



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 18, 2023 – 12:37 AM EDT

PDB ID : 4XYK
Title : Crystal structure of human phosphofructokinase-1 in complex with ADP, Northeast Structural Genomics Consortium Target HR9275
Authors : Forouhar, F.; Webb, B.A.; Szu, F.-E.; Seetharaman, J.; Barber, D.L.; Tong, L.; Northeast Structural Genomics Consortium (NESG)
Deposited on : 2015-02-02
Resolution : 3.40 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The 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 : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

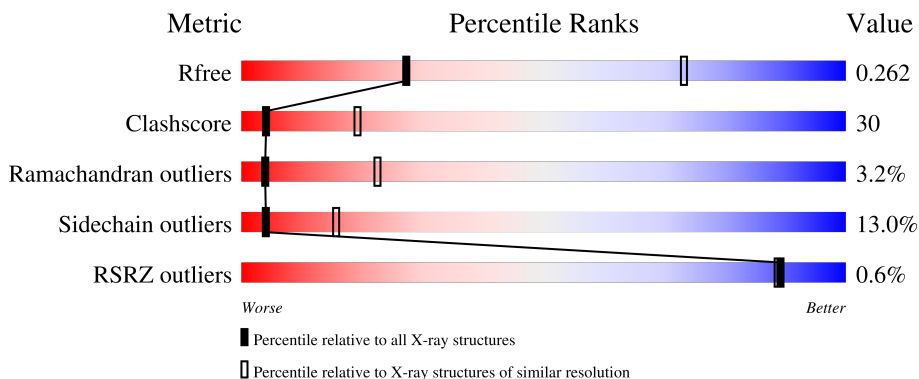
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	812	
1	B	812	
1	C	812	
1	D	812	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	PO4	A	803	-	-	X	-

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 22897 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 ATP-dependent 6-phosphofructokinase, platelet type.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	737	5640	3542	1000	1059	39	0	0	0
1	B	749	5727	3595	1019	1074	39	0	0	0
1	C	743	5681	3566	1008	1068	39	0	0	0
1	D	743	5681	3566	1008	1068	39	0	0	0

There are 112 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-27	MET	-	initiating methionine	UNP Q01813
A	-26	SER	-	expression tag	UNP Q01813
A	-25	TYR	-	expression tag	UNP Q01813
A	-24	TYR	-	expression tag	UNP Q01813
A	-23	HIS	-	expression tag	UNP Q01813
A	-22	HIS	-	expression tag	UNP Q01813
A	-21	HIS	-	expression tag	UNP Q01813
A	-20	HIS	-	expression tag	UNP Q01813
A	-19	HIS	-	expression tag	UNP Q01813
A	-18	HIS	-	expression tag	UNP Q01813
A	-17	ASP	-	expression tag	UNP Q01813
A	-16	TYR	-	expression tag	UNP Q01813
A	-15	ASP	-	expression tag	UNP Q01813
A	-14	ILE	-	expression tag	UNP Q01813
A	-13	PRO	-	expression tag	UNP Q01813
A	-12	THR	-	expression tag	UNP Q01813
A	-11	THR	-	expression tag	UNP Q01813
A	-10	GLU	-	expression tag	UNP Q01813
A	-9	ASN	-	expression tag	UNP Q01813
A	-8	LEU	-	expression tag	UNP Q01813
A	-7	TYR	-	expression tag	UNP Q01813

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	PHE	-	expression tag	UNP Q01813
A	-5	GLN	-	expression tag	UNP Q01813
A	-4	GLY	-	expression tag	UNP Q01813
A	-3	ALA	-	expression tag	UNP Q01813
A	-2	MET	-	expression tag	UNP Q01813
A	-1	ASP	-	expression tag	UNP Q01813
A	0	PRO	-	expression tag	UNP Q01813
B	-27	MET	-	initiating methionine	UNP Q01813
B	-26	SER	-	expression tag	UNP Q01813
B	-25	TYR	-	expression tag	UNP Q01813
B	-24	TYR	-	expression tag	UNP Q01813
B	-23	HIS	-	expression tag	UNP Q01813
B	-22	HIS	-	expression tag	UNP Q01813
B	-21	HIS	-	expression tag	UNP Q01813
B	-20	HIS	-	expression tag	UNP Q01813
B	-19	HIS	-	expression tag	UNP Q01813
B	-18	HIS	-	expression tag	UNP Q01813
B	-17	ASP	-	expression tag	UNP Q01813
B	-16	TYR	-	expression tag	UNP Q01813
B	-15	ASP	-	expression tag	UNP Q01813
B	-14	ILE	-	expression tag	UNP Q01813
B	-13	PRO	-	expression tag	UNP Q01813
B	-12	THR	-	expression tag	UNP Q01813
B	-11	THR	-	expression tag	UNP Q01813
B	-10	GLU	-	expression tag	UNP Q01813
B	-9	ASN	-	expression tag	UNP Q01813
B	-8	LEU	-	expression tag	UNP Q01813
B	-7	TYR	-	expression tag	UNP Q01813
B	-6	PHE	-	expression tag	UNP Q01813
B	-5	GLN	-	expression tag	UNP Q01813
B	-4	GLY	-	expression tag	UNP Q01813
B	-3	ALA	-	expression tag	UNP Q01813
B	-2	MET	-	expression tag	UNP Q01813
B	-1	ASP	-	expression tag	UNP Q01813
B	0	PRO	-	expression tag	UNP Q01813
C	-27	MET	-	initiating methionine	UNP Q01813
C	-26	SER	-	expression tag	UNP Q01813
C	-25	TYR	-	expression tag	UNP Q01813
C	-24	TYR	-	expression tag	UNP Q01813
C	-23	HIS	-	expression tag	UNP Q01813
C	-22	HIS	-	expression tag	UNP Q01813
C	-21	HIS	-	expression tag	UNP Q01813

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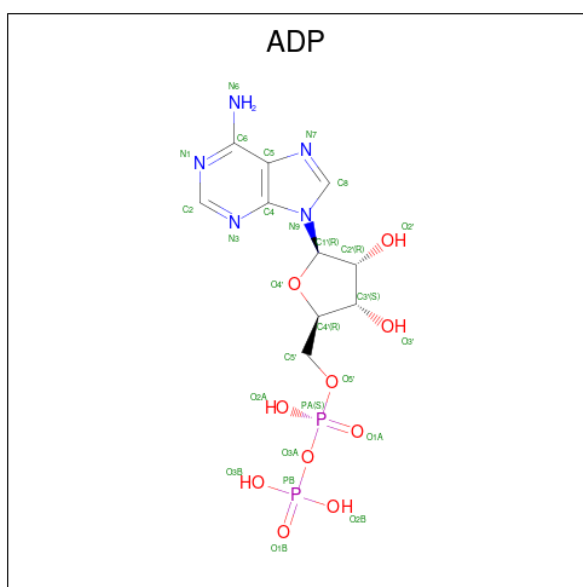
Chain	Residue	Modelled	Actual	Comment	Reference
C	-20	HIS	-	expression tag	UNP Q01813
C	-19	HIS	-	expression tag	UNP Q01813
C	-18	HIS	-	expression tag	UNP Q01813
C	-17	ASP	-	expression tag	UNP Q01813
C	-16	TYR	-	expression tag	UNP Q01813
C	-15	ASP	-	expression tag	UNP Q01813
C	-14	ILE	-	expression tag	UNP Q01813
C	-13	PRO	-	expression tag	UNP Q01813
C	-12	THR	-	expression tag	UNP Q01813
C	-11	THR	-	expression tag	UNP Q01813
C	-10	GLU	-	expression tag	UNP Q01813
C	-9	ASN	-	expression tag	UNP Q01813
C	-8	LEU	-	expression tag	UNP Q01813
C	-7	TYR	-	expression tag	UNP Q01813
C	-6	PHE	-	expression tag	UNP Q01813
C	-5	GLN	-	expression tag	UNP Q01813
C	-4	GLY	-	expression tag	UNP Q01813
C	-3	ALA	-	expression tag	UNP Q01813
C	-2	MET	-	expression tag	UNP Q01813
C	-1	ASP	-	expression tag	UNP Q01813
C	0	PRO	-	expression tag	UNP Q01813
D	-27	MET	-	initiating methionine	UNP Q01813
D	-26	SER	-	expression tag	UNP Q01813
D	-25	TYR	-	expression tag	UNP Q01813
D	-24	TYR	-	expression tag	UNP Q01813
D	-23	HIS	-	expression tag	UNP Q01813
D	-22	HIS	-	expression tag	UNP Q01813
D	-21	HIS	-	expression tag	UNP Q01813
D	-20	HIS	-	expression tag	UNP Q01813
D	-19	HIS	-	expression tag	UNP Q01813
D	-18	HIS	-	expression tag	UNP Q01813
D	-17	ASP	-	expression tag	UNP Q01813
D	-16	TYR	-	expression tag	UNP Q01813
D	-15	ASP	-	expression tag	UNP Q01813
D	-14	ILE	-	expression tag	UNP Q01813
D	-13	PRO	-	expression tag	UNP Q01813
D	-12	THR	-	expression tag	UNP Q01813
D	-11	THR	-	expression tag	UNP Q01813
D	-10	GLU	-	expression tag	UNP Q01813
D	-9	ASN	-	expression tag	UNP Q01813
D	-8	LEU	-	expression tag	UNP Q01813
D	-7	TYR	-	expression tag	UNP Q01813

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-6	PHE	-	expression tag	UNP Q01813
D	-5	GLN	-	expression tag	UNP Q01813
D	-4	GLY	-	expression tag	UNP Q01813
D	-3	ALA	-	expression tag	UNP Q01813
D	-2	MET	-	expression tag	UNP Q01813
D	-1	ASP	-	expression tag	UNP Q01813
D	0	PRO	-	expression tag	UNP Q01813

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
2	A	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	B	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	C	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	D	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

- Molecule 3 is PHOSPHATE ION (three-letter code: PO4) (formula: O_4P).

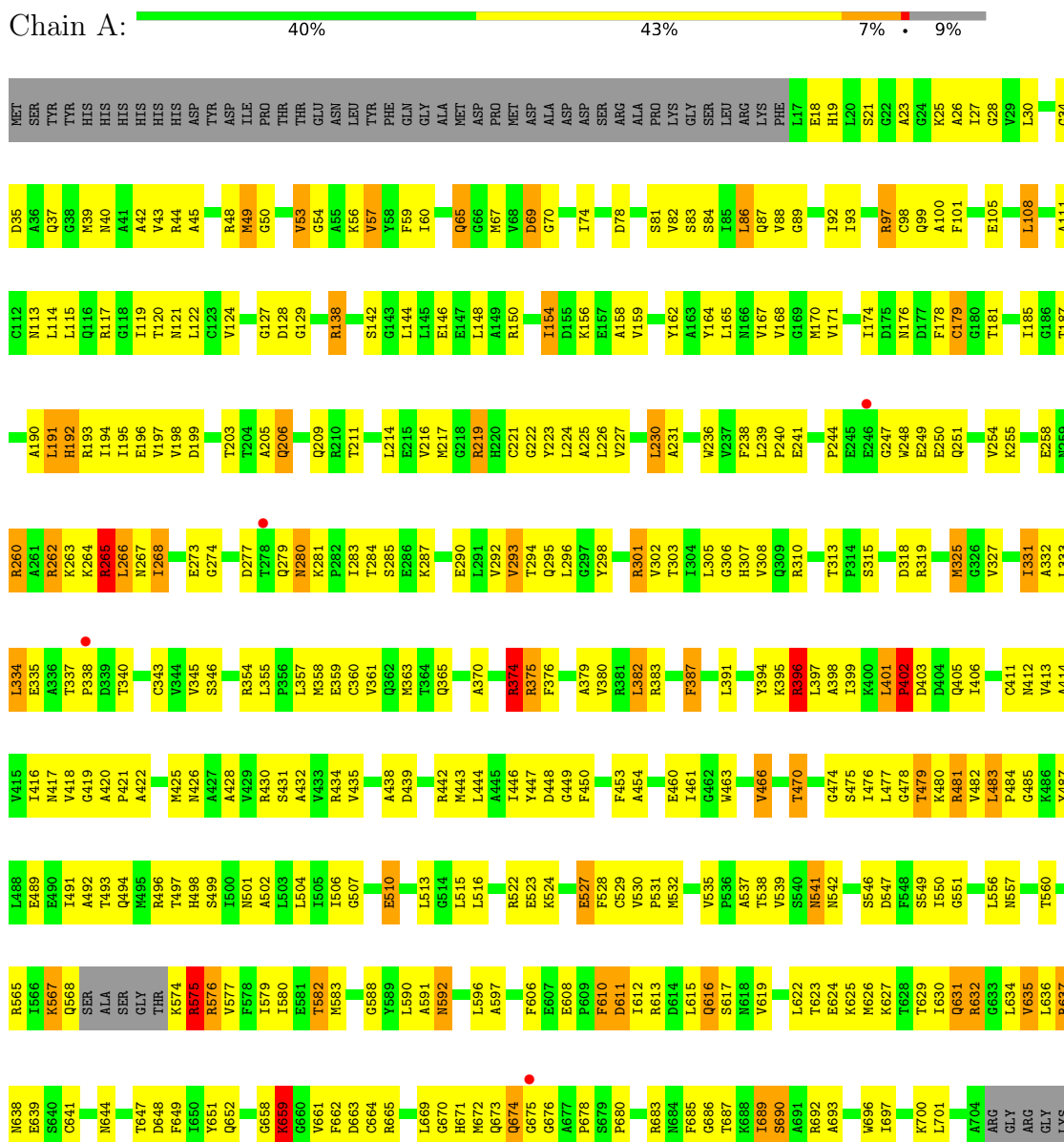


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total O P 5 4 1	0	0
3	A	1	Total O P 5 4 1	0	0
3	A	1	Total O P 5 4 1	0	0
3	B	1	Total O P 5 4 1	0	0
3	B	1	Total O P 5 4 1	0	0
3	C	1	Total O P 5 4 1	0	0
3	C	1	Total O P 5 4 1	0	0
3	C	1	Total O P 5 4 1	0	0
3	C	1	Total O P 5 4 1	0	0
3	D	1	Total O P 5 4 1	0	0
3	D	1	Total O P 5 4 1	0	0
3	D	1	Total O P 5 4 1	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 and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

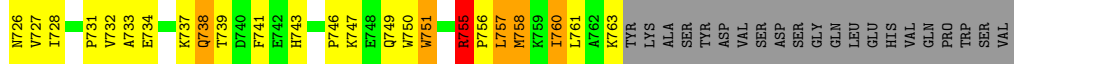
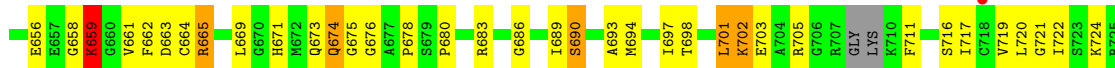
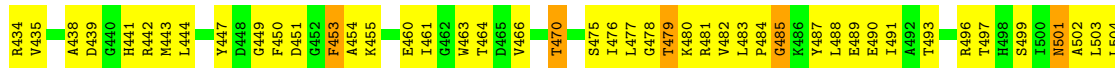
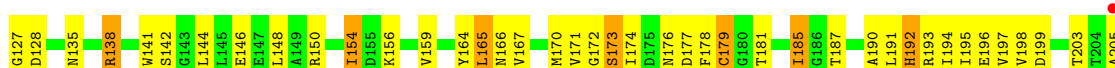
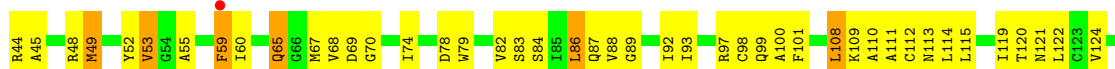
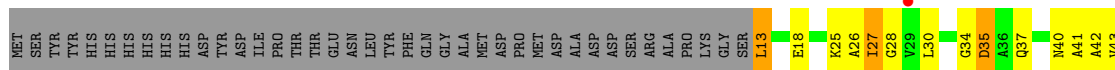
- Molecule 1: ATP-dependent 6-phosphofructokinase, platelet type





HIS
VAL
PRO
TRP
SER
VAL

• Molecule 1: ATP-dependent 6-phosphofructokinase, platelet type



• Molecule 1: ATP-dependent 6-phosphofructokinase, platelet type



V732	R665	I580	L503	R430	L355	T278	I201	G116
A733	E561	E504	L504	S431	M358	Q279	R202	R117
E734	L669	I505	I505	R434	E359	R280	T203	T120
L735	G670	I506	I506	V435	C360	K281	T204	A205
K736	H671	G507	G507	D439	M363	P282	Q206	L122
Q738	H672	E510	E510	R442	T364	T283	S207	C123
T739	Q673	A511	A511	M443	Q365	T284	R208	V124
D740	Q674	Y512	Y512	R444	T366	S285	Q209	D128
H743	G675	L515	L515	L444	A370	K287	R210	G129
P746	A676	E516	E516	Y447	R373	E290	S130	S130
K747	P678	E517	E517	D448	R375	V292	E215	R188
E748	P680	L518	L518	G449	F376	V293	V216	S142
Q749	F606	SS19	SS19	F450	A379	T294	M217	G143
W750	F606	A520	A520	F453	V380	Q295	G218	L144
W751	F610	A521	A521	A454	R381	L296	R219	L145
L752	F610	H525	H525	T458	L382	Y298	H290	E146
R755	L615	E526	E526	K463	R383	R301	C221	E147
P756	V619	F527	F527	T464	R385	V302	G222	G148
L757	E620	C528	C528	D465	R385	L224	Y223	L148
W758	H621	F530	F530	V466	S386	A225	L224	A149
K759	L622	V531	V531	T470	F387	L226	A225	R150
I760	T623	M532	M532	G474	N390	L305	L290	I154
L761	E624	M533	M533	S475	Y394	G306	L290	D155
A762	K625	M534	M534	I476	K395	H307	A231	K156
K763	M626	V535	V535	L477	Q309	V308	W236	V159
L764	G627	A537	A537	T478	R396	R310	W237	Y162
K700	I630	T538	T538	G479	L397	S315	F238	A163
L701	Q631	V539	V539	S476	A398	D318	L239	L165
K702	G632	SS40	SS40	I476	I399	R319	P240	M170
R705	L634	N541	N541	L477	K400	I320	P244	V171
GLY	V635	P544	P544	G478	L401	K325	W248	I174
GLY	L636	G545	G545	T479	P402	G326	E249	D175
LYS	R637	SS46	SS46	K480	D403	V327	E250	N176
LYS	N638	D547	D547	R481	Q405	I406	Q251	D177
F711	N639	F548	F548	V482	I406	C411	V254	F177
T712	S640	SS49	SS49	L483	I406	A332	K255	F178
T713	S640	I550	I550	P484	M412	L333	E258	C179
D714	C641	N557	N557	G485	V413	L334	N259	G180
D715	N644	N557	N557	K486	A414	I334	E259	T181
S716	T647	T560	T560	Y487	V415	T337	N259	T187
I717	T647	E489	E489	L488	I416	P338	R260	A190
C718	Q652	I491	I491	E490	N417	A281	R262	L191
V719	Q652	I491	I491	I491	V418	R262	K263	H192
L720	S655	K567	K567	A492	G419	T340	K263	I193
L721	E656	Q568	Q568	M495	A420	C343	R264	I194
I722	E656	G572	G572	R496	P421	R265	R264	I195
S723	E657	G572	G572	A422	V344	L266	R265	E196
K724	G658	R575	R575	T497	V345	N267	L266	V197
R725	K659	H498	H498	G424	S346	I268	L268	A200
N726	V727	S499	S499	M425	M425	G274	I268	
V727	V727	F662	F662	N501	N426	D277	G274	
I728	I728	D663	D663	N501	N501		D277	
F729	Q730	C664	C664	I579	V429		D277	
P731	P731						D277	
ALA	ALA							
LYS	LYS							
TYR	TYR							
SER	SER							
TYR	TYR							
ASP	ASP							
VAL	VAL							
VAL	VAL							
SER	SER							
SER	SER							
SER	SER							
LEU	LEU							
LEU	LEU							
GLU	GLU							
GLU	GLU							
HIS	HIS							
VAL	VAL							
GLN	GLN							
PRU	PRU							
TRP	TRP							
SER	SER							
SER	SER							
VAL	VAL							

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	79.34Å 168.37Å 133.27Å 90.00° 103.78° 90.00°	Depositor
Resolution (Å)	45.37 – 3.40 45.37 – 3.40	Depositor EDS
% Data completeness (in resolution range)	74.2 (45.37-3.40) 84.5 (45.37-3.40)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	0.10	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.71 (at 3.40Å)	Xtrriage
Refinement program	CNS 1.3	Depositor
R, R_{free}	0.256 , 0.290 0.250 , 0.262	Depositor DCC
R_{free} test set	3943 reflections (10.00%)	wwPDB-VP
Wilson B-factor (Å ²)	69.6	Xtrriage
Anisotropy	0.727	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 14.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.25$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	22897	wwPDB-VP
Average B, all atoms (Å ²)	76.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.71% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ADP, PO4

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	0.57	1/5730 (0.0%)	0.75	15/7735 (0.2%)
1	B	0.55	0/5819	0.85	18/7854 (0.2%)
1	C	0.54	1/5773 (0.0%)	0.81	16/7795 (0.2%)
1	D	0.53	0/5773	0.89	16/7795 (0.2%)
All	All	0.55	2/23095 (0.0%)	0.83	65/31179 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	5
1	B	0	4
1	C	0	4
1	D	0	2
All	All	0	15

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	664	CYS	CB-SG	-6.17	1.71	1.82
1	A	360	CYS	CB-SG	-5.68	1.72	1.81

