



# Full wwPDB X-ray Structure Validation Report ⓘ

May 15, 2020 – 11:10 am BST

PDB ID : 1E0T  
Title : R292D mutant of E. coli pyruvate kinase  
Authors : Fortin, R.; Mattevi, A.  
Deposited on : 2000-04-10  
Resolution : 1.80 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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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 : 2.11  
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) : 2.11

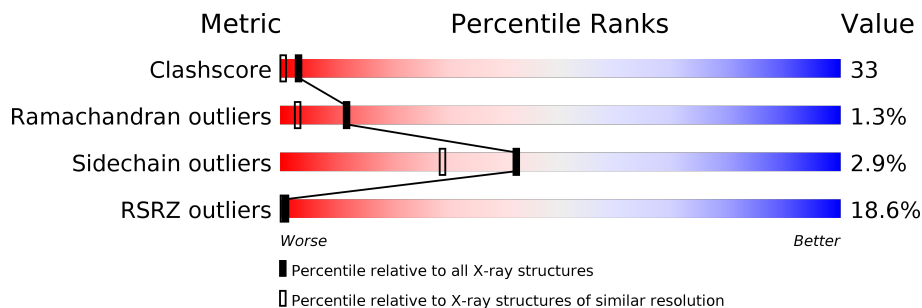
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	6793 (1.80-1.80)
Ramachandran outliers	138981	6697 (1.80-1.80)
Sidechain outliers	138945	6696 (1.80-1.80)
RSRZ outliers	127900	5850 (1.80-1.80)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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	470	
1	B	470	
1	C	470	
1	D	470	

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
2	SO4	B	702	-	-	X	-
2	SO4	C	703	-	-	X	-

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 13374 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 Pyruvate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	446	3307	2060	568	657	22	0	0	0
1	B	446	3307	2060	568	657	22	0	0	0
1	C	446	3307	2060	568	657	22	0	0	0
1	D	446	3307	2060	568	657	22	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	279	MET	GLN	engineered mutation	UNP A0A0A0G552
A	292	ASP	ARG	engineered mutation	UNP A0A0A0G552
B	279	MET	GLN	engineered mutation	UNP A0A0A0G552
B	292	ASP	ARG	engineered mutation	UNP A0A0A0G552
C	279	MET	GLN	engineered mutation	UNP A0A0A0G552
C	292	ASP	ARG	engineered mutation	UNP A0A0A0G552
D	279	MET	GLN	engineered mutation	UNP A0A0A0G552
D	292	ASP	ARG	engineered mutation	UNP A0A0A0G552

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



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

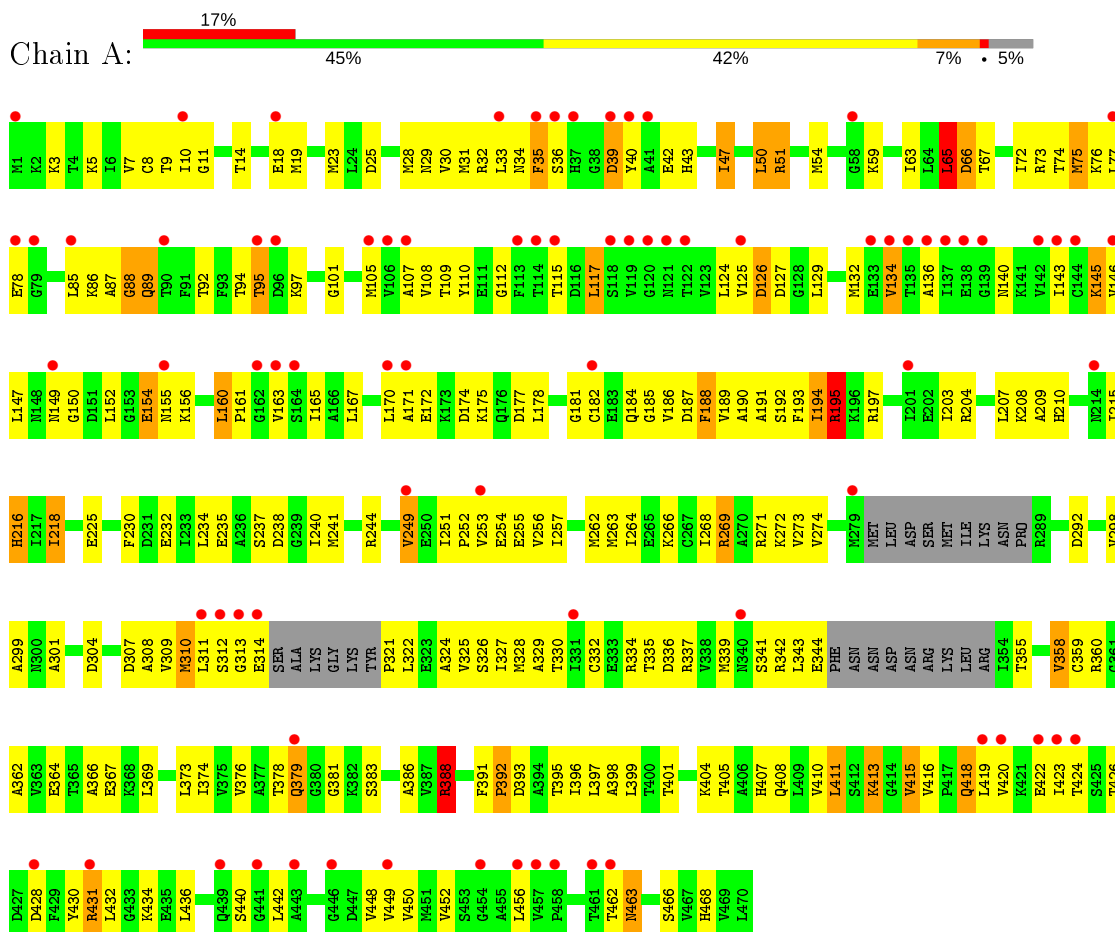
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	24	Total	O	0	0
			24	24		
3	B	35	Total	O	0	0
			35	35		
3	C	29	Total	O	0	0
			29	29		
3	D	38	Total	O	0	0
			38	38		

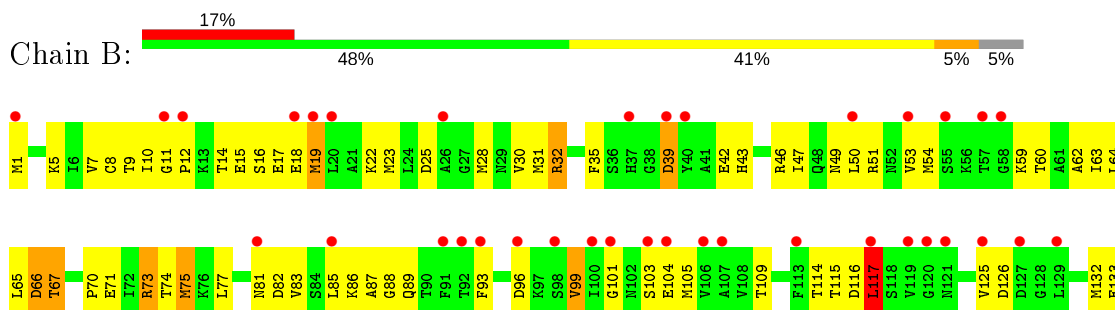
### 3 Residue-property plots i

These plots are drawn for all protein, RNA and DNA 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.

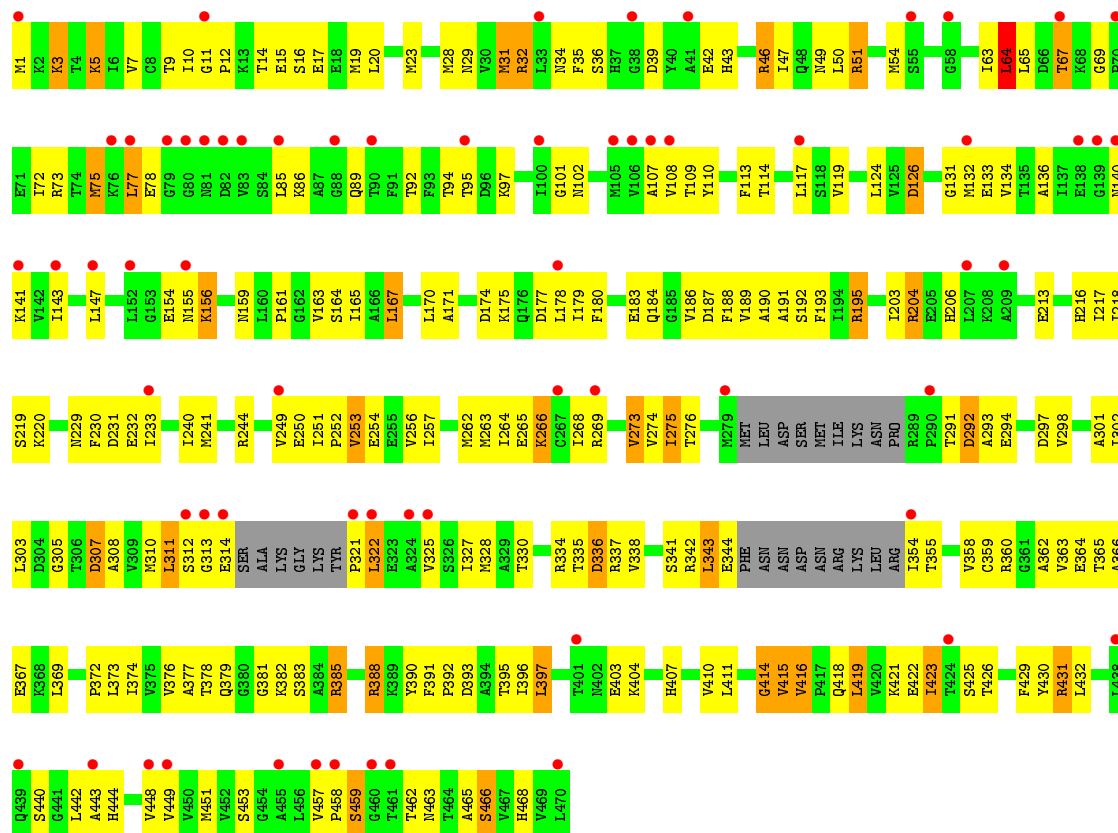
- Molecule 1: Pyruvate kinase



- Molecule 1: Pyruvate kinase









## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	74.47Å 129.34Å 240.37Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 1.80 14.97 – 2.80	Depositor EDS
% Data completeness (in resolution range)	96.3 (15.00-1.80) 96.3 (14.97-2.80)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	0.10	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	8.88 (at 2.81Å)	Xtrriage
Refinement program	REFMAC	Depositor
R, $R_{free}$	0.246 , 0.315 0.242 , (Not available)	Depositor DCC
$R_{free}$ test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	25.1	Xtrriage
Anisotropy	0.776	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 78.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.46$ , $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.89	EDS
Total number of atoms	13374	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	30.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 40.41 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.7480e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

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

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: SO4

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	0.65	0/3337	1.66	50/4507 (1.1%)
1	B	0.67	0/3337	1.65	46/4507 (1.0%)
1	C	0.68	0/3337	1.70	52/4507 (1.2%)
1	D	0.67	0/3337	1.68	44/4507 (1.0%)
All	All	0.66	0/13348	1.67	192/18028 (1.1%)

There are no bond length outliers.

