:233:MET:HA	2.42	0.53
1:A:191:THR:HG23	1:A:192:HIS:N	2.22	0.53
1:A:339:ARG:O	1:A:341:ILE:N	2.40	0.53
1:A:426:ALA:O	1:A:429:GLU:HB3	2.09	0.53
2:B:100:ASN:ND2	2:B:102:ALA:HB3	2.23	0.53
2:B:211:CYS:SG	2:B:220:PRO:CB	2.89	0.53
1:A:123:ARG:HB2	1:A:123:ARG:NH1	2.19	0.53
1:A:182:VAL:HG23	1:A:186:ASN:ND2	2.21	0.53
1:A:426:ALA:O	1:A:430:LYS:HG3	2.08	0.53
2:B:163:ILE:CD1	2:B:250:LEU:HD12	2.39	0.53
2:B:193:VAL:CG2	2:B:262:ARG:HH11	2.22	0.53
2:B:172:SER:OG	2:B:204:ASN:HB2	2.08	0.53
2:B:337:ASN:O	2:B:339:SER:N	2.42	0.53
2:B:387:ALA:O	2:B:389:PHE:N	2.42	0.53
1:A:70:LEU:HD13	1:A:110:ILE:HG13	1.91	0.53
1:A:199:ASP:HB3	1:A:256:GLN:NE2	2.24	0.53
1:A:201:ALA:O	1:A:267:PHE:HB3	2.09	0.53
2:B:50:TYR:HE1	2:B:238:THR:HG22	1.73	0.53
2:B:130:LEU:HD23	2:B:130:LEU:H	1.73	0.53
1:A:29:GLY:C	1:A:30:ILE:HG13	2.29	0.53
1:A:121:ARG:O	1:A:124:LYS:HB2	2.07	0.53
1:A:187:SER:O	1:A:190:THR:N	2.41	0.53
2:B:289:LEU:O	2:B:293:MET:HG3	2.09	0.53
1:A:153:LEU:O	1:A:157:LEU:HG	2.08	0.53
2:B:342:VAL:HG13	2:B:344:TRP:CD1	2.44	0.53