All (65) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	97	ARG	NE-CZ-NH2	-22.12	109.24	120.30
1	D	374	ARG	NE-CZ-NH1	-21.17	109.71	120.30
1	D	374	ARG	NE-CZ-NH2	21.17	130.88	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	665	ARG	NE-CZ-NH1	-20.40	110.10	120.30
1	C	97	ARG	NE-CZ-NH1	19.91	130.25	120.30
1	D	375	ARG	NE-CZ-NH2	-17.76	111.42	120.30
1	B	575	ARG	NE-CZ-NH1	17.62	129.11	120.30
1	B	665	ARG	NE-CZ-NH2	17.37	128.98	120.30
1	D	575	ARG	NE-CZ-NH1	16.50	128.55	120.30
1	D	375	ARG	NE-CZ-NH1	16.32	128.46	120.30
1	B	576	ARG	NE-CZ-NH1	-16.29	112.16	120.30
1	D	150	ARG	NE-CZ-NH2	16.24	128.42	120.30
1	B	575	ARG	NE-CZ-NH2	-15.79	112.40	120.30
1	B	576	ARG	NE-CZ-NH2	15.54	128.07	120.30
1	D	575	ARG	NE-CZ-NH2	-14.22	113.19	120.30
1	C	575	ARG	NE-CZ-NH2	13.23	126.91	120.30
1	D	150	ARG	NE-CZ-NH1	-12.67	113.97	120.30
1	C	575	ARG	NE-CZ-NH1	-11.81	114.40	120.30
1	D	374	ARG	CD-NE-CZ	10.69	138.56	123.60
1	C	665	ARG	NE-CZ-NH2	-9.68	115.46	120.30
1	B	374	ARG	NE-CZ-NH2	-9.56	115.52	120.30
1	C	97	ARG	CD-NE-CZ	9.45	136.83	123.60
1	A	575	ARG	NE-CZ-NH2	8.97	124.78	120.30
1	B	665	ARG	CD-NE-CZ	8.62	135.67	123.60
1	A	665	ARG	NE-CZ-NH2	-8.57	116.01	120.30
1	D	665	ARG	NE-CZ-NH1	8.31	124.45	120.30
1	C	375	ARG	NE-CZ-NH2	8.16	124.38	120.30
1	D	665	ARG	NE-CZ-NH2	-8.07	116.27	120.30
1	B	575	ARG	CD-NE-CZ	8.00	134.79	123.60
1	C	374	ARG	NE-CZ-NH2	-7.96	116.32	120.30
1	A	374	ARG	NE-CZ-NH2	-7.88	116.36	120.30
1	C	150	ARG	NE-CZ-NH2	-7.88	116.36	120.30
1	D	150	ARG	CD-NE-CZ	7.87	134.62	123.60
1	D	375	ARG	CD-NE-CZ	7.82	134.55	123.60
1	A	576	ARG	NE-CZ-NH1	7.73	124.16	120.30
1	D	575	ARG	CD-NE-CZ	7.67	134.34	123.60
1	C	375	ARG	NE-CZ-NH1	-7.37	116.61	120.30
1	C	665	ARG	NE-CZ-NH1	7.37	123.99	120.30
1	B	375	ARG	NE-CZ-NH1	-7.30	116.65	120.30
1	C	575	ARG	CD-NE-CZ	7.25	133.75	123.60
1	A	575	ARG	NE-CZ-NH1	-7.24	116.68	120.30
1	A	575	ARG	CD-NE-CZ	7.18	133.66	123.60
1	C	374	ARG	NE-CZ-NH1	7.17	123.89	120.30
1	A	375	ARG	NE-CZ-NH2	7.05	123.83	120.30
1	B	375	ARG	NE-CZ-NH2	7.03	123.81	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	576	ARG	CD-NE-CZ	6.93	133.31	123.60
1	C	150	ARG	NE-CZ-NH1	6.85	123.72	120.30
1	B	97	ARG	NE-CZ-NH2	6.81	123.70	120.30
1	A	665	ARG	NE-CZ-NH1	6.79	123.69	120.30
1	B	374	ARG	NE-CZ-NH1	6.68	123.64	120.30
1	A	150	ARG	NE-CZ-NH1	6.61	123.61	120.30
1	D	576	ARG	NE-CZ-NH1	6.43	123.51	120.30
1	A	576	ARG	NE-CZ-NH2	-6.37	117.12	120.30
1	A	374	ARG	NE-CZ-NH1	6.23	123.42	120.30
1	A	97	ARG	NE-CZ-NH1	-6.23	117.19	120.30
1	A	97	ARG	NE-CZ-NH2	6.13	123.36	120.30
1	B	97	ARG	NE-CZ-NH1	-5.78	117.41	120.30
1	A	150	ARG	NE-CZ-NH2	-5.73	117.44	120.30
1	B	150	ARG	NE-CZ-NH2	-5.50	117.55	120.30
1	B	150	ARG	NE-CZ-NH1	5.37	122.98	120.30
1	C	744	ARG	NE-CZ-NH1	-5.34	117.63	120.30
1	D	97	ARG	NE-CZ-NH1	-5.20	117.70	120.30
1	A	375	ARG	NE-CZ-NH1	-5.20	117.70	120.30
1	C	576	ARG	NE-CZ-NH2	-5.04	117.78	120.30
1	B	579	ILE	CG1-CB-CG2	-5.02	100.35	111.40

There are no chirality outliers.

All (15) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	219	ARG	Sidechain
1	A	262	ARG	Sidechain
1	A	301	ARG	Sidechain
1	A	632	ARG	Sidechain
1	A	692	ARG	Sidechain
1	B	219	ARG	Sidechain
1	B	396	ARG	Sidechain
1	B	565	ARG	Sidechain
1	B	755	ARG	Sidechain
1	C	260	ARG	Sidechain
1	C	265	ARG	Sidechain
1	C	44	ARG	Sidechain
1	C	632	ARG	Sidechain
1	D	138	ARG	Sidechain
1	D	265	ARG	Sidechain

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	5640	0	5674	340	0
1	B	5727	0	5764	340	0
1	C	5681	0	5709	358	0
1	D	5681	0	5709	376	0
2	A	27	0	12	2	0
2	B	27	0	12	1	0
2	C	27	0	12	1	0
2	D	27	0	12	0	0
3	A	15	0	0	2	0
3	B	10	0	0	0	0
3	C	20	0	0	1	0
3	D	15	0	0	1	0
All	All	22897	0	22904	1376	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 30.