All (192) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	292	ASP	CB-CG-OD1	13.34	130.31	118.30
1	D	117	LEU	CA-CB-CG	9.33	136.75	115.30
1	D	459	SER	N-CA-CB	8.94	123.91	110.50
1	D	311	LEU	CB-CG-CD2	-8.91	95.86	111.00
1	B	75	MET	CA-CB-CG	-8.81	98.33	113.30
1	B	117	LEU	CA-CB-CG	8.62	135.12	115.30
1	B	244	ARG	NE-CZ-NH1	8.57	124.58	120.30
1	A	413	LYS	CD-CE-NZ	8.25	130.67	111.70
1	A	262	MET	CA-CB-CG	8.23	127.29	113.30
1	C	269	ARG	NE-CZ-NH2	8.14	124.37	120.30
1	A	51	ARG	NE-CZ-NH1	8.07	124.34	120.30
1	A	456	LEU	CB-CG-CD2	7.97	124.55	111.00
1	A	216	HIS	N-CA-CB	7.59	124.27	110.60
1	C	311	LEU	CB-CG-CD2	-7.53	98.20	111.00
1	C	409	LEU	CA-CB-CG	7.49	132.52	115.30
1	A	39	ASP	CB-CG-OD1	7.43	124.99	118.30
1	A	336	ASP	CB-CG-OD2	-7.42	111.62	118.30
1	D	117	LEU	CB-CA-C	7.42	124.30	110.20
1	B	227	LEU	CB-CG-CD2	-7.42	98.39	111.00
1	D	466	SER	N-CA-CB	-7.38	99.43	110.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	35	PHE	CB-CA-C	7.30	125.01	110.40
1	D	322	LEU	CB-CG-CD2	-7.29	98.60	111.00
1	B	241	MET	CG-SD-CE	7.28	111.85	100.20
1	B	32	ARG	NE-CZ-NH1	7.17	123.89	120.30
1	C	177	ASP	CB-CG-OD2	-7.17	111.84	118.30
1	C	336	ASP	CB-CG-OD1	7.16	124.74	118.30
1	C	247	LEU	CB-CG-CD2	-7.10	98.93	111.00
1	B	262	MET	CA-CB-CG	7.09	125.35	113.30
1	A	411	LEU	CB-CG-CD2	7.08	123.03	111.00
1	A	334	ARG	NE-CZ-NH1	7.07	123.83	120.30
1	A	35	PHE	CB-CA-C	7.07	124.53	110.40
1	B	195	ARG	NE-CZ-NH1	-7.05	116.77	120.30
1	D	167	LEU	CB-CG-CD2	-7.05	99.02	111.00
1	A	182	CYS	CA-CB-SG	6.99	126.58	114.00
1	C	271	ARG	NE-CZ-NH2	-6.98	116.81	120.30
1	C	373	LEU	N-CA-CB	-6.95	96.50	110.40
1	B	342	ARG	NE-CZ-NH2	-6.91	116.85	120.30
1	C	199	ASP	CB-CG-OD1	6.91	124.51	118.30
1	B	8	CYS	CA-CB-SG	-6.89	101.60	114.00
1	A	160	LEU	CB-CG-CD2	-6.88	99.30	111.00
1	B	334	ARG	NE-CZ-NH1	6.88	123.74	120.30
1	B	253	VAL	CB-CA-C	-6.87	98.36	111.40
1	B	160	LEU	CB-CG-CD1	-6.85	99.35	111.00
1	A	51	ARG	NE-CZ-NH2	-6.83	116.89	120.30
1	B	66	ASP	CB-CG-OD2	-6.75	112.22	118.30
1	B	199	ASP	CB-CG-OD2	-6.74	112.24	118.30
1	C	167	LEU	CB-CG-CD2	-6.73	99.57	111.00
1	A	195	ARG	N-CA-C	6.72	129.14	111.00
1	D	292	ASP	N-CA-CB	-6.67	98.60	110.60
1	C	451	MET	CA-CB-CG	-6.66	101.97	113.30
1	B	322	LEU	CB-CG-CD2	-6.64	99.71	111.00
1	A	269	ARG	NE-CZ-NH2	6.57	123.59	120.30
1	C	110	TYR	N-CA-C	6.55	128.68	111.00
1	B	373	LEU	N-CA-CB	-6.50	97.40	110.40
1	C	328	MET	CG-SD-CE	6.44	110.50	100.20
1	A	89	GLN	CB-CA-C	-6.41	97.58	110.40
1	D	64	LEU	CA-CB-CG	6.39	129.99	115.30
1	D	343	LEU	CA-CB-CG	-6.38	100.62	115.30
1	C	271	ARG	CB-CA-C	6.31	123.03	110.40
1	C	98	SER	CB-CA-C	-6.30	98.14	110.10
1	D	253	VAL	CB-CA-C	-6.30	99.44	111.40
1	A	195	ARG	NE-CZ-NH1	-6.27	117.16	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	250	GLU	N-CA-C	6.27	127.92	111.00
1	C	194	ILE	CB-CA-C	-6.25	99.09	111.60
1	C	147	LEU	CA-CB-CG	6.25	129.67	115.30
1	C	167	LEU	C-N-CD	-6.25	106.86	120.60
1	B	54	MET	CG-SD-CE	6.24	110.18	100.20
1	B	144	CYS	CA-CB-SG	6.23	125.21	114.00
1	A	30	VAL	CB-CA-C	-6.17	99.67	111.40
1	C	126	ASP	CB-CG-OD2	-6.14	112.78	118.30
1	C	71	GLU	CB-CA-C	-6.13	98.14	110.40
1	C	170	LEU	CA-CB-CG	6.11	129.34	115.30
1	A	456	LEU	CD1-CG-CD2	-6.10	92.21	110.50
1	A	50	LEU	CB-CG-CD2	-6.07	100.67	111.00
1	B	73	ARG	NE-CZ-NH2	-6.02	117.29	120.30
1	A	388	ARG	NE-CZ-NH1	-6.02	117.29	120.30
1	C	132	MET	CG-SD-CE	-6.02	90.57	100.20
1	A	249	VAL	CB-CA-C	-6.00	99.99	111.40
1	D	177	ASP	CB-CG-OD1	6.00	123.70	118.30
1	C	456	LEU	CB-CG-CD1	5.99	121.19	111.00
1	B	39	ASP	CB-CG-OD1	5.97	123.67	118.30
1	C	419	LEU	CB-CG-CD2	-5.96	100.86	111.00
1	D	31	MET	CA-CB-CG	-5.96	103.17	113.30
1	A	415	VAL	CB-CA-C	-5.95	100.09	111.40
1	D	385	ARG	NE-CZ-NH2	-5.93	117.33	120.30
1	C	369	LEU	CA-CB-CG	-5.91	101.70	115.30
1	A	310	MET	CG-SD-CE	-5.90	90.76	100.20
1	D	233	ILE	CG1-CB-CG2	5.89	124.37	111.40
1	A	271	ARG	CB-CA-C	5.89	122.17	110.40
1	C	124	LEU	CB-CG-CD1	-5.86	101.05	111.00
1	D	51	ARG	NE-CZ-NH2	5.83	123.22	120.30
1	B	369	LEU	CB-CG-CD2	-5.82	101.11	111.00
1	C	343	LEU	CA-CB-CG	-5.82	101.92	115.30
1	D	419	LEU	CB-CG-CD1	5.80	120.86	111.00
1	A	75	MET	CA-CB-CG	-5.78	103.47	113.30
1	C	466	SER	N-CA-CB	-5.76	101.86	110.50
1	B	339	MET	CG-SD-CE	5.76	109.41	100.20
1	D	32	ARG	NE-CZ-NH1	5.75	123.18	120.30
1	D	266	LYS	CD-CE-NZ	-5.75	98.47	111.70
1	C	416	VAL	CB-CA-C	-5.70	100.58	111.40
1	D	265	GLU	CA-CB-CG	5.68	125.89	113.40
1	A	65	LEU	CB-CG-CD1	-5.67	101.36	111.00
1	A	145	LYS	CB-CG-CD	5.67	126.33	111.60
1	B	385	ARG	NE-CZ-NH1	-5.66	117.47	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	77	LEU	CB-CG-CD2	-5.64	101.40	111.00
1	A	154	GLU	OE1-CD-OE2	5.64	130.07	123.30
1	D	307	ASP	CB-CA-C	-5.62	99.16	110.40
1	A	188	PHE	CB-CA-C	-5.54	99.31	110.40
1	A	418	GLN	N-CA-CB	5.54	120.57	110.60
1	A	65	LEU	N-CA-C	-5.52	96.09	111.00
1	A	210	HIS	CB-CA-C	-5.52	99.36	110.40
1	D	416	VAL	CB-CA-C	-5.52	100.92	111.40
1	A	342	ARG	N-CA-C	-5.51	96.11	111.00
1	D	1	MET	CA-CB-CG	5.50	122.66	113.30
1	C	132	MET	N-CA-CB	5.49	120.48	110.60
1	A	309	VAL	CA-CB-CG1	5.49	119.13	110.90
1	B	223	ASN	N-CA-CB	-5.48	100.74	110.60
1	C	167	LEU	CB-CG-CD1	5.47	120.30	111.00
1	D	423	ILE	N-CA-C	-5.47	96.24	111.00
1	C	269	ARG	NE-CZ-NH1	-5.45	117.57	120.30
1	C	6	ILE	CB-CA-C	-5.45	100.71	111.60
1	D	3	LYS	CD-CE-NZ	-5.43	99.20	111.70
1	B	231	ASP	CB-CG-OD1	5.43	123.19	118.30
1	C	311	LEU	CB-CG-CD1	-5.42	101.78	111.00
1	D	415	VAL	CB-CA-C	-5.42	101.10	111.40
1	B	249	VAL	CB-CA-C	-5.42	101.10	111.40
1	A	145	LYS	N-CA-C	-5.42	96.37	111.00
1	B	73	ARG	NE-CZ-NH1	5.42	123.01	120.30
1	B	304	ASP	CB-CA-C	-5.38	99.63	110.40
1	A	218	ILE	CB-CA-C	-5.38	100.85	111.60
1	D	204	ARG	NE-CZ-NH1	-5.38	117.61	120.30
1	B	125	VAL	CG1-CB-CG2	-5.36	102.32	110.90
1	A	66	ASP	O-C-N	5.36	131.28	122.70
1	B	116	ASP	CB-CG-OD1	5.36	123.12	118.30
1	D	46	ARG	N-CA-CB	-5.34	100.98	110.60
1	D	393	ASP	CB-CG-OD2	5.34	123.10	118.30
1	C	250	GLU	OE1-CD-OE2	5.33	129.70	123.30
1	C	5	LYS	CD-CE-NZ	5.33	123.95	111.70
1	C	195	ARG	N-CA-C	5.32	125.37	111.00
1	B	372	PRO	C-N-CA	-5.32	108.41	121.70
1	A	419	LEU	CB-CG-CD2	-5.31	101.97	111.00
1	C	308	ALA	CA-C-N	-5.29	105.55	117.20
1	B	263	MET	CG-SD-CE	-5.29	91.73	100.20
1	B	240	ILE	CG1-CB-CG2	5.29	123.04	111.40
1	A	8	CYS	CB-CA-C	-5.29	99.83	110.40
1	B	35	PHE	CB-CA-C	5.28	120.97	110.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	234	LEU	CB-CG-CD1	5.27	119.96	111.00
1	A	117	LEU	CA-CB-CG	5.25	127.38	115.30
1	A	134	VAL	CB-CA-C	-5.25	101.42	111.40
1	B	99	VAL	CB-CA-C	-5.25	101.43	111.40
1	D	303	LEU	CB-CG-CD1	5.23	119.89	111.00
1	A	369	LEU	CA-CB-CG	-5.23	103.27	115.30
1	A	195	ARG	CB-CA-C	-5.23	99.94	110.40
1	A	311	LEU	CB-CG-CD1	-5.22	102.12	111.00
1	C	110	TYR	CA-C-N	-5.22	105.72	117.20
1	C	195	ARG	CB-CA-C	-5.22	99.96	110.40
1	C	126	ASP	CB-CG-OD1	5.22	123.00	118.30
1	C	452	VAL	CB-CA-C	-5.21	101.50	111.40
1	C	292	ASP	CB-CG-OD2	-5.20	113.62	118.30
1	C	227	LEU	CB-CG-CD2	-5.19	102.18	111.00
1	B	388	ARG	NE-CZ-NH1	-5.17	117.72	120.30
1	C	261	LYS	CD-CE-NZ	5.17	123.58	111.70
1	A	292	ASP	CB-CG-OD1	5.16	122.95	118.30
1	D	275	ILE	O-C-N	5.16	130.96	122.70
1	B	19	MET	CG-SD-CE	-5.16	91.94	100.20
1	A	47	ILE	CB-CA-C	-5.15	101.30	111.60
1	B	253	VAL	CA-CB-CG2	-5.14	103.19	110.90
1	D	273	VAL	N-CA-C	5.14	124.88	111.00
1	A	304	ASP	CB-CA-C	-5.13	100.14	110.40
1	C	309	VAL	C-N-CA	-5.13	108.88	121.70
1	C	234	LEU	CB-CG-CD1	5.13	119.72	111.00
1	D	5	LYS	CD-CE-NZ	5.13	123.49	111.70
1	B	198	SER	N-CA-CB	-5.12	102.81	110.50
1	B	337	ARG	CA-CB-CG	5.12	124.67	113.40
1	C	193	PHE	CB-CA-C	5.12	120.65	110.40
1	B	1	MET	CB-CG-SD	5.11	127.73	112.40
1	D	75	MET	CG-SD-CE	5.11	108.38	100.20
1	D	419	LEU	CB-CA-C	5.11	119.91	110.20
1	B	418	GLN	N-CA-CB	5.10	119.78	110.60
1	C	451	MET	CG-SD-CE	-5.10	92.05	100.20
1	D	336	ASP	CB-CG-OD1	-5.10	113.71	118.30
1	C	292	ASP	CB-CA-C	-5.09	100.22	110.40
1	D	397	LEU	CB-CA-C	-5.08	100.54	110.20
1	C	425	SER	CB-CA-C	-5.08	100.45	110.10
1	D	189	VAL	N-CA-C	-5.07	97.30	111.00
1	B	390	TYR	CA-CB-CG	-5.06	103.78	113.40
1	B	339	MET	CA-CB-CG	-5.06	104.70	113.30
1	D	85	LEU	CB-CG-CD2	5.05	119.59	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	418	GLN	N-CA-CB	5.05	119.68	110.60
1	A	216	HIS	CB-CA-C	-5.04	100.31	110.40
1	D	425	SER	CB-CA-C	-5.02	100.56	110.10
1	A	358	VAL	CA-CB-CG2	-5.02	103.38	110.90

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3307	0	3346	223	0
1	B	3307	0	3346	204	0
1	C	3307	0	3346	252	1
1	D	3307	0	3346	206	1
2	A	5	0	0	1	0
2	B	5	0	0	2	0
2	C	5	0	0	3	0
2	D	5	0	0	1	0
3	A	24	0	0	4	0
3	B	35	0	0	11	0
3	C	29	0	0	13	0
3	D	38	0	0	7	0
All	All	13374	0	13384	880	1

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 33.