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:399:THR:O	2:B:401:GLU:N	2.42	0.53
1:A:103:TYR:HB2	1:A:186:ASN:HA	1.91	0.52
1:A:122:ILE:O	1:A:126:ALA:N	2.41	0.52
1:A:177:VAL:CG2	1:A:207:GLU:HB2	2.40	0.52
1:A:223:THR:N	1:A:226:ASN:HD22	2.07	0.52
1:A:256:GLN:CA	1:A:260:VAL:HG12	2.39	0.52
2:B:359:ARG:NH1	2:B:359:ARG:HB3	2.24	0.52
1:A:172:TYR:HH	1:A:388:TRP:HE3	1.51	0.52
1:A:264:ARG:C	1:A:266:HIS:N	2.62	0.52
1:A:401:LYS:C	1:A:403:ALA:H	2.12	0.52
2:B:73:MET:SD	2:B:92:PHE:HB3	2.50	0.52
2:B:284:LEU:HD13	2:B:289:LEU:HD13	1.91	0.52
2:B:421:GLU:HG2	2:B:421:GLU:O	2.09	0.52
1:A:21:TRP:HH2	1:A:64:ARG:HG2	1.74	0.52
1:A:182:VAL:O	1:A:184:PRO:N	2.41	0.52
2:B:200:TYR:CD1	2:B:200:TYR:N	2.76	0.52
2:B:249:ASP:OD1	2:B:252:LYS:HD3	2.10	0.52
2:B:358:PRO:HB2	2:B:361:LEU:CB	2.36	0.52
1:A:16:ILE:HD12	1:A:171:ILE:HD11	1.92	0.52
1:A:77:GLU:CG	2:B:243:PRO:HB3	2.39	0.52
1:A:271:THR:HG23	1:A:272:TYR:N	2.16	0.52
2:B:412:GLU:O	2:B:416:ASN:N	2.42	0.52
2:B:377:LEU:CG	2:B:381:ILE:HD11	2.25	0.52
1:A:93:ILE:CD1	1:A:118:VAL:HA	2.40	0.52
1:A:154:MET:HE3	1:A:166:LYS:HB3	1.92	0.52
1:A:378:LEU:O	1:A:378:LEU:HD12	2.10	0.52
2:B:44:LEU:HD12	2:B:47:ILE:HG21	1.91	0.52
2:B:255:VAL:HG12	2:B:255:VAL:O	2.08	0.52
2:B:4:ILE:CG2	2:B:134:GLN:HG2	2.40	0.52
2:B:86:ARG:HB3	2:B:87:PRO:HD2	1.92	0.52
1:A:317:LEU:C	1:A:318:LEU:HD23	2.30	0.52
2:B:6:HIS:CE1	2:B:8:GLN:HB3	2.44	0.52
2:B:306:ARG:HA	2:B:340:TYR:CE2	2.45	0.52
1:A:116:ASP:HA	1:A:119:LEU:HD12	1.92	0.52
1:A:427:ALA:C	1:A:429:GLU:N	2.61	0.52
2:B:117:LEU:HD11	2:B:154:LYS:HZ2	1.75	0.52
2:B:257:MET:HE2	2:B:368:ILE:HG22	1.91	0.52
2:B:361:LEU:HD23	5:B:1001:EP:H431	1.91	0.52
2:B:113:VAL:HG12	2:B:117:LEU:CD1	2.40	0.52
2:B:139:LEU:HG	2:B:188:SER:HB3	1.92	0.52
2:B:232:THR:OG1	2:B:233:MET:N	2.41	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:260:PHE:HB3	2:B:261:PRO:HD2	1.91	0.52
1:A:107:HIS:O	1:A:152:LEU:HD21	2.10	0.51
1:A:189:LEU:HD23	1:A:421:ALA:HB3	1.91	0.51
1:A:217:LEU:HD12	1:A:277:SER:CA	2.30	0.51
1:A:93:ILE:HD11	1:A:121:ARG:HG3	1.91	0.51
1:A:23:LEU:O	1:A:26:LEU:HB3	2.11	0.51
1:A:69:ASP:C	1:A:70:LEU:HD23	2.30	0.51
1:A:117:LEU:HD12	1:A:117:LEU:O	2.10	0.51
1:A:167:LEU:CD2	1:A:200:CYS:HB3	2.37	0.51
1:A:221:ARG:HG2	1:A:221:ARG:O	2.09	0.51
2:B:372:THR:CB	2:B:426:GLN:HB2	2.40	0.51
2:B:3:GLU:HA	2:B:49:VAL:HA	1.91	0.51
2:B:133:PHE:O	2:B:165:ASN:HB2	2.10	0.51
2:B:149:THR:HG21	2:B:188:SER:HA	1.93	0.51
2:B:251:ARG:O	2:B:255:VAL:HG23	2.11	0.51
2:B:393:ALA:C	2:B:395:LEU:H	2.13	0.51
2:B:394:PHE:HD1	2:B:394:PHE:N	2.09	0.51
1:A:103:TYR:CD2	1:A:189:LEU:HD13	2.45	0.51
1:A:223:THR:H	1:A:226:ASN:HD22	1.58	0.51
2:B:21:TRP:O	2:B:25:SER:HB3	2.10	0.51
1:A:209:ILE:HG21	1:A:227:LEU:HD22	1.93	0.51
2:B:53:GLU:HG2	2:B:59:TYR:CE2	2.44	0.51
2:B:70:PRO:O	2:B:72:THR:N	2.44	0.51
1:A:274:PRO:HG3	1:A:374:ALA:HA	1.92	0.51
2:B:406:MET:O	2:B:409:THR:HB	2.10	0.51
1:A:114:ILE:HD11	1:A:149:PHE:CE2	2.46	0.51
1:A:223:THR:HG22	1:A:224:TYR:N	2.25	0.51
1:A:344:VAL:CG2	1:A:347:CYS:HB3	2.40	0.51
2:B:47:ILE:C	2:B:49:VAL:N	2.64	0.51
2:B:193:VAL:C	2:B:263:LEU:HD23	2.31	0.51
1:A:191:THR:HG21	1:A:425:MET:HE1	1.93	0.51
1:A:296:PHE:N	1:A:296:PHE:CD1	2.79	0.51
1:A:399:TYR:CE2	1:A:402:ARG:NH2	2.79	0.51
2:B:207:LEU:HB2	2:B:225:LEU:CD1	2.41	0.51
1:A:181:VAL:HG11	1:A:404:PHE:CZ	2.46	0.51
2:B:11:GLN:HA	2:B:72:THR:HG21	1.93	0.51
2:B:341:PHE:O	2:B:342:VAL:O	2.29	0.51
1:A:263:PRO:O	1:A:264:ARG:C	2.49	0.50
2:B:42:LEU:O	2:B:44:LEU:N	2.43	0.50
2:B:415:MET:O	2:B:415:MET:SD	2.69	0.50
2:B:417:ASP:O	2:B:420:SER:N	2.44	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:VAL:HG22	1:A:146:GLY:HA2	1.92	0.50
2:B:3:GLU:HB2	2:B:62:ARG:CZ	2.41	0.50
2:B:66:VAL:HG13	2:B:91:VAL:HG23	1.92	0.50
2:B:187:LEU:HD11	2:B:408:PHE:CZ	2.46	0.50
2:B:265:PHE:CD1	2:B:265:PHE:N	2.78	0.50
2:B:271:ALA:O	2:B:292:GLN:OE1	2.29	0.50
1:A:192:HIS:ND1	1:A:192:HIS:C	2.64	0.50
1:A:313:MET:HE1	1:A:380:ASN:OD1	2.12	0.50
2:B:271:ALA:H	2:B:272:PRO:HD2	1.76	0.50
2:B:303:CYS:HB3	2:B:373:ALA:O	2.11	0.50
1:A:256:GLN:HA	1:A:260:VAL:HG12	1.93	0.50
1:A:287:SER:HA	1:A:373:ARG:NH2	2.26	0.50
1:A:351:PHE:O	1:A:353:VAL:N	2.45	0.50
1:A:300:ASN:O	1:A:301:GLN:C	2.49	0.50
1:A:309:HIS:NE2	1:A:382:THR:HG22	2.27	0.50
1:A:404:PHE:N	1:A:404:PHE:HD1	2.08	0.50
2:B:3:GLU:O	2:B:131:GLN:N	2.43	0.50
2:B:17:GLY:O	2:B:20:PHE:N	2.45	0.50
2:B:66:VAL:CA	2:B:91:VAL:HG23	2.40	0.50
2:B:153:SER:HA	2:B:195:ASN:OD1	2.11	0.50
2:B:304:ASP:HB2	2:B:307:HIS:HB2	1.92	0.50
1:A:273:ALA:O	1:A:275:VAL:N	2.39	0.50
1:A:336:LYS:C	1:A:338:LYS:H	2.14	0.50
1:A:12:ALA:O	1:A:16:ILE:CG2	2.60	0.50
1:A:264:ARG:CB	1:A:266:HIS:CD2	2.94	0.50
1:A:330:ALA:O	1:A:334:THR:CG2	2.60	0.50
2:B:6:HIS:HA	2:B:134:GLN:O	2.12	0.50
2:B:28:HIS:HA	2:B:43:GLN:HB3	1.93	0.50
2:B:163:ILE:HD11	2:B:250:LEU:HD12	1.93	0.50
2:B:193:VAL:O	2:B:194:GLU:HG2	2.11	0.50
2:B:200:TYR:CE2	2:B:266:PHE:HD1	2.29	0.50
2:B:240:LEU:HD21	2:B:248:ALA:H	1.75	0.50
2:B:280:GLN:O	2:B:282:ARG:CG	2.60	0.50
2:B:322:SER:O	2:B:326:VAL:HG23	2.11	0.50
1:A:271:THR:HG22	1:A:272:TYR:N	2.27	0.50
2:B:257:MET:HE3	2:B:370:ASN:HB2	1.93	0.50
1:A:21:TRP:CH2	1:A:64:ARG:HG2	2.46	0.50
1:A:109:THR:HG22	1:A:110:ILE:CG2	2.42	0.50
1:A:178:SER:HB3	2:B:347:ASN:HD21	1.76	0.50
1:A:286:LEU:HD11	1:A:290:GLU:HG2	1.94	0.50
1:A:383:ALA:C	1:A:385:ALA:N	2.64	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:55:ALA:O	2:B:57:ASN:N	2.45	0.50
2:B:181:GLU:HB3	2:B:182:PRO:HD3	1.93	0.50
1:A:12:ALA:HB3	1:A:140:SER:OG	2.12	0.49
1:A:386:GLU:O	1:A:389:ALA:N	2.45	0.49
2:B:240:LEU:HD11	2:B:248:ALA:HB3	1.94	0.49
2:B:313:VAL:HG12	2:B:314:ALA:N	2.27	0.49
1:A:69:ASP:HB2	1:A:75:ILE:CG1	2.42	0.49
2:B:64:ILE:CD1	2:B:120:VAL:HG12	2.40	0.49
2:B:290:THR:HA	2:B:293:MET:HE3	1.94	0.49
2:B:361:LEU:HB2	5:B:1001:EP:C43	2.39	0.49
1:A:104:ALA:HB2	1:A:413:MET:HE2	1.94	0.49
1:A:134:GLY:HA3	1:A:165:SER:OG	2.12	0.49
1:A:169:PHE:HZ	1:A:238:ILE:HD12	1.75	0.49
1:A:269:LEU:O	1:A:269:LEU:CD1	2.60	0.49
1:A:273:ALA:C	1:A:275:VAL:H	2.14	0.49
2:B:190:HIS:HA	2:B:414:ASN:ND2	2.27	0.49
1:A:9:VAL:O	1:A:13:GLY:HA3	2.12	0.49
1:A:276:ILE:HD13	1:A:276:ILE:C	2.32	0.49
1:A:315:CYS:SG	1:A:343:PHE:HZ	2.33	0.49
1:A:422:ARG:O	1:A:423:GLU:C	2.50	0.49
1:A:423:GLU:O	1:A:426:ALA:HB3	2.12	0.49
1:A:427:ALA:O	1:A:429:GLU:N	2.46	0.49
2:B:36:TYR:HE1	2:B:43:GLN:HB2	1.78	0.49
2:B:65:LEU:O	2:B:73:MET:HE3	2.12	0.49
2:B:271:ALA:HB2	2:B:293:MET:CG	2.41	0.49
2:B:385:PHE:O	2:B:386:THR:C	2.51	0.49
1:A:132:LEU:HG	1:A:133:GLN:N	2.27	0.49
1:A:207:GLU:O	1:A:208:ALA:C	2.51	0.49
1:A:237:SER:C	1:A:239:THR:N	2.64	0.49
1:A:402:ARG:O	1:A:403:ALA:C	2.51	0.49
2:B:351:THR:HG22	2:B:352:ALA:N	2.28	0.49
2:B:361:LEU:HD11	2:B:363:MET:O	2.12	0.49
2:B:389:PHE:C	2:B:391:ARG:H	2.16	0.49
1:A:84:ARG:HG2	1:A:84:ARG:HH11	1.77	0.49
1:A:202:PHE:HE2	1:A:378:LEU:HD13	1.75	0.49
1:A:235:VAL:C	1:A:237:SER:N	2.64	0.49
1:A:264:ARG:HB2	1:A:266:HIS:CD2	2.48	0.49
2:B:73:MET:CE	2:B:92:PHE:HD2	2.26	0.49
2:B:119:VAL:O	2:B:122:LYS:HB3	2.13	0.49
2:B:148:GLY:O	2:B:151:LEU:HB2	2.13	0.49
1:A:139:HIS:CG	1:A:140:SER:N	2.78	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:182:VAL:O	1:A:183:GLU:C	2.50	0.49
1:A:332:ILE:O	1:A:336:LYS:HB3	2.12	0.49
1:A:362:VAL:CB	1:A:370:LYS:HB2	2.42	0.49
2:B:23:VAL:O	2:B:27:GLU:HB2	2.13	0.49
2:B:130:LEU:CD2	2:B:162:ARG:NH1	2.75	0.49
2:B:287:PRO:O	2:B:291:GLN:CB	2.55	0.49
2:B:308:GLY:HA3	2:B:426:GLN:NE2	2.23	0.49
1:A:204:VAL:HG11	1:A:231:ILE:HD12	1.95	0.49
1:A:434:GLU:O	1:A:435:VAL:C	2.51	0.49
2:B:24:ILE:CG1	2:B:238:THR:HG21	2.43	0.49
2:B:117:LEU:CD1	2:B:154:LYS:HZ2	2.26	0.49
2:B:198:GLU:HB3	2:B:266:PHE:CE1	2.48	0.49
1:A:112:LYS:HD3	1:A:115:ILE:HG21	1.95	0.48
1:A:141:PHE:O	1:A:143:GLY:N	2.45	0.48
1:A:203:MET:HG3	1:A:384:ILE:HG21	1.94	0.48
1:A:210:TYR:CG	2:B:324:LYS:HD3	2.46	0.48
1:A:273:ALA:N	1:A:274:PRO:HD2	2.28	0.48
1:A:294:ALA:HB1	1:A:300:ASN:ND2	2.28	0.48
2:B:72:THR:HA	2:B:75:SER:OG	2.13	0.48
1:A:90:GLU:O	1:A:121:ARG:NE	2.43	0.48
1:A:93:ILE:HD12	1:A:118:VAL:HA	1.95	0.48
1:A:149:PHE:O	1:A:150:THR:C	2.51	0.48
1:A:319:TYR:CD2	1:A:323:VAL:HG11	2.48	0.48
1:A:278:ALA:HB2	1:A:369:ALA:CA	2.42	0.48
2:B:76:VAL:O	2:B:82:GLY:HA3	2.13	0.48
1:A:78:VAL:O	1:A:80:THR:N	2.42	0.48
1:A:123:ARG:HA	1:A:126:ALA:HB3	1.94	0.48
1:A:295:CYS:SG	1:A:375:VAL:HG21	2.53	0.48
2:B:108:GLU:O	2:B:111:GLU:HG2	2.13	0.48
1:A:321:GLY:HA2	1:A:357:TYR:O	2.13	0.48
2:B:135:LEU:HD13	2:B:152:ILE:HG23	1.95	0.48
2:B:341:PHE:CD2	2:B:348:ASN:ND2	2.82	0.48
1:A:5:ILE:O	1:A:135:PHE:HA	2.14	0.48
1:A:425:MET:O	1:A:426:ALA:C	2.52	0.48
2:B:289:LEU:HD22	2:B:363:MET:HB3	1.95	0.48
1:A:228:ASN:HA	1:A:231:ILE:HG12	1.94	0.48
1:A:235:VAL:O	1:A:237:SER:N	2.43	0.48
1:A:31:GLN:HB2	1:A:32:PRO:HD2	1.96	0.48
1:A:261:PRO:HB2	1:A:262:TYR:HD1	1.79	0.48
1:A:362:VAL:CG2	1:A:368:LEU:HB2	2.43	0.48
2:B:79:GLY:O	2:B:80:PRO:O	2.31	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:207:LEU:HD21	2:B:300:MET:HG3	1.95	0.48
2:B:241:ARG:CG	2:B:241:ARG:NH1	2.71	0.48
1:A:99:ALA:HB1	3:A:9500:GTP:O3G	2.14	0.48
1:A:187:SER:O	1:A:188:ILE:C	2.51	0.48
1:A:354:GLY:C	1:A:355:ILE:HG13	2.33	0.48
1:A:404:PHE:CZ	2:B:312:THR:HG21	2.44	0.48
2:B:91:VAL:HG21	2:B:116:VAL:HG22	1.95	0.48
1:A:152:LEU:CD1	1:A:152:LEU:O	2.61	0.48
1:A:178:SER:CB	2:B:347:ASN:ND2	2.73	0.48
1:A:343:PHE:CE1	1:A:351:PHE:CZ	3.02	0.48
1:A:209:ILE:O	1:A:212:ILE:HB	2.13	0.47
1:A:244:PHE:HB2	1:A:356:ASN:HD21	1.78	0.47
2:B:256:ASN:CB	2:B:350:LYS:HG3	2.44	0.47
2:B:265:PHE:CD1	2:B:378:PHE:HE1	2.31	0.47
1:A:68:VAL:HG22	1:A:93:ILE:HB	1.96	0.47
1:A:104:ALA:HB1	1:A:413:MET:CG	2.43	0.47
1:A:150:THR:O	1:A:153:LEU:HB3	2.14	0.47
1:A:191:THR:CG2	1:A:192:HIS:N	2.78	0.47
1:A:296:PHE:HD1	1:A:296:PHE:H	1.61	0.47
1:A:406:HIS:C	1:A:408:TYR:N	2.67	0.47
2:B:412:GLU:O	2:B:416:ASN:HB2	2.14	0.47
1:A:151:SER:OG	1:A:190:THR:HG23	2.15	0.47
1:A:171:ILE:HA	1:A:204:VAL:O	2.13	0.47
1:A:183:GLU:HB3	1:A:184:PRO:HD3	1.94	0.47
1:A:332:ILE:C	1:A:334:THR:H	2.18	0.47
2:B:205:GLU:HA	2:B:208:TYR:CD1	2.49	0.47
1:A:14:VAL:O	1:A:18:ASN:HB2	2.14	0.47
1:A:166:LYS:HE3	1:A:166:LYS:N	2.29	0.47
1:A:188:ILE:HG22	1:A:189:LEU:N	2.29	0.47
1:A:210:TYR:HA	1:A:213:CYS:SG	2.55	0.47
1:A:254:GLU:O	1:A:258:ASN:ND2	2.47	0.47
2:B:40:SER:HB3	2:B:43:GLN:CG	2.29	0.47
2:B:100:ASN:HD21	2:B:102:ALA:HB3	1.79	0.47
2:B:104:GLY:C	2:B:109:GLY:HA3	2.35	0.47
2:B:205:GLU:O	2:B:208:TYR:N	2.44	0.47
2:B:357:PRO:HB2	2:B:358:PRO:HD2	1.97	0.47
1:A:27:GLU:O	1:A:28:HIS:CD2	2.66	0.47
2:B:8:GLN:CG	2:B:65:LEU:HD22	2.44	0.47
2:B:77:ARG:NH1	2:B:90:PHE:CD2	2.82	0.47
2:B:326:VAL:HG11	2:B:351:THR:CG2	2.43	0.47
1:A:11:GLN:O	1:A:15:GLN:HG3	2.15	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:GLN:CB	1:A:32:PRO:HD2	2.43	0.47
1:A:239:THR:CG2	1:A:240:ALA:N	2.73	0.47
2:B:313:VAL:HG13	2:B:367:PHE:CE1	2.48	0.47
2:B:337:ASN:O	2:B:337:ASN:CG	2.53	0.47
1:A:277:SER:O	1:A:279:GLU:N	2.45	0.47
1:A:403:ALA:HB1	1:A:404:PHE:HD1	1.79	0.47
2:B:143:THR:HG23	4:B:1500:GDP:PB	2.54	0.47
2:B:235:GLY:O	2:B:236:VAL:C	2.52	0.47
2:B:252:LYS:H	2:B:252:LYS:HG2	1.49	0.47
2:B:371:SER:C	2:B:373:ALA:H	2.18	0.47
1:A:234:ILE:CD1	1:A:270:ALA:HB1	2.45	0.47
2:B:135:LEU:HD13	2:B:152:ILE:CG2	2.44	0.47
2:B:185:ALA:O	2:B:186:THR:C	2.53	0.47
2:B:244:GLY:C	2:B:246:LEU:N	2.69	0.47
1:A:261:PRO:HB2	1:A:262:TYR:CD1	2.50	0.47
1:A:291:ILE:HG13	1:A:292:THR:N	2.30	0.47
2:B:66:VAL:HG13	2:B:91:VAL:CG2	2.44	0.47
1:A:66:VAL:HA	1:A:91:GLN:HB3	1.97	0.47
1:A:102:ASN:ND2	1:A:411:GLU:HG2	2.27	0.46
1:A:311:LYS:NZ	1:A:437:VAL:H	2.12	0.46
2:B:377:LEU:C	2:B:379:LYS:N	2.68	0.46
1:A:368:LEU:C	1:A:370:LYS:H	2.18	0.46
1:A:381:THR:HG23	1:A:383:ALA:CB	2.44	0.46
1:A:429:GLU:C	1:A:431:ASP:N	2.68	0.46
2:B:186:THR:HG22	2:B:187:LEU:N	2.31	0.46
2:B:210:ILE:HG21	2:B:298:ASN:HA	1.97	0.46
2:B:282:ARG:HH22	2:B:361:LEU:CD2	2.29	0.46
2:B:319:GLY:O	2:B:320:ARG:C	2.53	0.46
1:A:11:GLN:HB3	3:A:9500:GTP:O2A	2.15	0.46
1:A:31:GLN:H	1:A:31:GLN:HG2	1.30	0.46
1:A:410:GLY:C	1:A:412:GLY:H	2.17	0.46
2:B:197:ASP:O	2:B:198:GLU:HG3	2.15	0.46
2:B:215:LEU:O	2:B:216:LYS:HG3	2.16	0.46
1:A:7:ILE:HD11	1:A:157:LEU:HD11	1.97	0.46
1:A:404:PHE:O	1:A:407:TRP:HB2	2.14	0.46
2:B:7:ILE:O	2:B:8:GLN:C	2.53	0.46
2:B:344:TRP:HZ2	2:B:425:TYR:HB3	1.81	0.46
1:A:128:GLN:O	1:A:128:GLN:HG3	2.15	0.46
1:A:188:ILE:CG2	1:A:421:ALA:O	2.57	0.46
1:A:407:TRP:HZ2	2:B:258:VAL:CG2	2.28	0.46
1:A:416:GLY:O	1:A:417:GLU:C	2.54	0.46