All (1376) 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:D:480:LYS:HB3	1:D:482:VAL:HG23	1.29	1.05
1:B:522:ARG:HH12	1:B:529:CYS:HA	1.25	1.00
1:D:532:MET:HB2	1:D:717:ILE:HG22	1.41	1.00
1:A:539:VAL:HG11	1:A:674:GLN:HB3	1.43	0.99
1:A:121:ASN:HB3	1:A:333:LEU:HD22	1.46	0.97
1:C:121:ASN:HB3	1:C:333:LEU:HD22	1.45	0.95
1:C:44:ARG:NH1	1:C:761:LEU:HD22	1.81	0.95
1:D:327:VAL:HG21	1:D:757:LEU:HD21	1.47	0.93
1:D:30:LEU:HD21	1:D:124:VAL:HG22	1.51	0.92
1:B:30:LEU:HD21	1:B:124:VAL:HG22	1.50	0.91
1:A:181:THR:HB	1:A:346:SER:HB2	1.53	0.91
1:B:588:GLY:HA2	1:B:638:ASN:HD22	1.36	0.90
1:A:284:THR:HG23	1:A:287:LYS:H	1.32	0.90
1:C:588:GLY:HA2	1:C:638:ASN:HD22	1.37	0.90
1:D:630:ILE:HD12	1:D:630:ILE:H	1.36	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:121:ASN:HB3	1:B:333:LEU:HD22	1.53	0.89
1:B:630:ILE:H	1:B:630:ILE:HD12	1.37	0.89
1:D:516:LEU:HD21	1:D:736:LYS:HE2	1.54	0.89
1:A:219:ARG:HG3	1:A:273:GLU:OE1	1.72	0.88
1:A:496:ARG:HB3	1:A:527:GLU:HG3	1.53	0.88
1:C:539:VAL:HG11	1:C:674:GLN:HB3	1.56	0.88
1:D:44:ARG:HH11	1:D:44:ARG:HG3	1.38	0.87
1:A:678:PRO:HG2	1:A:683:ARG:HD3	1.57	0.87
1:C:630:ILE:HD12	1:C:630:ILE:H	1.39	0.86
1:B:284:THR:HG23	1:B:287:LYS:H	1.37	0.86
1:D:181:THR:HB	1:D:346:SER:HB2	1.54	0.86
1:D:678:PRO:HG2	1:D:683:ARG:HD3	1.55	0.86
1:D:488:LEU:HD23	1:D:488:LEU:H	1.40	0.85
1:C:534:MET:HG2	1:C:719:VAL:HG22	1.56	0.85
1:B:522:ARG:NH1	1:B:529:CYS:HA	1.91	0.84
1:C:30:LEU:HD21	1:C:124:VAL:HG22	1.59	0.84
1:A:30:LEU:HD21	1:A:124:VAL:HG22	1.59	0.84
1:C:284:THR:HG23	1:C:287:LYS:H	1.40	0.84
1:B:262:ARG:HH22	1:B:400:LYS:HD3	1.42	0.84
1:C:181:THR:HB	1:C:346:SER:HB2	1.58	0.84
1:A:480:LYS:HB3	1:A:482:VAL:HG23	1.57	0.83
1:B:539:VAL:HG11	1:B:674:GLN:HB3	1.60	0.82
1:B:669:LEU:HB3	1:B:673:GLN:HE21	1.44	0.82
1:A:630:ILE:HD12	1:A:630:ILE:H	1.44	0.82
1:D:121:ASN:HB3	1:D:333:LEU:HD22	1.58	0.82
1:A:515:LEU:CD2	1:A:732:VAL:HG11	2.10	0.82
1:D:575:ARG:HD3	1:D:661:VAL:O	1.79	0.82
1:B:678:PRO:HG2	1:B:683:ARG:HD3	1.60	0.82
1:C:658:GLY:O	1:C:661:VAL:HG12	1.80	0.81
1:D:539:VAL:HG11	1:D:674:GLN:HB3	1.61	0.81
1:C:262:ARG:HH22	1:C:400:LYS:HD3	1.43	0.81
1:A:448:ASP:OD1	1:B:574:LYS:HG3	1.81	0.81
1:D:401:LEU:HD23	1:D:401:LEU:H	1.46	0.80
1:A:45:ALA:O	1:A:49:MET:HB2	1.82	0.80
1:B:26:ALA:HB3	1:B:119:ILE:HA	1.60	0.80
1:B:401:LEU:HD23	1:B:401:LEU:H	1.45	0.80
1:B:413:VAL:HG22	1:B:502:ALA:HB3	1.63	0.80
1:B:279:GLN:HG2	1:B:374:ARG:CZ	2.11	0.80
1:C:306:GLY:CA	1:D:303:THR:HG21	2.12	0.79
1:C:327:VAL:HG21	1:C:757:LEU:HD21	1.64	0.79
1:A:658:GLY:O	1:A:661:VAL:HG12	1.83	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:522:ARG:NH1	1:C:529:CYS:HA	1.97	0.79
1:A:48:ARG:HH12	3:A:803:PO4:P	2.06	0.79
1:D:505:ILE:HG13	1:D:515:LEU:HD21	1.64	0.78
1:C:686:GLY:O	1:C:690:SER:HB2	1.84	0.78
1:D:284:THR:HG23	1:D:287:LYS:H	1.49	0.78
1:B:401:LEU:HD21	1:B:406:ILE:HD11	1.65	0.78
1:C:401:LEU:HD23	1:C:401:LEU:H	1.49	0.78
1:A:527:GLU:CD	1:A:527:GLU:H	1.87	0.77
1:D:503:LEU:HB3	1:D:532:MET:HG2	1.65	0.77
1:D:515:LEU:HA	1:D:518:LEU:HD12	1.65	0.77
1:B:259:ASN:HD22	1:B:267:ASN:HD21	1.33	0.77
1:A:40:ASN:OD1	1:A:92:ILE:HG23	1.85	0.76
1:B:327:VAL:HG21	1:B:757:LEU:HD21	1.68	0.76
1:B:181:THR:HB	1:B:346:SER:HB2	1.66	0.76
1:B:250:GLU:O	1:B:254:VAL:HG23	1.85	0.76
1:B:480:LYS:HB3	1:B:482:VAL:HG23	1.68	0.76
1:C:522:ARG:HE	1:C:717:ILE:HD11	1.51	0.76
1:D:630:ILE:HG22	1:D:632:ARG:HG2	1.68	0.76
1:B:70:GLY:HA3	1:B:113:ASN:ND2	2.00	0.75
1:D:266:LEU:HD22	1:D:267:ASN:N	2.02	0.75
1:D:658:GLY:O	1:D:661:VAL:HG12	1.85	0.75
1:C:412:ASN:OD1	1:C:442:ARG:HD3	1.86	0.75
1:D:262:ARG:HH22	1:D:400:LYS:HD3	1.52	0.75
1:A:515:LEU:HD22	1:A:732:VAL:HG11	1.69	0.75
1:C:413:VAL:HG22	1:C:502:ALA:HB3	1.67	0.74
1:B:606:PHE:HB2	1:B:641:CYS:HA	1.69	0.74
1:B:401:LEU:HD23	1:B:401:LEU:N	2.03	0.74
1:D:43:VAL:HG11	1:D:93:ILE:HD12	1.68	0.74
1:B:588:GLY:HA2	1:B:638:ASN:ND2	2.02	0.74
1:C:401:LEU:HD21	1:C:406:ILE:HD11	1.69	0.74
1:C:495:MET:SD	1:C:500:ILE:HD12	2.28	0.74
1:C:40:ASN:OD1	1:C:92:ILE:HG23	1.86	0.74
1:A:530:VAL:HB	1:A:531:PRO:HD2	1.70	0.73
1:C:501:ASN:O	1:C:530:VAL:HB	1.88	0.73
1:D:577:VAL:HG21	1:D:622:LEU:HD21	1.70	0.73
1:C:44:ARG:NH1	1:C:761:LEU:CD2	2.52	0.73
1:C:431:SER:HB2	1:C:687:THR:HG23	1.70	0.73
1:D:401:LEU:H	1:D:401:LEU:CD2	2.01	0.73
1:B:534:MET:HB3	1:B:719:VAL:HG12	1.71	0.73
1:D:731:PRO:HG2	1:D:734:GLU:HG2	1.68	0.73
1:B:142:SER:O	1:B:146:GLU:HG2	1.88	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:541:ASN:HA	1:D:549:SER:OG	1.89	0.73
1:B:401:LEU:H	1:B:401:LEU:CD2	2.02	0.73
1:C:731:PRO:HG2	1:C:734:GLU:HG2	1.68	0.73
1:D:720:LEU:HD23	1:D:721:GLY:N	2.03	0.73
1:A:83:SER:HA	3:A:803:PO4:O3	1.89	0.72
1:A:108:LEU:HG	1:A:144:LEU:HD22	1.69	0.72
1:C:588:GLY:HA2	1:C:638:ASN:ND2	2.05	0.72
1:A:577:VAL:HG21	1:A:622:LEU:HD21	1.70	0.72
1:C:171:VAL:HG11	1:C:181:THR:HG21	1.70	0.72
1:A:717:ILE:HG12	1:A:717:ILE:O	1.90	0.72
1:C:79:TRP:CZ2	1:C:763:LYS:HB2	2.25	0.72
1:C:515:LEU:HD11	1:C:534:MET:HB3	1.72	0.72
1:D:250:GLU:O	1:D:254:VAL:HG23	1.90	0.72
1:B:418:VAL:O	1:B:507:GLY:HA3	1.90	0.71
1:A:522:ARG:HH21	1:A:717:ILE:HG23	1.55	0.71
1:B:108:LEU:HG	1:B:144:LEU:HD22	1.71	0.71
1:C:250:GLU:O	1:C:254:VAL:HG23	1.90	0.71
1:D:320:ILE:HD11	1:D:597:ALA:HB2	1.70	0.71
1:D:412:ASN:OD1	1:D:442:ARG:HD3	1.90	0.71
1:D:84:SER:CB	1:D:632:ARG:HH22	2.03	0.71
1:C:301:ARG:HH21	1:C:301:ARG:CG	2.03	0.71
1:A:401:LEU:N	1:A:401:LEU:HD23	2.06	0.70
1:C:306:GLY:HA3	1:D:303:THR:HG21	1.72	0.70
1:B:503:LEU:HB3	1:B:532:MET:HG2	1.71	0.70
1:D:84:SER:HB2	1:D:632:ARG:HH22	1.55	0.70
1:B:43:VAL:HG11	1:B:93:ILE:HD12	1.71	0.70
1:C:401:LEU:HD23	1:C:401:LEU:N	2.05	0.70
1:A:191:LEU:HD22	1:A:680:PRO:HB3	1.73	0.70
1:C:401:LEU:H	1:C:401:LEU:CD2	2.04	0.70
1:B:583:MET:HG2	1:B:673:GLN:OE1	1.91	0.70
1:A:522:ARG:NH2	1:A:716:SER:HB2	2.06	0.70
1:B:731:PRO:HG2	1:B:734:GLU:HG2	1.72	0.70
1:D:40:ASN:OD1	1:D:92:ILE:HG23	1.91	0.70
1:A:700:LYS:O	1:A:711:PHE:HZ	1.75	0.70
1:B:86:LEU:HD21	1:B:597:ALA:O	1.92	0.70
1:C:505:ILE:HD12	1:C:515:LEU:HD21	1.74	0.70
1:A:401:LEU:H	1:A:401:LEU:CD2	2.06	0.69
1:B:84:SER:HB2	1:B:632:ARG:HH22	1.56	0.69
1:D:27:ILE:HG21	1:D:333:LEU:HD13	1.74	0.69
1:D:44:ARG:HG3	1:D:44:ARG:NH1	2.04	0.69
1:A:420:ALA:HB2	1:A:481:ARG:HD3	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:577:VAL:HG21	1:B:622:LEU:HD21	1.72	0.69
1:A:142:SER:O	1:A:146:GLU:HG2	1.93	0.69
1:D:45:ALA:O	1:D:49:MET:HB2	1.93	0.69
1:C:669:LEU:HB3	1:C:673:GLN:HE21	1.57	0.69
1:B:686:GLY:O	1:B:690:SER:HB2	1.91	0.69
1:C:108:LEU:HG	1:C:144:LEU:HD22	1.74	0.69
1:D:70:GLY:HA3	1:D:113:ASN:ND2	2.07	0.69
1:D:718:CYS:HB3	1:D:731:PRO:HA	1.75	0.69
1:C:306:GLY:HA2	1:D:303:THR:HG21	1.74	0.68
1:C:678:PRO:HG2	1:C:683:ARG:HD3	1.73	0.68
1:A:401:LEU:HD23	1:A:401:LEU:H	1.58	0.68
1:B:582:THR:HG21	1:B:591:ALA:HA	1.75	0.68
1:C:508:GLY:HA3	1:C:538:THR:HB	1.76	0.68
1:D:327:VAL:HG21	1:D:757:LEU:CD2	2.21	0.68
1:A:583:MET:HG2	1:A:673:GLN:OE1	1.93	0.68
1:B:515:LEU:HD12	1:B:732:VAL:HG11	1.75	0.68
1:B:532:MET:HB2	1:B:717:ILE:HG23	1.75	0.68
1:B:719:VAL:HG13	1:B:732:VAL:HG12	1.76	0.68
1:C:219:ARG:HH12	3:C:805:PO4:P	2.15	0.68
1:C:430:ARG:HD3	1:C:470:THR:HG23	1.73	0.68
1:C:623:THR:HG23	1:C:661:VAL:HG21	1.75	0.68
1:D:401:LEU:HD23	1:D:401:LEU:N	2.08	0.68
1:B:370:ALA:HB3	1:B:379:ALA:HB2	1.75	0.68
1:C:301:ARG:HG2	1:C:301:ARG:NH2	2.07	0.68
1:C:43:VAL:HG11	1:C:93:ILE:HD12	1.76	0.68
1:D:430:ARG:HD3	1:D:470:THR:HG23	1.76	0.67
1:B:428:ALA:HB1	1:B:506:ILE:HD13	1.77	0.67
1:A:756:PRO:O	1:A:760:ILE:HG23	1.94	0.67
1:B:756:PRO:O	1:B:760:ILE:HG23	1.94	0.67
1:C:483:LEU:CD1	1:C:484:PRO:HD2	2.24	0.67
1:A:731:PRO:HG2	1:A:734:GLU:HG2	1.75	0.67
1:B:532:MET:HB2	1:B:717:ILE:HG12	1.76	0.67
1:A:49:MET:O	1:A:53:VAL:HG22	1.95	0.67
1:D:370:ALA:HB3	1:D:379:ALA:HB2	1.77	0.66
1:A:250:GLU:O	1:A:254:VAL:HG23	1.96	0.66
1:A:430:ARG:HD3	1:A:470:THR:HG23	1.77	0.66
1:B:266:LEU:HD22	1:B:267:ASN:N	2.10	0.66
1:C:483:LEU:HD13	1:C:484:PRO:HD2	1.76	0.66
1:C:45:ALA:O	1:C:49:MET:HB2	1.95	0.66
1:A:294:THR:HG23	1:A:294:THR:O	1.96	0.66
1:A:669:LEU:HB3	1:A:673:GLN:HE21	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:376:PHE:O	1:D:380:VAL:HG23	1.96	0.66
1:D:398:ALA:O	1:D:399:ILE:HD13	1.95	0.66
1:A:717:ILE:HD13	1:A:717:ILE:H	1.61	0.65
1:C:575:ARG:H	1:C:631:GLN:HB2	1.60	0.65
1:C:478:GLY:HA2	1:D:572:GLY:O	1.96	0.65
1:C:226:LEU:HB2	1:C:239:LEU:HD11	1.77	0.65
1:D:483:LEU:HD13	1:D:484:PRO:HD2	1.78	0.65
1:B:588:GLY:CA	1:B:638:ASN:HD22	2.09	0.65
1:D:702:LYS:HA	1:D:705:ARG:HB2	1.77	0.65
1:A:418:VAL:O	1:A:507:GLY:HA3	1.96	0.65
1:C:280:ASN:H	1:C:374:ARG:HH21	1.43	0.65
1:D:515:LEU:HD11	1:D:534:MET:HB2	1.77	0.65
1:A:515:LEU:HD21	1:A:732:VAL:HG11	1.78	0.65
1:B:401:LEU:HG	1:B:406:ILE:HG12	1.78	0.65
1:D:583:MET:HG2	1:D:673:GLN:OE1	1.96	0.65
1:A:678:PRO:HG2	1:A:683:ARG:CD	2.27	0.65
1:A:358:MET:HG3	1:A:359:GLU:H	1.63	0.64
1:B:416:ILE:HD11	1:B:449:GLY:C	2.18	0.64
1:B:483:LEU:HD22	1:B:513:LEU:HD22	1.80	0.64
1:A:70:GLY:HA3	1:A:113:ASN:ND2	2.12	0.64
1:C:693:ALA:HB2	1:C:720:LEU:HD23	1.79	0.64
1:D:16:PHE:N	1:D:16:PHE:CD2	2.64	0.64
1:D:534:MET:HB3	1:D:719:VAL:HG12	1.80	0.64
1:D:108:LEU:HG	1:D:144:LEU:HD22	1.78	0.64
1:A:419:GLY:HA2	1:A:510:GLU:HG3	1.79	0.64
1:D:512:TYR:HA	1:D:534:MET:CE	2.28	0.64
1:C:70:GLY:HA3	1:C:113:ASN:ND2	2.13	0.64
1:D:669:LEU:HB3	1:D:673:GLN:HE21	1.63	0.64
1:C:457:GLN:HA	1:C:457:GLN:NE2	2.12	0.64
1:D:412:ASN:ND2	1:D:499:SER:HB2	2.12	0.64
1:D:532:MET:O	1:D:717:ILE:HA	1.98	0.64
1:A:43:VAL:HG11	1:A:93:ILE:HD12	1.79	0.63
1:A:588:GLY:HA2	1:A:638:ASN:OD1	1.98	0.63
1:B:230:LEU:HG	1:B:394:TYR:HB2	1.79	0.63
1:B:527:GLU:CD	1:B:527:GLU:H	2.01	0.63
1:B:630:ILE:HG22	1:B:632:ARG:HG2	1.80	0.63
1:D:306:GLY:C	1:D:308:VAL:H	2.01	0.63
1:B:49:MET:HG3	1:B:327:VAL:HG13	1.80	0.63
1:D:719:VAL:HG13	1:D:732:VAL:HG12	1.79	0.63
1:B:192:HIS:CE1	1:B:680:PRO:HD2	2.34	0.63
1:B:623:THR:HG23	1:B:661:VAL:HG21	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:746:PRO:HG2	1:C:749:GLN:HG2	1.81	0.63
1:D:419:GLY:HA2	1:D:510:GLU:HG3	1.81	0.63
1:C:266:LEU:HD22	1:C:267:ASN:N	2.13	0.63
1:D:262:ARG:O	1:D:263:LYS:HB2	1.98	0.63
1:D:697:ILE:O	1:D:701:LEU:HB2	1.99	0.63
1:D:280:ASN:H	1:D:374:ARG:NH2	1.97	0.63
1:A:171:VAL:HG11	1:A:181:THR:HG21	1.80	0.63
1:B:575:ARG:H	1:B:631:GLN:HB2	1.64	0.63
1:D:320:ILE:CD1	1:D:597:ALA:HB2	2.28	0.63
1:D:507:GLY:O	1:D:537:ALA:N	2.31	0.63
1:C:416:ILE:HD11	1:C:449:GLY:C	2.19	0.62
1:A:306:GLY:C	1:A:308:VAL:H	2.02	0.62
1:A:398:ALA:O	1:A:399:ILE:HD13	1.98	0.62
1:A:280:ASN:H	1:A:374:ARG:HH21	1.45	0.62
1:C:303:THR:HG21	1:D:306:GLY:CA	2.29	0.62
1:D:226:LEU:HB2	1:D:239:LEU:HD11	1.81	0.62
1:D:280:ASN:H	1:D:374:ARG:HH21	1.47	0.62
1:A:612:ILE:HG21	1:C:616:GLN:NE2	2.15	0.62
1:B:40:ASN:OD1	1:B:92:ILE:HG23	1.99	0.62
1:C:49:MET:HG3	1:C:327:VAL:HG13	1.79	0.62
1:D:203:THR:HA	1:D:206:GLN:HG2	1.82	0.62
1:D:722:ILE:HD13	1:D:727:VAL:HG12	1.80	0.62
1:D:678:PRO:HG2	1:D:683:ARG:CD	2.28	0.62
1:B:358:MET:HG3	1:B:359:GLU:H	1.62	0.62
1:B:541:ASN:HA	1:B:549:SER:OG	2.00	0.62
1:D:27:ILE:HD13	1:D:57:VAL:HG12	1.82	0.62
1:D:454:ALA:HB1	1:D:490:GLU:HB2	1.81	0.62
1:D:512:TYR:HE1	1:D:516:LEU:HD12	1.64	0.62
1:B:18:GLU:HB2	1:B:52:TYR:OH	1.98	0.62
1:B:480:LYS:HB3	1:B:482:VAL:CG2	2.30	0.62
1:B:505:ILE:HD12	1:B:515:LEU:HD21	1.81	0.62
1:D:171:VAL:HG11	1:D:181:THR:HG21	1.80	0.62
1:A:567:LYS:HG2	1:A:632:ARG:HD3	1.82	0.61
1:A:648:ASP:O	1:A:652:GLN:HG3	2.00	0.61
1:B:84:SER:CB	1:B:632:ARG:HH22	2.12	0.61
1:C:546:SER:HA	1:C:722:ILE:O	2.00	0.61
1:D:702:LYS:HD2	1:D:705:ARG:CB	2.31	0.61
1:D:148:LEU:HB3	1:D:154:ILE:HG23	1.81	0.61
1:A:422:ALA:O	1:A:425:MET:HB2	2.00	0.61
1:C:749:GLN:OE1	1:C:751:TRP:CZ2	2.54	0.61
1:D:49:MET:SD	1:D:760:ILE:HD11	2.41	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:337:THR:OG1	1:D:340:THR:HB	2.00	0.61
1:B:79:TRP:NE1	1:B:763:LYS:HB2	2.16	0.61
1:D:120:THR:HG23	1:D:121:ASN:ND2	2.15	0.61
1:B:409:THR:HB	1:B:705:ARG:HH22	1.65	0.61
1:B:658:GLY:O	1:B:661:VAL:HG12	2.00	0.61
1:D:49:MET:HG3	1:D:327:VAL:HG13	1.80	0.61
1:A:292:VAL:O	1:A:296:LEU:HB2	2.01	0.61
1:A:416:ILE:HD11	1:A:449:GLY:C	2.21	0.61
1:D:538:THR:HG23	1:D:541:ASN:H	1.66	0.61
1:D:458:ILE:HD12	1:D:498:HIS:CD2	2.36	0.61
1:B:259:ASN:HD22	1:B:267:ASN:ND2	1.99	0.60
1:B:171:VAL:HG11	1:B:181:THR:HG21	1.82	0.60
1:C:292:VAL:O	1:C:296:LEU:HB2	2.01	0.60
1:A:454:ALA:HB2	1:A:491:ILE:HD12	1.82	0.60
1:B:428:ALA:CB	1:B:506:ILE:HD13	2.32	0.60
1:C:65:GLN:HG2	1:C:98:CYS:HB2	1.84	0.60
1:C:301:ARG:CG	1:C:301:ARG:NH2	2.62	0.60
1:B:13:LEU:N	1:B:13:LEU:HD23	2.17	0.60
1:C:514:GLY:O	1:C:518:LEU:HD23	2.01	0.60
1:C:32:SER:HB3	1:C:130:SER:OG	2.02	0.60
1:C:148:LEU:HB3	1:C:154:ILE:HG23	1.83	0.60
1:A:575:ARG:H	1:A:631:GLN:HB2	1.67	0.60
1:A:714:ASP:OD2	1:A:733:ALA:HB2	2.02	0.60
1:D:567:LYS:HG2	1:D:632:ARG:HD3	1.84	0.60
1:B:70:GLY:HA3	1:B:113:ASN:HD22	1.67	0.60
1:C:418:VAL:O	1:C:507:GLY:HA3	2.01	0.60
1:C:762:ALA:O	1:C:763:LYS:HB3	2.02	0.60
1:B:179:CYS:SG	1:B:363:MET:HB2	2.42	0.59
1:C:230:LEU:HG	1:C:394:TYR:HB2	1.84	0.59
1:D:746:PRO:HG2	1:D:749:GLN:HG2	1.84	0.59
1:A:596:LEU:HB2	1:A:758:MET:HG3	1.83	0.59
1:B:415:VAL:HG12	1:B:504:LEU:HD23	1.83	0.59
1:C:171:VAL:HG11	1:C:181:THR:CG2	2.31	0.59
1:D:720:LEU:HD12	1:D:729:PHE:CE2	2.37	0.59
1:C:541:ASN:HA	1:C:549:SER:OG	2.02	0.59
1:D:221:CYS:HA	1:D:383:ARG:NH2	2.17	0.59
1:D:503:LEU:HD21	1:D:505:ILE:HD11	1.83	0.59
1:A:535:VAL:HG13	1:A:689:ILE:HD11	1.83	0.59
1:B:79:TRP:CZ2	1:B:763:LYS:HA	2.36	0.59
1:B:493:THR:O	1:B:497:THR:HG23	2.02	0.59
1:C:361:VAL:HG12	1:C:365:GLN:NE2	2.17	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:190:ALA:O	1:D:194:ILE:HG13	2.01	0.59
1:B:244:PRO:HD2	1:B:277:ASP:HA	1.84	0.59
1:B:398:ALA:O	1:B:399:ILE:HD13	2.02	0.59
1:C:25:LYS:CE	1:C:120:THR:HG21	2.33	0.59
1:C:398:ALA:O	1:C:399:ILE:HD13	2.02	0.59
1:D:418:VAL:O	1:D:507:GLY:HA3	2.02	0.59
1:A:226:LEU:HB2	1:A:239:LEU:HD11	1.85	0.59
1:A:582:THR:HG21	1:A:591:ALA:HA	1.84	0.59
1:B:45:ALA:O	1:B:49:MET:HB2	2.02	0.59
1:B:430:ARG:HD3	1:B:470:THR:HG23	1.84	0.59
1:C:606:PHE:HB2	1:C:641:CYS:HA	1.85	0.59
1:D:512:TYR:CE1	1:D:516:LEU:HD12	2.37	0.59
1:A:205:ALA:CB	1:A:266:LEU:HD23	2.33	0.59
1:B:266:LEU:HD11	1:B:268:ILE:HD11	1.84	0.59
1:D:290:GLU:O	1:D:294:THR:HG22	2.02	0.59
1:D:422:ALA:O	1:D:425:MET:HB2	2.01	0.59
1:A:205:ALA:HB3	1:A:266:LEU:HD23	1.85	0.59
1:C:473:GLY:CA	1:C:678:PRO:HD3	2.32	0.59
1:A:644:ASN:HD22	1:C:656:GLU:HB2	1.68	0.59
1:B:251:GLN:O	1:B:254:VAL:HB	2.03	0.58
1:C:579:ILE:N	1:C:579:ILE:HD12	2.18	0.58
1:D:358:MET:HG3	1:D:359:GLU:H	1.67	0.58
1:D:634:LEU:HD11	1:D:636:LEU:HD21	1.85	0.58
1:D:702:LYS:HD2	1:D:705:ARG:HB3	1.85	0.58
1:C:756:PRO:O	1:C:760:ILE:HG23	2.03	0.58
1:D:216:VAL:HG21	1:D:225:ALA:HA	1.85	0.58
1:D:487:TYR:N	1:D:487:TYR:HD2	2.01	0.58
1:D:579:ILE:HD12	1:D:579:ILE:N	2.18	0.58
1:A:203:THR:HA	1:A:206:GLN:HG2	1.84	0.58
1:C:221:CYS:HA	1:C:383:ARG:NH2	2.17	0.58
1:C:676:GLY:HA2	1:D:565:ARG:HG2	1.85	0.58
1:A:592:ASN:C	1:A:592:ASN:HD22	2.07	0.58
1:B:426:ASN:OD1	1:B:476:ILE:HG13	2.04	0.58
1:C:195:ILE:HD11	1:C:231:ALA:HB3	1.86	0.58
1:C:370:ALA:HB3	1:C:379:ALA:HB2	1.86	0.58
1:B:83:SER:O	1:B:84:SER:HB3	2.04	0.58
1:B:434:ARG:HG2	1:B:463:TRP:CD2	2.38	0.58
1:C:290:GLU:O	1:C:294:THR:HG22	2.04	0.58
1:A:426:ASN:OD1	1:A:476:ILE:HG13	2.04	0.58
1:B:148:LEU:HB3	1:B:154:ILE:HG23	1.84	0.58
1:D:217:MET:HG3	1:D:309:GLN:NE2	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:623:THR:HG23	1:D:661:VAL:HG21	1.85	0.58
1:D:658:GLY:O	1:D:659:LYS:C	2.41	0.58
1:C:542:ASN:O	1:C:746:PRO:HD3	2.04	0.58
1:A:477:LEU:HD12	1:A:477:LEU:H	1.67	0.57
1:B:634:LEU:HD11	1:B:636:LEU:HD21	1.86	0.57
1:A:401:LEU:N	1:A:401:LEU:CD2	2.66	0.57
1:B:190:ALA:O	1:B:194:ILE:HG13	2.04	0.57
1:B:195:ILE:HD11	1:B:231:ALA:HB3	1.86	0.57
1:C:176:ASN:C	1:C:178:PHE:H	2.08	0.57
1:A:649:PHE:CD1	1:C:649:PHE:CE1	2.93	0.57
1:D:762:ALA:O	1:D:763:LYS:HB2	2.04	0.57
1:A:630:ILE:HG22	1:A:632:ARG:HG2	1.87	0.57
1:B:630:ILE:H	1:B:630:ILE:CD1	2.14	0.57
1:D:401:LEU:HD21	1:D:406:ILE:HD11	1.86	0.57
1:B:30:LEU:H	1:B:30:LEU:HD23	1.70	0.57
1:B:337:THR:OG1	1:B:340:THR:HB	2.05	0.57
1:D:431:SER:HB2	1:D:687:THR:HG23	1.86	0.57
1:A:425:MET:HE1	1:A:475:SER:HB2	1.85	0.57
1:D:487:TYR:N	1:D:487:TYR:CD2	2.72	0.57
1:D:735:LEU:O	1:D:739:THR:HG22	2.05	0.57
1:B:327:VAL:HG21	1:B:757:LEU:CD2	2.35	0.57
1:C:25:LYS:HE2	1:C:120:THR:HG21	1.87	0.57
1:C:637:ARG:HE	1:C:647:THR:N	2.03	0.57
1:D:719:VAL:HG23	1:D:719:VAL:O	2.04	0.57
1:C:315:SER:O	1:C:319:ARG:HG3	2.05	0.57
1:C:583:MET:HG2	1:C:673:GLN:OE1	2.05	0.57
1:C:676:GLY:HA3	1:D:565:ARG:CD	2.34	0.57
1:C:483:LEU:HD12	1:C:517:GLU:OE1	2.05	0.56
1:B:358:MET:HG3	1:B:359:GLU:N	2.19	0.56
1:B:669:LEU:CB	1:B:673:GLN:HE21	2.15	0.56
1:D:592:ASN:C	1:D:592:ASN:HD22	2.08	0.56
1:D:756:PRO:O	1:D:760:ILE:HG23	2.04	0.56
1:A:402:PRO:HG2	1:A:405:GLN:HG3	1.88	0.56
1:A:479:THR:HG23	1:A:479:THR:O	2.05	0.56
1:A:539:VAL:HG11	1:A:674:GLN:CB	2.29	0.56
1:A:612:ILE:HG21	1:C:616:GLN:HE22	1.69	0.56
1:B:292:VAL:O	1:B:296:LEU:HB2	2.05	0.56
1:B:508:GLY:CA	1:B:538:THR:HB	2.35	0.56
1:C:608:GLU:OE1	1:C:755:ARG:HG2	2.05	0.56
1:B:484:PRO:HG2	1:B:517:GLU:HB3	1.87	0.56
1:B:525:HIS:HB3	1:B:527:GLU:OE1	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:678:PRO:HG2	1:B:683:ARG:CD	2.33	0.56
1:C:285:SER:HB3	1:C:302:VAL:HG21	1.87	0.56
1:D:92:ILE:HG13	1:D:93:ILE:N	2.19	0.56
1:A:181:THR:CB	1:A:346:SER:HB2	2.33	0.56
1:A:49:MET:HG3	1:A:327:VAL:HG13	1.86	0.56
1:C:419:GLY:HA2	1:C:510:GLU:HG3	1.86	0.56
1:A:606:PHE:HB2	1:A:641:CYS:HA	1.87	0.56
1:C:262:ARG:NH2	1:C:400:LYS:HD3	2.19	0.56
1:D:84:SER:HB2	1:D:632:ARG:NH2	2.21	0.56
1:A:575:ARG:HG2	1:A:661:VAL:O	2.05	0.56
1:C:156:LYS:O	1:C:159:VAL:HG12	2.06	0.56
1:D:577:VAL:HG21	1:D:622:LEU:CD2	2.36	0.56
1:A:401:LEU:HD21	1:A:406:ILE:HD11	1.88	0.56
1:A:686:GLY:O	1:A:690:SER:HB2	2.06	0.56
1:B:531:PRO:HA	1:B:716:SER:O	2.06	0.56
1:B:701:LEU:O	1:B:705:ARG:HG3	2.06	0.56
1:A:454:ALA:HB2	1:A:491:ILE:CD1	2.36	0.56
1:B:477:LEU:HD12	1:B:477:LEU:H	1.70	0.56
1:C:35:ASP:OD2	1:D:204:THR:HA	2.06	0.56
1:D:390:ASN:OD1	1:D:688:LYS:HE2	2.05	0.56
1:A:236:TRP:HZ3	1:A:399:ILE:HD11	1.71	0.55
1:C:337:THR:OG1	1:C:340:THR:HB	2.05	0.55
1:C:487:TYR:O	1:C:491:ILE:HG13	2.06	0.55
1:C:720:LEU:HD22	1:C:729:PHE:CE2	2.41	0.55
1:C:303:THR:HG21	1:D:306:GLY:HA3	1.87	0.55
1:C:534:MET:CG	1:C:719:VAL:HG22	2.33	0.55
1:C:579:ILE:HG13	1:C:635:VAL:CG1	2.37	0.55
1:A:416:ILE:HG13	1:A:446:ILE:HB	1.87	0.55
1:B:577:VAL:HG21	1:B:622:LEU:CD2	2.36	0.55
1:A:370:ALA:HB3	1:A:379:ALA:HB2	1.88	0.55
1:A:397:LEU:HD21	1:A:430:ARG:NH2	2.22	0.55
1:C:397:LEU:HD11	1:C:431:SER:HA	1.88	0.55
1:A:450:PHE:CE1	1:A:484:PRO:HD3	2.42	0.55
1:D:83:SER:O	1:D:84:SER:HB3	2.07	0.55
1:B:78:ASP:OD2	1:B:78:ASP:N	2.34	0.55
1:D:292:VAL:O	1:D:296:LEU:HB2	2.06	0.55
1:D:567:LYS:HD3	1:D:632:ARG:NH1	2.21	0.55
1:D:606:PHE:HB2	1:D:641:CYS:HA	1.89	0.55
1:A:195:ILE:HD11	1:A:231:ALA:HB3	1.89	0.55
1:C:634:LEU:HD11	1:C:636:LEU:HD21	1.87	0.55
1:A:176:ASN:C	1:A:178:PHE:H	2.10	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:478:GLY:HA2	1:B:572:GLY:O	2.05	0.55
1:C:579:ILE:HG13	1:C:635:VAL:HG13	1.88	0.55
1:C:680:PRO:HA	1:C:683:ARG:HG3	1.89	0.55
1:D:305:LEU:HD12	1:D:305:LEU:H	1.72	0.55
1:D:722:ILE:HD13	1:D:727:VAL:CG1	2.36	0.55
1:B:192:HIS:O	1:B:196:GLU:HG3	2.06	0.55
1:B:221:CYS:HA	1:B:383:ARG:NH2	2.22	0.55
1:A:148:LEU:HB3	1:A:154:ILE:HD12	1.89	0.55
1:A:461:ILE:O	1:A:461:ILE:HD12	2.07	0.55
1:C:25:LYS:CD	1:C:120:THR:HG21	2.37	0.55
1:C:320:ILE:HD11	1:C:597:ALA:HB2	1.88	0.55
1:C:505:ILE:HG21	1:C:511:ALA:HB1	1.88	0.55
1:C:675:GLY:O	1:D:568:GLN:HG2	2.07	0.55
1:D:637:ARG:HE	1:D:647:THR:N	2.05	0.55
1:A:658:GLY:O	1:A:659:LYS:C	2.45	0.54
1:C:301:ARG:HH21	1:C:301:ARG:HG2	1.67	0.54
1:A:358:MET:HG3	1:A:359:GLU:N	2.22	0.54
1:A:506:ILE:HD13	1:A:535:VAL:HB	1.88	0.54
1:A:649:PHE:CE1	1:C:649:PHE:CE1	2.95	0.54
1:B:397:LEU:HD11	1:B:431:SER:HA	1.89	0.54
1:B:401:LEU:N	1:B:401:LEU:CD2	2.68	0.54
1:A:634:LEU:HD11	1:A:636:LEU:HD21	1.90	0.54
1:A:669:LEU:HB3	1:A:673:GLN:NE2	2.22	0.54
1:B:37:GLN:NE2	1:B:310:ARG:C	2.61	0.54
1:B:205:ALA:CB	1:B:266:LEU:HD23	2.37	0.54
1:B:461:ILE:HD12	1:B:461:ILE:O	2.08	0.54
1:C:240:PRO:HG3	1:C:274:GLY:O	2.08	0.54
1:B:177:ASP:O	1:B:364:THR:HG23	2.06	0.54
1:C:327:VAL:HG21	1:C:757:LEU:CD2	2.37	0.54
1:C:630:ILE:HG22	1:C:632:ARG:HG2	1.90	0.54