All (880) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:163:VAL:HG12	1:A:165:ILE:HD12	1.36	1.08
1:B:50:LEU:HD23	1:B:63:ILE:HD11	1.38	1.06
1:C:170:LEU:HD11	1:C:178:LEU:HD12	1.40	1.04
1:C:92:THR:HB	1:C:105:MET:HB2	1.38	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:409:LEU:HB2	3:C:2024:HOH:O	1.57	1.01
1:C:170:LEU:HD13	1:C:175:LYS:HG2	1.43	0.99
1:C:95:THR:HB	1:C:140:ASN:HB2	1.40	0.99
1:A:75:MET:HE2	1:A:97:LYS:HA	1.44	0.96
1:C:355:THR:HG23	1:C:462:THR:HB	1.48	0.95
1:C:132:MET:HA	1:C:147:LEU:HD22	1.52	0.92
1:C:132:MET:CA	1:C:147:LEU:HD22	2.01	0.91
1:B:67:THR:HG22	1:B:192:SER:HB2	1.50	0.90
1:A:193:PHE:CD2	1:A:195:ARG:HD2	2.10	0.86
1:B:268:ILE:HD13	1:B:391:PHE:CZ	2.11	0.85
1:C:170:LEU:CD2	1:C:174:ASP:HB3	2.06	0.85
1:C:14:THR:HA	1:C:19:MET:HG2	1.57	0.85
1:D:86:LYS:O	1:D:89:GLN:HG2	1.76	0.85
1:D:10:ILE:HG22	1:D:46:ARG:HD2	1.59	0.84
1:C:170:LEU:HD22	1:C:174:ASP:HB3	1.60	0.83
1:D:124:LEU:HD12	1:D:161:PRO:HD3	1.61	0.83
1:D:72:ILE:HG23	1:D:110:TYR:HB3	1.58	0.83
1:D:154:GLU:O	1:D:156:LYS:HE2	1.77	0.83
1:C:117:LEU:HD11	1:C:160:LEU:HD22	1.61	0.82
1:B:25:ASP:OD1	1:B:59:LYS:NZ	2.12	0.82
1:C:124:LEU:HD11	1:C:161:PRO:HG3	1.62	0.81
1:A:404:LYS:O	1:A:408:GLN:HG3	1.81	0.81
1:A:75:MET:HG3	1:A:107:ALA:O	1.81	0.81
1:D:230:PHE:CE2	1:D:263:MET:HG2	2.16	0.80
1:C:154:GLU:HA	3:C:2010:HOH:O	1.81	0.80
1:D:264:ILE:O	1:D:268:ILE:HG13	1.81	0.80
1:C:76:LYS:HE3	3:C:2002:HOH:O	1.81	0.80
1:C:326:SER:O	1:C:330:THR:HG23	1.81	0.80
1:C:75:MET:HB2	3:C:2003:HOH:O	1.81	0.80
1:D:355:THR:HG23	1:D:462:THR:HB	1.65	0.79
1:C:411:LEU:HG	3:C:2025:HOH:O	1.82	0.79
1:A:373:LEU:HD12	1:A:395:THR:O	1.83	0.78
1:A:193:PHE:CE2	1:A:195:ARG:HD2	2.19	0.77
1:B:449:VAL:HG21	1:B:470:LEU:HD11	1.64	0.77
1:C:187:ASP:HA	1:C:404:LYS:HE3	1.67	0.77
1:D:10:ILE:HG12	1:D:31:MET:HG3	1.65	0.77
1:A:324:ALA:O	1:A:327:ILE:HG22	1.85	0.76
1:C:78:GLU:HG3	1:C:101:GLY:O	1.84	0.76
1:C:132:MET:N	1:C:147:LEU:HD22	2.00	0.76
1:C:170:LEU:HD11	1:C:178:LEU:CD1	2.15	0.76
1:B:11:GLY:HA2	1:B:46:ARG:NH1	1.99	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:326:SER:O	1:B:330:THR:HG23	1.86	0.76
1:A:10:ILE:HG12	1:A:31:MET:HG3	1.67	0.76
1:C:134:VAL:HA	1:C:144:CYS:SG	2.26	0.76
1:D:124:LEU:HD11	1:D:161:PRO:HG3	1.68	0.76
1:B:167:LEU:HB3	1:B:168:PRO:HD2	1.68	0.75
1:A:165:ILE:HG22	1:A:167:LEU:H	1.51	0.75
1:C:170:LEU:HD21	1:C:178:LEU:HD11	1.67	0.75
1:C:430:TYR:O	1:C:434:LYS:HG3	1.86	0.75
1:B:67:THR:CG2	1:B:192:SER:HB2	2.15	0.75
1:B:230:PHE:CE2	1:B:263:MET:HG2	2.21	0.75
1:A:208:LYS:HD2	3:A:2014:HOH:O	1.88	0.74
1:C:273:VAL:HG12	3:C:2019:HOH:O	1.86	0.74
1:D:167:LEU:O	1:D:195:ARG:NH2	2.21	0.74
1:C:241:MET:HE1	1:C:310:MET:HE1	1.69	0.73
1:C:11:GLY:HA2	1:C:46:ARG:NH1	2.03	0.73
1:B:268:ILE:HD13	1:B:391:PHE:HZ	1.52	0.73
1:C:77:LEU:HG	1:C:154:GLU:HG2	1.70	0.73
1:B:17:GLU:HG2	1:B:49:ASN:HB3	1.70	0.73
1:C:378:THR:OG1	2:C:703:SO4:O1	2.05	0.73
1:B:50:LEU:HD23	1:B:63:ILE:CD1	2.18	0.72
1:D:78:GLU:HG3	1:D:101:GLY:O	1.89	0.72
1:A:3:LYS:NZ	1:A:393:ASP:O	2.17	0.72
1:C:264:ILE:O	1:C:268:ILE:HG13	1.88	0.72
1:C:75:MET:CE	1:C:97:LYS:HG2	2.19	0.72
1:A:254:GLU:N	1:A:254:GLU:OE1	2.22	0.72
1:A:110:TYR:CD1	1:A:167:LEU:HD21	2.24	0.72
1:A:171:ALA:N	1:A:174:ASP:HB2	2.05	0.72
1:A:170:LEU:HD22	1:A:174:ASP:HB3	1.71	0.72
1:D:165:ILE:HG22	1:D:167:LEU:H	1.55	0.71
1:A:167:LEU:O	1:A:195:ARG:NH2	2.23	0.71
1:C:110:TYR:CD1	1:C:167:LEU:HD21	2.25	0.71
1:D:14:THR:HA	1:D:19:MET:HG2	1.70	0.71
1:D:276:THR:HG21	1:D:301:ALA:CB	2.21	0.71
1:A:51:ARG:NH2	1:A:184:GLN:O	2.23	0.71
1:D:276:THR:HG21	1:D:301:ALA:HB1	1.73	0.71
1:B:430:TYR:O	1:B:434:LYS:HG3	1.89	0.70
1:D:426:THR:HG22	1:D:430:TYR:CE2	2.26	0.70
1:B:67:THR:HG22	1:B:192:SER:CB	2.21	0.70
1:C:94:THR:CG2	1:C:107:ALA:HA	2.22	0.70
1:B:49:ASN:O	1:B:53:VAL:HG23	1.92	0.70
1:A:431:ARG:HD3	1:A:432:LEU:N	2.07	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:181:GLY:O	1:C:185:GLY:N	2.25	0.70
1:B:355:THR:HG23	1:B:462:THR:HB	1.72	0.70
1:A:273:VAL:HG21	1:A:411:LEU:HD23	1.73	0.70
1:C:171:ALA:HB3	1:C:174:ASP:CG	2.12	0.70
1:B:253:VAL:HG23	1:B:254:GLU:H	1.57	0.69
1:D:383:SER:HB3	1:D:462:THR:OG1	1.92	0.69
1:D:124:LEU:HB2	1:D:159:ASN:HB2	1.74	0.69
1:B:253:VAL:HG23	1:B:254:GLU:N	2.08	0.69
1:D:193:PHE:CD2	1:D:195:ARG:HD2	2.29	0.68
1:A:204:ARG:NH1	3:A:2012:HOH:O	2.24	0.68
1:A:203:ILE:O	1:A:207:LEU:HG	1.93	0.68
1:C:153:GLY:O	1:C:156:LYS:HG2	1.92	0.68
1:B:70:PRO:HB2	1:B:167:LEU:HD13	1.73	0.68
1:A:189:VAL:HG23	1:A:215:ILE:HG21	1.74	0.68
1:B:358:VAL:HG21	1:B:463:ASN:HA	1.75	0.68
1:B:380:GLY:N	2:B:702:SO4:O2	2.22	0.68
1:C:124:LEU:CD1	1:C:161:PRO:HG3	2.24	0.68
1:D:219:SER:HB2	1:D:240:ILE:HD13	1.75	0.68
1:B:15:GLU:HB3	1:B:46:ARG:HD3	1.76	0.67
1:C:119:VAL:HG13	1:C:134:VAL:O	1.94	0.67
1:D:188:PHE:CD1	1:D:216:HIS:HB2	2.29	0.67
1:A:181:GLY:O	1:A:185:GLY:N	2.28	0.67
1:B:268:ILE:HG21	1:B:391:PHE:HE1	1.57	0.67
1:C:253:VAL:HG23	1:C:254:GLU:OE1	1.95	0.67
1:A:388:ARG:HB2	1:A:396:ILE:CD1	2.25	0.67
1:C:391:PHE:N	1:C:392:PRO:HD3	2.10	0.67
1:C:378:THR:HA	2:C:703:SO4:O1	1.95	0.66
1:A:87:ALA:N	1:A:149:ASN:OD1	2.27	0.66
1:A:440:SER:HB3	1:A:442:LEU:HG	1.77	0.66
1:B:18:GLU:O	1:B:22:LYS:HG3	1.95	0.66
1:D:132:MET:HA	1:D:147:LEU:HG	1.75	0.66
1:D:312:SER:O	1:D:314:GLU:N	2.29	0.66
1:C:321:PRO:HD2	1:C:322:LEU:H	1.59	0.66
1:A:43:HIS:O	1:A:47:ILE:HG13	1.94	0.66
1:D:94:THR:HG23	1:D:107:ALA:HB2	1.78	0.66
1:C:94:THR:HG23	1:C:107:ALA:HA	1.75	0.66
1:D:67:THR:HG22	1:D:192:SER:HB2	1.78	0.66
1:D:360:ARG:NH2	1:D:364:GLU:OE1	2.27	0.66
1:A:86:LYS:O	1:A:89:GLN:HG2	1.94	0.65
1:C:170:LEU:HD22	1:C:174:ASP:CB	2.25	0.65
1:C:95:THR:HB	1:C:140:ASN:CB	2.24	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:11:GLY:O	1:B:15:GLU:N	2.29	0.65
1:C:373:LEU:HD12	1:C:395:THR:O	1.95	0.65
1:B:268:ILE:HD13	1:B:391:PHE:CE1	2.32	0.65
1:C:207:LEU:O	1:C:212:GLY:N	2.28	0.65
1:D:75:MET:HE2	1:D:97:LYS:HA	1.79	0.65
1:A:163:VAL:HG12	1:A:165:ILE:CD1	2.20	0.65
1:A:94:THR:HG23	1:A:107:ALA:HB2	1.79	0.65
1:D:124:LEU:HD12	1:D:161:PRO:CD	2.27	0.65
1:D:47:ILE:O	1:D:51:ARG:HG2	1.97	0.65
1:A:171:ALA:H	1:A:174:ASP:HB2	1.62	0.64
1:A:374:ILE:O	1:A:376:VAL:HG23	1.97	0.64
1:B:379:GLN:N	2:B:702:SO4:O2	2.29	0.64
1:D:69:GLY:HA2	1:D:174:ASP:OD2	1.97	0.64
1:D:39:ASP:OD1	1:D:42:GLU:HG3	1.98	0.64
1:C:93:PHE:HB2	1:C:142:VAL:HB	1.79	0.64