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:327:ASP:O	2:B:331:LEU:N	2.49	0.46
1:A:62:VAL:HG23	1:A:88:HIS:CE1	2.50	0.46
1:A:246:GLY:O	1:A:247:ALA:C	2.54	0.46
1:A:396:ASP:O	1:A:397:LEU:C	2.54	0.46
2:B:187:LEU:HD11	2:B:408:PHE:CE1	2.50	0.46
1:A:313:MET:O	1:A:314:ALA:HB2	2.16	0.46
2:B:2:ARG:HD2	2:B:131:GLN:HE22	1.79	0.46
2:B:192:LEU:C	2:B:194:GLU:N	2.69	0.46
2:B:209:ASP:OD2	2:B:213:ARG:HD2	2.16	0.46
1:A:276:ILE:HG21	1:A:284:GLU:OE1	2.16	0.46
1:A:390:ARG:C	1:A:392:ASP:H	2.18	0.46
2:B:22:GLU:O	2:B:22:GLU:HG2	2.15	0.46
2:B:106:TYR:CE2	2:B:403:MET:HG3	2.51	0.46
2:B:171:PRO:CB	2:B:181:GLU:HG3	2.45	0.46
1:A:184:PRO:O	1:A:185:TYR:C	2.53	0.46
1:A:271:THR:OG1	1:A:301:GLN:HA	2.15	0.46
1:A:384:ILE:C	1:A:386:GLU:N	2.67	0.46
1:A:412:GLY:C	1:A:413:MET:HG2	2.35	0.46
2:B:11:GLN:O	2:B:15:GLN:N	2.48	0.46
2:B:196:THR:OG1	2:B:263:LEU:HD22	2.16	0.46
2:B:238:THR:OG1	2:B:239:CYS:N	2.47	0.46
2:B:282:ARG:HE	2:B:282:ARG:HB3	1.27	0.46
1:A:199:ASP:CB	1:A:256:GLN:NE2	2.78	0.46
1:A:207:GLU:O	1:A:210:TYR:N	2.49	0.46
1:A:234:ILE:O	1:A:234:ILE:CD1	2.59	0.46
1:A:300:ASN:O	1:A:302:MET:HE3	2.16	0.46
2:B:112:LEU:O	2:B:112:LEU:HD13	2.16	0.46
2:B:293:MET:SD	2:B:315:ALA:HB1	2.56	0.46
1:A:62:VAL:HG23	1:A:88:HIS:HE1	1.81	0.45
1:A:242:LEU:HD13	1:A:242:LEU:HA	1.68	0.45
2:B:121:ARG:HG2	2:B:159:TYR:OH	2.17	0.45
2:B:270:PHE:HE2	2:B:272:PRO:HG2	1.81	0.45
2:B:377:LEU:C	2:B:379:LYS:H	2.18	0.45
2:B:399:THR:O	2:B:400:GLY:C	2.55	0.45
1:A:72:PRO:HD3	1:A:95:GLY:O	2.16	0.45
1:A:115:ILE:HA	1:A:118:VAL:HG23	1.97	0.45
1:A:216:ASN:N	1:A:216:ASN:HD22	2.14	0.45
1:A:274:PRO:HG3	1:A:374:ALA:CB	2.47	0.45
1:A:297:GLU:HG3	1:A:299:ALA:H	1.82	0.45
2:B:121:ARG:C	2:B:123:GLU:N	2.67	0.45
2:B:289:LEU:HG	2:B:365:ALA:CB	2.46	0.45