1:D:156:LYS:O	1:D:159:VAL:HG12	2.08	0.54
1:D:582:THR:HG21	1:D:591:ALA:HA	1.90	0.54
1:B:262:ARG:O	1:B:263:LYS:HB2	2.07	0.54
1:D:588:GLY:HA2	1:D:638:ASN:HD22	1.71	0.54
1:A:541:ASN:HA	1:A:549:SER:OG	2.08	0.54
1:C:303:THR:HG21	1:D:306:GLY:HA2	1.89	0.54
1:D:434:ARG:HG2	1:D:463:TRP:CD2	2.43	0.54
1:D:661:VAL:HG13	1:D:662:PHE:CD2	2.43	0.54
1:A:315:SER:O	1:A:319:ARG:HG3	2.08	0.54
1:A:680:PRO:HA	1:A:683:ARG:HG3	1.88	0.54
1:C:114:LEU:HD22	1:C:119:ILE:HB	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:376:PHE:O	1:C:380:VAL:HG23	2.07	0.54
1:D:236:TRP:CZ3	1:D:399:ILE:HD11	2.43	0.54
1:B:669:LEU:HB3	1:B:673:GLN:NE2	2.18	0.54
1:C:120:THR:HG23	1:C:121:ASN:ND2	2.23	0.54
1:C:658:GLY:O	1:C:659:LYS:C	2.45	0.54
1:D:370:ALA:CB	1:D:379:ALA:HB2	2.37	0.54
1:A:576:ARG:HA	1:A:663:ASP:O	2.08	0.53
1:A:746:PRO:HG2	1:A:749:GLN:HG2	1.90	0.53
1:B:266:LEU:CD1	1:B:268:ILE:HD11	2.38	0.53
1:B:479:THR:HG23	1:B:479:THR:O	2.08	0.53
1:C:560:THR:HG22	1:C:597:ALA:HB3	1.90	0.53
1:D:480:LYS:C	1:D:482:VAL:H	2.11	0.53
1:A:221:CYS:HA	1:A:383:ARG:NH2	2.24	0.53
1:C:567:LYS:HG2	1:C:632:ARG:HD3	1.89	0.53
1:C:737:LYS:HG3	1:C:738:GLN:N	2.22	0.53
1:A:434:ARG:HG2	1:A:463:TRP:CD2	2.43	0.53
1:A:522:ARG:HG2	1:A:528:PHE:O	2.08	0.53
1:B:240:PRO:HG3	1:B:274:GLY:O	2.08	0.53
1:D:142:SER:O	1:D:146:GLU:HG2	2.08	0.53
1:D:503:LEU:CB	1:D:532:MET:HG2	2.36	0.53
1:D:535:VAL:HG13	1:D:689:ILE:HD11	1.91	0.53
1:A:65:GLN:HG2	1:A:98:CYS:HB2	1.90	0.53
1:A:262:ARG:O	1:A:263:LYS:HB2	2.08	0.53
1:A:483:LEU:HD12	1:A:483:LEU:H	1.74	0.53
1:C:138:ARG:HA	1:C:165:LEU:HD12	1.91	0.53
1:D:503:LEU:CD2	1:D:505:ILE:HD11	2.39	0.53
1:A:577:VAL:HG21	1:A:622:LEU:CD2	2.37	0.53
1:B:409:THR:HB	1:B:705:ARG:NH2	2.23	0.53
1:C:434:ARG:HG2	1:C:463:TRP:CD2	2.43	0.53
1:D:236:TRP:HZ3	1:D:399:ILE:HD11	1.73	0.53
1:D:397:LEU:HD21	1:D:430:ARG:NH2	2.24	0.53
1:D:488:LEU:H	1:D:488:LEU:CD2	2.16	0.53
1:A:529:CYS:O	1:A:711:PHE:HB2	2.08	0.53
1:B:625:LYS:C	1:B:627:LYS:H	2.11	0.53
1:C:638:ASN:HB3	1:C:641:CYS:HB3	1.90	0.53
1:C:757:LEU:HD22	1:C:757:LEU:O	2.09	0.53
1:D:193:ARG:O	1:D:197:VAL:HG23	2.09	0.53
1:B:42:ALA:HB1	1:B:170:MET:CE	2.39	0.53
1:B:120:THR:HG23	1:B:121:ASN:ND2	2.24	0.53
1:C:25:LYS:CG	1:C:120:THR:HG21	2.39	0.53
1:C:538:THR:HG23	1:C:541:ASN:H	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:512:TYR:HA	1:D:534:MET:HE1	1.91	0.53
1:C:37:GLN:NE2	1:C:310:ARG:C	2.62	0.53
1:C:669:LEU:HB3	1:C:673:GLN:NE2	2.23	0.53
1:A:431:SER:HB2	1:A:687:THR:HG23	1.89	0.53
1:B:306:GLY:C	1:B:308:VAL:H	2.13	0.53
1:B:658:GLY:O	1:B:659:LYS:C	2.47	0.53
1:B:739:THR:HG23	1:B:741:PHE:CE1	2.44	0.53
1:D:171:VAL:HG11	1:D:181:THR:CG2	2.38	0.53
1:D:240:PRO:HG3	1:D:274:GLY:O	2.08	0.53
1:A:83:SER:O	1:A:84:SER:HB3	2.09	0.53
1:A:138:ARG:HA	1:A:165:LEU:HD12	1.90	0.53
1:A:412:ASN:HB2	1:A:499:SER:O	2.08	0.53
1:B:84:SER:HB2	1:B:632:ARG:NH2	2.24	0.53
1:B:717:ILE:O	1:B:732:VAL:HG13	2.09	0.53
1:D:27:ILE:HG23	1:D:121:ASN:HB2	1.90	0.53
1:D:480:LYS:HB3	1:D:482:VAL:CG2	2.20	0.53
1:A:515:LEU:HD23	1:A:515:LEU:C	2.29	0.52
1:B:530:VAL:HB	1:B:531:PRO:HD2	1.90	0.52
1:C:49:MET:O	1:C:53:VAL:HG22	2.09	0.52
1:A:421:PRO:HG2	1:A:674:GLN:HE22	1.74	0.52
1:B:579:ILE:HD12	1:B:579:ILE:N	2.24	0.52
1:B:680:PRO:HA	1:B:683:ARG:HG3	1.91	0.52
1:C:174:ILE:HG21	1:C:190:ALA:HB2	1.90	0.52
1:C:280:ASN:H	1:C:374:ARG:NH2	2.06	0.52
1:C:488:LEU:HD22	1:C:528:PHE:CZ	2.44	0.52
1:C:746:PRO:HD2	1:C:749:GLN:NE2	2.24	0.52
1:D:560:THR:HG22	1:D:597:ALA:HB3	1.91	0.52
1:B:315:SER:O	1:B:319:ARG:HG3	2.09	0.52
1:C:556:LEU:O	1:C:560:THR:HG23	2.09	0.52
1:C:700:LYS:HA	1:C:703:GLU:HG2	1.90	0.52
1:C:356:PRO:HG2	1:C:359:GLU:HB3	1.92	0.52
1:C:582:THR:HG21	1:C:591:ALA:HA	1.91	0.52
1:A:240:PRO:HG3	1:A:274:GLY:O	2.09	0.52
1:A:487:TYR:O	1:A:491:ILE:HD13	2.10	0.52
1:C:435:VAL:HG21	1:C:691:ALA:CB	2.40	0.52
1:D:27:ILE:N	1:D:27:ILE:HD12	2.24	0.52
1:D:397:LEU:HD11	1:D:431:SER:HA	1.91	0.52
1:A:138:ARG:HD3	1:A:165:LEU:O	2.09	0.52
1:A:395:LYS:C	1:A:397:LEU:H	2.12	0.52
1:A:483:LEU:HD12	1:A:483:LEU:N	2.23	0.52
1:A:616:GLN:HA	1:A:616:GLN:HE21	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:236:TRP:CZ3	1:A:399:ILE:HD11	2.45	0.52
1:B:419:GLY:HA2	1:B:481:ARG:HG2	1.90	0.52
1:B:532:MET:CB	1:B:717:ILE:HG23	2.40	0.52
1:C:508:GLY:CA	1:C:538:THR:HB	2.39	0.52
1:D:176:ASN:C	1:D:178:PHE:H	2.13	0.52
1:C:516:LEU:HD22	1:C:732:VAL:HB	1.92	0.52
1:C:592:ASN:C	1:C:592:ASN:HD22	2.13	0.52
1:C:757:LEU:HD22	1:C:757:LEU:C	2.30	0.52
1:A:268:ILE:HD12	1:A:268:ILE:N	2.25	0.52
1:A:435:VAL:HG12	1:A:435:VAL:O	2.09	0.52
1:C:424:GLY:N	1:C:678:PRO:HB3	2.24	0.52
1:C:477:LEU:HD12	1:C:477:LEU:H	1.74	0.52
1:D:416:ILE:HD11	1:D:449:GLY:C	2.30	0.52
1:D:477:LEU:HD12	1:D:477:LEU:H	1.74	0.52
1:D:625:LYS:C	1:D:627:LYS:H	2.14	0.52
1:A:720:LEU:HD22	1:A:729:PHE:CE2	2.46	0.51
1:B:176:ASN:C	1:B:178:PHE:H	2.13	0.51
1:D:420:ALA:HB2	1:D:481:ARG:HH11	1.76	0.51
1:D:680:PRO:HA	1:D:683:ARG:HG3	1.91	0.51
1:A:50:GLY:O	1:A:53:VAL:HG23	2.11	0.51
1:A:206:GLN:O	1:A:265:ARG:NH2	2.44	0.51
1:A:396:ARG:HB3	1:A:396:ARG:HH21	1.76	0.51
1:B:114:LEU:HD22	1:B:119:ILE:HB	1.93	0.51
1:B:376:PHE:O	1:B:380:VAL:HG23	2.10	0.51
1:B:483:LEU:HD21	1:B:513:LEU:HD13	1.92	0.51
1:C:187:THR:HG21	1:C:223:TYR:HE2	1.75	0.51
1:C:615:LEU:O	1:C:619:VAL:HG23	2.10	0.51
1:A:42:ALA:HB1	1:A:170:MET:CE	2.40	0.51
1:B:226:LEU:HB2	1:B:239:LEU:HD11	1.91	0.51
1:B:542:ASN:O	1:B:746:PRO:HD3	2.10	0.51
1:C:181:THR:CB	1:C:346:SER:HB2	2.35	0.51
1:C:479:THR:HG23	1:C:479:THR:O	2.10	0.51
1:D:48:ARG:HG2	1:D:79:TRP:CE2	2.45	0.51
1:D:621:HIS:CE1	1:D:763:LYS:HB2	2.46	0.51
1:D:715:ASP:C	1:D:717:ILE:H	2.13	0.51
1:D:717:ILE:O	1:D:732:VAL:HG13	2.10	0.51
1:A:115:LEU:HD12	1:A:162:TYR:CD2	2.46	0.51
1:A:337:THR:OG1	1:A:340:THR:HB	2.10	0.51
1:A:527:GLU:CD	1:A:527:GLU:N	2.62	0.51
1:B:560:THR:HG22	1:B:597:ALA:HB3	1.92	0.51
1:D:65:GLN:HG2	1:D:98:CYS:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:VAL:HG21	1:A:225:ALA:HA	1.93	0.51
1:A:623:THR:HG23	1:A:661:VAL:HG21	1.93	0.51
1:B:438:ALA:HB2	1:B:463:TRP:HZ3	1.74	0.51
1:D:412:ASN:ND2	1:D:499:SER:CB	2.74	0.51
1:B:42:ALA:HB1	1:B:170:MET:HE1	1.93	0.51
1:B:216:VAL:HG21	1:B:225:ALA:HA	1.91	0.51
1:B:262:ARG:NH2	1:B:400:LYS:HD3	2.18	0.51
1:D:32:SER:HB3	1:D:130:SER:OG	2.09	0.51
1:A:28:GLY:HA3	1:A:122:LEU:HD12	1.93	0.51
1:A:579:ILE:HG13	1:A:635:VAL:HG13	1.93	0.51
1:B:592:ASN:C	1:B:592:ASN:HD22	2.14	0.51
1:C:357:LEU:O	1:C:361:VAL:HG23	2.10	0.51
1:D:66:GLY:HA2	1:D:73:ASN:HD22	1.75	0.51
1:A:99:GLN:C	1:A:101:PHE:H	2.14	0.51
1:B:443:MET:O	1:B:460:GLU:HG3	2.11	0.51
1:B:615:LEU:O	1:B:619:VAL:HG23	2.11	0.51
1:B:630:ILE:HD12	1:B:630:ILE:N	2.17	0.51
1:C:572:GLY:O	1:D:478:GLY:HA2	2.10	0.51
1:B:203:THR:HA	1:B:206:GLN:HG2	1.93	0.51
1:B:496:ARG:HB3	1:B:527:GLU:HG2	1.92	0.51
1:B:579:ILE:HG13	1:B:635:VAL:HG13	1.93	0.51
1:B:760:ILE:HG12	1:B:761:LEU:HD23	1.92	0.51
1:C:305:LEU:H	1:C:305:LEU:HD12	1.75	0.51
1:D:16:PHE:N	1:D:16:PHE:HD2	2.09	0.51
1:D:450:PHE:CD1	1:D:484:PRO:HD3	2.46	0.51
1:A:608:GLU:OE1	1:A:755:ARG:HG2	2.11	0.51
1:B:277:ASP:HB3	1:B:283:ILE:HD11	1.93	0.51
1:B:739:THR:N	1:B:747:LYS:HG3	2.26	0.51
1:C:190:ALA:O	1:C:194:ILE:HG13	2.11	0.51
1:C:262:ARG:HD3	1:C:464:THR:HG22	1.93	0.51
1:D:331:ILE:HG13	1:D:354:ARG:HH22	1.76	0.51
1:A:538:THR:HG23	1:A:541:ASN:H	1.75	0.50
1:B:737:LYS:HG3	1:B:738:GLN:HG3	1.92	0.50
1:B:750:TRP:CG	1:B:751:TRP:N	2.78	0.50
1:C:516:LEU:CD2	1:C:732:VAL:HB	2.41	0.50
1:C:522:ARG:HH12	1:C:529:CYS:HA	1.72	0.50
1:D:358:MET:HG3	1:D:359:GLU:N	2.26	0.50
1:B:92:ILE:HG13	1:B:93:ILE:N	2.26	0.50
1:C:306:GLY:C	1:C:308:VAL:H	2.14	0.50
1:C:583:MET:HA	1:C:639:GLU:HB2	1.93	0.50
1:A:127:GLY:C	2:A:801:ADP:O3B	2.49	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:VAL:HG11	1:A:181:THR:CG2	2.41	0.50
1:B:206:GLN:O	1:B:265:ARG:NH2	2.44	0.50
1:A:174:ILE:HG21	1:A:190:ALA:HB2	1.93	0.50
1:A:483:LEU:HD23	1:A:513:LEU:HD12	1.94	0.50
1:A:625:LYS:C	1:A:627:LYS:H	2.15	0.50
1:B:26:ALA:CB	1:B:119:ILE:HA	2.35	0.50
1:B:192:HIS:HA	1:B:680:PRO:HG2	1.94	0.50
1:C:237:VAL:HG12	1:C:238:PHE:N	2.26	0.50
1:D:424:GLY:N	1:D:678:PRO:HB3	2.26	0.50
1:D:577:VAL:CG2	1:D:622:LEU:HD21	2.39	0.50
1:D:615:LEU:O	1:D:619:VAL:HG23	2.12	0.50
1:D:630:ILE:H	1:D:630:ILE:CD1	2.11	0.50
1:A:717:ILE:O	1:A:717:ILE:CG1	2.58	0.50
1:B:539:VAL:HG12	1:B:551:GLY:O	2.12	0.50
1:C:515:LEU:CD1	1:C:534:MET:HB3	2.42	0.50
1:D:211:THR:OG1	1:D:267:ASN:HB2	2.12	0.50
1:A:192:HIS:O	1:A:196:GLU:HG3	2.11	0.50
1:A:195:ILE:HG13	1:A:680:PRO:HG3	1.93	0.50
1:A:254:VAL:O	1:A:258:GLU:HG3	2.11	0.50
1:B:432:ALA:HB1	1:B:504:LEU:CD2	2.42	0.50
1:B:501:ASN:HA	1:B:530:VAL:HG11	1.92	0.50
1:B:746:PRO:HG2	1:B:749:GLN:HG2	1.94	0.50
1:C:255:LYS:HE3	1:C:399:ILE:HD13	1.93	0.50
1:C:396:ARG:HH21	1:C:396:ARG:HB3	1.75	0.50
1:C:565:ARG:HG2	1:D:676:GLY:HA2	1.92	0.50
1:A:305:LEU:HD12	1:A:305:LEU:H	1.77	0.50
1:C:522:ARG:NE	1:C:717:ILE:HD11	2.24	0.50
1:D:315:SER:O	1:D:319:ARG:HG3	2.11	0.50
1:A:611:ASP:OD1	1:A:613:ARG:HB2	2.11	0.50
1:C:84:SER:CB	1:C:632:ARG:HH22	2.25	0.50
1:D:580:ILE:N	1:D:580:ILE:HD12	2.26	0.50
1:B:290:GLU:O	1:B:294:THR:HG23	2.12	0.50
1:B:453:PHE:CG	1:B:491:ILE:HD12	2.46	0.50
1:B:538:THR:HG23	1:B:541:ASN:H	1.75	0.50
1:D:70:GLY:HA3	1:D:113:ASN:HD22	1.77	0.50
1:A:238:PHE:CD2	1:A:283:ILE:HG21	2.47	0.49
1:A:630:ILE:HD12	1:A:630:ILE:N	2.21	0.49
1:C:44:ARG:HH11	1:C:761:LEU:CD2	2.21	0.49
1:A:114:LEU:HD22	1:A:119:ILE:HB	1.94	0.49
1:A:539:VAL:O	1:A:590:LEU:HD11	2.12	0.49
1:B:49:MET:O	1:B:53:VAL:HG22	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:201:ILE:HD11	1:D:308:VAL:HG12	1.95	0.49
1:C:429:VAL:HG11	1:C:477:LEU:HD11	1.93	0.49
1:D:306:GLY:C	1:D:308:VAL:N	2.65	0.49
1:A:266:LEU:HD22	1:A:267:ASN:N	2.26	0.49
1:A:290:GLU:O	1:A:294:THR:HG22	2.12	0.49
1:A:560:THR:HG22	1:A:597:ALA:HB3	1.94	0.49
1:B:211:THR:OG1	1:B:267:ASN:HB2	2.12	0.49
1:B:255:LYS:HE3	1:B:399:ILE:HD13	1.93	0.49
1:C:262:ARG:O	1:C:263:LYS:HB2	2.11	0.49
1:D:279:GLN:O	1:D:281:LYS:N	2.46	0.49
1:A:230:LEU:HG	1:A:394:TYR:HB2	1.94	0.49
1:B:193:ARG:O	1:B:197:VAL:HG23	2.11	0.49
1:D:395:LYS:C	1:D:397:LEU:H	2.15	0.49
1:D:447:TYR:HD2	1:D:477:LEU:HA	1.77	0.49
1:D:461:ILE:HD12	1:D:461:ILE:O	2.11	0.49
1:A:280:ASN:H	1:A:374:ARG:NH2	2.09	0.49
1:A:331:ILE:HG13	1:A:354:ARG:HH22	1.78	0.49
1:A:474:GLY:HA3	1:B:568:GLN:HE21	1.77	0.49
1:B:111:ALA:O	1:B:115:LEU:HD22	2.12	0.49
1:B:422:ALA:O	1:B:425:MET:HB2	2.12	0.49
1:C:447:TYR:HD2	1:C:477:LEU:HA	1.77	0.49
1:D:429:VAL:HG11	1:D:477:LEU:HD11	1.93	0.49
1:A:266:LEU:HD11	1:A:268:ILE:HD11	1.94	0.49
1:A:417:ASN:ND2	1:A:506:ILE:HB	2.28	0.49
1:A:542:ASN:O	1:A:746:PRO:HD3	2.13	0.49
1:A:693:ALA:HB2	1:A:720:LEU:HD23	1.93	0.49
1:B:48:ARG:HG2	1:B:79:TRP:CE2	2.48	0.49
1:B:181:THR:CB	1:B:346:SER:HB2	2.41	0.49
1:B:579:ILE:HG13	1:B:635:VAL:CG1	2.42	0.49
1:C:42:ALA:HB1	1:C:170:MET:CE	2.43	0.49
1:D:238:PHE:CD2	1:D:283:ILE:HG21	2.48	0.49
1:D:669:LEU:HB3	1:D:673:GLN:NE2	2.28	0.49
1:A:493:THR:O	1:A:497:THR:HB	2.13	0.49
1:B:539:VAL:HG11	1:B:674:GLN:CB	2.38	0.49
1:C:179:CYS:SG	1:C:363:MET:HB2	2.53	0.49
1:D:49:MET:O	1:D:53:VAL:HG22	2.12	0.49
1:A:44:ARG:HD3	1:A:86:LEU:HB2	1.95	0.49
1:B:395:LYS:C	1:B:397:LEU:H	2.15	0.49
1:D:195:ILE:HD11	1:D:231:ALA:HB3	1.95	0.49
1:D:696:TRP:CZ2	1:D:700:LYS:HD2	2.47	0.49
1:A:244:PRO:HD2	1:A:277:ASP:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:470:THR:O	1:A:683:ARG:HD2	2.13	0.49
1:B:669:LEU:CB	1:B:673:GLN:NE2	2.75	0.49
1:C:65:GLN:HG2	1:C:98:CYS:CB	2.42	0.49
1:C:264:LYS:HG2	1:C:266:LEU:O	2.12	0.49
1:C:537:ALA:HA	1:C:550:ILE:HB	1.94	0.49
1:C:539:VAL:HG12	1:C:551:GLY:O	2.13	0.49
1:D:411:CYS:O	1:D:442:ARG:HG2	2.12	0.49
1:D:412:ASN:HB2	1:D:499:SER:O	2.12	0.49
1:B:737:LYS:HG3	1:B:738:GLN:N	2.27	0.49
1:C:397:LEU:HD21	1:C:430:ARG:NH2	2.28	0.49
1:C:605:ILE:HG12	1:C:755:ARG:HH21	1.76	0.49
1:C:610:PHE:N	1:C:610:PHE:CD1	2.80	0.49
1:D:27:ILE:HG21	1:D:333:LEU:CD1	2.43	0.49
1:D:99:GLN:C	1:D:101:PHE:H	2.16	0.49
1:A:268:ILE:HD12	1:A:268:ILE:H	1.77	0.48
1:D:192:HIS:O	1:D:196:GLU:HG3	2.13	0.48
1:D:501:ASN:HA	1:D:530:VAL:HG11	1.94	0.48
1:D:739:THR:N	1:D:747:LYS:HG3	2.28	0.48
1:A:266:LEU:CD1	1:A:268:ILE:HD11	2.42	0.48
1:A:532:MET:HB2	1:A:717:ILE:HG22	1.95	0.48
1:C:325:MET:HE2	1:C:345:VAL:HB	1.96	0.48
1:D:205:ALA:CB	1:D:266:LEU:HD23	2.43	0.48
1:B:174:ILE:HG21	1:B:190:ALA:HB2	1.94	0.48
1:B:645:TYR:CE1	1:D:656:GLU:HG2	2.48	0.48
1:C:501:ASN:O	1:C:531:PRO:HD2	2.13	0.48
1:D:746:PRO:HG2	1:D:749:GLN:CG	2.43	0.48
1:A:37:GLN:NE2	1:A:310:ARG:C	2.67	0.48
1:A:156:LYS:O	1:A:159:VAL:HG12	2.13	0.48
1:A:644:ASN:ND2	1:C:656:GLU:HB2	2.27	0.48
1:B:722:ILE:HD13	1:B:727:VAL:HG12	1.95	0.48
1:C:99:GLN:C	1:C:101:PHE:H	2.15	0.48
1:D:715:ASP:C	1:D:717:ILE:N	2.66	0.48
1:A:92:ILE:HG13	1:A:93:ILE:N	2.29	0.48
1:A:292:VAL:HG23	1:A:293:VAL:N	2.28	0.48
1:A:583:MET:HA	1:A:639:GLU:HB2	1.96	0.48
1:B:504:LEU:HD22	1:B:694:MET:HE1	1.95	0.48
1:B:583:MET:HA	1:B:639:GLU:HB2	1.94	0.48
1:A:522:ARG:NH1	1:A:529:CYS:HA	2.29	0.48
1:B:508:GLY:HA2	1:B:538:THR:HB	1.94	0.48
1:B:535:VAL:HG13	1:B:689:ILE:HD11	1.94	0.48
1:B:656:GLU:HB2	1:D:644:ASN:ND2	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:266:LEU:CD1	1:C:268:ILE:HD11	2.44	0.48
1:A:577:VAL:CG2	1:A:622:LEU:HD21	2.41	0.48
1:C:461:ILE:HD12	1:C:461:ILE:O	2.13	0.48
1:C:750:TRP:CG	1:C:751:TRP:N	2.81	0.48
1:D:181:THR:CB	1:D:346:SER:HB2	2.37	0.48
1:A:241:GLU:OE2	1:A:387:PHE:HE1	1.97	0.48
1:A:284:THR:HG22	1:A:287:LYS:HB2	1.96	0.48
1:A:443:MET:O	1:A:460:GLU:HG3	2.12	0.48
1:A:539:VAL:CG1	1:A:674:GLN:HB3	2.30	0.48
1:C:244:PRO:HD2	1:C:277:ASP:HA	1.93	0.48
1:C:533:VAL:HG22	1:C:696:TRP:CZ3	2.49	0.48
1:D:174:ILE:HG21	1:D:190:ALA:HB2	1.95	0.48
1:D:515:LEU:HG	1:D:534:MET:HE1	1.95	0.48
1:B:638:ASN:HB3	1:B:641:CYS:HB3	1.96	0.48
1:C:238:PHE:CD2	1:C:283:ILE:HG21	2.48	0.48
1:D:49:MET:SD	1:D:760:ILE:CD1	3.01	0.48
1:D:52:TYR:CE2	1:D:760:ILE:HB	2.49	0.48
1:D:255:LYS:HE3	1:D:399:ILE:HD13	1.95	0.48
1:A:337:THR:O	1:A:340:THR:HG22	2.13	0.47
1:A:539:VAL:HG12	1:A:551:GLY:O	2.14	0.47
1:B:156:LYS:O	1:B:159:VAL:HG12	2.13	0.47
1:C:27:ILE:CG2	1:C:121:ASN:HB2	2.44	0.47
1:C:211:THR:OG1	1:C:267:ASN:HB2	2.14	0.47
1:D:87:GLN:HE22	1:D:567:LYS:HE3	1.79	0.47
1:D:560:THR:CG2	1:D:597:ALA:HB3	2.44	0.47
1:D:596:LEU:HB2	1:D:758:MET:HG3	1.96	0.47
1:A:191:LEU:HD22	1:A:680:PRO:CB	2.44	0.47
1:B:65:GLN:HG2	1:B:98:CYS:HB2	1.96	0.47
1:B:530:VAL:CB	1:B:531:PRO:HD2	2.45	0.47
1:B:750:TRP:CD2	1:B:751:TRP:N	2.82	0.47
1:C:48:ARG:HG2	1:C:79:TRP:CE2	2.49	0.47
1:C:205:ALA:CB	1:C:266:LEU:HD23	2.44	0.47
1:C:411:CYS:O	1:C:442:ARG:HG2	2.13	0.47
1:C:539:VAL:O	1:C:590:LEU:HD11	2.14	0.47
1:C:720:LEU:HD13	1:C:729:PHE:CD2	2.49	0.47
1:A:750:TRP:CG	1:A:751:TRP:N	2.82	0.47
1:B:719:VAL:HG23	1:B:719:VAL:O	2.15	0.47
1:D:27:ILE:CG2	1:D:333:LEU:HD13	2.41	0.47
1:B:205:ALA:HB3	1:B:266:LEU:HD23	1.97	0.47
1:B:262:ARG:HD3	1:B:464:THR:HG22	1.96	0.47
1:C:27:ILE:HG13	1:C:57:VAL:HG12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:192:HIS:CE1	1:C:680:PRO:HD2	2.48	0.47
1:D:450:PHE:CE1	1:D:484:PRO:HG3	2.49	0.47
1:B:435:VAL:HG12	1:B:435:VAL:O	2.14	0.47
1:C:197:VAL:HG13	1:D:308:VAL:HG11	1.95	0.47
1:C:451:ASP:O	1:C:455:LYS:HG3	2.14	0.47
1:D:138:ARG:HA	1:D:165:LEU:HD12	1.95	0.47
1:D:164:TYR:CD2	1:D:338:PRO:HB3	2.50	0.47
1:D:262:ARG:HD3	1:D:464:THR:HG22	1.97	0.47
1:A:494:GLN:O	1:A:497:THR:HG22	2.14	0.47
1:A:547:ASP:HB3	1:A:750:TRP:NE1	2.30	0.47
1:A:651:TYR:HE2	1:A:664:CYS:O	1.98	0.47
1:B:44:ARG:HD3	1:B:86:LEU:HB2	1.96	0.47
1:B:478:GLY:O	1:B:479:THR:HB	2.15	0.47
1:C:148:LEU:HB3	1:C:154:ILE:CG2	2.45	0.47
1:C:414:ALA:HA	1:C:444:LEU:O	2.13	0.47
1:D:27:ILE:HD12	1:D:56:LYS:O	2.14	0.47
1:A:23:ALA:HB1	1:A:54:GLY:O	2.14	0.47
1:A:306:GLY:C	1:A:308:VAL:N	2.68	0.47
1:A:579:ILE:HG13	1:A:635:VAL:CG1	2.44	0.47
1:A:661:VAL:HG13	1:A:662:PHE:CD2	2.49	0.47
1:C:193:ARG:O	1:C:197:VAL:HG23	2.14	0.47
1:C:241:GLU:OE2	1:C:387:PHE:HE1	1.97	0.47
1:C:661:VAL:HG13	1:C:662:PHE:CD2	2.50	0.47
1:D:191:LEU:HD22	1:D:680:PRO:HB3	1.95	0.47
1:A:221:CYS:SG	1:A:223:TYR:HB2	2.55	0.47
1:A:487:TYR:N	1:A:487:TYR:CD2	2.81	0.47
1:A:565:ARG:O	1:A:568:GLN:HB3	2.15	0.47
1:B:99:GLN:C	1:B:101:PHE:H	2.18	0.47
1:B:171:VAL:HG11	1:B:181:THR:CG2	2.44	0.47
1:B:254:VAL:O	1:B:258:GLU:HG3	2.15	0.47
1:B:567:LYS:HG2	1:B:632:ARG:HD3	1.97	0.47
1:C:443:MET:O	1:C:460:GLU:HG3	2.15	0.47
1:D:337:THR:O	1:D:340:THR:HG22	2.14	0.47
1:D:610:PHE:CD1	1:D:610:PHE:N	2.82	0.47
1:A:260:ARG:NH2	1:A:267:ASN:HD22	2.13	0.47
1:A:739:THR:N	1:A:747:LYS:HG3	2.30	0.47
1:B:241:GLU:O	1:B:376:PHE:HB3	2.15	0.47
1:B:508:GLY:HA3	1:B:538:THR:HB	1.96	0.47
1:B:580:ILE:HG23	1:B:669:LEU:HG	1.96	0.47
1:B:630:ILE:CG2	1:B:632:ARG:HG2	2.45	0.47
1:C:209:GLN:HA	1:C:265:ARG:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:361:VAL:HG12	1:C:365:GLN:HE22	1.80	0.47
1:C:502:ALA:HB2	1:C:701:LEU:HD11	1.95	0.47
1:C:651:TYR:HE2	1:C:664:CYS:O	1.97	0.47
1:A:726:ASN:OD1	1:A:726:ASN:N	2.48	0.47
1:B:726:ASN:OD1	1:B:726:ASN:N	2.47	0.47
1:C:213:VAL:O	1:C:302:VAL:HG23	2.15	0.47
1:C:596:LEU:HB2	1:C:758:MET:HG3	1.96	0.47
1:D:332:ALA:HA	1:D:354:ARG:NH1	2.30	0.47
1:D:546:SER:HA	1:D:722:ILE:O	2.15	0.47
1:A:319:ARG:HD2	1:A:597:ALA:O	2.14	0.46
1:A:750:TRP:CD2	1:A:751:TRP:N	2.83	0.46
1:B:720:LEU:HD23	1:B:721:GLY:N	2.29	0.46
1:B:722:ILE:HD13	1:B:727:VAL:CG1	2.45	0.46
1:C:121:ASN:OD1	1:C:166:ASN:HB2	2.15	0.46
1:C:199:ASP:CG	1:C:683:ARG:HH22	2.19	0.46
1:C:676:GLY:HA3	1:D:565:ARG:HD2	1.96	0.46
1:D:101:PHE:C	1:D:103:THR:H	2.17	0.46
1:D:713:THR:O	1:D:715:ASP:N	2.49	0.46
1:A:198:VAL:HG12	1:A:199:ASP:N	2.29	0.46
1:A:413:VAL:HG22	1:A:502:ALA:HB3	1.97	0.46
1:B:198:VAL:HG22	1:B:214:LEU:HD21	1.96	0.46
1:B:414:ALA:HA	1:B:444:LEU:O	2.15	0.46
1:D:414:ALA:HA	1:D:444:LEU:O	2.14	0.46
1:A:42:ALA:HB1	1:A:170:MET:HE1	1.97	0.46
1:A:428:ALA:HB1	1:A:506:ILE:HD12	1.98	0.46
1:B:661:VAL:HG13	1:B:662:PHE:CD2	2.50	0.46
1:C:420:ALA:HB2	1:C:481:ARG:NH1	2.31	0.46
1:C:750:TRP:CD2	1:C:751:TRP:N	2.83	0.46
1:D:430:ARG:HA	1:D:466:VAL:HB	1.97	0.46
1:D:481:ARG:HH12	3:D:801:PO4:P	2.39	0.46
1:D:579:ILE:HG13	1:D:635:VAL:CG1	2.45	0.46
1:A:711:PHE:HD2	1:A:716:SER:HB3	1.81	0.46
1:C:509:PHE:HE2	1:C:513:LEU:HD21	1.80	0.46
1:D:42:ALA:HB1	1:D:170:MET:HE1	1.98	0.46
1:D:65:GLN:HG2	1:D:98:CYS:CB	2.46	0.46
1:D:115:LEU:HD12	1:D:162:TYR:CD2	2.50	0.46
1:D:262:ARG:NH2	1:D:400:LYS:HD3	2.27	0.46
1:D:426:ASN:OD1	1:D:476:ILE:HG13	2.15	0.46
1:D:752:LEU:O	1:D:755:ARG:HB2	2.14	0.46
1:A:396:ARG:HD2	1:A:396:ARG:O	2.15	0.46
1:A:638:ASN:HB3	1:A:641:CYS:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:535:VAL:HG13	1:C:689:ILE:HD11	1.98	0.46
1:C:755:ARG:N	1:C:756:PRO:HD2	2.31	0.46
1:D:496:ARG:HB2	1:D:527:GLU:HG2	1.98	0.46
1:D:685:PHE:CE2	1:D:689:ILE:HG21	2.51	0.46
1:B:185:ILE:HD11	1:B:322:ALA:HA	1.98	0.46
1:B:406:ILE:HG22	1:B:406:ILE:O	2.16	0.46
1:B:493:THR:HG22	1:B:496:ARG:NH2	2.30	0.46
1:D:718:CYS:HA	1:D:732:VAL:HG13	1.97	0.46
1:B:702:LYS:HA	1:B:705:ARG:HD2	1.97	0.46
1:C:92:ILE:HG13	1:C:93:ILE:N	2.30	0.46
1:A:492:ALA:HB1	1:A:527:GLU:OE1	2.15	0.46
1:C:525:HIS:HB2	1:C:528:PHE:CE1	2.51	0.46
1:C:577:VAL:HG21	1:C:622:LEU:HD21	1.98	0.46
1:C:700:LYS:HA	1:C:703:GLU:CG	2.45	0.46
1:A:69:ASP:O	1:A:113:ASN:ND2	2.48	0.46
1:A:325:MET:HE2	1:A:345:VAL:HB	1.98	0.46
1:B:529:CYS:HB3	1:B:711:PHE:O	2.16	0.46
1:B:610:PHE:N	1:B:610:PHE:CD1	2.84	0.46
1:C:762:ALA:O	1:C:763:LYS:CB	2.64	0.46
1:A:546:SER:HB2	1:A:721:GLY:HA3	1.98	0.46
1:A:622:LEU:O	1:A:626:MET:HG2	2.16	0.46
1:A:717:ILE:HD13	1:A:717:ILE:N	2.30	0.46
1:A:735:LEU:O	1:A:739:THR:HG22	2.16	0.46
1:B:576:ARG:HD3	1:B:663:ASP:HB3	1.96	0.46
1:B:663:ASP:O	1:B:664:CYS:HB3	2.16	0.46
1:C:417:ASN:HB3	1:C:425:MET:HE3	1.98	0.46
1:C:630:ILE:HD12	1:C:630:ILE:N	2.19	0.46
1:D:214:LEU:HB3	1:D:305:LEU:HD11	1.98	0.46
1:A:148:LEU:HB3	1:A:154:ILE:HG23	1.97	0.45
1:A:174:ILE:HD11	1:A:217:MET:SD	2.56	0.45
1:A:522:ARG:C	1:A:524:LYS:H	2.18	0.45
1:A:532:MET:O	1:A:717:ILE:HA	2.16	0.45
1:B:523:GLU:O	1:B:524:LYS:C	2.54	0.45
1:C:236:TRP:CZ3	1:C:399:ILE:HD11	2.51	0.45
1:D:262:ARG:O	1:D:263:LYS:CB	2.64	0.45
1:A:27:ILE:HD13	1:A:57:VAL:CG1	2.46	0.45
1:A:138:ARG:CD	1:A:165:LEU:O	2.64	0.45
1:A:260:ARG:NH2	1:A:267:ASN:ND2	2.64	0.45
1:A:412:ASN:OD1	1:A:442:ARG:HD3	2.17	0.45
1:B:88:VAL:HG12	1:B:89:GLY:N	2.31	0.45
1:B:135:ASN:HB2	1:B:357:LEU:HD22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:241:GLU:OE2	1:B:387:PHE:HE1	1.98	0.45