1:A:163:VAL:CG1	1:A:165:ILE:HD12	2.22	0.64
1:D:67:THR:HG21	3:D:2014:HOH:O	1.96	0.64
1:A:253:VAL:HG23	1:A:254:GLU:H	1.62	0.64
1:C:373:LEU:HA	1:C:394:ALA:HB1	1.80	0.64
1:C:415:VAL:HG12	1:C:416:VAL:N	2.11	0.64
1:C:75:MET:HE1	1:C:97:LYS:HG2	1.78	0.64
1:B:117:LEU:HD13	1:B:160:LEU:HD13	1.80	0.64
1:B:372:PRO:HD2	1:B:448:VAL:O	1.97	0.64
1:C:117:LEU:HD13	1:C:160:LEU:HD13	1.79	0.64
1:C:77:LEU:N	1:C:154:GLU:OE2	2.28	0.64
1:A:326:SER:O	1:A:330:THR:HG23	1.98	0.64
1:A:73:ARG:O	1:A:108:VAL:HA	1.98	0.63
1:B:342:ARG:HD2	1:B:391:PHE:CD1	2.33	0.63
1:D:12:PRO:HD3	1:D:46:ARG:HH12	1.61	0.63
1:A:170:LEU:HD11	1:A:178:LEU:HD12	1.80	0.63
1:A:75:MET:CE	1:A:97:LYS:HA	2.24	0.63
1:D:16:SER:OG	1:D:19:MET:HB2	1.99	0.63
1:A:329:ALA:O	1:A:332:CYS:N	2.30	0.63
1:B:114:THR:OG1	1:B:115:THR:N	2.28	0.63
1:C:10:ILE:HG22	1:C:11:GLY:N	2.13	0.63
1:C:235:GLU:O	1:C:272:LYS:NZ	2.31	0.63
1:A:186:VAL:O	1:A:215:ILE:HG12	1.99	0.63
1:A:132:MET:HA	1:A:147:LEU:HG	1.80	0.63
1:B:10:ILE:CD1	1:B:23:MET:HE1	2.28	0.63
1:A:170:LEU:HD11	1:A:178:LEU:CD1	2.28	0.63
1:B:64:LEU:HD21	1:B:190:ALA:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:10:ILE:HG12	1:B:31:MET:HG3	1.81	0.63
1:D:124:LEU:CD1	1:D:161:PRO:HG3	2.29	0.63
1:D:133:GLU:HG2	3:D:2009:HOH:O	1.99	0.62
1:A:257:ILE:HD11	3:A:2017:HOH:O	1.99	0.62
1:B:240:ILE:O	1:B:274:VAL:HA	2.00	0.62
1:C:170:LEU:CD1	1:C:175:LYS:HG2	2.25	0.62
1:D:72:ILE:HG23	1:D:110:TYR:CB	2.27	0.62
1:A:7:VAL:HG11	1:A:310:MET:HE2	1.80	0.62
1:A:23:MET:HB3	1:A:28:MET:HE2	1.82	0.62
1:B:174:ASP:O	1:B:178:LEU:HG	2.00	0.62
1:B:241:MET:HE2	1:B:310:MET:HE3	1.81	0.62
1:A:78:GLU:HG3	1:A:101:GLY:O	1.99	0.62
1:B:5:LYS:HG3	1:B:410:VAL:O	2.00	0.61
1:B:87:ALA:N	1:B:149:ASN:OD1	2.29	0.61
1:C:76:LYS:O	1:C:101:GLY:N	2.29	0.61
1:C:449:VAL:HG21	1:C:470:LEU:HD11	1.83	0.61
1:B:216:HIS:ND1	3:B:2017:HOH:O	2.24	0.61
1:D:321:PRO:O	1:D:325:VAL:HG23	2.01	0.61
1:B:391:PHE:N	1:B:392:PRO:HD3	2.16	0.61
1:C:312:SER:O	1:C:314:GLU:N	2.34	0.61
1:A:253:VAL:HG23	1:A:254:GLU:N	2.16	0.61
1:D:126:ASP:HB2	1:D:156:LYS:HG3	1.82	0.61
1:A:7:VAL:CG1	1:A:310:MET:HE2	2.31	0.61
1:D:94:THR:HG23	1:D:107:ALA:CB	2.30	0.60
1:A:171:ALA:HB3	1:A:174:ASP:CG	2.22	0.60
1:D:195:ARG:O	1:D:229:ASN:ND2	2.31	0.60
1:A:92:THR:HG23	1:A:143:ILE:HD13	1.81	0.60
1:A:47:ILE:O	1:A:51:ARG:HG3	2.02	0.60
1:D:373:LEU:HD12	1:D:395:THR:O	2.01	0.60
1:A:321:PRO:HD2	1:A:322:LEU:H	1.65	0.60
1:B:297:ASP:OD1	3:B:2027:HOH:O	2.16	0.60
1:B:379:GLN:O	1:B:405:THR:HG21	2.01	0.60
1:D:170:LEU:HD23	3:D:2014:HOH:O	2.02	0.60
1:D:273:VAL:HG12	1:D:307:ASP:CG	2.22	0.60
1:B:10:ILE:HD12	1:B:23:MET:HE1	1.84	0.60
1:B:244:ARG:HD2	1:B:256:VAL:CG1	2.31	0.60
1:D:165:ILE:N	1:D:165:ILE:HD12	2.17	0.60
1:D:342:ARG:HD2	1:D:391:PHE:CD1	2.36	0.60
1:D:65:LEU:HD23	1:D:65:LEU:C	2.22	0.60
1:D:126:ASP:CB	1:D:156:LYS:HG3	2.31	0.60
1:D:244:ARG:HD2	1:D:256:VAL:CG1	2.32	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:132:MET:HB3	1:C:146:VAL:HA	1.83	0.60
1:C:172:GLU:OE1	1:C:172:GLU:HA	2.01	0.60
1:C:240:ILE:CG2	1:C:241:MET:N	2.65	0.60
1:D:297:ASP:OD1	3:D:2029:HOH:O	2.16	0.60
1:B:230:PHE:CE2	1:B:263:MET:CG	2.85	0.59
1:B:171:ALA:O	1:B:174:ASP:N	2.35	0.59
1:D:302:ILE:HB	1:D:335:THR:HG21	1.85	0.59
1:B:312:SER:O	1:B:314:GLU:N	2.36	0.59
1:B:403:GLU:HG2	1:B:419:LEU:HD22	1.84	0.59
1:C:170:LEU:HD23	1:C:174:ASP:HB3	1.81	0.59
1:C:152:LEU:HD12	1:C:153:GLY:O	2.02	0.59
1:D:51:ARG:NH2	1:D:184:GLN:O	2.36	0.59
1:B:10:ILE:CG1	1:B:31:MET:HG3	2.33	0.59
1:B:67:THR:HG22	1:B:192:SER:H	1.68	0.59
1:D:92:THR:HG23	1:D:143:ILE:HD13	1.84	0.59
1:C:77:LEU:HG	1:C:154:GLU:CG	2.32	0.59
1:A:321:PRO:O	1:A:325:VAL:HG23	2.02	0.58
1:B:67:THR:CG2	1:B:192:SER:H	2.16	0.58
1:C:136:ALA:HB3	1:C:143:ILE:HB	1.85	0.58
1:C:195:ARG:O	1:C:225:GLU:HG2	2.02	0.58
1:D:302:ILE:O	1:D:305:GLY:N	2.34	0.58
1:D:422:GLU:HG3	1:D:423:ILE:N	2.19	0.58
1:A:73:ARG:NH1	1:A:155:ASN:O	2.36	0.58
1:B:343:LEU:O	1:B:360:ARG:HD2	2.03	0.58
1:D:253:VAL:HG23	1:D:254:GLU:N	2.18	0.58
1:C:7:VAL:HG11	1:C:310:MET:HE2	1.85	0.58
1:D:231:ASP:OD1	1:D:266:LYS:NZ	2.35	0.58
1:A:422:GLU:HG3	1:A:423:ILE:N	2.19	0.58
1:A:216:HIS:HB3	1:A:238:ASP:CB	2.34	0.58
1:C:452:VAL:HG12	1:C:453:SER:N	2.18	0.58
1:B:171:ALA:O	1:B:174:ASP:HB2	2.04	0.58
1:B:449:VAL:CG2	1:B:470:LEU:HD11	2.34	0.58
1:C:388:ARG:HB2	1:C:396:ILE:CD1	2.34	0.57
1:D:262:MET:SD	1:D:266:LYS:HE3	2.44	0.57
1:A:124:LEU:CD1	1:A:161:PRO:HG3	2.34	0.57
1:A:23:MET:CB	1:A:28:MET:HE2	2.34	0.57
1:A:452:VAL:CG1	1:A:462:THR:HG21	2.35	0.57
1:C:170:LEU:HD13	1:C:175:LYS:CG	2.29	0.57
1:D:15:GLU:HB3	1:D:46:ARG:HD3	1.85	0.57
1:A:67:THR:O	1:A:192:SER:OG	2.23	0.57
1:B:117:LEU:HD11	1:B:160:LEU:HD22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:391:PHE:N	1:B:392:PRO:CD	2.66	0.57
1:B:422:GLU:HG3	1:B:423:ILE:N	2.19	0.57
1:C:67:THR:O	1:C:192:SER:OG	2.21	0.57
1:C:230:PHE:CE1	1:C:263:MET:HG2	2.40	0.57
1:B:413:LYS:O	1:B:415:VAL:N	2.37	0.57
1:B:65:LEU:C	1:B:65:LEU:HD23	2.25	0.57
1:C:10:ILE:CG1	1:C:31:MET:HG3	2.34	0.57
1:A:10:ILE:CG1	1:A:31:MET:HG3	2.35	0.57
1:A:388:ARG:HD3	1:A:388:ARG:C	2.25	0.57
1:C:10:ILE:HG13	1:C:31:MET:HG3	1.87	0.57
1:D:159:ASN:CG	1:D:249:VAL:HG11	2.26	0.57
1:A:378:THR:OG1	1:A:381:GLY:HA2	2.05	0.57
1:B:132:MET:HA	1:B:147:LEU:HG	1.85	0.57
1:B:403:GLU:HG2	1:B:419:LEU:CD2	2.35	0.57
1:C:241:MET:CE	1:C:310:MET:HE1	2.33	0.57
1:D:75:MET:CE	1:D:97:LYS:HA	2.35	0.57
1:A:171:ALA:H	1:A:174:ASP:CB	2.17	0.57
1:A:195:ARG:HB3	1:A:225:GLU:HG2	1.86	0.57
1:A:187:ASP:HA	1:A:404:LYS:HE3	1.87	0.57
1:C:30:VAL:HG22	1:C:62:ALA:HB3	1.86	0.57
1:C:35:PHE:CZ	1:C:43:HIS:CD2	2.92	0.57
1:C:65:LEU:HD23	1:C:65:LEU:C	2.24	0.57
1:C:274:VAL:HG13	1:C:274:VAL:O	2.03	0.56
1:D:253:VAL:HG23	1:D:254:GLU:H	1.69	0.56
1:C:431:ARG:HD3	1:C:432:LEU:N	2.21	0.56
1:D:343:LEU:O	1:D:360:ARG:HD2	2.05	0.56
1:B:9:THR:HA	1:B:32:ARG:HB3	1.85	0.56
1:B:65:LEU:HD23	1:B:66:ASP:N	2.20	0.56
1:C:417:PRO:HB3	3:C:2024:HOH:O	2.06	0.56
1:A:73:ARG:O	1:A:109:THR:N	2.37	0.56
1:C:400:THR:O	1:C:420:VAL:N	2.36	0.56
1:A:466:SER:OG	1:A:468:HIS:NE2	2.38	0.56
1:B:51:ARG:NH2	1:B:184:GLN:O	2.39	0.56
1:C:73:ARG:HD3	1:C:155:ASN:OD1	2.06	0.56
1:A:72:ILE:HG23	1:A:110:TYR:HB3	1.88	0.55
1:A:360:ARG:NH2	1:A:364:GLU:OE1	2.39	0.55
1:A:341:SER:HA	1:A:391:PHE:O	2.05	0.55
1:B:240:ILE:HG23	1:B:241:MET:N	2.21	0.55