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:361:LEU:HD11	2:B:363:MET:C	2.37	0.45
1:A:115:ILE:HD13	1:A:115:ILE:O	2.15	0.45
1:A:139:HIS:O	1:A:140:SER:HB3	2.17	0.45
1:A:150:THR:CG2	1:A:151:SER:N	2.80	0.45
1:A:193:THR:O	1:A:193:THR:HG23	2.16	0.45
1:A:195:LEU:CD1	1:A:265:GLY:H	2.29	0.45
1:A:237:SER:O	1:A:242:LEU:HD23	2.16	0.45
1:A:264:ARG:HB3	1:A:266:HIS:CD2	2.51	0.45
1:A:408:TYR:O	1:A:411:GLU:N	2.49	0.45
2:B:113:VAL:HG12	2:B:117:LEU:HD12	1.97	0.45
2:B:319:GLY:HA2	2:B:355:ASP:O	2.15	0.45
1:A:12:ALA:C	1:A:16:ILE:HG22	2.37	0.45
1:A:76:ASP:HA	1:A:79:ARG:HG3	1.99	0.45
2:B:2:ARG:HG2	2:B:46:ARG:HH12	1.81	0.45
2:B:113:VAL:HG13	2:B:151:LEU:CD1	2.46	0.45
1:A:33:ASP:OD1	1:A:85:GLN:HB3	2.17	0.45
1:A:252:LEU:HA	1:A:255:PHE:HD1	1.76	0.45
1:A:267:PHE:H	1:A:267:PHE:HD1	1.59	0.45
1:A:215:ARG:C	1:A:216:ASN:HD22	2.20	0.45
1:A:268:PRO:CB	1:A:379:SER:O	2.65	0.45
1:A:426:ALA:HB1	1:A:430:LYS:NZ	2.31	0.45
2:B:61:PRO:CD	2:B:84:ILE:HG12	2.47	0.45
2:B:136:THR:HG23	2:B:233:MET:HE3	1.98	0.45
2:B:209:ASP:CG	2:B:213:ARG:HD2	2.37	0.45
1:A:180:ALA:HA	2:B:350:LYS:HG2	1.99	0.45
1:A:219:ILE:HG21	1:A:367:ASP:OD2	2.17	0.45
1:A:373:ARG:HB3	1:A:373:ARG:NH1	2.31	0.45
1:A:386:GLU:OE1	1:A:390:ARG:NH2	2.49	0.45
2:B:3:GLU:H	2:B:130:LEU:HA	1.81	0.45
2:B:292:GLN:O	2:B:293:MET:C	2.55	0.45
2:B:294:PHE:CZ	2:B:313:VAL:HG11	2.52	0.45
1:A:169:PHE:CZ	1:A:235:VAL:HG22	2.52	0.45
1:A:234:ILE:CG1	1:A:270:ALA:HB1	2.45	0.45
1:A:291:ILE:O	1:A:294:ALA:HB3	2.17	0.45
1:A:373:ARG:O	1:A:374:ALA:CB	2.63	0.45
2:B:2:ARG:HA	2:B:129:CYS:O	2.16	0.45
2:B:221:THR:CG2	2:B:222:TYR:N	2.70	0.45
2:B:253:LEU:O	2:B:257:MET:CB	2.64	0.45
2:B:272:PRO:O	2:B:274:THR:HG23	2.16	0.45
1:A:259:LEU:HD21	1:A:316:CYS:CB	2.37	0.45
1:A:287:SER:HB2	1:A:290:GLU:OE1	2.16	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:368:LEU:C	1:A:370:LYS:N	2.69	0.45
2:B:117:LEU:CD1	2:B:154:LYS:NZ	2.79	0.45
1:A:259:LEU:HD11	1:A:378:LEU:CD1	2.46	0.45
2:B:205:GLU:HA	2:B:208:TYR:HD1	1.82	0.45
2:B:240:LEU:HD13	2:B:248:ALA:C	2.37	0.45
2:B:324:LYS:HD2	2:B:324:LYS:O	2.17	0.45
1:A:8:HIS:CE1	1:A:138:PHE:CD1	3.05	0.44
1:A:31:GLN:CB	1:A:32:PRO:CD	2.95	0.44
1:A:203:MET:HG2	1:A:268:PRO:O	2.16	0.44
1:A:210:TYR:O	1:A:212:ILE:N	2.48	0.44
2:B:61:PRO:HG2	2:B:85:PHE:CD2	2.52	0.44
2:B:88:ASP:C	2:B:90:PHE:N	2.70	0.44
2:B:130:LEU:HD23	2:B:130:LEU:N	2.31	0.44
2:B:130:LEU:O	2:B:130:LEU:HG	2.17	0.44
2:B:249:ASP:OD2	2:B:251:ARG:HB2	2.18	0.44
1:A:417:GLU:OE2	1:A:417:GLU:CA	2.65	0.44
2:B:35:SER:O	2:B:37:HIS:N	2.49	0.44
2:B:81:PHE:O	2:B:84:ILE:HG22	2.17	0.44
1:A:20:CYS:HA	1:A:232:GLY:CA	2.47	0.44
1:A:103:TYR:CD1	1:A:148:GLY:HA2	2.52	0.44
1:A:122:ILE:O	1:A:125:LEU:N	2.49	0.44
1:A:248:LEU:CD1	1:A:355:ILE:HD12	2.46	0.44
1:A:276:ILE:CG2	1:A:369:ALA:HB3	2.39	0.44
1:A:292:THR:HG22	1:A:335:ILE:HD11	1.99	0.44
2:B:210:ILE:CG2	2:B:298:ASN:HD22	2.30	0.44
1:A:228:ASN:HA	1:A:231:ILE:CG1	2.48	0.44
2:B:42:LEU:C	2:B:44:LEU:N	2.70	0.44
2:B:73:MET:HE1	2:B:91:VAL:O	2.17	0.44
2:B:210:ILE:HD11	2:B:299:MET:O	2.17	0.44
2:B:322:SER:O	2:B:325:GLU:HG2	2.18	0.44
1:A:356:ASN:HD22	1:A:356:ASN:HA	1.54	0.44
2:B:36:TYR:C	2:B:38:GLY:N	2.69	0.44
2:B:52:ASN:CB	2:B:60:VAL:HG23	2.46	0.44
1:A:184:PRO:HG3	1:A:394:LYS:HB3	2.00	0.44
1:A:384:ILE:C	1:A:386:GLU:H	2.19	0.44
1:A:436:GLY:O	1:A:437:VAL:HB	2.18	0.44
2:B:193:VAL:CA	2:B:263:LEU:HD23	2.48	0.44
1:A:115:ILE:O	1:A:118:VAL:N	2.49	0.44
2:B:146:GLY:HA2	2:B:149:THR:OG1	2.17	0.44
2:B:150:LEU:O	2:B:154:LYS:HG3	2.17	0.44
2:B:265:PHE:HE1	2:B:418:LEU:HD21	1.82	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:103:TYR:C	1:A:105:ARG:H	2.21	0.44
1:A:384:ILE:N	1:A:384:ILE:CD1	2.80	0.44
1:A:429:GLU:O	1:A:431:ASP:N	2.47	0.44
1:A:359:PRO:CB	1:A:372:GLN:O	2.55	0.44
2:B:100:ASN:HD21	2:B:398:TYR:HA	1.83	0.44
2:B:165:ASN:OD1	2:B:250:LEU:HD13	2.18	0.44
2:B:262:ARG:C	2:B:264:HIS:N	2.72	0.44
2:B:399:THR:HG22	2:B:400:GLY:N	2.32	0.44
1:A:132:LEU:N	1:A:132:LEU:CD2	2.78	0.43
2:B:105:HIS:HB2	2:B:146:GLY:CA	2.48	0.43
1:A:14:VAL:HG13	1:A:67:PHE:HD2	1.83	0.43
1:A:172:TYR:CE2	1:A:391:LEU:HD13	2.53	0.43
2:B:201:CYS:SG	2:B:374:ILE:HD11	2.58	0.43
2:B:282:ARG:HH22	2:B:361:LEU:HD23	1.83	0.43
2:B:322:SER:HB3	2:B:325:GLU:OE1	2.18	0.43
1:A:217:LEU:HG	1:A:367:ASP:OD1	2.18	0.43
1:A:265:GLY:O	1:A:266:HIS:C	2.56	0.43
1:A:382:THR:HG23	1:A:432:TYR:O	2.18	0.43
2:B:44:LEU:HG	2:B:47:ILE:CD1	2.49	0.43
2:B:101:TRP:CD1	2:B:146:GLY:N	2.87	0.43
2:B:295:ASP:OD1	2:B:297:LYS:HG2	2.17	0.43
2:B:341:PHE:HB3	2:B:348:ASN:ND2	2.33	0.43
2:B:359:ARG:HH11	2:B:359:ARG:HA	1.82	0.43
2:B:393:ALA:O	2:B:395:LEU:N	2.51	0.43
1:A:10:GLY:O	1:A:11:GLN:C	2.56	0.43
1:A:277:SER:C	1:A:279:GLU:H	2.19	0.43
1:A:292:THR:HG22	1:A:335:ILE:CD1	2.48	0.43
2:B:258:VAL:HA	2:B:259:PRO:HD2	1.83	0.43
1:A:217:LEU:HA	1:A:277:SER:CB	2.47	0.43
1:A:296:PHE:CE1	1:A:317:LEU:HD21	2.53	0.43
1:A:303:VAL:O	1:A:305:CYS:N	2.49	0.43
1:A:436:GLY:C	1:A:438:ASP:H	2.20	0.43
2:B:104:GLY:O	2:B:147:MET:HA	2.18	0.43
2:B:120:VAL:HG23	2:B:121:ARG:N	2.33	0.43
2:B:120:VAL:O	2:B:123:GLU:HB2	2.19	0.43
2:B:190:HIS:ND1	2:B:414:ASN:ND2	2.67	0.43
2:B:193:VAL:C	2:B:194:GLU:HG2	2.38	0.43
2:B:242:PHE:HB3	2:B:243:PRO:CD	2.49	0.43
2:B:271:ALA:HB2	2:B:293:MET:HG2	2.01	0.43
2:B:112:LEU:HD22	2:B:112:LEU:HA	1.69	0.43
2:B:163:ILE:HD13	2:B:250:LEU:CD1	2.47	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:299:MET:CE	2:B:367:PHE:CE2	3.01	0.43
1:A:201:ALA:O	1:A:267:PHE:CB	2.67	0.43
1:A:206:ASN:OD1	3:A:9500:GTP:N3	2.52	0.43
1:A:236:SER:O	1:A:320:ARG:NH1	2.49	0.43
1:A:303:VAL:C	1:A:305:CYS:N	2.72	0.43
1:A:390:ARG:C	1:A:392:ASP:N	2.71	0.43
2:B:19:LYS:CG	2:B:226:ASN:HB2	2.47	0.43
2:B:60:VAL:CG1	2:B:86:ARG:HG2	2.46	0.43
2:B:113:VAL:HG13	2:B:151:LEU:HD12	2.00	0.43
2:B:258:VAL:O	2:B:258:VAL:CG2	2.62	0.43
2:B:271:ALA:HB2	2:B:293:MET:HG3	2.00	0.43
1:A:15:GLN:O	1:A:16:ILE:C	2.57	0.43
1:A:29:GLY:O	1:A:30:ILE:HG13	2.19	0.43
1:A:194:THR:O	1:A:197:HIS:HB2	2.19	0.43
1:A:383:ALA:C	1:A:385:ALA:H	2.22	0.43
1:A:407:TRP:CZ2	2:B:258:VAL:CG2	3.01	0.43
2:B:36:TYR:CZ	2:B:44:LEU:HB2	2.54	0.43
2:B:80:PRO:O	2:B:81:PHE:C	2.57	0.43
2:B:156:ARG:HH21	2:B:164:MET:HB2	1.84	0.43
2:B:232:THR:O	2:B:233:MET:C	2.57	0.43
2:B:257:MET:CE	2:B:368:ILE:HG22	2.48	0.43
2:B:267:MET:SD	2:B:301:ALA:HB3	2.58	0.43
2:B:299:MET:HG3	2:B:305:PRO:HG2	1.99	0.43
2:B:361:LEU:HD13	2:B:362:LYS:N	2.34	0.43
1:A:8:HIS:HE1	1:A:138:PHE:CD1	2.37	0.43
1:A:139:HIS:CG	1:A:140:SER:H	2.37	0.43
1:A:167:LEU:CD1	1:A:252:LEU:HB3	2.45	0.43
1:A:188:ILE:O	1:A:191:THR:HG22	2.19	0.43
1:A:336:LYS:O	1:A:338:LYS:N	2.52	0.43
1:A:411:GLU:N	1:A:411:GLU:OE1	2.52	0.43
2:B:117:LEU:HD11	2:B:154:LYS:NZ	2.34	0.43
2:B:138:SER:HA	2:B:169:VAL:HB	2.01	0.43
2:B:359:ARG:HH11	2:B:359:ARG:CB	2.32	0.43
1:A:205:ASP:HB3	1:A:208:ALA:HB3	2.00	0.42
2:B:54:ALA:C	2:B:56:GLY:N	2.72	0.42
2:B:69:GLU:CG	2:B:69:GLU:O	2.67	0.42
2:B:158:GLU:C	2:B:159:TYR:CD1	2.92	0.42
2:B:192:LEU:C	2:B:194:GLU:H	2.23	0.42
2:B:240:LEU:HD22	2:B:248:ALA:N	2.33	0.42
1:A:242:LEU:HG	1:A:255:PHE:CZ	2.54	0.42