1:B:596:LEU:HB2	1:B:758:MET:HG3	1.98	0.45
1:D:401:LEU:HG	1:D:406:ILE:HG12	1.98	0.45
1:D:504:LEU:HD23	1:D:504:LEU:O	2.16	0.45
1:C:223:TYR:O	1:C:225:ALA:N	2.48	0.45
1:C:395:LYS:C	1:C:397:LEU:H	2.19	0.45
1:C:522:ARG:HE	1:C:717:ILE:CD1	2.23	0.45
1:D:42:ALA:HB1	1:D:170:MET:CE	2.47	0.45
1:D:507:GLY:N	1:D:537:ALA:HB3	2.32	0.45
1:C:115:LEU:HD12	1:C:162:TYR:CD2	2.52	0.45
1:C:426:ASN:OD1	1:C:476:ILE:HG13	2.16	0.45
1:C:489:GLU:OE2	1:C:525:HIS:CD2	2.69	0.45
1:D:306:GLY:O	1:D:308:VAL:N	2.50	0.45
1:D:487:TYR:O	1:D:491:ILE:HD12	2.17	0.45
1:D:750:TRP:CG	1:D:751:TRP:N	2.83	0.45
1:B:447:TYR:HD2	1:B:477:LEU:HA	1.82	0.45
1:C:30:LEU:HB3	1:C:60:ILE:HB	1.99	0.45
1:C:277:ASP:HB3	1:C:283:ILE:HD11	1.99	0.45
1:C:577:VAL:HG22	1:C:633:GLY:HA3	1.99	0.45
1:C:746:PRO:HG2	1:C:749:GLN:CG	2.45	0.45
1:B:363:MET:O	1:B:367:VAL:HG23	2.17	0.45
1:B:483:LEU:CD2	1:B:513:LEU:HD22	2.45	0.45
1:D:536:PRO:HD3	1:D:720:LEU:O	2.16	0.45
1:D:580:ILE:HG23	1:D:669:LEU:HG	1.99	0.45
1:A:332:ALA:HA	1:A:354:ARG:NH1	2.31	0.45
1:B:537:ALA:HA	1:B:550:ILE:HB	1.98	0.45
1:C:67:MET:HE2	1:C:110:ALA:HB1	1.99	0.45
1:C:327:VAL:O	1:C:331:ILE:HG23	2.16	0.45
1:C:450:PHE:CE1	1:C:484:PRO:HD3	2.52	0.45
1:D:470:THR:O	1:D:683:ARG:HD2	2.17	0.45
1:D:701:LEU:HD23	1:D:701:LEU:HA	1.83	0.45
1:D:729:PHE:CD1	1:D:729:PHE:N	2.85	0.45
1:D:755:ARG:N	1:D:756:PRO:HD2	2.31	0.45
1:A:120:THR:HG23	1:A:121:ASN:ND2	2.31	0.45
1:A:168:VAL:O	1:A:168:VAL:HG13	2.16	0.45
1:B:356:PRO:HG2	1:B:359:GLU:HB3	1.99	0.45
1:C:409:THR:HB	1:C:705:ARG:NH2	2.32	0.45
1:C:473:GLY:HA2	1:C:678:PRO:HD3	1.98	0.45
1:D:419:GLY:CA	1:D:510:GLU:HG3	2.47	0.45
1:D:481:ARG:HG3	1:D:510:GLU:CG	2.47	0.45
1:D:485:GLY:O	1:D:488:LEU:HD22	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:685:PHE:HE2	1:D:689:ILE:HG21	1.81	0.45
1:A:293:VAL:HG23	1:A:298:TYR:O	2.16	0.45
1:A:354:ARG:O	1:A:355:LEU:HD23	2.16	0.45
1:A:556:LEU:O	1:A:560:THR:HG23	2.16	0.45
1:B:30:LEU:HB3	1:B:60:ILE:HB	1.98	0.45
1:B:285:SER:HB3	1:B:302:VAL:HG21	1.98	0.45
1:C:670:GLY:C	1:C:672:MET:H	2.20	0.45
1:D:435:VAL:HG12	1:D:435:VAL:O	2.16	0.45
1:A:39:MET:O	1:A:42:ALA:HB3	2.16	0.45
1:A:70:GLY:HA3	1:A:113:ASN:HD22	1.79	0.45
1:A:187:THR:HG21	1:A:223:TYR:HE2	1.82	0.45
1:A:258:GLU:O	1:A:262:ARG:HG3	2.17	0.45
1:A:417:ASN:HD22	1:A:506:ILE:HB	1.82	0.45
1:B:450:PHE:HD1	1:B:482:VAL:O	2.00	0.45
1:B:515:LEU:HD11	1:B:534:MET:HB2	1.98	0.45
1:B:586:TYR:CG	1:B:743:HIS:HB3	2.51	0.45
1:C:519:SER:O	1:C:522:ARG:HD2	2.16	0.45
1:D:30:LEU:HB3	1:D:60:ILE:HB	1.99	0.45
1:D:59:PHE:O	1:D:74:ILE:HA	2.17	0.45
1:D:285:SER:HB3	1:D:302:VAL:HG21	1.99	0.45
1:D:726:ASN:OD1	1:D:726:ASN:N	2.48	0.45
1:A:247:GLY:O	1:A:251:GLN:HG2	2.17	0.44
1:A:397:LEU:HD11	1:A:431:SER:HA	1.99	0.44
1:A:685:PHE:CE2	1:A:689:ILE:HG21	2.53	0.44
1:B:25:LYS:O	1:B:55:ALA:HB1	2.17	0.44
1:B:79:TRP:CZ2	1:B:763:LYS:CA	3.00	0.44
1:B:577:VAL:CG2	1:B:622:LEU:HD21	2.44	0.44
1:B:662:PHE:CD1	1:B:662:PHE:C	2.90	0.44
1:C:488:LEU:HD22	1:C:528:PHE:CE1	2.52	0.44
1:C:735:LEU:O	1:C:739:THR:HG22	2.17	0.44
1:A:26:ALA:HA	1:A:56:LYS:O	2.16	0.44
1:A:174:ILE:CG2	1:A:190:ALA:HB2	2.48	0.44
1:A:284:THR:CG2	1:A:287:LYS:HB2	2.46	0.44
1:B:533:VAL:HG21	1:B:693:ALA:HB1	1.99	0.44
1:C:50:GLY:O	1:C:53:VAL:HG23	2.18	0.44
1:C:83:SER:O	1:C:84:SER:HB3	2.18	0.44
1:D:583:MET:HA	1:D:639:GLU:HB2	1.98	0.44
1:A:696:TRP:CZ2	1:A:700:LYS:HD2	2.52	0.44
1:B:79:TRP:CE2	1:B:763:LYS:HB2	2.51	0.44
1:C:320:ILE:CD1	1:C:597:ALA:HB2	2.47	0.44
1:D:52:TYR:CD2	1:D:760:ILE:HB	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:221:CYS:HA	1:D:383:ARG:HH21	1.80	0.44
1:D:512:TYR:CD1	1:D:512:TYR:C	2.91	0.44
1:D:521:ALA:O	1:D:525:HIS:HB2	2.17	0.44
1:D:530:VAL:HG12	1:D:531:PRO:HD2	1.99	0.44
1:D:579:ILE:HA	1:D:635:VAL:HG13	1.98	0.44
1:B:215:GLU:OE1	1:B:304:ILE:HG12	2.18	0.44
1:C:165:LEU:HD13	1:C:167:VAL:HG13	2.00	0.44
1:D:387:PHE:HD2	1:D:387:PHE:O	2.01	0.44
1:A:496:ARG:HH21	1:A:496:ARG:HG3	1.83	0.44
1:B:138:ARG:HA	1:B:165:LEU:HD12	1.98	0.44
1:B:221:CYS:HA	1:B:383:ARG:HH21	1.82	0.44
1:B:483:LEU:CD2	1:B:513:LEU:HB3	2.48	0.44
1:C:223:TYR:C	1:C:225:ALA:N	2.69	0.44
1:D:266:LEU:HD11	1:D:268:ILE:HD11	1.99	0.44
1:D:293:VAL:HG23	1:D:298:TYR:O	2.18	0.44
1:D:416:ILE:HG22	1:D:505:ILE:HD13	1.99	0.44
1:A:285:SER:HB3	1:A:302:VAL:HG21	2.00	0.44
1:B:205:ALA:HB1	1:B:266:LEU:HD23	1.99	0.44
1:B:451:ASP:O	1:B:455:LYS:HG3	2.17	0.44
1:B:524:LYS:HD3	1:B:524:LYS:H	1.82	0.44
1:B:608:GLU:OE1	1:B:755:ARG:HG2	2.18	0.44
1:B:644:ASN:HD21	1:D:655:SER:HB3	1.83	0.44
1:C:23:ALA:HA	1:C:54:GLY:O	2.17	0.44
1:C:208:HIS:O	1:C:209:GLN:C	2.56	0.44
1:C:326:GLY:O	1:C:330:VAL:HG23	2.18	0.44
1:C:578:PHE:C	1:C:579:ILE:HD12	2.38	0.44
1:D:27:ILE:HD12	1:D:27:ILE:H	1.83	0.44
1:D:413:VAL:HA	1:D:502:ALA:HB3	1.98	0.44
1:D:479:THR:HG23	1:D:479:THR:O	2.16	0.44
1:D:495:MET:C	1:D:497:THR:H	2.21	0.44
1:D:537:ALA:HA	1:D:550:ILE:HB	1.99	0.44
1:A:78:ASP:OD2	1:A:78:ASP:N	2.43	0.44
1:A:306:GLY:O	1:A:308:VAL:N	2.51	0.44
1:A:720:LEU:HD13	1:A:729:PHE:CD2	2.53	0.44
1:B:30:LEU:HD23	1:B:30:LEU:N	2.32	0.44
1:B:84:SER:C	1:B:87:GLN:HE22	2.21	0.44
1:B:209:GLN:HA	1:B:265:ARG:O	2.18	0.44
1:B:327:VAL:O	1:B:331:ILE:HG23	2.18	0.44
1:C:221:CYS:HA	1:C:383:ARG:HH21	1.80	0.44
1:D:74:ILE:HG21	1:D:117:ARG:HG3	1.99	0.44
1:D:512:TYR:CE2	1:D:544:PRO:HG2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:ARG:HH22	1:A:267:ASN:HD22	1.66	0.44
1:B:27:ILE:HG12	1:B:333:LEU:HD13	1.99	0.44
1:B:223:TYR:C	1:B:225:ALA:N	2.70	0.44
1:B:554:THR:HG22	1:B:555:ALA:N	2.33	0.44
1:C:266:LEU:HD11	1:C:268:ILE:HD11	1.99	0.44
1:D:26:ALA:HA	1:D:56:LYS:O	2.17	0.44
1:D:244:PRO:HB2	1:D:248:TRP:CG	2.53	0.44
1:A:279:GLN:O	1:A:281:LYS:N	2.51	0.44
1:A:327:VAL:O	1:A:331:ILE:HG23	2.18	0.44
1:A:411:CYS:O	1:A:442:ARG:HG2	2.17	0.44
1:A:718:CYS:SG	1:A:731:PRO:HA	2.58	0.44
1:B:566:ILE:C	1:B:568:GLN:H	2.21	0.44
1:C:701:LEU:HD23	1:C:701:LEU:HA	1.89	0.44
1:A:370:ALA:HB2	1:A:375:ARG:NH1	2.33	0.43
1:A:414:ALA:HA	1:A:444:LEU:O	2.18	0.43
1:B:411:CYS:O	1:B:442:ARG:HG2	2.17	0.43
1:B:454:ALA:N	1:B:491:ILE:HD11	2.33	0.43
1:B:504:LEU:HD12	1:B:533:VAL:HG13	1.99	0.43
1:B:541:ASN:O	1:B:541:ASN:ND2	2.48	0.43
1:C:580:ILE:N	1:C:580:ILE:HD12	2.33	0.43
1:D:37:GLN:NE2	1:D:310:ARG:C	2.71	0.43
1:D:717:ILE:O	1:D:717:ILE:HG13	2.18	0.43
1:D:740:ASP:CG	1:D:743:HIS:HD1	2.21	0.43
1:A:193:ARG:O	1:A:197:VAL:HG23	2.18	0.43
1:A:211:THR:OG1	1:A:267:ASN:HB2	2.17	0.43
1:A:327:VAL:HG21	1:A:757:LEU:HD21	2.01	0.43
1:A:480:LYS:C	1:A:482:VAL:H	2.20	0.43
1:A:670:GLY:C	1:A:672:MET:H	2.21	0.43
1:B:370:ALA:CB	1:B:379:ALA:HB2	2.45	0.43
1:B:412:ASN:OD1	1:B:442:ARG:HD3	2.19	0.43
1:B:429:VAL:HG11	1:B:477:LEU:HD11	1.99	0.43
1:B:577:VAL:O	1:B:664:CYS:HA	2.18	0.43
1:C:70:GLY:HA3	1:C:113:ASN:HD22	1.83	0.43
1:C:414:ALA:O	1:C:503:LEU:HA	2.18	0.43
1:D:230:LEU:HG	1:D:394:TYR:HB2	2.00	0.43
1:D:244:PRO:HD2	1:D:277:ASP:HA	1.99	0.43
1:D:327:VAL:O	1:D:331:ILE:HG23	2.17	0.43
1:D:496:ARG:HD3	1:D:527:GLU:OE1	2.17	0.43
1:B:419:GLY:HA2	1:B:510:GLU:HG3	2.00	0.43
1:C:311:GLY:HA3	1:D:200:ALA:O	2.18	0.43
1:C:433:VAL:HG21	1:C:466:VAL:HG11	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:187:THR:HG21	1:D:223:TYR:HE2	1.83	0.43
1:A:209:GLN:HA	1:A:265:ARG:O	2.19	0.43
1:A:535:VAL:HG13	1:A:689:ILE:CD1	2.48	0.43
1:A:649:PHE:CD1	1:C:649:PHE:CD1	3.06	0.43
1:A:739:THR:HG23	1:A:741:PHE:CE1	2.53	0.43
1:D:27:ILE:HD13	1:D:57:VAL:CG1	2.47	0.43
1:D:738:GLN:O	1:D:738:GLN:HG2	2.18	0.43
1:A:244:PRO:HB2	1:A:248:TRP:CG	2.54	0.43
1:A:255:LYS:HE3	1:A:399:ILE:HD13	2.01	0.43
1:B:187:THR:HG21	1:B:223:TYR:HE2	1.82	0.43
1:B:217:MET:HG3	1:B:309:GLN:NE2	2.33	0.43
1:B:425:MET:HE2	1:B:475:SER:HB2	2.00	0.43
1:B:637:ARG:HE	1:B:647:THR:N	2.17	0.43
1:B:755:ARG:HD2	1:B:755:ARG:HA	1.70	0.43
1:C:262:ARG:HD3	1:C:464:THR:CG2	2.48	0.43
1:D:25:LYS:H	1:D:25:LYS:HG3	1.50	0.43
1:A:170:MET:HG3	1:A:345:VAL:HG23	2.01	0.43
1:B:67:MET:HE2	1:B:110:ALA:HB1	2.00	0.43
1:B:649:PHE:HD1	1:D:652:GLN:OE1	2.01	0.43
1:B:717:ILE:O	1:B:717:ILE:HG22	2.18	0.43
1:C:370:ALA:HB2	1:C:375:ARG:NH1	2.34	0.43
1:C:565:ARG:HG2	1:D:676:GLY:CA	2.49	0.43
1:C:579:ILE:HA	1:C:635:VAL:HG13	2.00	0.43
1:D:87:GLN:NE2	1:D:567:LYS:HE3	2.33	0.43
1:B:35:ASP:O	1:B:310:ARG:HD2	2.19	0.43
1:C:402:PRO:HB2	1:C:405:GLN:HG3	2.01	0.43
1:C:568:GLN:HG3	1:D:474:GLY:HA3	2.01	0.43
1:C:608:GLU:OE1	1:C:755:ARG:CG	2.66	0.43
1:A:59:PHE:O	1:A:74:ILE:HA	2.18	0.43
1:A:477:LEU:HD12	1:A:477:LEU:N	2.33	0.43
1:A:722:ILE:HD13	1:A:727:VAL:HG12	2.01	0.43
1:B:284:THR:O	1:B:288:ILE:HG13	2.18	0.43
1:B:493:THR:O	1:B:496:ARG:N	2.49	0.43
1:C:88:VAL:HG12	1:C:89:GLY:N	2.34	0.43
1:C:402:PRO:HG2	1:C:405:GLN:HG3	2.01	0.43
1:D:277:ASP:HB3	1:D:283:ILE:HD11	2.01	0.43
1:D:526:GLU:HA	1:D:529:CYS:SG	2.59	0.43
1:A:30:LEU:N	1:A:30:LEU:HD23	2.34	0.43
1:B:41:ALA:CB	1:B:86:LEU:HD12	2.48	0.43
1:C:601:ASP:O	1:C:602:ALA:HB2	2.19	0.43
1:A:438:ALA:HB2	1:A:463:TRP:HZ3	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:292:VAL:HG23	1:B:293:VAL:N	2.34	0.43
1:B:331:ILE:O	1:B:335:GLU:HB2	2.19	0.43
1:C:30:LEU:N	1:C:30:LEU:HD23	2.33	0.43
1:C:49:MET:HG2	1:C:760:ILE:HD11	2.01	0.43
1:C:308:VAL:HG12	1:D:201:ILE:HD11	2.00	0.43
1:C:324:ARG:NE	1:C:754:LEU:HD21	2.34	0.43
1:D:148:LEU:HB3	1:D:154:ILE:CG2	2.47	0.43
1:D:481:ARG:HG3	1:D:510:GLU:HB3	2.00	0.43
1:D:519:SER:OG	1:D:717:ILE:HD11	2.18	0.43
1:A:610:PHE:N	1:A:610:PHE:CD1	2.87	0.42
1:A:685:PHE:HE2	1:A:689:ILE:HG21	1.84	0.42
1:B:68:VAL:O	1:B:109:LYS:HG3	2.19	0.42
1:B:121:ASN:OD1	1:B:166:ASN:HB2	2.18	0.42
1:B:247:GLY:O	1:B:251:GLN:HG2	2.19	0.42
1:B:321:LEU:HD23	1:B:321:LEU:O	2.19	0.42
1:B:567:LYS:HD3	1:B:632:ARG:NH1	2.33	0.42
1:B:702:LYS:HD2	1:B:705:ARG:HD2	2.01	0.42
1:C:25:LYS:HG2	1:C:120:THR:HG21	1.99	0.42
1:C:483:LEU:HD13	1:C:484:PRO:CD	2.47	0.42
1:C:739:THR:HG23	1:C:741:PHE:CE1	2.54	0.42
1:D:638:ASN:HB3	1:D:641:CYS:HB3	1.99	0.42
1:B:199:ASP:CG	1:B:683:ARG:HH22	2.23	0.42
1:B:279:GLN:O	1:B:281:LYS:N	2.52	0.42
1:B:629:THR:O	1:B:631:GLN:HG3	2.18	0.42
1:C:42:ALA:HB1	1:C:170:MET:HE1	2.01	0.42
1:C:177:ASP:O	1:C:364:THR:HG23	2.19	0.42
1:D:179:CYS:SG	1:D:363:MET:CB	3.07	0.42
1:D:443:MET:O	1:D:460:GLU:HG3	2.18	0.42
1:A:222:GLY:HA3	1:A:240:PRO:HD2	2.01	0.42
1:A:629:THR:O	1:A:631:GLN:HG3	2.19	0.42
1:B:222:GLY:HA3	1:B:240:PRO:HD2	2.01	0.42
1:B:337:THR:O	1:B:340:THR:HG22	2.19	0.42
1:C:86:LEU:HD21	1:C:597:ALA:O	2.19	0.42
1:C:541:ASN:O	1:C:541:ASN:ND2	2.53	0.42
1:D:87:GLN:CD	1:D:87:GLN:H	2.23	0.42
1:D:223:TYR:O	1:D:225:ALA:N	2.52	0.42
1:D:402:PRO:HB2	1:D:405:GLN:HG3	2.00	0.42
1:D:637:ARG:HH11	1:D:637:ARG:CG	2.32	0.42
1:A:357:LEU:O	1:A:361:VAL:HG23	2.19	0.42
1:B:164:TYR:CD2	1:B:338:PRO:HB3	2.54	0.42
1:C:217:MET:HG3	1:C:309:GLN:NE2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:223:TYR:C	1:C:225:ALA:H	2.23	0.42
1:C:625:LYS:C	1:C:627:LYS:H	2.22	0.42
1:C:755:ARG:HD2	1:C:755:ARG:HA	1.83	0.42
1:D:540:SER:O	1:D:541:ASN:HB3	2.19	0.42
1:D:694:MET:O	1:D:697:ILE:HB	2.20	0.42
1:A:84:SER:C	1:A:87:GLN:HE22	2.23	0.42
1:A:190:ALA:O	1:A:194:ILE:HG13	2.18	0.42
1:A:376:PHE:O	1:A:380:VAL:HG23	2.19	0.42
1:A:476:ILE:C	1:A:478:GLY:H	2.23	0.42
1:A:731:PRO:O	1:A:733:ALA:N	2.52	0.42
1:A:731:PRO:C	1:A:733:ALA:N	2.72	0.42
1:B:28:GLY:HA3	1:B:122:LEU:HD12	2.01	0.42
1:B:441:HIS:NE2	1:B:698:THR:HG23	2.34	0.42
1:C:27:ILE:HG23	1:C:121:ASN:HB2	2.01	0.42
1:C:408:LYS:H	1:C:408:LYS:HG2	1.68	0.42
1:C:438:ALA:HB2	1:C:463:TRP:HZ3	1.84	0.42
1:C:662:PHE:CD1	1:C:662:PHE:C	2.93	0.42
1:D:78:ASP:OD2	1:D:78:ASP:N	2.42	0.42
1:D:492:ALA:HB2	1:D:528:PHE:CZ	2.55	0.42
1:A:74:ILE:HG21	1:A:117:ARG:HG3	2.01	0.42
1:A:171:VAL:HG23	1:A:171:VAL:O	2.19	0.42
1:A:380:VAL:C	1:A:382:LEU:H	2.22	0.42
1:A:411:CYS:SG	1:A:701:LEU:HD21	2.60	0.42
1:A:422:ALA:HB2	1:A:538:THR:HA	2.01	0.42
1:B:477:LEU:HD12	1:B:477:LEU:N	2.33	0.42
1:C:505:ILE:HD12	1:C:515:LEU:CD2	2.48	0.42
1:D:577:VAL:O	1:D:664:CYS:HA	2.20	0.42
1:A:277:ASP:HB3	1:A:283:ILE:HD11	2.00	0.42
1:A:580:ILE:N	1:A:580:ILE:HD12	2.34	0.42
1:B:112:CYS:HB2	1:B:148:LEU:CD2	2.49	0.42
1:C:21:SER:HB2	1:C:22:GLY:H	1.60	0.42
1:C:236:TRP:HZ3	1:C:399:ILE:HD11	1.85	0.42
1:C:492:ALA:O	1:C:495:MET:HB2	2.19	0.42
1:D:179:CYS:SG	1:D:363:MET:HB2	2.59	0.42
1:D:380:VAL:C	1:D:382:LEU:H	2.23	0.42
1:A:537:ALA:HA	1:A:550:ILE:HB	2.01	0.42
1:A:630:ILE:H	1:A:630:ILE:CD1	2.18	0.42
1:B:127:GLY:HA3	2:B:801:ADP:O2B	2.19	0.42
1:C:84:SER:HB2	1:C:632:ARG:HH22	1.83	0.42
1:C:241:GLU:O	1:C:376:PHE:HB3	2.20	0.42
1:C:307:HIS:NE2	1:D:301:ARG:HG2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:355:LEU:HB3	1:C:356:PRO:HD2	2.01	0.42
1:C:435:VAL:O	1:C:435:VAL:HG12	2.20	0.42
1:C:667:ASN:HD22	1:C:667:ASN:HA	1.64	0.42
1:D:478:GLY:O	1:D:479:THR:HB	2.19	0.42
1:D:547:ASP:HB3	1:D:750:TRP:NE1	2.35	0.42
1:A:156:LYS:HA	1:A:156:LYS:HD2	1.84	0.42
1:A:447:TYR:HD2	1:A:477:LEU:HA	1.83	0.42
1:C:293:VAL:HG23	1:C:298:TYR:O	2.20	0.42
1:C:402:PRO:HG2	1:C:405:GLN:CD	2.40	0.42
1:C:521:ALA:O	1:C:528:PHE:HD1	2.02	0.42
1:D:413:VAL:HG22	1:D:502:ALA:HB3	2.01	0.42
1:D:416:ILE:CG2	1:D:505:ILE:HD13	2.50	0.42
1:D:534:MET:HB2	1:D:534:MET:HE2	1.87	0.42
1:D:670:GLY:C	1:D:672:MET:H	2.23	0.42
1:A:729:PHE:N	1:A:729:PHE:CD1	2.87	0.42
1:B:148:LEU:HB3	1:B:154:ILE:CG2	2.49	0.42
1:C:48:ARG:HD3	1:C:761:LEU:O	2.20	0.42
1:C:179:CYS:SG	1:C:363:MET:CB	3.08	0.42
1:C:244:PRO:HB2	1:C:248:TRP:CG	2.55	0.42
1:C:422:ALA:O	1:C:425:MET:HB2	2.20	0.42
1:C:717:ILE:O	1:C:732:VAL:HG22	2.20	0.42
1:C:729:PHE:CD1	1:C:729:PHE:N	2.88	0.42
1:D:61:TYR:HA	1:D:93:ILE:O	2.20	0.42
1:D:567:LYS:HD3	1:D:632:ARG:CD	2.50	0.42
1:A:637:ARG:HE	1:A:647:THR:N	2.18	0.41
1:B:156:LYS:HA	1:B:156:LYS:HD2	1.85	0.41
1:B:504:LEU:HD22	1:B:694:MET:CE	2.50	0.41
1:B:504:LEU:CD1	1:B:533:VAL:HG13	2.50	0.41
1:C:412:ASN:OD1	1:C:442:ARG:CD	2.63	0.41
1:C:412:ASN:ND2	1:C:498:HIS:O	2.53	0.41
1:D:205:ALA:HB3	1:D:266:LEU:HD23	2.02	0.41
1:D:717:ILE:O	1:D:732:VAL:HG22	2.21	0.41
1:B:59:PHE:O	1:B:74:ILE:HA	2.19	0.41
1:B:223:TYR:C	1:B:225:ALA:H	2.24	0.41
1:B:656:GLU:HB2	1:D:644:ASN:HD22	1.84	0.41
1:C:648:ASP:O	1:C:652:GLN:HG3	2.20	0.41
1:D:174:ILE:CG2	1:D:190:ALA:HB2	2.50	0.41
1:D:387:PHE:C	1:D:387:PHE:CD2	2.93	0.41
1:A:406:ILE:O	1:A:406:ILE:HG22	2.20	0.41
1:A:501:ASN:O	1:A:531:PRO:HD2	2.19	0.41
1:A:546:SER:HA	1:A:722:ILE:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:214:LEU:HB3	1:B:305:LEU:HD11	2.02	0.41
1:B:264:LYS:C	1:B:266:LEU:H	2.24	0.41
1:B:530:VAL:HA	1:B:711:PHE:CD2	2.55	0.41
1:C:74:ILE:HG21	1:C:117:ARG:HG3	2.02	0.41
1:C:370:ALA:CB	1:C:379:ALA:HB2	2.49	0.41
1:D:48:ARG:NE	1:D:79:TRP:NE1	2.68	0.41
1:D:208:HIS:C	1:D:209:GLN:HG2	2.40	0.41
1:D:294:THR:O	1:D:294:THR:HG23	2.19	0.41
1:A:219:ARG:HG3	1:A:273:GLU:CD	2.38	0.41
1:A:432:ALA:HB1	1:A:504:LEU:HD23	2.02	0.41
1:A:717:ILE:O	1:A:732:VAL:HG13	2.20	0.41
1:B:357:LEU:O	1:B:361:VAL:HG23	2.20	0.41
1:B:430:ARG:HH21	1:B:470:THR:CG2	2.33	0.41
1:C:176:ASN:C	1:C:178:PHE:N	2.72	0.41
1:D:354:ARG:O	1:D:355:LEU:HD23	2.20	0.41
1:D:735:LEU:O	1:D:739:THR:CG2	2.67	0.41
1:A:88:VAL:HG12	1:A:89:GLY:N	2.35	0.41
1:A:264:LYS:C	1:A:266:LEU:H	2.24	0.41
1:A:478:GLY:O	1:A:479:THR:HB	2.20	0.41
1:B:65:GLN:HG2	1:B:98:CYS:CB	2.50	0.41
1:B:622:LEU:O	1:B:626:MET:HG2	2.20	0.41
1:B:731:PRO:C	1:B:733:ALA:N	2.74	0.41
1:D:176:ASN:C	1:D:178:PHE:N	2.73	0.41
1:D:512:TYR:C	1:D:512:TYR:HD1	2.24	0.41
1:A:86:LEU:HD21	1:A:597:ALA:O	2.20	0.41
1:A:129:GLY:N	2:A:801:ADP:O3B	2.53	0.41
1:A:494:GLN:C	1:A:497:THR:HG22	2.41	0.41
1:B:412:ASN:ND2	1:B:442:ARG:HH11	2.17	0.41
1:D:223:TYR:C	1:D:225:ALA:N	2.74	0.41
1:D:424:GLY:CA	1:D:678:PRO:HB3	2.50	0.41
1:D:481:ARG:HD3	1:D:510:GLU:OE1	2.20	0.41
1:D:731:PRO:C	1:D:733:ALA:N	2.74	0.41
1:B:138:ARG:HH11	1:B:342:ALA:HA	1.86	0.41
1:B:268:ILE:H	1:B:268:ILE:HD12	1.85	0.41
1:B:284:THR:CG2	1:B:287:LYS:HB2	2.51	0.41
1:B:397:LEU:HD21	1:B:430:ARG:NH2	2.36	0.41
1:C:52:TYR:CE2	1:C:760:ILE:HB	2.56	0.41
1:D:586:TYR:HB2	1:D:743:HIS:O	2.21	0.41
1:A:30:LEU:HB3	1:A:60:ILE:HB	2.02	0.41
1:A:122:LEU:O	1:A:167:VAL:HA	2.21	0.41
1:B:122:LEU:O	1:B:167:VAL:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:172:GLY:O	1:B:173:SER:HB2	2.19	0.41
1:B:476:ILE:C	1:B:478:GLY:H	2.22	0.41
1:B:524:LYS:H	1:B:524:LYS:CD	2.34	0.41
1:C:130:SER:HB2	2:C:801:ADP:O2A	2.20	0.41
1:C:201:ILE:HD11	1:D:308:VAL:CG1	2.50	0.41
1:C:354:ARG:O	1:C:355:LEU:HD23	2.21	0.41
1:C:512:TYR:O	1:C:516:LEU:HD23	2.21	0.41
1:C:731:PRO:C	1:C:733:ALA:N	2.74	0.41
1:D:79:TRP:CZ2	1:D:763:LYS:HA	2.55	0.41
1:A:164:TYR:CD2	1:A:338:PRO:HB3	2.56	0.41
1:A:331:ILE:O	1:A:335:GLU:HB2	2.21	0.41
1:A:334:LEU:H	1:A:334:LEU:HG	1.68	0.41
1:A:447:TYR:CD2	1:A:477:LEU:HA	2.56	0.41
1:A:697:ILE:O	1:A:701:LEU:N	2.51	0.41
1:A:755:ARG:N	1:A:756:PRO:HD2	2.35	0.41
1:B:412:ASN:HB2	1:B:499:SER:O	2.21	0.41
1:B:485:GLY:O	1:B:488:LEU:HB2	2.21	0.41
1:B:755:ARG:N	1:B:756:PRO:HD2	2.36	0.41
1:C:214:LEU:N	1:C:214:LEU:CD1	2.84	0.41
1:C:216:VAL:HG21	1:C:225:ALA:HA	2.01	0.41
1:C:264:LYS:C	1:C:266:LEU:H	2.23	0.41
1:D:209:GLN:HA	1:D:265:ARG:O	2.20	0.41
1:D:254:VAL:O	1:D:258:GLU:HG3	2.20	0.41
1:D:284:THR:CG2	1:D:287:LYS:HB2	2.51	0.41
1:D:387:PHE:HD2	1:D:387:PHE:C	2.24	0.41
1:D:486:LYS:C	1:D:487:TYR:HD2	2.24	0.41
1:D:712:THR:O	1:D:713:THR:C	2.58	0.41
1:A:67:MET:HE2	1:A:67:MET:HB3	1.92	0.41
1:B:223:TYR:O	1:B:225:ALA:N	2.54	0.41
1:C:515:LEU:HB3	1:C:717:ILE:CG2	2.51	0.41
1:C:539:VAL:HG11	1:C:674:GLN:CB	2.36	0.41
1:C:580:ILE:HG23	1:C:669:LEU:HG	2.03	0.41
1:D:67:MET:HE2	1:D:67:MET:HB3	1.89	0.41
1:D:67:MET:HE3	1:D:114:LEU:HG	2.02	0.41
1:D:222:GLY:HA3	1:D:240:PRO:HD2	2.01	0.41
1:D:266:LEU:CD1	1:D:268:ILE:HD11	2.51	0.41
1:D:579:ILE:HG13	1:D:635:VAL:HG13	2.02	0.41
1:A:81:SER:C	1:A:83:SER:H	2.24	0.40
1:A:251:GLN:O	1:A:254:VAL:HB	2.21	0.40
1:B:511:ALA:HB1	1:B:534:MET:HG3	2.03	0.40
1:C:78:ASP:OD2	1:C:81:SER:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:111:ALA:O	1:C:115:LEU:HD22	2.21	0.40
1:C:215:GLU:OE1	1:C:304:ILE:HG12	2.21	0.40
1:C:530:VAL:HB	1:C:531:PRO:HD2	2.02	0.40
1:D:239:LEU:HA	1:D:240:PRO:HD3	1.86	0.40
1:D:416:ILE:HG12	1:D:417:ASN:N	2.36	0.40
1:D:750:TRP:CD2	1:D:751:TRP:N	2.89	0.40
1:A:255:LYS:HB2	1:A:255:LYS:HE2	1.91	0.40
1:A:425:MET:CE	1:A:475:SER:HB2	2.49	0.40
1:A:615:LEU:O	1:A:619:VAL:HG23	2.22	0.40
1:A:722:ILE:HD13	1:A:727:VAL:CG1	2.51	0.40
1:B:141:TRP:CG	1:B:165:LEU:HB2	2.56	0.40
1:B:577:VAL:HG22	1:B:633:GLY:HA3	2.03	0.40
1:C:139:LYS:HD3	1:C:139:LYS:HA	1.80	0.40
1:C:174:ILE:CG2	1:C:190:ALA:HB2	2.50	0.40
1:C:205:ALA:HB1	1:C:266:LEU:HD23	2.03	0.40
1:C:268:ILE:HD12	1:C:268:ILE:H	1.86	0.40
1:C:473:GLY:HA3	1:C:678:PRO:HD3	2.03	0.40
1:A:430:ARG:HA	1:A:466:VAL:HB	2.02	0.40
1:B:502:ALA:HB1	1:B:697:ILE:CG2	2.51	0.40
1:C:307:HIS:C	1:C:309:GLN:H	2.24	0.40
1:C:506:ILE:HG22	1:C:537:ALA:CB	2.52	0.40
1:D:83:SER:O	1:D:84:SER:CB	2.69	0.40
1:D:251:GLN:HA	1:D:251:GLN:OE1	2.21	0.40
1:D:534:MET:HB3	1:D:534:MET:HE2	1.86	0.40
1:A:111:ALA:O	1:A:115:LEU:HD22	2.21	0.40
1:A:224:LEU:HA	1:A:227:VAL:CG2	2.51	0.40
1:A:579:ILE:HD12	1:A:579:ILE:N	2.36	0.40
1:B:728:ILE:HD12	1:B:728:ILE:HA	1.97	0.40
1:B:756:PRO:HG2	1:B:757:LEU:H	1.86	0.40
1:C:25:LYS:HB3	1:C:120:THR:CG2	2.50	0.40
1:C:425:MET:HE1	1:C:475:SER:HB2	2.03	0.40
1:C:476:ILE:C	1:C:478:GLY:H	2.23	0.40
1:C:544:PRO:HB3	1:C:746:PRO:HB3	2.04	0.40
1:D:81:SER:C	1:D:83:SER:H	2.25	0.40
1:D:531:PRO:HD3	1:D:711:PHE:CD1	2.57	0.40
1:A:179:CYS:SG	1:A:363:MET:HB2	2.62	0.40
1:A:491:ILE:HG22	1:A:492:ALA:N	2.36	0.40
1:A:496:ARG:C	1:A:498:HIS:H	2.25	0.40
1:A:530:VAL:HB	1:A:531:PRO:CD	2.47	0.40
1:A:577:VAL:O	1:A:664:CYS:HA	2.21	0.40
1:B:239:LEU:HA	1:B:240:PRO:HD3	1.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:586:TYR:CE1	1:B:743:HIS:HD2	2.40	0.40
1:B:651:TYR:HE2	1:B:664:CYS:O	2.03	0.40
1:C:390:ASN:OD1	1:C:688:LYS:HE2	2.21	0.40
1:C:667:ASN:OD1	1:D:670:GLY:HA3	2.22	0.40
1:D:23:ALA:O	1:D:25:LYS:HG3	2.21	0.40
1:D:156:LYS:HA	1:D:156:LYS:HD2	1.82	0.40
1:D:506:ILE:HG23	1:D:537:ALA:HB2	2.03	0.40
1:D:512:TYR:HA	1:D:534:MET:HE3	2.03	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	731/812 (90%)	610 (83%)	95 (13%)	26 (4%)	3	21
1	B	745/812 (92%)	631 (85%)	87 (12%)	27 (4%)	3	21
1	C	739/812 (91%)	620 (84%)	97 (13%)	22 (3%)	4	23
1	D	739/812 (91%)	618 (84%)	101 (14%)	20 (3%)	5	26
All	All	2954/3248 (91%)	2479 (84%)	380 (13%)	95 (3%)	4	22