1:D:94:THR:CG2	1:D:107:ALA:HB2	2.35	0.55
1:D:359:CYS:O	1:D:363:VAL:HG23	2.06	0.55
1:D:358:VAL:HG21	1:D:463:ASN:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:388:ARG:C	1:B:388:ARG:HD3	2.27	0.55
1:B:81:ASN:HA	3:B:2004:HOH:O	2.06	0.55
1:C:369:LEU:O	1:C:370:ASP:HB2	2.06	0.55
1:D:10:ILE:CG1	1:D:31:MET:HG3	2.36	0.55
1:D:443:ALA:C	1:D:444:HIS:CD2	2.80	0.55
1:C:195:ARG:N	1:C:195:ARG:HD3	2.22	0.55
1:A:165:ILE:N	1:A:165:ILE:HD12	2.22	0.55
1:A:18:GLU:OE1	1:A:18:GLU:N	2.40	0.55
1:C:244:ARG:HD2	1:C:256:VAL:HG12	1.89	0.55
1:A:358:VAL:HG21	1:A:463:ASN:HA	1.88	0.55
1:C:363:VAL:O	1:C:366:ALA:HB3	2.06	0.55
1:D:19:MET:O	1:D:23:MET:HG2	2.07	0.55
1:A:430:TYR:O	1:A:434:LYS:HG3	2.07	0.54
1:B:39:ASP:OD1	1:B:42:GLU:HG3	2.07	0.54
1:B:82:ASP:N	3:B:2004:HOH:O	2.28	0.54
1:B:96:ASP:OD2	1:B:99:VAL:HG23	2.07	0.54
1:D:140:ASN:OD1	1:D:141:LYS:HE2	2.08	0.54
1:A:14:THR:HA	1:A:19:MET:HG2	1.89	0.54
1:A:379:GLN:O	1:A:405:THR:HG21	2.07	0.54
1:D:178:LEU:HD12	1:D:206:HIS:CD2	2.43	0.54
1:D:327:ILE:HG23	1:D:328:MET:N	2.21	0.54
1:A:312:SER:O	1:A:314:GLU:N	2.40	0.54
1:B:404:LYS:HE2	3:B:2032:HOH:O	2.07	0.54
1:C:70:PRO:HB2	1:C:167:LEU:HD12	1.89	0.54
1:D:190:ALA:HA	1:D:218:ILE:HB	1.89	0.54
1:A:92:THR:O	1:A:105:MET:HG3	2.07	0.54
1:A:50:LEU:O	1:A:54:MET:HG3	2.07	0.54
1:B:73:ARG:N	1:B:109:THR:OG1	2.39	0.54
1:B:312:SER:C	1:B:314:GLU:H	2.11	0.54
1:D:154:GLU:HA	3:D:2011:HOH:O	2.06	0.54
1:C:124:LEU:HD11	1:C:161:PRO:CG	2.34	0.54
1:D:163:VAL:HG12	1:D:164:SER:N	2.22	0.54
1:B:327:ILE:HD11	1:D:253:VAL:HG21	1.89	0.54
1:A:378:THR:OG1	1:A:381:GLY:CA	2.56	0.54
1:C:216:HIS:CD2	1:C:408:GLN:NE2	2.76	0.54
1:A:10:ILE:HG22	1:A:11:GLY:N	2.23	0.54
1:A:341:SER:HB3	1:A:367:GLU:OE2	2.07	0.54
1:B:383:SER:HB3	1:B:462:THR:OG1	2.08	0.54
1:C:110:TYR:CE1	1:C:167:LEU:CD2	2.91	0.54
1:A:448:VAL:HG12	1:A:449:VAL:N	2.22	0.54
1:B:161:PRO:O	1:B:163:VAL:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:105:MET:HG3	1:C:106:VAL:N	2.22	0.54
1:D:274:VAL:O	1:D:274:VAL:HG13	2.07	0.54
1:D:5:LYS:HA	1:D:29:ASN:OD1	2.08	0.54
1:B:359:CYS:O	1:B:363:VAL:HG23	2.08	0.54
1:B:382:LYS:O	1:B:385:ARG:HB2	2.08	0.54
1:C:463:ASN:O	1:D:466:SER:HA	2.08	0.54
1:B:135:THR:OG1	1:B:143:ILE:HG22	2.08	0.53
1:C:73:ARG:O	1:C:108:VAL:HG12	2.07	0.53
1:A:39:ASP:OD1	1:A:42:GLU:HG3	2.08	0.53
1:B:12:PRO:HD3	1:B:46:ARG:HH12	1.73	0.53
1:A:422:GLU:CG	1:A:423:ILE:N	2.71	0.53
1:A:216:HIS:HB3	1:A:238:ASP:HB2	1.88	0.53
1:B:426:THR:HG22	1:B:430:TYR:CE2	2.43	0.53
1:A:3:LYS:HZ1	1:A:393:ASP:C	2.07	0.53
1:B:431:ARG:HD3	1:B:432:LEU:N	2.24	0.53
1:B:10:ILE:CD1	1:B:23:MET:CE	2.87	0.53
1:B:324:ALA:O	1:B:327:ILE:HG22	2.08	0.53
1:B:64:LEU:HD21	1:B:190:ALA:CB	2.39	0.53
1:C:324:ALA:O	1:C:327:ILE:HG22	2.08	0.53
1:D:378:THR:OG1	1:D:381:GLY:N	2.41	0.53
1:A:237:SER:O	1:A:272:LYS:NZ	2.31	0.53
1:A:355:THR:HG23	1:A:462:THR:HB	1.89	0.53
1:A:25:ASP:OD1	1:A:59:LYS:NZ	2.24	0.53
1:A:383:SER:HB3	1:A:462:THR:OG1	2.09	0.53
1:B:268:ILE:CD1	1:B:391:PHE:HZ	2.22	0.53
1:A:240:ILE:CG2	1:A:241:MET:N	2.71	0.53
1:C:165:ILE:HG22	1:C:167:LEU:H	1.75	0.52
1:D:34:ASN:OD1	1:D:36:SER:HB2	2.08	0.52
1:B:11:GLY:HA2	1:B:46:ARG:HH11	1.73	0.52
1:D:312:SER:C	1:D:314:GLU:H	2.13	0.52
1:C:422:GLU:HG3	1:C:423:ILE:N	2.25	0.52
1:A:124:LEU:HD11	1:A:161:PRO:CG	2.40	0.52
1:A:31:MET:CE	1:A:33:LEU:HD21	2.39	0.52
1:B:377:ALA:HB2	1:B:429:PHE:CE1	2.45	0.52
1:D:391:PHE:N	1:D:392:PRO:CD	2.71	0.52
1:B:19:MET:O	1:B:23:MET:HG3	2.08	0.52
1:A:268:ILE:HD13	1:A:391:PHE:CE1	2.44	0.52
1:A:416:VAL:O	1:A:416:VAL:HG12	2.10	0.52
1:C:302:ILE:HA	1:C:306:THR:HG22	1.92	0.52
1:C:383:SER:HB3	1:C:462:THR:OG1	2.08	0.52
1:D:50:LEU:HD23	1:D:63:ILE:HD11	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:94:THR:CG2	1:A:107:ALA:HB2	2.40	0.52
1:A:388:ARG:HB2	1:A:396:ILE:HD12	1.91	0.52
1:B:191:ALA:O	1:B:220:LYS:HB2	2.10	0.52
1:B:241:MET:CE	1:B:310:MET:HE3	2.40	0.52
1:B:411:LEU:HD12	1:B:411:LEU:O	2.09	0.52
1:D:230:PHE:CD2	1:D:263:MET:HG2	2.44	0.52
1:A:397:LEU:HD12	1:A:416:VAL:O	2.10	0.52
1:B:244:ARG:HD2	1:B:256:VAL:HG12	1.92	0.52
1:C:241:MET:HE2	1:C:310:MET:HE3	1.92	0.52
1:C:251:ILE:HB	1:C:252:PRO:HD2	1.91	0.52
1:D:431:ARG:HD3	1:D:432:LEU:N	2.25	0.52
1:A:77:LEU:HD23	1:A:101:GLY:HA3	1.91	0.52
1:B:366:ALA:HA	1:B:450:VAL:HG21	1.91	0.52
1:A:359:CYS:SG	1:A:386:ALA:HB1	2.50	0.51
1:B:253:VAL:HG21	1:D:327:ILE:HD11	1.92	0.51
1:C:372:PRO:HD2	1:C:448:VAL:O	2.10	0.51
1:D:321:PRO:HD2	1:D:322:LEU:H	1.74	0.51
1:A:244:ARG:HD2	1:A:256:VAL:CG1	2.40	0.51
1:A:426:THR:HG22	1:A:430:TYR:CE2	2.46	0.51
1:C:110:TYR:O	1:C:113:PHE:HB2	2.11	0.51
1:C:175:LYS:HB3	1:C:206:HIS:CE1	2.46	0.51
1:D:422:GLU:CG	1:D:423:ILE:N	2.74	0.51
1:D:9:THR:HA	1:D:32:ARG:HB3	1.92	0.51
1:A:401:THR:HG22	1:A:420:VAL:O	2.11	0.51
1:C:195:ARG:HB3	1:C:225:GLU:CD	2.30	0.51
1:B:363:VAL:HG21	1:B:390:TYR:HB2	1.93	0.51
1:C:105:MET:CG	1:C:106:VAL:N	2.74	0.51
1:A:440:SER:HB3	1:A:442:LEU:CG	2.40	0.51
1:D:171:ALA:HB3	1:D:174:ASP:CG	2.31	0.51
1:D:385:ARG:O	1:D:388:ARG:N	2.44	0.51
1:D:43:HIS:O	1:D:46:ARG:HB3	2.10	0.51
1:B:264:ILE:O	1:B:268:ILE:HG13	2.10	0.51
1:C:241:MET:CE	1:C:310:MET:CE	2.89	0.51
1:A:136:ALA:HB3	1:A:143:ILE:HB	1.92	0.51
1:C:388:ARG:C	1:C:388:ARG:HD3	2.31	0.51
1:D:430:TYR:HD1	1:D:451:MET:SD	2.34	0.51
1:A:126:ASP:HB3	1:A:129:LEU:HB3	1.93	0.51
1:A:95:THR:HB	1:A:140:ASN:HB2	1.92	0.51
1:B:249:VAL:HG12	1:B:249:VAL:O	2.11	0.51
1:C:110:TYR:CD1	1:C:167:LEU:CD2	2.94	0.51
1:D:119:VAL:HG13	1:D:134:VAL:O	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:291:THR:O	1:D:294:GLU:HB2	2.10	0.50
1:B:167:LEU:O	1:B:195:ARG:NH2	2.45	0.50
1:A:124:LEU:HD11	1:A:161:PRO:HG3	1.94	0.50
1:A:366:ALA:HA	1:A:450:VAL:HG21	1.93	0.50
1:B:77:LEU:N	1:B:154:GLU:HG2	2.27	0.50
1:C:10:ILE:CG2	1:C:11:GLY:N	2.74	0.50
1:D:365:THR:HG22	1:D:369:LEU:HD12	1.91	0.50
1:A:89:GLN:HG3	1:A:89:GLN:O	2.12	0.50
1:B:5:LYS:HB2	1:B:308:ALA:HB2	1.93	0.50
1:C:373:LEU:CA	1:C:394:ALA:HB1	2.40	0.50
1:B:160:LEU:HB2	1:B:165:ILE:HD11	1.94	0.50
1:B:440:SER:C	1:B:442:LEU:H	2.14	0.50
1:C:359:CYS:O	1:C:363:VAL:HG23	2.12	0.50
1:D:94:THR:HG22	1:D:107:ALA:HA	1.93	0.50
1:A:74:THR:OG1	1:A:156:LYS:N	2.42	0.50
1:A:298:VAL:O	1:A:301:ALA:N	2.45	0.50
1:B:187:ASP:HA	1:B:404:LYS:HE3	1.92	0.50
1:C:426:THR:HG22	1:C:430:TYR:CE2	2.47	0.50