1:A:362:VAL:HG21	1:A:370:LYS:CA	2.49	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:6:HIS:HE1	2:B:8:GLN:CB	2.30	0.42
2:B:64:ILE:HG22	2:B:91:VAL:HG22	2.02	0.42
2:B:169:VAL:O	2:B:169:VAL:HG12	2.18	0.42
2:B:193:VAL:HG22	2:B:193:VAL:O	2.20	0.42
2:B:389:PHE:C	2:B:391:ARG:N	2.73	0.42
1:A:209:ILE:O	1:A:210:TYR:C	2.57	0.42
1:A:224:TYR:HD2	1:A:224:TYR:HA	1.75	0.42
1:A:392:ASP:OD1	1:A:392:ASP:C	2.58	0.42
1:A:422:ARG:O	1:A:425:MET:N	2.52	0.42
2:B:26:ASP:OD1	2:B:26:ASP:C	2.56	0.42
2:B:36:TYR:CE1	2:B:43:GLN:HB2	2.54	0.42
2:B:130:LEU:HD11	2:B:162:ARG:HG3	2.02	0.42
2:B:163:ILE:HG13	2:B:163:ILE:H	1.67	0.42
2:B:193:VAL:HA	2:B:263:LEU:HD23	2.01	0.42
2:B:350:LYS:O	2:B:350:LYS:HD3	2.18	0.42
1:A:169:PHE:CZ	1:A:238:ILE:HD12	2.53	0.42
1:A:192:HIS:CD2	1:A:421:ALA:HA	2.54	0.42
1:A:241:SER:O	1:A:242:LEU:C	2.57	0.42
2:B:28:HIS:C	2:B:43:GLN:HE21	2.22	0.42
2:B:289:LEU:HD21	2:B:364:SER:C	2.40	0.42
2:B:425:TYR:C	2:B:427:ASP:H	2.22	0.42
1:A:276:ILE:CD1	1:A:277:SER:O	2.67	0.42
1:A:284:GLU:HB3	1:A:371:VAL:HG13	2.02	0.42
1:A:341:ILE:O	1:A:342:GLN:O	2.38	0.42
1:A:407:TRP:CE3	2:B:255:VAL:HG22	2.54	0.42
2:B:80:PRO:C	2:B:82:GLY:N	2.72	0.42
2:B:49:VAL:C	2:B:62:ARG:NH2	2.73	0.42
2:B:183:TYR:HD2	2:B:385:PHE:CE1	2.37	0.42
2:B:200:TYR:HB3	2:B:268:PRO:HG3	2.02	0.42
2:B:398:TYR:CD2	2:B:408:PHE:HZ	2.38	0.42
1:A:18:ASN:O	1:A:22:GLU:HB2	2.20	0.42
1:A:75:ILE:HG13	1:A:94:THR:OG1	2.19	0.42
2:B:244:GLY:H	2:B:247:ASN:HD22	1.68	0.42
1:A:33:ASP:O	1:A:34:GLY:O	2.37	0.42
1:A:71:GLU:CG	2:B:2:ARG:HH12	2.32	0.42
1:A:83:TYR:O	1:A:84:ARG:C	2.58	0.42
1:A:238:ILE:CA	1:A:242:LEU:HD23	2.49	0.42
1:A:303:VAL:HG12	1:A:305:CYS:N	2.34	0.42
1:A:313:MET:HG2	1:A:344:VAL:HG11	2.02	0.42
1:A:416:GLY:O	1:A:419:SER:N	2.53	0.42
1:A:16:ILE:HG13	1:A:231:ILE:HG21	2.02	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:GLN:NE2	1:A:253:THR:HG23	2.35	0.42
1:A:338:LYS:O	1:A:340:THR:N	2.49	0.42
2:B:60:VAL:O	2:B:61:PRO:C	2.58	0.42
2:B:183:TYR:OH	2:B:388:MET:O	2.36	0.42
2:B:242:PHE:HB2	2:B:354:CYS:SG	2.59	0.42
2:B:368:ILE:HG22	2:B:368:ILE:O	2.20	0.42
2:B:372:THR:OG1	2:B:426:GLN:HB2	2.20	0.42
1:A:12:ALA:O	1:A:15:GLN:HB2	2.20	0.42
1:A:122:ILE:O	1:A:123:ARG:C	2.57	0.42
1:A:155:GLU:O	1:A:155:GLU:OE1	2.37	0.42
1:A:239:THR:O	1:A:241:SER:N	2.53	0.42
1:A:296:PHE:CZ	1:A:317:LEU:HD21	2.55	0.42
2:B:228:LEU:CD1	2:B:273:LEU:HD21	2.38	0.42
1:A:70:LEU:HD23	1:A:70:LEU:N	2.35	0.41
1:A:103:TYR:CD1	1:A:148:GLY:CA	3.03	0.41
1:A:242:LEU:H	1:A:242:LEU:CD2	2.32	0.41
1:A:267:PHE:CE1	1:A:428:LEU:HD21	2.55	0.41
2:B:69:GLU:O	2:B:69:GLU:HG2	2.20	0.41
2:B:84:ILE:HG12	2:B:84:ILE:O	2.20	0.41
2:B:88:ASP:O	2:B:90:PHE:N	2.53	0.41
2:B:193:VAL:HA	2:B:265:PHE:HZ	1.85	0.41
2:B:313:VAL:CG1	2:B:314:ALA:N	2.83	0.41
1:A:14:VAL:O	1:A:14:VAL:HG12	2.20	0.41
2:B:197:ASP:HA	2:B:263:LEU:CB	2.45	0.41
1:A:3:GLU:H	1:A:132:LEU:HA	1.84	0.41
1:A:14:VAL:HG22	1:A:67:PHE:HD2	1.84	0.41
1:A:207:GLU:O	1:A:210:TYR:HB2	2.21	0.41
1:A:327:ASP:OD1	1:A:327:ASP:N	2.54	0.41
2:B:265:PHE:CD1	2:B:378:PHE:CE1	3.08	0.41
2:B:322:SER:OG	2:B:324:LYS:HB3	2.20	0.41
1:A:259:LEU:O	1:A:261:PRO:HD3	2.19	0.41
1:A:309:HIS:CG	1:A:310:GLY:H	2.38	0.41
2:B:37:HIS:N	2:B:37:HIS:ND1	2.69	0.41
2:B:54:ALA:O	2:B:56:GLY:N	2.49	0.41
2:B:204:ASN:OD1	4:B:1500:GDP:N3	2.53	0.41
2:B:304:ASP:O	2:B:307:HIS:HB2	2.21	0.41
1:A:11:GLN:O	1:A:15:GLN:N	2.54	0.41
1:A:93:ILE:CD1	1:A:117:LEU:HG	2.49	0.41
1:A:177:VAL:HG23	1:A:177:VAL:O	2.20	0.41
1:A:214:ARG:CG	1:A:220:GLU:OE1	2.67	0.41
1:A:269:LEU:HD23	1:A:384:ILE:CD1	2.50	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:64:ILE:HG22	2:B:65:LEU:N	2.36	0.41
2:B:197:ASP:O	2:B:258:VAL:HG11	2.20	0.41
1:A:22:GLU:HG2	1:A:83:TYR:CE1	2.54	0.41
1:A:115:ILE:HD13	1:A:115:ILE:C	2.41	0.41
1:A:195:LEU:C	1:A:197:HIS:N	2.73	0.41
2:B:101:TRP:HE1	2:B:188:SER:HA	1.86	0.41
2:B:244:GLY:O	2:B:246:LEU:N	2.54	0.41
2:B:257:MET:CE	2:B:370:ASN:HB2	2.50	0.41
2:B:299:MET:HE1	2:B:367:PHE:CE2	2.55	0.41
2:B:318:ARG:HG3	2:B:318:ARG:O	2.21	0.41
1:A:115:ILE:CG2	1:A:116:ASP:H	2.33	0.41
1:A:203:MET:O	1:A:204:VAL:HG23	2.21	0.41
1:A:242:LEU:HD11	1:A:250:VAL:HB	1.97	0.41
2:B:85:PHE:HB2	2:B:90:PHE:HE1	1.84	0.41
2:B:170:VAL:CG2	2:B:377:LEU:HD11	2.51	0.41
2:B:197:ASP:O	2:B:198:GLU:CG	2.69	0.41
2:B:309:ARG:HB3	2:B:342:VAL:HG23	2.03	0.41
2:B:313:VAL:CG1	2:B:367:PHE:CE1	3.03	0.41
2:B:344:TRP:CE3	2:B:345:ILE:HG13	2.55	0.41
1:A:154:MET:SD	1:A:168:GLU:OE1	2.79	0.41
2:B:403:MET:CE	2:B:408:PHE:HE1	2.33	0.41
1:A:23:LEU:CD1	1:A:26:LEU:HD23	2.34	0.41
1:A:70:LEU:HD22	1:A:114:ILE:CD1	2.51	0.41
1:A:76:ASP:O	1:A:80:THR:CG2	2.69	0.41
1:A:201:ALA:HB3	1:A:267:PHE:CD2	2.56	0.41
1:A:416:GLY:O	1:A:419:SER:HB2	2.21	0.41
2:B:99:ASN:HD22	2:B:99:ASN:HA	1.67	0.41
2:B:101:TRP:NE1	2:B:146:GLY:HA2	2.36	0.41
2:B:159:TYR:N	2:B:160:PRO:CD	2.84	0.41
2:B:181:GLU:CB	2:B:182:PRO:CD	2.94	0.41
2:B:207:LEU:HB2	2:B:225:LEU:HD13	2.02	0.41
2:B:255:VAL:O	2:B:255:VAL:CG1	2.68	0.41
2:B:262:ARG:NH2	2:B:417:ASP:OD1	2.54	0.41
2:B:263:LEU:HG	2:B:264:HIS:N	2.36	0.41
2:B:312:THR:O	2:B:312:THR:OG1	2.38	0.41
2:B:374:ILE:O	2:B:374:ILE:HG23	2.21	0.41
2:B:379:LYS:O	2:B:382:SER:HB3	2.21	0.41
2:B:399:THR:C	2:B:401:GLU:N	2.75	0.41
2:B:403:MET:HG2	2:B:404:ASP:H	1.86	0.41
1:A:11:GLN:O	1:A:12:ALA:C	2.58	0.41
1:A:173:PRO:HG2	1:A:187:SER:OG	2.21	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:183:GLU:HB3	1:A:184:PRO:HD2	2.02	0.41
1:A:209:ILE:O	1:A:213:CYS:SG	2.78	0.41
1:A:216:ASN:N	1:A:216:ASN:ND2	2.69	0.41
1:A:262:TYR:HB3	1:A:263:PRO:CD	2.44	0.41
1:A:404:PHE:HE2	2:B:256:ASN:HA	1.85	0.41
2:B:91:VAL:CB	2:B:116:VAL:HG22	2.51	0.41
2:B:230:SER:O	2:B:234:SER:CB	2.69	0.41
1:A:15:GLN:OE1	3:A:9500:GTP:O6	2.38	0.40
1:A:181:VAL:HG23	2:B:256:ASN:OD1	2.21	0.40
1:A:214:ARG:CD	1:A:220:GLU:OE1	2.69	0.40
1:A:333:ALA:C	1:A:334:THR:HG22	2.42	0.40
2:B:117:LEU:HD11	2:B:154:LYS:CE	2.51	0.40
2:B:169:VAL:HG11	2:B:204:ASN:HD21	1.86	0.40
2:B:234:SER:O	2:B:235:GLY:C	2.58	0.40
2:B:241:ARG:NH2	2:B:250:LEU:HG	2.36	0.40
1:A:71:GLU:HB2	1:A:99:ALA:CB	2.50	0.40
1:A:209:ILE:O	1:A:212:ILE:N	2.55	0.40
2:B:36:TYR:CG	2:B:44:LEU:HD22	2.56	0.40
2:B:189:VAL:O	2:B:190:HIS:C	2.58	0.40
2:B:193:VAL:CG2	2:B:262:ARG:NH1	2.84	0.40
2:B:271:ALA:HB3	2:B:272:PRO:HD3	2.02	0.40
1:A:91:GLN:O	1:A:93:ILE:N	2.50	0.40
1:A:289:ALA:HB3	1:A:290:GLU:OE2	2.21	0.40
2:B:141:GLY:O	2:B:184:ASN:ND2	2.54	0.40
1:A:84:ARG:NH1	1:A:84:ARG:HG2	2.36	0.40
1:A:191:THR:O	1:A:194:THR:HG22	2.21	0.40
1:A:217:LEU:CA	1:A:277:SER:HB2	2.46	0.40
1:A:291:ILE:O	1:A:294:ALA:N	2.54	0.40
1:A:392:ASP:O	1:A:395:PHE:HB3	2.22	0.40
2:B:31:ASP:OD2	2:B:37:HIS:CE1	2.75	0.40
2:B:136:THR:HG22	2:B:167:PHE:HB2	2.03	0.40
2:B:204:ASN:HD21	4:B:1500:GDP:H1'	1.86	0.40
2:B:310:TYR:CD2	2:B:371:SER:HB3	2.57	0.40
1:A:5:ILE:O	1:A:136:SER:N	2.51	0.40
1:A:167:LEU:HD22	1:A:202:PHE:CE1	2.56	0.40
1:A:210:TYR:HH	2:B:323:MET:HB2	1.79	0.40
2:B:11:GLN:O	2:B:15:GLN:HG3	2.22	0.40
2:B:111:GLU:HG3	2:B:111:GLU:O	2.21	0.40
2:B:337:ASN:HD21	2:B:340:TYR:HD1	1.67	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 PDB entries followed by that with respect to all EM entries.