All (95) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	69	ASP
1	A	724	LYS
1	B	724	LYS
1	C	19	HIS
1	C	724	LYS
1	D	714	ASP
1	A	402	PRO

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Mol	Chain	Res	Type
1	A	523	GLU
1	A	659	LYS
1	A	675	GLY
1	B	69	ASP
1	B	374	ARG
1	B	402	PRO
1	B	485	GLY
1	B	659	LYS
1	B	675	GLY
1	B	676	GLY
1	C	69	ASP
1	C	486	LYS
1	C	659	LYS
1	C	675	GLY
1	D	69	ASP
1	D	280	ASN
1	D	307	HIS
1	D	402	PRO
1	D	659	LYS
1	D	675	GLY
1	D	724	LYS
1	D	751	TRP
1	A	19	HIS
1	A	34	GLY
1	A	158	ALA
1	A	280	ASN
1	A	307	HIS
1	A	751	TRP
1	A	762	ALA
1	B	82	VAL
1	B	280	ASN
1	B	490	GLU
1	B	524	LYS
1	B	703	GLU
1	B	751	TRP
1	C	35	ASP
1	C	82	VAL
1	C	173	SER
1	C	185	ILE
1	C	307	HIS
1	C	402	PRO
1	C	524	LYS

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Mol	Chain	Res	Type
1	D	82	VAL
1	D	100	ALA
1	D	466	VAL
1	D	676	GLY
1	D	713	THR
1	D	715	ASP
1	A	18	GLU
1	A	35	ASP
1	A	265	ARG
1	A	396	ARG
1	A	466	VAL
1	A	676	GLY
1	B	35	ASP
1	B	100	ALA
1	B	173	SER
1	B	185	ILE
1	B	265	ARG
1	B	307	HIS
1	B	466	VAL
1	B	479	THR
1	C	34	GLY
1	C	100	ALA
1	C	280	ASN
1	D	34	GLY
1	D	35	ASP
1	D	498	HIS
1	A	82	VAL
1	A	295	GLN
1	A	479	THR
1	A	485	GLY
1	A	527	GLU
1	B	626	MET
1	C	265	ARG
1	C	466	VAL
1	C	607	GLU
1	D	265	ARG
1	A	100	ALA
1	B	489	GLU
1	C	751	TRP
1	C	306	GLY
1	C	485	GLY
1	D	306	GLY