1:B:62:ALA:HA	3:B:2011:HOH:O	2.11	0.50
1:A:422:GLU:CG	1:A:423:ILE:H	2.25	0.50
1:B:251:ILE:HD11	1:B:256:VAL:HG22	1.94	0.50
1:B:327:ILE:CG2	1:B:328:MET:N	2.75	0.50
1:C:391:PHE:N	1:C:392:PRO:CD	2.75	0.50
1:B:422:GLU:CG	1:B:423:ILE:N	2.75	0.49
1:C:78:GLU:HG3	1:C:100:ILE:HG22	1.93	0.49
1:D:440:SER:C	1:D:442:LEU:H	2.14	0.49
1:A:7:VAL:HG11	1:A:310:MET:CE	2.42	0.49
1:A:327:ILE:CG2	1:A:328:MET:N	2.75	0.49
1:B:241:MET:HE1	1:B:310:MET:HE1	1.93	0.49
1:B:214:ASN:O	1:B:408:GLN:NE2	2.44	0.49
1:B:67:THR:HG22	1:B:192:SER:N	2.26	0.49
1:C:119:VAL:HG13	1:C:135:THR:CA	2.42	0.49
1:D:336:ASP:O	1:D:338:VAL:N	2.45	0.49
1:C:430:TYR:HD1	1:C:451:MET:SD	2.35	0.49
1:D:110:TYR:O	1:D:113:PHE:HB2	2.12	0.49
1:D:293:ALA:O	1:D:297:ASP:HB2	2.12	0.49
1:A:5:LYS:HB2	1:A:308:ALA:HB2	1.95	0.49
1:B:9:THR:OG1	1:B:32:ARG:HD3	2.12	0.49
1:C:222:GLU:O	1:C:223:ASN:HB3	2.13	0.49
1:C:466:SER:OG	1:C:468:HIS:NE2	2.42	0.49
1:D:254:GLU:OE1	1:D:254:GLU:N	2.34	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:377:ALA:HB2	1:D:429:PHE:CE1	2.48	0.49
1:B:189:VAL:HG23	1:B:215:ILE:HG21	1.95	0.49
1:C:240:ILE:HG23	1:C:241:MET:N	2.28	0.49
1:C:30:VAL:HG21	1:C:411:LEU:HD13	1.95	0.49
1:A:426:THR:CG2	1:A:430:TYR:CE2	2.96	0.49
1:B:74:THR:O	1:B:155:ASN:HA	2.13	0.49
1:B:255:GLU:OE2	1:D:334:ARG:NE	2.39	0.49
1:C:94:THR:CG2	1:C:107:ALA:CA	2.91	0.49
1:D:415:VAL:HG12	1:D:416:VAL:N	2.27	0.49
1:D:382:LYS:HB2	2:D:704:SO4:O1	2.12	0.49
1:A:189:VAL:HG23	1:A:215:ILE:CG2	2.42	0.49
1:A:268:ILE:HD13	1:A:391:PHE:CZ	2.47	0.49
1:A:50:LEU:HD23	1:A:63:ILE:HD11	1.94	0.49
1:C:171:ALA:N	1:C:174:ASP:HB2	2.28	0.49
1:C:449:VAL:CG2	1:C:470:LEU:HD11	2.41	0.49
1:C:94:THR:HG22	1:C:107:ALA:HA	1.92	0.49
1:D:73:ARG:O	1:D:108:VAL:HA	2.12	0.49
1:A:112:GLY:O	1:A:115:THR:HB	2.12	0.49
1:A:171:ALA:O	1:A:174:ASP:HB2	2.12	0.49
1:B:274:VAL:HG13	1:B:274:VAL:O	2.13	0.49
1:B:360:ARG:NH2	1:B:364:GLU:OE1	2.42	0.49
1:C:378:THR:CG2	1:C:381:GLY:HA2	2.43	0.49
1:D:94:THR:CG2	1:D:107:ALA:HA	2.43	0.49
1:D:163:VAL:CG1	1:D:164:SER:N	2.76	0.49
1:A:235:GLU:O	1:A:272:LYS:NZ	2.45	0.49
1:A:35:PHE:CE1	1:A:65:LEU:HG	2.48	0.49
1:B:421:LYS:O	1:B:422:GLU:HB2	2.13	0.49
1:C:119:VAL:HG13	1:C:135:THR:HA	1.95	0.49
1:C:75:MET:HE2	1:C:97:LYS:HG2	1.95	0.49
1:C:207:LEU:HD13	1:C:215:ILE:HG21	1.95	0.48
1:C:43:HIS:O	1:C:47:ILE:HG13	2.12	0.48
1:D:343:LEU:O	1:D:344:GLU:O	2.32	0.48
1:A:117:LEU:HG	1:A:134:VAL:HG21	1.95	0.48
1:A:431:ARG:C	1:A:431:ARG:HD3	2.33	0.48
1:B:240:ILE:CG2	1:B:241:MET:N	2.76	0.48
1:B:253:VAL:HG23	1:B:254:GLU:OE1	2.13	0.48
1:C:239:GLY:O	1:C:240:ILE:HG12	2.13	0.48
1:A:65:LEU:HD23	1:A:66:ASP:N	2.29	0.48
1:B:86:LYS:O	1:B:89:GLN:HG2	2.13	0.48
1:C:354:ILE:HD13	1:C:354:ILE:HG21	1.48	0.48
1:D:230:PHE:CE2	1:D:263:MET:CG	2.93	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:10:ILE:HD11	1:B:23:MET:CE	2.43	0.48
1:C:153:GLY:C	1:C:156:LYS:HE2	2.33	0.48
1:C:327:ILE:CG2	1:C:328:MET:N	2.76	0.48
1:C:378:THR:CA	2:C:703:SO4:O1	2.60	0.48
1:D:95:THR:HB	1:D:140:ASN:HB2	1.95	0.48
1:B:83:VAL:HG11	1:B:103:SER:N	2.28	0.48
1:C:51:ARG:NH2	1:C:184:GLN:O	2.44	0.48
1:C:312:SER:C	1:C:314:GLU:H	2.15	0.48
1:C:407:HIS:O	1:C:410:VAL:HG23	2.13	0.48
1:D:327:ILE:CG2	1:D:328:MET:N	2.76	0.48
1:A:124:LEU:HD12	1:A:161:PRO:HG3	1.96	0.48
1:A:424:THR:HG23	1:A:428:ASP:OD2	2.14	0.48
1:A:88:GLY:N	1:A:146:VAL:O	2.47	0.48
1:C:125:VAL:O	1:C:126:ASP:O	2.30	0.48
1:D:449:VAL:N	1:D:468:HIS:O	2.46	0.48
1:D:7:VAL:HG11	1:D:310:MET:HE2	1.96	0.48
1:A:251:ILE:HD12	1:A:255:GLU:HB2	1.96	0.48
1:B:269:ARG:HA	1:B:389:LYS:HE3	1.96	0.48
1:B:86:LYS:HA	1:B:149:ASN:OD1	2.14	0.48
1:C:110:TYR:CE1	1:C:167:LEU:HD23	2.49	0.48
1:C:132:MET:N	1:C:147:LEU:CD2	2.75	0.48
1:C:158:VAL:HG12	1:C:159:ASN:N	2.29	0.48
1:A:327:ILE:HG23	1:A:328:MET:N	2.29	0.47
1:B:193:PHE:CD2	1:B:195:ARG:HD2	2.49	0.47
1:C:35:PHE:HB3	1:C:177:ASP:OD2	2.14	0.47
1:D:251:ILE:HB	1:D:252:PRO:HD2	1.96	0.47
1:A:73:ARG:HD3	1:A:155:ASN:OD1	2.14	0.47
1:B:200:VAL:HG22	1:B:219:SER:OG	2.14	0.47
1:D:192:SER:HA	1:D:220:LYS:HD3	1.96	0.47
1:B:167:LEU:HB3	1:B:168:PRO:CD	2.41	0.47
1:B:16:SER:OG	1:B:19:MET:HB2	2.14	0.47
1:A:75:MET:HB2	3:A:2010:HOH:O	2.15	0.47
1:D:175:LYS:O	1:D:179:ILE:HG13	2.14	0.47
1:D:65:LEU:CD2	1:D:65:LEU:C	2.82	0.47
1:B:343:LEU:O	1:B:344:GLU:O	2.32	0.47
1:B:422:GLU:HG3	1:B:423:ILE:H	1.79	0.47
1:B:7:VAL:CG1	1:B:32:ARG:HB2	2.44	0.47
1:C:244:ARG:CD	1:C:256:VAL:HG12	2.44	0.47
1:A:10:ILE:CG2	1:A:11:GLY:N	2.77	0.47
1:A:249:VAL:HG12	1:A:249:VAL:O	2.13	0.47
1:B:422:GLU:CG	1:B:423:ILE:H	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:273:VAL:HG11	3:C:2025:HOH:O	2.14	0.47
1:C:378:THR:HG21	1:C:381:GLY:HA2	1.95	0.47
1:D:298:VAL:O	1:D:301:ALA:N	2.47	0.47
1:A:132:MET:HG2	1:A:146:VAL:HA	1.97	0.47
1:B:241:MET:CE	1:B:310:MET:CE	2.92	0.47
1:C:102:ASN:OD1	1:C:104:GLU:N	2.40	0.47
1:C:92:THR:HA	1:C:142:VAL:O	2.15	0.47
1:C:401:THR:HA	1:C:420:VAL:O	2.14	0.47
1:A:399:LEU:HD21	1:A:436:LEU:HD12	1.96	0.47
1:B:452:VAL:HG12	1:B:453:SER:N	2.29	0.47
1:B:87:ALA:C	1:B:89:GLN:H	2.18	0.47
1:C:244:ARG:HD2	1:C:256:VAL:CG1	2.44	0.47
1:D:391:PHE:N	1:D:392:PRO:HD3	2.29	0.47
1:A:244:ARG:HG3	1:A:244:ARG:HH11	1.80	0.47
1:A:312:SER:C	1:A:314:GLU:H	2.18	0.47
1:D:266:LYS:HG2	1:D:269:ARG:HH12	1.79	0.47
1:A:124:LEU:CD1	1:A:161:PRO:CG	2.92	0.47
1:A:415:VAL:HG12	1:A:416:VAL:N	2.29	0.47
1:C:241:MET:HE2	1:C:310:MET:CE	2.44	0.47
1:C:26:ALA:HB3	1:C:325:VAL:HG11	1.96	0.47
1:A:440:SER:C	1:A:442:LEU:H	2.18	0.47
1:B:11:GLY:O	1:B:14:THR:N	2.39	0.47
1:C:72:ILE:HG12	1:C:110:TYR:HB3	1.96	0.47
1:C:195:ARG:H	1:C:195:ARG:HD3	1.79	0.47
1:C:86:LYS:O	1:C:89:GLN:HG2	2.15	0.47
1:B:5:LYS:HD3	1:B:5:LYS:HA	1.76	0.46
1:C:18:GLU:O	1:C:22:LYS:HG3	2.15	0.46
1:C:378:THR:OG1	1:C:381:GLY:CA	2.63	0.46
1:B:293:ALA:O	1:B:297:ASP:HB2	2.15	0.46
1:B:369:LEU:HA	1:B:369:LEU:HD23	1.71	0.46
1:D:342:ARG:HD2	1:D:391:PHE:CE1	2.51	0.46
1:D:407:HIS:O	1:D:410:VAL:HG23	2.15	0.46
1:B:10:ILE:HD11	1:B:23:MET:HE3	1.97	0.46
1:B:67:THR:HG21	3:B:2010:HOH:O	2.15	0.46
1:C:152:LEU:C	1:C:152:LEU:HD12	2.35	0.46
1:C:5:LYS:HA	1:C:29:ASN:OD1	2.16	0.46
1:C:379:GLN:O	1:C:405:THR:HG21	2.15	0.46
1:C:422:GLU:CG	1:C:423:ILE:N	2.77	0.46
1:D:191:ALA:CB	1:D:203:ILE:CD1	2.93	0.46
1:A:125:VAL:HG12	1:A:126:ASP:N	2.29	0.46
1:B:327:ILE:HA	1:B:327:ILE:HD12	1.73	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:77:LEU:HD11	1:B:152:LEU:HG	1.97	0.46