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	408/440 (93%)	223 (55%)	113 (28%)	72 (18%)	0	0
2	B	424/427 (99%)	251 (59%)	109 (26%)	64 (15%)	0	0
All	All	832/867 (96%)	474 (57%)	222 (27%)	136 (16%)	0	0

All (136) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	66	VAL
1	A	72	PRO
1	A	73	THR
1	A	100	ALA
1	A	101	ASN
1	A	104	ALA
1	A	132	LEU
1	A	141	PHE
1	A	142	GLY
1	A	183	GLU
1	A	238	ILE
1	A	240	ALA
1	A	247	ALA
1	A	287	SER
1	A	342	GLN
1	A	369	ALA
1	A	399	TYR
1	A	421	ALA
2	B	80	PRO
2	B	81	PHE
2	B	84	ILE
2	B	111	GLU
2	B	112	LEU
2	B	126	SER
2	B	185	ALA

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	227	HIS
2	B	228	LEU
2	B	236	VAL
2	B	238	THR
2	B	246	LEU
2	B	262	ARG
2	B	264	HIS
2	B	286	VAL
2	B	293	MET
2	B	320	ARG
2	B	359	ARG
2	B	387	ALA
2	B	388	MET
2	B	393	ALA
1	A	24	TYR
1	A	79	ARG
1	A	80	THR
1	A	92	LEU
1	A	108	TYR
1	A	131	GLY
1	A	196	GLU
1	A	211	ASP
1	A	241	SER
1	A	255	PHE
1	A	266	HIS
1	A	270	ALA
1	A	278	ALA
1	A	279	GLU
1	A	309	HIS
1	A	310	GLY
1	A	330	ALA
1	A	337	THR
1	A	344	VAL
1	A	352	LYS
1	A	370	LYS
1	A	374	ALA
2	B	34	GLY
2	B	36	TYR
2	B	43	GLN
2	B	56	GLY
2	B	71	GLY
2	B	82	GLY