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Mol	Chain	Res	Type
1	B	34	GLY
1	B	306	GLY
1	A	185	ILE
1	B	584	GLY

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	594/658 (90%)	516 (87%)	78 (13%)	4	15
1	B	602/658 (92%)	529 (88%)	73 (12%)	5	18
1	C	598/658 (91%)	518 (87%)	80 (13%)	4	15
1	D	598/658 (91%)	517 (86%)	81 (14%)	4	14
All	All	2392/2632 (91%)	2080 (87%)	312 (13%)	4	16

All (312) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	SER
1	A	25	LYS
1	A	49	MET
1	A	53	VAL
1	A	57	VAL
1	A	65	GLN
1	A	86	LEU
1	A	97	ARG
1	A	105	GLU
1	A	108	LEU
1	A	128	ASP
1	A	138	ARG
1	A	154	ILE
1	A	179	CYS
1	A	191	LEU
1	A	192	HIS
1	A	206	GLN

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Mol	Chain	Res	Type
1	A	214	LEU
1	A	230	LEU
1	A	249	GLU
1	A	260	ARG
1	A	265	ARG
1	A	266	LEU
1	A	268	ILE
1	A	293	VAL
1	A	301	ARG
1	A	303	THR
1	A	313	THR
1	A	318	ASP
1	A	325	MET
1	A	331	ILE
1	A	334	LEU
1	A	343	CYS
1	A	365	GLN
1	A	374	ARG
1	A	382	LEU
1	A	387	PHE
1	A	391	LEU
1	A	396	ARG
1	A	401	LEU
1	A	402	PRO
1	A	403	ASP
1	A	439	ASP
1	A	453	PHE
1	A	470	THR
1	A	481	ARG
1	A	483	LEU
1	A	489	GLU
1	A	510	GLU
1	A	516	LEU
1	A	541	ASN
1	A	557	ASN
1	A	567	LYS
1	A	574	LYS
1	A	575	ARG
1	A	582	THR
1	A	592	ASN
1	A	610	PHE
1	A	611	ASP

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Mol	Chain	Res	Type
1	A	616	GLN
1	A	617	SER
1	A	624	GLU
1	A	631	GLN
1	A	635	VAL
1	A	637	ARG
1	A	659	LYS
1	A	671	HIS
1	A	674	GLN
1	A	689	ILE
1	A	690	SER
1	A	714	ASP
1	A	715	ASP
1	A	717	ILE
1	A	748	GLU
1	A	755	ARG
1	A	760	ILE
1	A	761	LEU
1	A	763	LYS
1	B	13	LEU
1	B	27	ILE
1	B	49	MET
1	B	53	VAL
1	B	59	PHE
1	B	65	GLN
1	B	86	LEU
1	B	108	LEU
1	B	128	ASP
1	B	138	ARG
1	B	154	ILE
1	B	165	LEU
1	B	179	CYS
1	B	191	LEU
1	B	192	HIS
1	B	214	LEU
1	B	230	LEU
1	B	249	GLU
1	B	260	ARG
1	B	265	ARG
1	B	266	LEU
1	B	268	ILE
1	B	293	VAL

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Mol	Chain	Res	Type
1	B	301	ARG
1	B	303	THR
1	B	313	THR
1	B	318	ASP
1	B	325	MET
1	B	331	ILE
1	B	334	LEU
1	B	343	CYS
1	B	362	GLN
1	B	365	GLN
1	B	382	LEU
1	B	387	PHE
1	B	391	LEU
1	B	395	LYS
1	B	396	ARG
1	B	401	LEU
1	B	404	ASP
1	B	439	ASP
1	B	453	PHE
1	B	470	THR
1	B	487	TYR
1	B	501	ASN
1	B	517	GLU
1	B	524	LYS
1	B	530	VAL
1	B	541	ASN
1	B	557	ASN
1	B	563	CYS
1	B	567	LYS
1	B	569	SER
1	B	576	ARG
1	B	582	THR
1	B	592	ASN
1	B	610	PHE
1	B	618	ASN
1	B	631	GLN
1	B	635	VAL
1	B	637	ARG
1	B	659	LYS
1	B	665	ARG
1	B	671	HIS
1	B	674	GLN

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Mol	Chain	Res	Type
1	B	690	SER
1	B	701	LEU
1	B	702	LYS
1	B	738	GLN
1	B	755	ARG
1	B	757	LEU
1	B	758	MET
1	B	760	ILE
1	C	16	PHE
1	C	18	GLU
1	C	19	HIS
1	C	21	SER
1	C	27	ILE
1	C	49	MET
1	C	57	VAL
1	C	59	PHE
1	C	65	GLN
1	C	86	LEU
1	C	87	GLN
1	C	108	LEU
1	C	128	ASP
1	C	130	SER
1	C	138	ARG
1	C	139	LYS
1	C	146	GLU
1	C	154	ILE
1	C	179	CYS
1	C	191	LEU
1	C	192	HIS
1	C	214	LEU
1	C	219	ARG
1	C	230	LEU
1	C	249	GLU
1	C	258	GLU
1	C	260	ARG
1	C	265	ARG
1	C	266	LEU
1	C	268	ILE
1	C	293	VAL
1	C	301	ARG
1	C	303	THR
1	C	308	VAL

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Mol	Chain	Res	Type
1	C	318	ASP
1	C	325	MET
1	C	331	ILE
1	C	334	LEU
1	C	343	CYS
1	C	351	HIS
1	C	358	MET
1	C	365	GLN
1	C	374	ARG
1	C	382	LEU
1	C	385	ARG
1	C	387	PHE
1	C	391	LEU
1	C	396	ARG
1	C	401	LEU
1	C	403	ASP
1	C	439	ASP
1	C	453	PHE
1	C	457	GLN
1	C	470	THR
1	C	503	LEU
1	C	524	LYS
1	C	526	GLU
1	C	530	VAL
1	C	541	ASN
1	C	557	ASN
1	C	568	GLN
1	C	575	ARG
1	C	582	THR
1	C	583	MET
1	C	592	ASN
1	C	610	PHE
1	C	624	GLU
1	C	631	GLN
1	C	635	VAL
1	C	637	ARG
1	C	659	LYS
1	C	674	GLN
1	C	689	ILE
1	C	690	SER
1	C	711	PHE
1	C	715	ASP

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Mol	Chain	Res	Type
1	C	755	ARG
1	C	757	LEU
1	C	760	ILE
1	C	761	LEU
1	D	16	PHE
1	D	20	LEU
1	D	27	ILE
1	D	29	VAL
1	D	44	ARG
1	D	49	MET
1	D	53	VAL
1	D	59	PHE
1	D	65	GLN
1	D	86	LEU
1	D	87	GLN
1	D	97	ARG
1	D	99	GLN
1	D	108	LEU
1	D	128	ASP
1	D	130	SER
1	D	138	ARG
1	D	142	SER
1	D	154	ILE
1	D	179	CYS
1	D	191	LEU
1	D	192	HIS
1	D	206	GLN
1	D	214	LEU
1	D	219	ARG
1	D	230	LEU
1	D	249	GLU
1	D	260	ARG
1	D	265	ARG
1	D	266	LEU
1	D	268	ILE
1	D	293	VAL
1	D	301	ARG
1	D	303	THR
1	D	318	ASP
1	D	325	MET
1	D	331	ILE
1	D	334	LEU

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Mol	Chain	Res	Type
1	D	351	HIS
1	D	365	GLN
1	D	374	ARG
1	D	382	LEU
1	D	385	ARG
1	D	387	PHE
1	D	396	ARG
1	D	401	LEU
1	D	403	ASP
1	D	439	ASP
1	D	453	PHE
1	D	470	THR
1	D	475	SER
1	D	487	TYR
1	D	488	LEU
1	D	489	GLU
1	D	510	GLU
1	D	512	TYR
1	D	516	LEU
1	D	519	SER
1	D	530	VAL
1	D	534	MET
1	D	540	SER
1	D	541	ASN
1	D	557	ASN
1	D	567	LYS
1	D	582	THR
1	D	592	ASN
1	D	610	PHE
1	D	624	GLU
1	D	630	ILE
1	D	637	ARG
1	D	671	HIS
1	D	674	GLN
1	D	690	SER
1	D	701	LEU
1	D	714	ASP
1	D	715	ASP
1	D	718	CYS
1	D	755	ARG
1	D	757	LEU
1	D	760	ILE

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Mol	Chain	Res	Type
1	D	763	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (55) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	65	GLN
1	A	73	ASN
1	A	87	GLN
1	A	116	GLN
1	A	135	ASN
1	A	206	GLN
1	A	417	ASN
1	A	616	GLN
1	A	618	ASN
1	A	667	ASN
1	A	674	GLN
1	B	65	GLN
1	B	113	ASN
1	B	116	GLN
1	B	135	ASN
1	B	153	GLN
1	B	192	HIS
1	B	208	HIS
1	B	267	ASN
1	B	417	ASN
1	B	568	GLN
1	B	644	ASN
1	B	652	GLN
1	B	673	GLN
1	C	65	GLN
1	C	73	ASN
1	C	113	ASN
1	C	116	GLN
1	C	153	GLN
1	C	192	HIS
1	C	295	GLN
1	C	365	GLN
1	C	457	GLN
1	C	498	HIS
1	C	592	ASN
1	C	616	GLN
1	C	652	GLN

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Mol	Chain	Res	Type
1	D	65	GLN
1	D	73	ASN
1	D	113	ASN
1	D	116	GLN
1	D	135	ASN
1	D	153	GLN
1	D	192	HIS
1	D	206	GLN
1	D	208	HIS
1	D	417	ASN
1	D	457	GLN
1	D	494	GLN
1	D	498	HIS
1	D	541	ASN
1	D	592	ASN
1	D	667	ASN
1	D	674	GLN
1	D	730	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

16 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
2	ADP	A	801	-	24,29,29	1.33	2 (8%)	29,45,45	1.26	4 (13%)
2	ADP	B	801	-	24,29,29	1.67	4 (16%)	29,45,45	1.25	4 (13%)
3	PO4	C	804	-	4,4,4	1.47	0	6,6,6	0.42	0
3	PO4	A	803	-	4,4,4	1.39	0	6,6,6	0.40	0
3	PO4	A	804	-	4,4,4	1.64	1 (25%)	6,6,6	0.46	0
3	PO4	B	803	-	4,4,4	1.52	0	6,6,6	0.44	0
3	PO4	C	802	-	4,4,4	1.64	1 (25%)	6,6,6	0.40	0
3	PO4	D	803	-	4,4,4	1.61	1 (25%)	6,6,6	0.42	0
3	PO4	D	804	-	4,4,4	1.56	0	6,6,6	0.45	0
2	ADP	C	801	-	24,29,29	1.51	3 (12%)	29,45,45	1.18	3 (10%)
3	PO4	B	802	-	4,4,4	1.51	0	6,6,6	0.41	0
3	PO4	D	801	-	4,4,4	1.54	0	6,6,6	0.46	0
3	PO4	A	802	-	4,4,4	1.64	0	6,6,6	0.45	0
3	PO4	C	803	-	4,4,4	1.57	0	6,6,6	0.51	0
3	PO4	C	805	-	4,4,4	1.56	0	6,6,6	0.41	0
2	ADP	D	802	-	24,29,29	1.84	5 (20%)	29,45,45	1.37	4 (13%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ADP	A	801	-	-	4/12/32/32	0/3/3/3
2	ADP	D	802	-	-	1/12/32/32	0/3/3/3
2	ADP	B	801	-	-	0/12/32/32	0/3/3/3
2	ADP	C	801	-	-	3/12/32/32	0/3/3/3

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	802	ADP	PB-O1B	6.40	1.71	1.50
2	B	801	ADP	PB-O1B	5.95	1.69	1.50
2	C	801	ADP	PB-O3B	3.85	1.69	1.54
2	A	801	ADP	PB-O3B	3.54	1.68	1.54
2	D	802	ADP	O4'-C1'	3.47	1.45	1.41
2	A	801	ADP	O4'-C1'	3.36	1.45	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	801	ADP	C4-N3	2.98	1.39	1.35
2	B	801	ADP	C4-N3	2.67	1.39	1.35
2	C	801	ADP	O4'-C1'	2.60	1.44	1.41
2	B	801	ADP	O4'-C1'	2.37	1.44	1.41
2	D	802	ADP	C4-N3	2.26	1.38	1.35
3	D	803	PO4	P-O2	-2.20	1.48	1.54
2	D	802	ADP	C2-N3	2.18	1.35	1.32
3	A	804	PO4	P-O4	-2.04	1.48	1.54
3	C	802	PO4	P-O4	-2.04	1.48	1.54
2	D	802	ADP	PB-O2B	-2.03	1.47	1.54
2	B	801	ADP	C2-N3	2.01	1.35	1.32