1:C:165:ILE:O	1:C:195:ARG:NH2	2.49	0.46
1:C:375:VAL:HG12	1:C:376:VAL:N	2.29	0.46
1:A:422:GLU:HG3	1:A:423:ILE:H	1.81	0.46
1:D:187:ASP:HA	1:D:404:LYS:HE3	1.97	0.46
1:B:230:PHE:CE2	1:B:263:MET:SD	3.09	0.46
1:B:93:PHE:HB2	1:B:142:VAL:HB	1.98	0.46
1:A:165:ILE:N	1:A:165:ILE:CD1	2.78	0.46
1:A:195:ARG:O	1:A:225:GLU:HG2	2.16	0.46
1:A:244:ARG:HD2	1:A:256:VAL:HG12	1.98	0.46
1:A:5:LYS:HG3	1:A:410:VAL:O	2.16	0.46
1:A:75:MET:HE2	1:A:97:LYS:CA	2.30	0.46
1:D:372:PRO:HD2	1:D:448:VAL:O	2.15	0.46
1:B:104:GLU:O	3:B:2007:HOH:O	2.20	0.46
1:B:10:ILE:HG22	1:B:11:GLY:N	2.31	0.46
1:B:85:LEU:O	1:B:149:ASN:HA	2.15	0.46
1:B:15:GLU:CB	1:B:46:ARG:HD3	2.46	0.46
1:C:78:GLU:OE1	3:C:2004:HOH:O	2.21	0.46
1:D:186:VAL:O	1:D:404:LYS:NZ	2.31	0.46
1:B:133:GLU:O	1:B:144:CYS:HB3	2.16	0.46
1:C:11:GLY:CA	1:C:46:ARG:NH1	2.76	0.46
1:B:43:HIS:O	1:B:46:ARG:HB3	2.16	0.45
1:C:31:MET:CE	1:C:33:LEU:HD21	2.45	0.45
1:D:156:LYS:HA	1:D:156:LYS:HD3	1.55	0.45
1:D:354:ILE:O	1:D:358:VAL:HG23	2.16	0.45
1:D:363:VAL:O	1:D:367:GLU:HG3	2.16	0.45
1:A:398:ALA:C	1:A:399:LEU:HD12	2.35	0.45
1:A:5:LYS:HA	1:A:29:ASN:OD1	2.16	0.45
1:D:253:VAL:HG23	1:D:254:GLU:OE1	2.16	0.45
1:C:190:ALA:HA	1:C:218:ILE:HB	1.97	0.45
1:C:254:GLU:OE1	1:C:254:GLU:N	2.33	0.45
1:C:343:LEU:O	1:C:344:GLU:O	2.35	0.45
1:D:444:HIS:CD2	1:D:444:HIS:N	2.84	0.45
1:B:74:THR:C	1:B:75:MET:HG3	2.30	0.45
1:A:23:MET:CB	1:A:28:MET:CE	2.94	0.45
1:C:93:PHE:HA	1:C:106:VAL:O	2.16	0.45
1:C:127:ASP:C	1:C:249:VAL:HG13	2.36	0.45
1:C:266:LYS:HG2	1:C:269:ARG:HH12	1.81	0.45
1:C:358:VAL:HG21	1:C:463:ASN:HA	1.98	0.45
1:C:154:GLU:O	1:C:155:ASN:HB3	2.17	0.45
1:D:422:GLU:CG	1:D:423:ILE:H	2.29	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:ALA:O	1:A:175:LYS:HG3	2.17	0.45
1:B:179:ILE:HG22	1:B:179:ILE:O	2.16	0.45
1:B:362:ALA:O	1:B:366:ALA:HB2	2.17	0.45
1:C:113:PHE:CD2	1:C:142:VAL:HG21	2.51	0.45
1:D:15:GLU:CB	1:D:46:ARG:HD3	2.46	0.45
1:D:17:GLU:HG2	1:D:49:ASN:HB3	1.98	0.45
1:A:407:HIS:O	1:A:410:VAL:HG23	2.16	0.45
1:B:310:MET:HG2	1:B:311:LEU:N	2.32	0.45
1:C:16:SER:OG	1:C:19:MET:HB2	2.16	0.45
1:C:217:ILE:O	1:C:238:ASP:HB2	2.17	0.45
1:D:10:ILE:HG13	1:D:31:MET:SD	2.57	0.45
1:D:216:HIS:ND1	3:D:2020:HOH:O	2.36	0.45
1:D:275:ILE:HA	1:D:308:ALA:O	2.17	0.45
1:D:416:VAL:O	1:D:416:VAL:HG12	2.16	0.45
1:A:240:ILE:HG23	1:A:241:MET:N	2.32	0.45
1:A:440:SER:HB3	1:A:442:LEU:CD1	2.47	0.45
1:B:216:HIS:CE1	3:B:2017:HOH:O	2.69	0.45
1:C:12:PRO:HA	1:C:15:GLU:OE2	2.17	0.45
1:C:344:GLU:N	3:C:2022:HOH:O	2.48	0.45
1:D:124:LEU:CD1	1:D:161:PRO:CG	2.95	0.45
1:A:362:ALA:O	1:A:366:ALA:HB2	2.17	0.45
1:C:91:PHE:HE2	1:C:106:VAL:HG12	1.82	0.45
1:C:216:HIS:CD2	1:C:408:GLN:HE22	2.35	0.45
1:D:240:ILE:CG2	1:D:241:MET:N	2.80	0.45
1:B:419:LEU:HD12	1:B:419:LEU:HA	1.53	0.44
1:B:47:ILE:O	1:B:51:ARG:HG2	2.16	0.44
1:B:70:PRO:O	1:B:71:GLU:HG3	2.17	0.44
1:C:35:PHE:HE2	1:C:40:TYR:CE1	2.35	0.44
1:A:191:ALA:CB	1:A:194:ILE:HD11	2.46	0.44
1:A:307:ASP:HA	1:A:413:LYS:HB2	1.99	0.44
1:D:219:SER:HB2	1:D:240:ILE:CD1	2.45	0.44
1:B:366:ALA:HA	1:B:450:VAL:CG2	2.48	0.44
1:B:426:THR:CG2	1:B:430:TYR:CE2	3.00	0.44
1:D:20:LEU:O	1:D:23:MET:HB2	2.17	0.44
1:D:50:LEU:O	1:D:54:MET:HG3	2.17	0.44
1:A:172:GLU:HA	1:A:172:GLU:OE1	2.17	0.44
1:C:170:LEU:O	1:C:175:LYS:HE3	2.17	0.44
1:C:440:SER:C	1:C:442:LEU:H	2.21	0.44
1:D:374:ILE:O	1:D:376:VAL:HG23	2.18	0.44
1:D:422:GLU:HG3	1:D:423:ILE:H	1.83	0.44
1:A:193:PHE:O	1:A:195:ARG:HD3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:77:LEU:H	1:D:154:GLU:HG2	1.83	0.44
1:D:77:LEU:N	1:D:154:GLU:HG2	2.32	0.44
1:D:15:GLU:HB3	1:D:46:ARG:CD	2.48	0.44
1:A:170:LEU:CD1	1:A:178:LEU:HD12	2.46	0.44
1:A:466:SER:HA	1:B:463:ASN:O	2.17	0.44
1:C:170:LEU:HD22	1:C:174:ASP:C	2.38	0.44
1:C:203:ILE:O	1:C:207:LEU:HG	2.18	0.44
1:C:260:GLN:O	1:C:264:ILE:HG13	2.18	0.44
1:D:448:VAL:O	1:D:449:VAL:HG23	2.17	0.44
1:D:42:GLU:O	1:D:46:ARG:HB2	2.17	0.44
1:A:47:ILE:O	1:A:47:ILE:HG22	2.18	0.44
1:C:188:PHE:CD2	1:C:216:HIS:HB2	2.53	0.44
1:D:9:THR:OG1	1:D:32:ARG:HD3	2.18	0.44
1:B:132:MET:CA	1:B:147:LEU:HG	2.48	0.44
1:B:242:VAL:HG12	1:B:244:ARG:HG2	1.99	0.44
1:B:311:LEU:HD23	1:B:311:LEU:HA	1.73	0.44
1:C:165:ILE:N	1:C:165:ILE:HD12	2.32	0.44
1:D:114:THR:HG21	1:D:140:ASN:HA	2.00	0.44
1:D:421:LYS:O	1:D:422:GLU:HB2	2.18	0.44
1:A:391:PHE:N	1:A:392:PRO:CD	2.81	0.44
1:B:63:ILE:HG22	1:B:186:VAL:HG12	2.00	0.44
1:C:74:THR:O	1:C:155:ASN:HA	2.18	0.44
1:D:204:ARG:HA	1:D:217:ILE:HD11	1.99	0.44
1:D:388:ARG:C	1:D:388:ARG:HD3	2.38	0.44
1:D:77:LEU:HD23	1:D:77:LEU:HA	1.50	0.44
1:A:452:VAL:CG1	1:A:462:THR:CG2	2.96	0.43
1:B:73:ARG:HG2	1:B:157:GLY:HA2	2.00	0.43
1:C:253:VAL:H	1:C:253:VAL:HG22	1.42	0.43
1:C:321:PRO:O	1:C:325:VAL:HG23	2.18	0.43
1:D:12:PRO:HA	1:D:15:GLU:OE2	2.18	0.43
1:D:10:ILE:CG2	1:D:46:ARG:HD2	2.37	0.43
1:D:73:ARG:NH1	1:D:155:ASN:O	2.51	0.43
1:A:191:ALA:HB2	1:A:203:ILE:CD1	2.48	0.43
1:A:5:LYS:HA	1:A:5:LYS:HD3	1.85	0.43
1:B:190:ALA:HA	1:B:218:ILE:HB	2.00	0.43
1:B:366:ALA:CA	1:B:450:VAL:HG21	2.48	0.43
1:C:140:ASN:OD1	1:C:141:LYS:HE2	2.18	0.43
1:A:378:THR:OG1	2:A:701:SO4:O3	2.32	0.43
1:C:369:LEU:HD23	1:C:369:LEU:HA	1.68	0.43
1:C:415:VAL:CG1	1:C:416:VAL:N	2.80	0.43
1:C:77:LEU:H	1:C:154:GLU:CD	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:MET:CA	1:A:147:LEU:HG	2.48	0.43
1:A:298:VAL:O	1:A:301:ALA:HB3	2.17	0.43
1:A:422:GLU:CD	1:A:423:ILE:H	2.22	0.43
1:A:77:LEU:HD11	1:A:152:LEU:HG	1.99	0.43
1:C:91:PHE:CE2	1:C:106:VAL:HG12	2.53	0.43
1:C:170:LEU:CD2	1:C:174:ASP:CB	2.88	0.43
1:C:178:LEU:O	1:C:181:GLY:N	2.51	0.43
1:C:419:LEU:HA	1:C:419:LEU:HD12	1.75	0.43
1:D:78:GLU:CD	1:D:102:ASN:HB3	2.38	0.43
1:B:241:MET:HE1	1:B:310:MET:CE	2.48	0.43
1:C:9:THR:HA	1:C:32:ARG:HB3	1.99	0.43
1:D:131:GLY:C	1:D:132:MET:HG3	2.39	0.43
1:D:403:GLU:HG2	1:D:419:LEU:CD2	2.49	0.43
1:A:230:PHE:CE2	1:A:263:MET:HG2	2.54	0.43
1:B:455:ALA:H	1:B:457:VAL:HG22	1.83	0.43
1:B:64:LEU:HA	1:B:188:PHE:O	2.19	0.43
1:C:137:ILE:HA	1:C:141:LYS:O	2.19	0.43
1:C:136:ALA:O	1:C:143:ILE:N	2.44	0.43
1:C:207:LEU:HD13	1:C:215:ILE:CG2	2.49	0.43
1:C:440:SER:HB3	1:C:442:LEU:HG	2.01	0.43
1:A:244:ARG:HG3	1:A:244:ARG:NH1	2.33	0.43
1:A:298:VAL:HG12	1:A:299:ALA:N	2.34	0.43
1:B:310:MET:CG	1:B:311:LEU:N	2.82	0.43
1:B:83:VAL:O	1:B:83:VAL:HG23	2.19	0.43