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	166	THR
2	B	193	VAL
2	B	275	SER
2	B	284	LEU
2	B	292	GLN
2	B	296	ALA
2	B	338	SER
2	B	342	VAL
2	B	368	ILE
2	B	394	PHE
2	B	400	GLY
2	B	402	GLY
1	A	158	SER
1	A	187	SER
1	A	217	LEU
1	A	285	GLN
1	A	314	ALA
1	A	339	ARG
1	A	377	MET
1	A	398	MET
1	A	430	LYS
2	B	8	GLN
2	B	48	ASN
2	B	62	ARG
2	B	89	ASN
2	B	276	ARG
2	B	281	TYR
2	B	336	LYS
2	B	349	VAL
2	B	392	LYS
2	B	410	GLU
1	A	133	GLN
1	A	140	SER
1	A	179	THR
1	A	188	ILE
1	A	304	LYS
1	A	334	THR
1	A	340	THR
1	A	364	PRO
1	A	382	THR
2	B	55	ALA
2	B	110	ALA

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
2	B	162	ARG
2	B	195	ASN
2	B	235	GLY
2	B	245	GLN
2	B	348	ASN
2	B	357	PRO
1	A	31	GLN
1	A	236	SER
1	A	265	GLY
1	A	362	VAL
2	B	143	THR
2	B	180	VAL
2	B	346	PRO
1	A	32	PRO
1	A	160	ASP
1	A	307	PRO
1	A	435	VAL
2	B	142	GLY
2	B	319	GLY
1	A	63	PRO
1	A	174	ALA
1	A	366	GLY
1	A	177	VAL
2	B	261	PRO
1	A	204	VAL
1	A	273	ALA
2	B	87	PRO

### 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 PDB entries followed by that with respect to all EM entries.

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	347/369 (94%)	291 (84%)	56 (16%)	<b>2</b> <b>6</b>
2	B	367/368 (100%)	303 (83%)	64 (17%)	<b>1</b> <b>5</b>
All	All	714/737 (97%)	594 (83%)	120 (17%)	<b>4</b> <b>5</b>

All (120) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	VAL
1	A	16	ILE
1	A	20	CYS
1	A	22	GLU
1	A	24	TYR
1	A	31	GLN
1	A	32	PRO
1	A	64	ARG
1	A	69	ASP
1	A	70	LEU
1	A	76	ASP
1	A	77	GLU
1	A	79	ARG
1	A	94	THR
1	A	98	ASP
1	A	114	ILE
1	A	115	ILE
1	A	123	ARG
1	A	130	THR
1	A	155	GLU
1	A	166	LYS
1	A	172	TYR
1	A	192	HIS
1	A	196	GLU
1	A	213	CYS
1	A	224	TYR
1	A	234	ILE
1	A	248	LEU
1	A	251	ASP
1	A	267	PHE
1	A	271	THR
1	A	275	VAL
1	A	276	ILE
1	A	279	GLU
1	A	291	ILE
1	A	293	ASN
1	A	302	MET
1	A	323	VAL
1	A	327	ASP
1	A	334	THR
1	A	340	THR
1	A	343	PHE

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	356	ASN
1	A	361	THR
1	A	368	LEU
1	A	375	VAL
1	A	384	ILE
1	A	392	ASP
1	A	404	PHE
1	A	409	VAL
1	A	411	GLU
1	A	415	GLU
1	A	417	GLU
1	A	424	ASP
1	A	432	TYR
1	A	433	GLU
2	B	3	GLU
2	B	5	VAL
2	B	24	ILE
2	B	26	ASP
2	B	31	ASP
2	B	32	PRO
2	B	37	HIS
2	B	41	ASP
2	B	44	LEU
2	B	46	ARG
2	B	48	ASN
2	B	60	VAL
2	B	65	LEU
2	B	66	VAL
2	B	69	GLU
2	B	85	PHE
2	B	88	ASP
2	B	112	LEU
2	B	127	CYS
2	B	136	THR
2	B	143	THR
2	B	151	LEU
2	B	153	SER
2	B	156	ARG
2	B	170	VAL
2	B	180	VAL
2	B	181	GLU
2	B	186	THR

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	188	SER
2	B	189	VAL
2	B	196	THR
2	B	209	ASP
2	B	211	CYS
2	B	214	THR
2	B	232	THR
2	B	238	THR
2	B	239	CYS
2	B	240	LEU
2	B	241	ARG
2	B	249	ASP
2	B	252	LYS
2	B	263	LEU
2	B	273	LEU
2	B	276	ARG
2	B	284	LEU
2	B	297	LYS
2	B	300	MET
2	B	307	HIS
2	B	329	GLN
2	B	340	TYR
2	B	341	PHE
2	B	356	ILE
2	B	357	PRO
2	B	358	PRO
2	B	364	SER
2	B	370	ASN
2	B	371	SER
2	B	375	GLN
2	B	377	LEU
2	B	381	ILE
2	B	394	PHE
2	B	395	LEU
2	B	416	ASN
2	B	422	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (41) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	8	HIS
1	A	15	GLN

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	28	HIS
1	A	61	HIS
1	A	85	GLN
1	A	88	HIS
1	A	91	GLN
1	A	139	HIS
1	A	216	ASN
1	A	226	ASN
1	A	249	ASN
1	A	256	GLN
1	A	266	HIS
1	A	293	ASN
1	A	300	ASN
1	A	329	ASN
1	A	356	ASN
1	A	406	HIS
2	B	8	GLN
2	B	14	ASN
2	B	43	GLN
2	B	48	ASN
2	B	99	ASN
2	B	100	ASN
2	B	105	HIS
2	B	131	GLN
2	B	137	HIS
2	B	191	GLN
2	B	204	ASN
2	B	226	ASN
2	B	247	ASN
2	B	264	HIS
2	B	298	ASN
2	B	332	ASN
2	B	337	ASN
2	B	347	ASN
2	B	370	ASN
2	B	414	ASN
2	B	416	ASN
2	B	423	GLN
2	B	426	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](#)

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
5	EP	B	1001	-	33,36,36	2.08	7 (21%)	42,53,53	2.62	8 (19%)
4	GDP	B	1500	-	25,30,30	2.28	3 (12%)	30,47,47	0.95	2 (6%)
3	GTP	A	9500	-	29,34,34	3.27	5 (17%)	35,54,54	0.93	2 (5%)

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
5	EP	B	1001	-	-	15/49/55/55	1/3/3/3
4	GDP	B	1500	-	-	2/12/32/32	0/3/3/3
3	GTP	A	9500	-	-	3/18/38/38	0/3/3/3

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	9500	GTP	PB-O3B	-10.54	1.48	1.59
4	B	1500	GDP	PA-O3A	-10.05	1.48	1.59
3	A	9500	GTP	PA-O3A	-9.43	1.49	1.59
3	A	9500	GTP	PB-O3A	-8.68	1.50	1.59
5	B	1001	EP	C27-C24	7.52	1.60	1.46
5	B	1001	EP	C13-S1	5.88	1.79	1.70
3	A	9500	GTP	C5-C6	-3.08	1.41	1.47
5	B	1001	EP	C72-C68	2.70	1.56	1.53
3	A	9500	GTP	C8-N7	-2.54	1.30	1.34
4	B	1500	GDP	C5-C6	-2.47	1.42	1.47
4	B	1500	GDP	C8-N7	-2.46	1.31	1.34
5	B	1001	EP	O26-C24	-2.29	1.40	1.45
5	B	1001	EP	C41-C47	2.28	1.57	1.53
5	B	1001	EP	C12-N20	2.20	1.44	1.37
5	B	1001	EP	O26-C27	-2.15	1.40	1.45

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	1001	EP	C27-O26-C24	12.29	69.53	60.67
5	B	1001	EP	O26-C27-C24	-6.38	55.15	59.66
5	B	1001	EP	O26-C24-C27	-6.13	55.32	59.66
5	B	1001	EP	O2-C75-C72	2.62	116.13	111.43
5	B	1001	EP	C38-C41-C47	2.46	115.43	111.51
3	A	9500	GTP	O2G-PG-O1G	2.30	119.80	110.83
4	B	1500	GDP	O2B-PB-O1B	2.29	119.75	110.83
5	B	1001	EP	O26-C24-C21	-2.28	111.57	116.34
4	B	1500	GDP	O6-C6-C5	2.19	128.66	124.32
5	B	1001	EP	O2-C3-C5	2.17	115.44	109.59
3	A	9500	GTP	O6-C6-C5	2.14	128.56	124.32
5	B	1001	EP	C68-C72-C75	2.11	115.73	111.81

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	1001	EP	C5-C10-C12-N20
5	B	1001	EP	C59-C68-C72-C75
5	B	1001	EP	O70-C68-C72-C75
5	B	1001	EP	C41-C47-C51-C53
5	B	1001	EP	O49-C47-C51-C57
5	B	1001	EP	C35-C38-C41-C43

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
5	B	1001	EP	C41-C47-C51-C57
5	B	1001	EP	O26-C27-C32-C35
5	B	1001	EP	O58-C57-C59-C68
5	B	1001	EP	C51-C57-C59-C68
4	B	1500	GDP	C3'-C4'-C5'-O5'
3	A	9500	GTP	C4'-C5'-O5'-PA
5	B	1001	EP	C38-C41-C47-O49
5	B	1001	EP	C5-C3-O2-C75
5	B	1001	EP	C51-C57-C59-C60
4	B	1500	GDP	O4'-C4'-C5'-O5'
3	A	9500	GTP	PA-O3A-PB-O1B
5	B	1001	EP	O49-C47-C51-C53
5	B	1001	EP	O58-C57-C59-C60
3	A	9500	GTP	PA-O3A-PB-O2B