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	801	ADP	O2B-PB-O3A	3.38	115.98	104.64
2	C	801	ADP	C5-C6-N6	3.25	125.29	120.35
2	D	802	ADP	O5'-C5'-C4'	3.18	119.92	108.99
2	D	802	ADP	C5-C6-N6	3.16	125.16	120.35
2	C	801	ADP	O2B-PB-O3A	2.80	114.03	104.64
2	B	801	ADP	O2B-PB-O3A	2.76	113.88	104.64
2	D	802	ADP	O2B-PB-O3A	2.74	113.83	104.64
2	A	801	ADP	O5'-C5'-C4'	2.74	118.42	108.99
2	B	801	ADP	C5-C6-N6	2.56	124.25	120.35
2	A	801	ADP	C5-C6-N6	2.54	124.21	120.35
2	C	801	ADP	O5'-C5'-C4'	2.47	117.50	108.99
2	B	801	ADP	O5'-C5'-C4'	2.38	117.17	108.99
2	B	801	ADP	O3B-PB-O3A	2.23	112.10	104.64
2	A	801	ADP	O4'-C1'-C2'	-2.12	103.83	106.93
2	D	802	ADP	O2B-PB-O1B	-2.09	102.49	110.68

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	801	ADP	PA-O3A-PB-O2B
2	A	801	ADP	C5'-O5'-PA-O1A
2	C	801	ADP	C3'-C4'-C5'-O5'
2	C	801	ADP	O4'-C4'-C5'-O5'
2	C	801	ADP	C4'-C5'-O5'-PA
2	A	801	ADP	C5'-O5'-PA-O3A
2	D	802	ADP	C5'-O5'-PA-O3A

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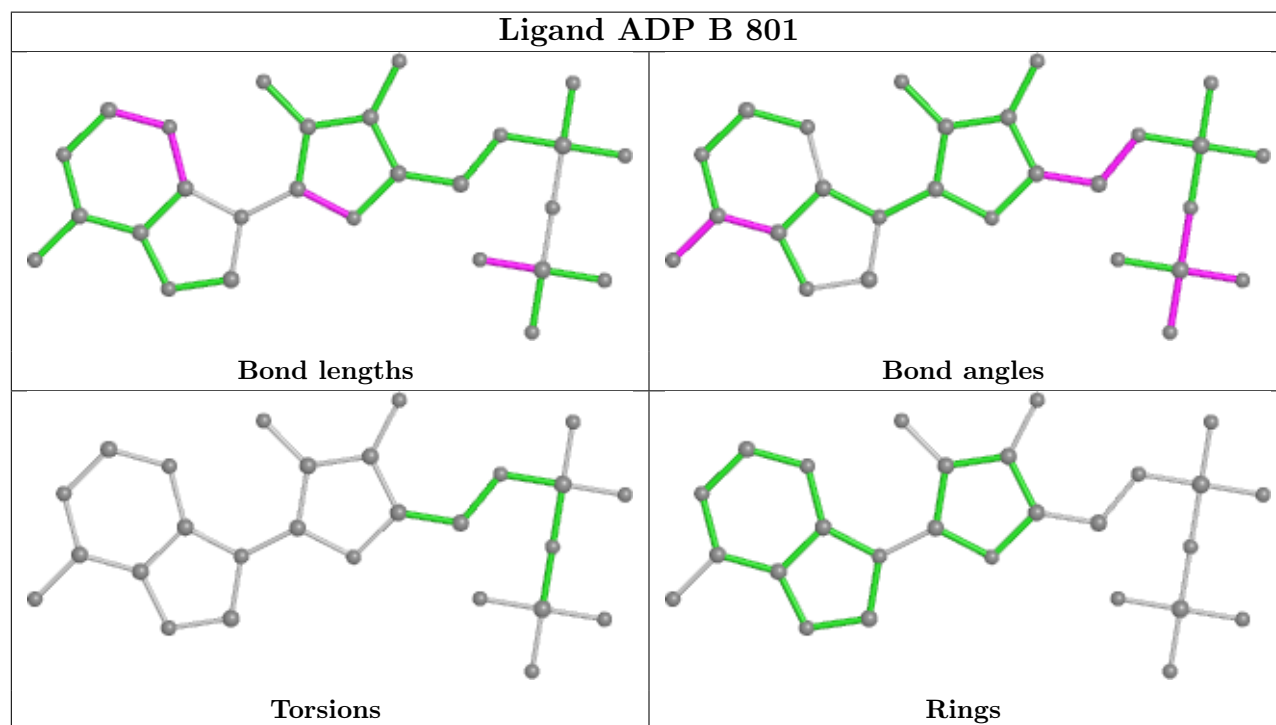
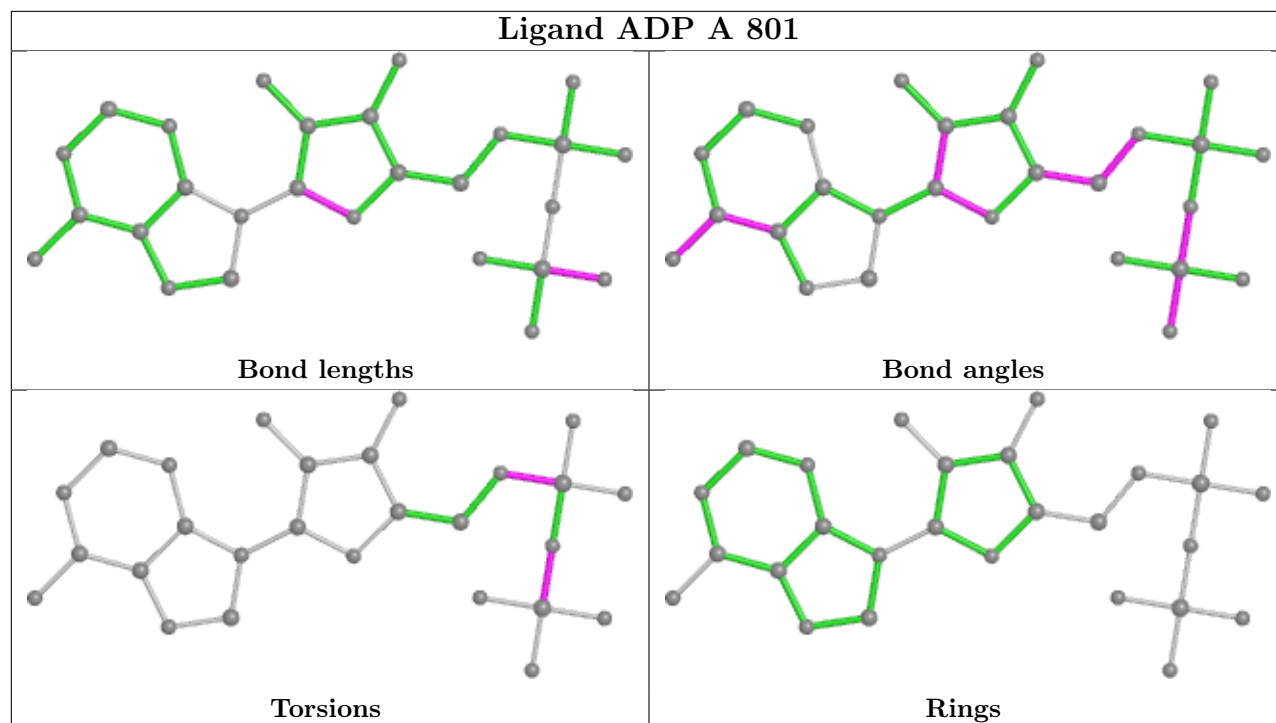
Mol	Chain	Res	Type	Atoms
2	A	801	ADP	PA-O3A-PB-O3B

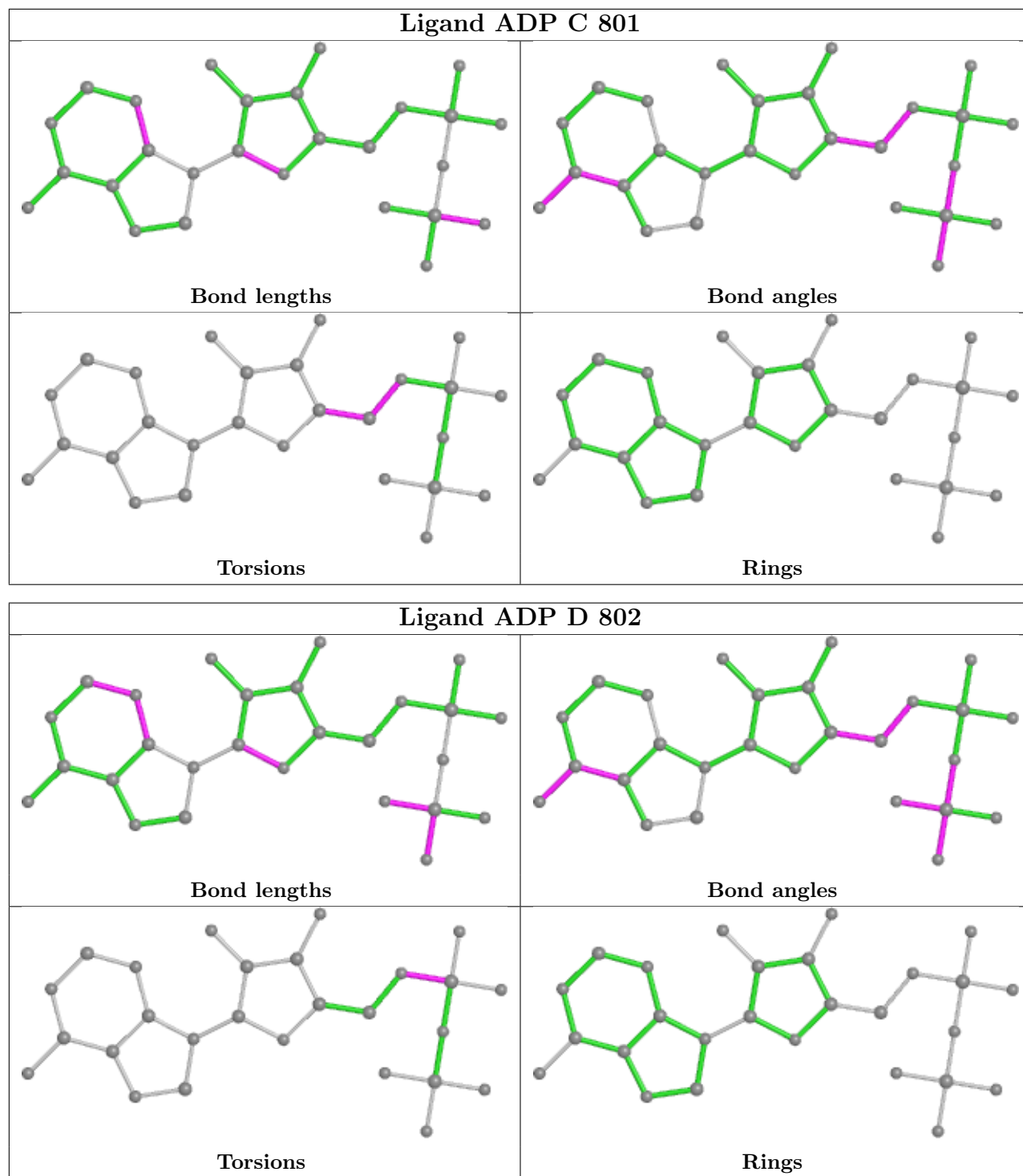
There are no ring outliers.

6 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	801	ADP	2	0
2	B	801	ADP	1	0
3	A	803	PO4	2	0
2	C	801	ADP	1	0
3	D	801	PO4	1	0
3	C	805	PO4	1	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

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	737/812 (90%)	-0.17	4 (0%) 91 90	27, 73, 113, 162	0
1	B	749/812 (92%)	-0.11	7 (0%) 84 83	25, 75, 114, 162	0
1	C	743/812 (91%)	-0.16	2 (0%) 94 93	26, 73, 112, 161	0
1	D	743/812 (91%)	-0.14	4 (0%) 91 90	28, 74, 113, 162	0
All	All	2972/3248 (91%)	-0.14	17 (0%) 89 89	25, 74, 113, 162	0

All (17) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	338	PRO	3.2
1	D	343	CYS	2.9
1	B	59	PHE	2.8
1	B	205	ALA	2.8
1	B	206	GLN	2.5
1	C	347	LEU	2.5
1	B	621	HIS	2.5
1	A	246	GLU	2.4
1	D	360	CYS	2.2
1	A	675	GLY	2.2
1	B	379	ALA	2.2
1	B	29	VAL	2.2
1	D	344	VAL	2.1
1	D	122	LEU	2.1
1	A	278	THR	2.1
1	C	59	PHE	2.0
1	B	718	CYS	2.0

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

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

6.3 Carbohydrates [i](#)

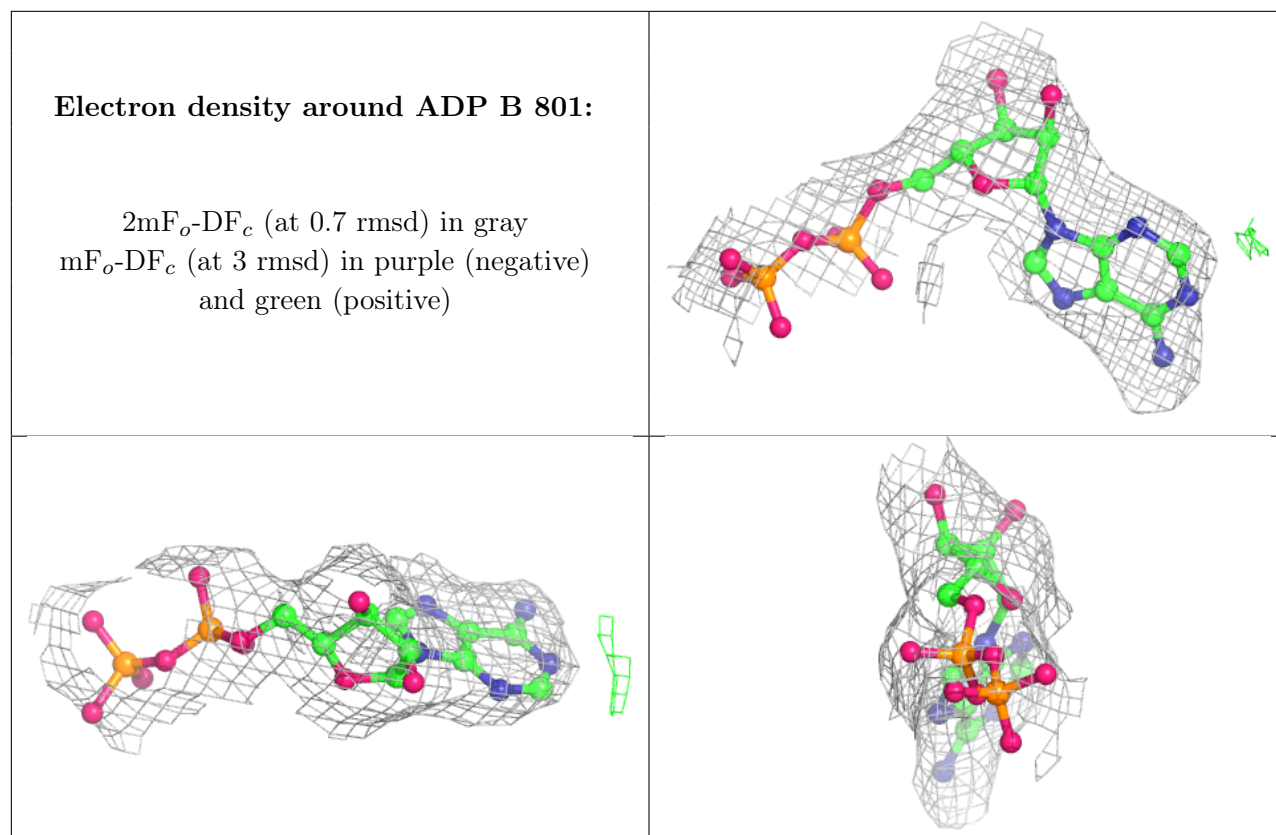
There are no monosaccharides in this entry.

6.4 Ligands [i](#)

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

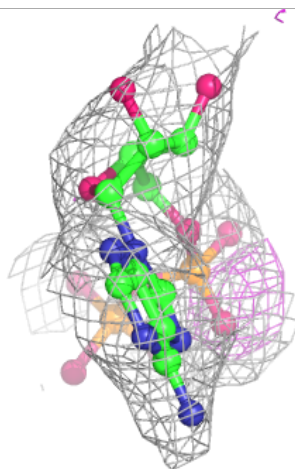
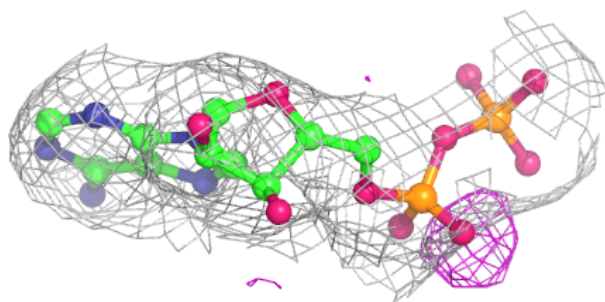
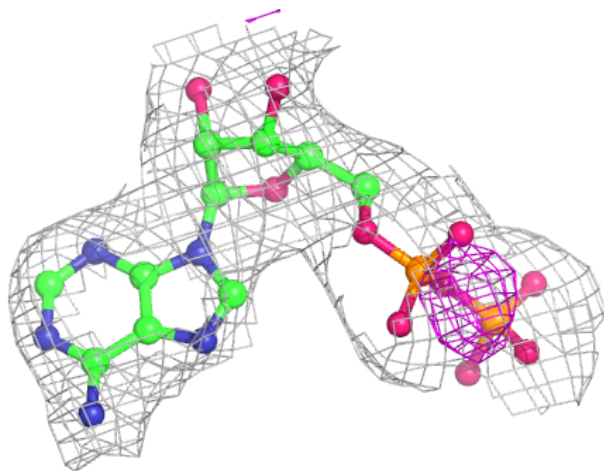
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	PO4	C	804	5/5	0.90	0.19	6,89,105,127	0
3	PO4	A	803	5/5	0.91	0.17	17,29,126,144	0
3	PO4	C	805	5/5	0.91	0.12	65,81,155,163	0
2	ADP	B	801	27/27	0.92	0.17	21,98,154,163	0
2	ADP	A	801	27/27	0.94	0.19	1,73,118,137	0
3	PO4	C	803	5/5	0.94	0.15	1,20,85,87	0
2	ADP	C	801	27/27	0.94	0.17	35,98,135,151	0
2	ADP	D	802	27/27	0.94	0.21	1,91,129,134	0
3	PO4	B	803	5/5	0.95	0.16	7,34,89,107	0
3	PO4	B	802	5/5	0.95	0.12	16,71,134,135	0
3	PO4	D	801	5/5	0.96	0.14	14,27,57,97	0
3	PO4	A	802	5/5	0.97	0.13	1,67,103,108	0
3	PO4	C	802	5/5	0.97	0.12	1,66,70,97	0
3	PO4	D	803	5/5	0.97	0.10	31,32,74,82	0
3	PO4	D	804	5/5	0.98	0.13	18,41,68,78	0
3	PO4	A	804	5/5	0.99	0.13	4,10,57,70	0

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



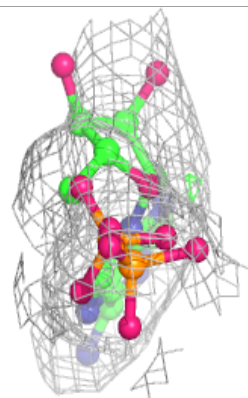
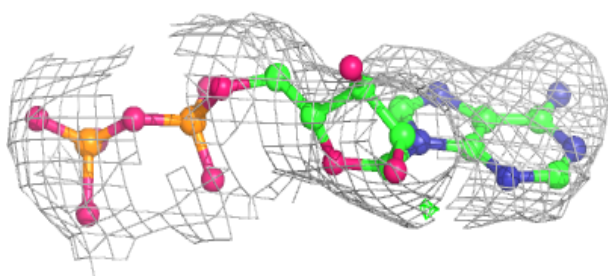
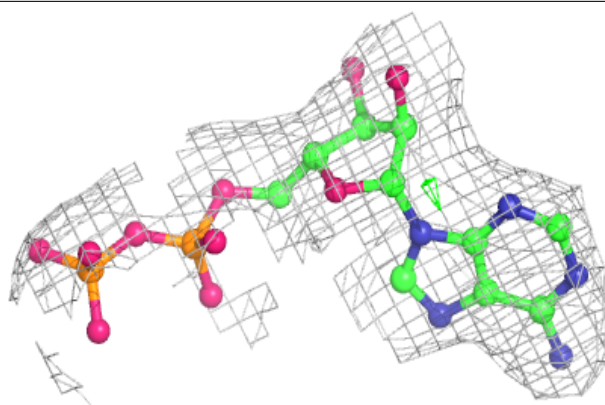
Electron density around ADP A 801:

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

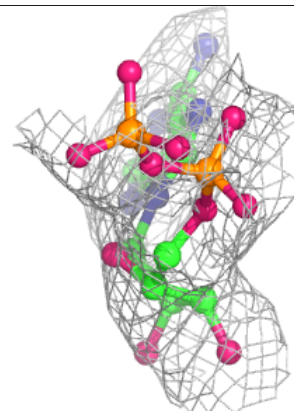
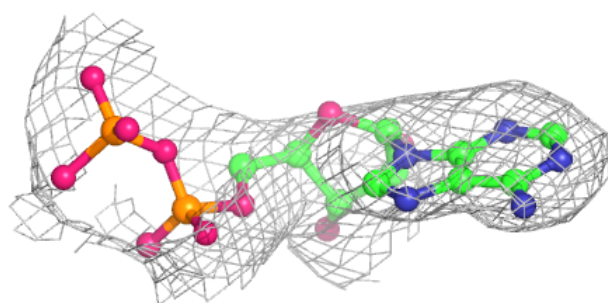
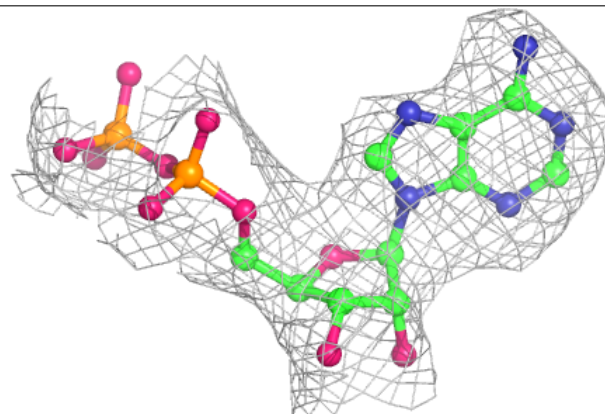


Electron density around ADP C 801:

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

**Electron density around ADP D 802:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.