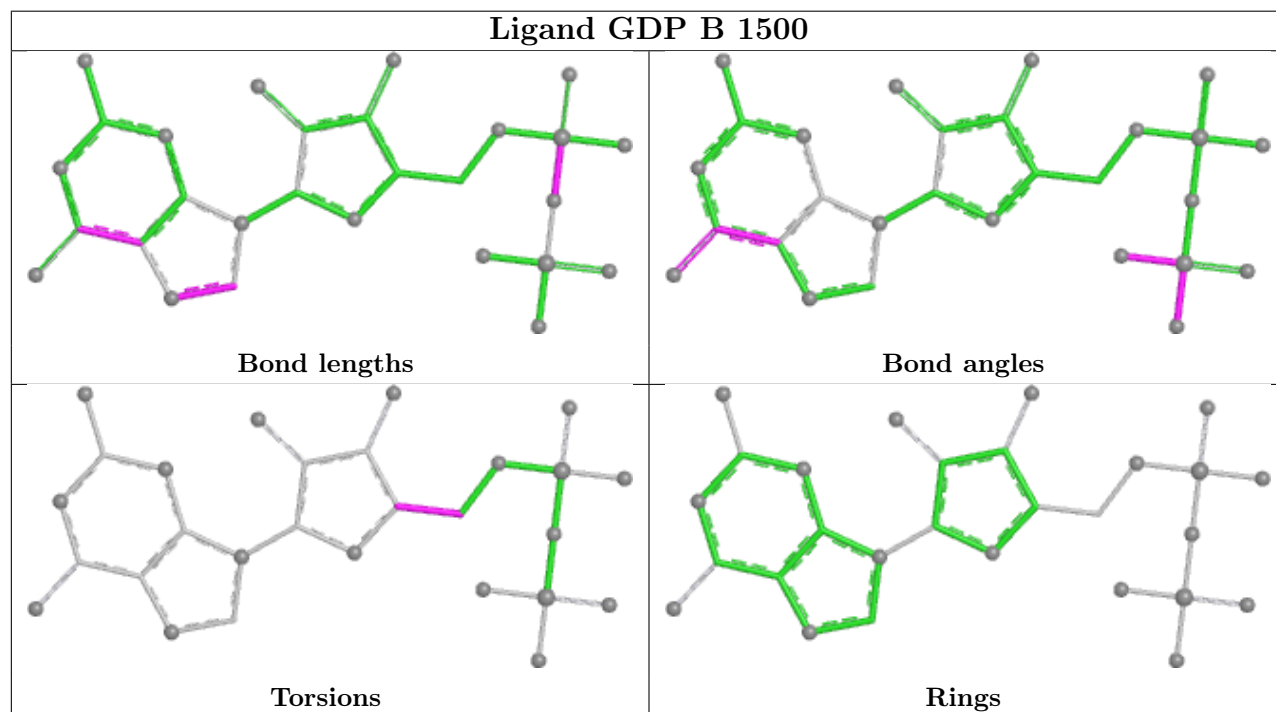
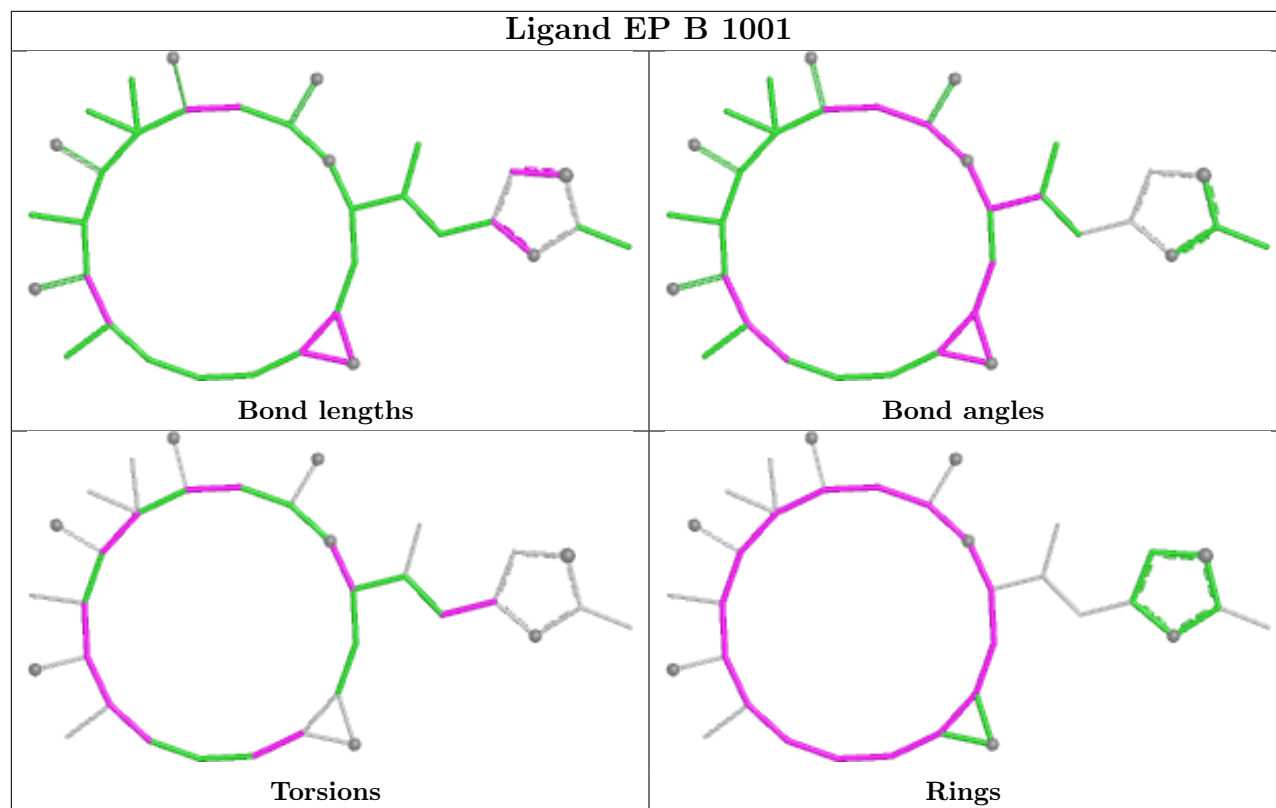
All (1) ring outliers are listed below:

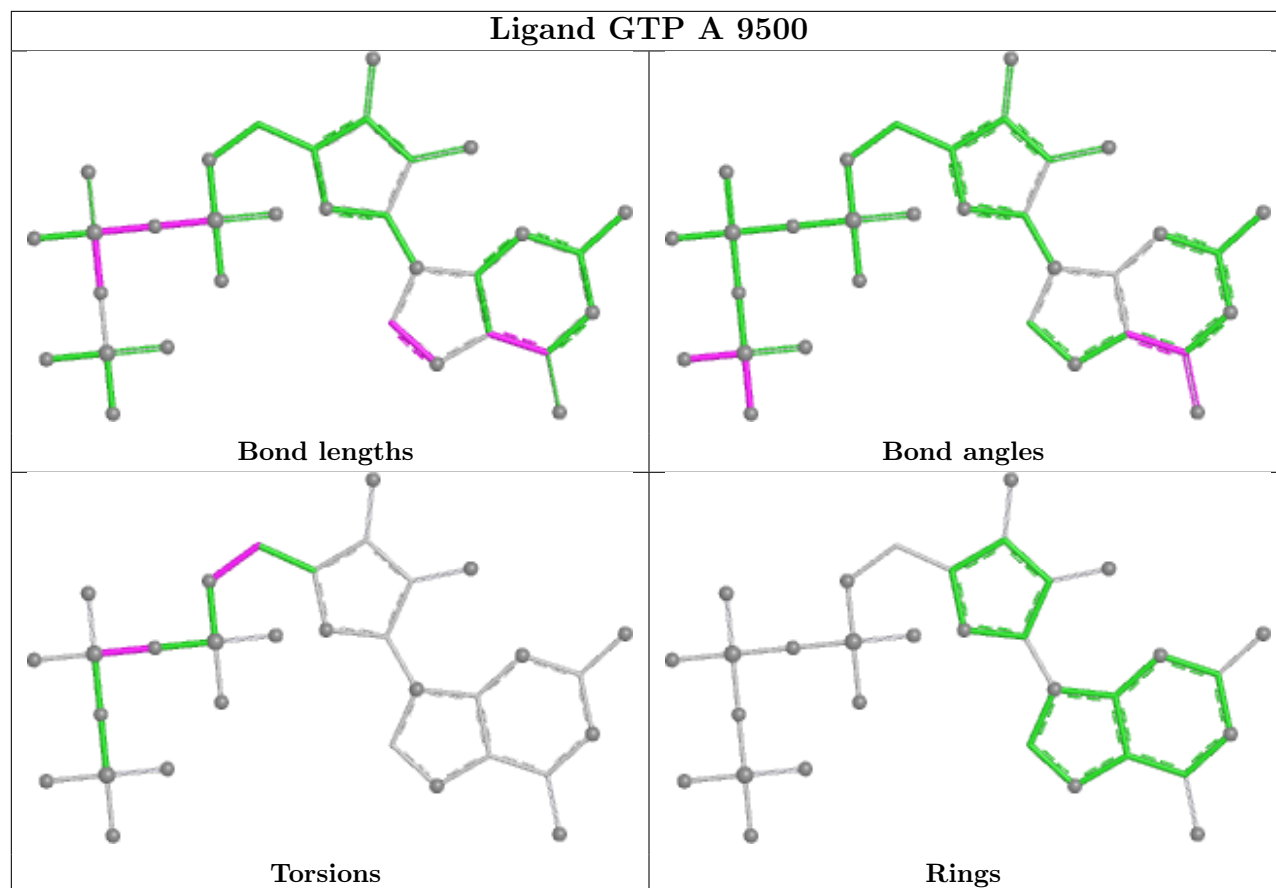
Mol	Chain	Res	Type	Atoms
5	B	1001	EP	C21-C24-C27-C3-C32-C35-C38-C41-C47-C51-C57-C59-C68-C72-C75-O2

3 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	1001	EP	4	0
4	B	1500	GDP	8	0
3	A	9500	GTP	4	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.