1:C:40:TYR:HB3	1:C:180:PHE:CE2	2.53	0.43
1:C:61:ALA:HA	1:C:410:VAL:HG11	2.01	0.43
1:C:77:LEU:H	1:C:154:GLU:HG2	1.84	0.43
1:C:94:THR:HA	1:C:140:ASN:O	2.19	0.43
1:A:23:MET:HB2	1:A:28:MET:CE	2.49	0.43
1:D:124:LEU:HD11	1:D:161:PRO:CG	2.44	0.43
1:D:154:GLU:O	1:D:156:LYS:CE	2.59	0.43
1:D:35:PHE:HZ	1:D:180:PHE:CE2	2.37	0.43
1:D:390:TYR:C	1:D:392:PRO:HD3	2.40	0.43
1:D:3:LYS:HB3	1:D:414:GLY:CA	2.49	0.43
1:A:188:PHE:CD2	1:A:218:ILE:HD11	2.54	0.42
1:A:34:ASN:C	1:A:36:SER:H	2.22	0.42
1:A:65:LEU:C	1:A:65:LEU:HD23	2.40	0.42
1:C:67:THR:CG2	1:C:68:LYS:N	2.78	0.42
1:D:396:ILE:HB	1:D:415:VAL:HA	2.01	0.42
1:A:197:ARG:HB2	1:A:232:GLU:CD	2.40	0.42
1:A:355:THR:O	1:A:359:CYS:SG	2.77	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:375:VAL:HG12	1:B:376:VAL:N	2.33	0.42
1:C:135:THR:OG1	1:C:143:ILE:O	2.33	0.42
1:C:399:LEU:HD21	1:C:436:LEU:HD12	2.00	0.42
1:C:77:LEU:N	1:C:154:GLU:HG2	2.34	0.42
1:D:244:ARG:CD	1:D:256:VAL:CG1	2.96	0.42
1:D:5:LYS:HB2	1:D:308:ALA:HB2	2.00	0.42
1:A:170:LEU:HA	1:A:170:LEU:HD23	1.83	0.42
1:B:117:LEU:CD1	1:B:160:LEU:HD13	2.49	0.42
1:B:247:LEU:O	1:B:251:ILE:HG12	2.19	0.42
1:D:188:PHE:CD1	1:D:216:HIS:CB	3.01	0.42
1:D:28:MET:HE2	1:D:28:MET:HB3	1.95	0.42
1:D:415:VAL:CG1	1:D:416:VAL:N	2.81	0.42
1:D:457:VAL:HA	1:D:458:PRO:HD3	1.84	0.42
1:A:378:THR:OG1	1:A:381:GLY:N	2.52	0.42
1:C:298:VAL:O	1:C:301:ALA:N	2.52	0.42
1:C:327:ILE:HA	1:C:327:ILE:HD12	1.75	0.42
1:C:65:LEU:C	1:C:65:LEU:CD2	2.88	0.42
1:C:78:GLU:CG	1:C:100:ILE:HG22	2.49	0.42
1:A:126:ASP:O	1:A:129:LEU:N	2.38	0.42
1:A:234:LEU:O	1:A:234:LEU:HG	2.15	0.42
1:A:436:LEU:HA	1:A:436:LEU:HD23	1.74	0.42
1:A:65:LEU:C	1:A:65:LEU:CD2	2.88	0.42
1:C:94:THR:HG22	1:C:106:VAL:O	2.19	0.42
1:C:135:THR:OG1	1:C:136:ALA:N	2.53	0.42
1:C:251:ILE:HB	1:C:252:PRO:CD	2.49	0.42
1:C:341:SER:HB3	1:C:367:GLU:OE2	2.20	0.42
1:C:436:LEU:O	1:C:439:GLN:N	2.52	0.42
1:D:311:LEU:HD23	1:D:311:LEU:HA	1.43	0.42
1:C:244:ARG:NH1	1:C:260:GLN:OE1	2.43	0.42
1:A:85:LEU:N	1:A:150:GLY:O	2.41	0.42
1:A:76:LYS:HA	1:A:154:GLU:OE2	2.19	0.42
1:A:191:ALA:HB1	1:A:194:ILE:HD11	2.01	0.42
1:C:416:VAL:HG12	1:C:416:VAL:O	2.19	0.42
1:D:170:LEU:HD22	1:D:174:ASP:HB3	2.01	0.42
1:B:369:LEU:O	1:B:370:ASP:HB2	2.18	0.42
1:C:263:MET:HE2	1:C:263:MET:HB2	1.91	0.42
1:A:327:ILE:HA	1:A:327:ILE:HD12	1.69	0.42
1:A:434:LYS:HE2	1:A:434:LYS:HB3	1.89	0.42
1:C:94:THR:N	1:C:106:VAL:O	2.51	0.42
1:C:253:VAL:HG23	1:C:254:GLU:H	1.84	0.42
1:C:267:CYS:O	1:C:270:ALA:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:73:ARG:HB2	1:D:109:THR:HG21	2.02	0.42
1:D:257:ILE:HA	1:D:257:ILE:HD12	1.80	0.42
1:D:64:LEU:HA	1:D:188:PHE:O	2.20	0.42
1:A:195:ARG:N	1:A:195:ARG:HD3	2.34	0.42
1:A:63:ILE:HG21	1:A:63:ILE:HD13	1.79	0.42
1:B:402:ASN:OD1	1:B:404:LYS:N	2.53	0.42
1:B:440:SER:C	1:B:442:LEU:N	2.73	0.42
1:B:462:THR:O	1:B:463:ASN:HB3	2.20	0.42
1:D:7:VAL:HG11	1:D:310:MET:CE	2.50	0.42
1:A:388:ARG:HB2	1:A:396:ILE:HD11	1.99	0.41
1:A:5:LYS:O	1:A:308:ALA:HA	2.20	0.41
1:C:134:VAL:HG22	1:C:144:CYS:SG	2.59	0.41
1:D:35:PHE:CZ	1:D:43:HIS:CD2	3.07	0.41
1:B:10:ILE:HD12	1:B:10:ILE:HG23	1.77	0.41
1:B:126:ASP:CG	1:B:156:LYS:HG3	2.40	0.41
1:B:266:LYS:HG2	1:B:269:ARG:HH12	1.85	0.41
1:C:327:ILE:HG23	1:C:328:MET:N	2.35	0.41
1:C:73:ARG:O	1:C:108:VAL:HA	2.20	0.41
1:A:31:MET:HE1	1:A:33:LEU:HD21	2.01	0.41
1:A:422:GLU:HA	1:A:422:GLU:OE1	2.20	0.41
1:B:170:LEU:HD23	3:B:2010:HOH:O	2.19	0.41
1:C:434:LYS:HE2	1:C:434:LYS:HB3	1.82	0.41
1:D:136:ALA:HB3	1:D:143:ILE:HB	2.02	0.41
1:D:341:SER:HA	1:D:391:PHE:O	2.20	0.41
1:B:30:VAL:HG12	1:B:31:MET:N	2.35	0.41
1:C:321:PRO:CD	1:C:322:LEU:H	2.31	0.41
1:C:422:GLU:CG	1:C:423:ILE:H	2.33	0.41
1:C:77:LEU:H	1:C:154:GLU:CG	2.32	0.41
1:D:165:ILE:N	1:D:165:ILE:CD1	2.83	0.41
1:D:229:ASN:O	1:D:232:GLU:HG2	2.19	0.41
1:D:268:ILE:HD13	1:D:391:PHE:CZ	2.55	0.41
1:D:5:LYS:HG3	1:D:411:LEU:O	2.21	0.41
1:A:163:VAL:CG1	1:A:165:ILE:CD1	2.92	0.41
1:A:23:MET:HB3	1:A:28:MET:CE	2.49	0.41
1:A:252:PRO:HB2	1:A:255:GLU:HG2	2.03	0.41
1:A:35:PHE:CD1	1:A:65:LEU:HG	2.56	0.41
1:A:75:MET:CE	1:A:97:LYS:CA	2.94	0.41
1:B:10:ILE:CG2	1:B:11:GLY:N	2.84	0.41
1:C:435:GLU:HG2	3:C:2028:HOH:O	2.20	0.41
1:D:343:LEU:HA	1:D:343:LEU:HD23	1.70	0.41
1:D:5:LYS:HG3	1:D:410:VAL:O	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:335:THR:O	1:A:339:MET:HG3	2.21	0.41
1:C:25:ASP:OD1	1:C:59:LYS:NZ	2.46	0.41
1:D:11:GLY:HA2	1:D:46:ARG:NH1	2.35	0.41
1:D:180:PHE:O	1:D:183:GLU:HB2	2.21	0.41
1:D:362:ALA:O	1:D:366:ALA:HB2	2.21	0.41
1:D:451:MET:O	1:D:465:ALA:HA	2.20	0.41
1:A:343:LEU:O	1:A:344:GLU:O	2.39	0.41
1:D:165:ILE:HD12	1:D:165:ILE:H	1.82	0.41
1:D:373:LEU:HD11	1:D:397:LEU:HB2	2.01	0.41
1:A:125:VAL:CG1	1:A:126:ASP:N	2.82	0.41
1:A:190:ALA:HA	1:A:218:ILE:O	2.21	0.41
1:A:9:THR:OG1	1:A:32:ARG:HD3	2.21	0.41
1:B:73:ARG:HD3	1:B:155:ASN:OD1	2.20	0.41
1:B:163:VAL:CG1	1:B:164:SER:N	2.84	0.41
1:B:244:ARG:CD	1:B:256:VAL:HG12	2.51	0.41
1:B:28:MET:HE2	1:B:28:MET:HB3	1.74	0.41
1:D:231:ASP:HB2	3:D:2022:HOH:O	2.19	0.41
1:B:77:LEU:H	1:B:154:GLU:HG2	1.86	0.41
1:B:374:ILE:HA	1:B:450:VAL:O	2.21	0.41
1:C:113:PHE:HD2	1:C:142:VAL:HG21	1.85	0.41
1:C:110:TYR:HD1	1:C:167:LEU:HD21	1.80	0.41
1:D:230:PHE:C	1:D:230:PHE:CD1	2.94	0.41
1:D:403:GLU:HG2	1:D:419:LEU:HD22	2.03	0.41
1:A:171:ALA:H	1:A:174:ASP:CG	2.23	0.41
1:B:187:ASP:OD2	3:B:2011:HOH:O	2.21	0.41
1:C:201:ILE:HG23	1:C:201:ILE:HD12	1.92	0.41
1:C:310:MET:HG2	1:C:311:LEU:N	2.36	0.41
1:A:264:ILE:O	1:A:268:ILE:HG13	2.20	0.41
1:A:74:THR:O	1:A:155:ASN:HA	2.21	0.41
1:B:404:LYS:O	1:B:407:HIS:N	2.47	0.41
1:C:218:ILE:HD12	1:C:218:ILE:HG23	1.75	0.41
1:D:395:THR:HG22	1:D:396:ILE:N	2.35	0.41
1:A:40:TYR:HE1	1:A:177:ASP:OD1	2.04	0.40
1:B:378:THR:O	1:B:400:THR:HB	2.21	0.40
1:B:11:GLY:CA	1:B:46:ARG:HH11	2.33	0.40
1:C:243:ALA:O	1:C:247:LEU:HB2	2.21	0.40
1:A:143:ILE:HD12	1:A:143:ILE:HG23	1.91	0.40
1:A:398:ALA:O	1:A:418:GLN:N	2.54	0.40
1:A:35:PHE:CD1	1:A:65:LEU:HD21	2.56	0.40
1:B:101:GLY:HA2	1:B:105:MET:O	2.21	0.40
1:B:434:LYS:HB3	1:B:434:LYS:HE2	1.82	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:452:VAL:CG1	1:B:453:SER:N	2.84	0.40
1:C:321:PRO:CD	1:C:322:LEU:N	2.84	0.40
1:C:436:LEU:HA	1:C:436:LEU:HD23	1.77	0.40
1:B:341:SER:HA	1:B:391:PHE:O	2.21	0.40
1:C:426:THR:CG2	1:C:430:TYR:CE2	3.04	0.40
1:C:70:PRO:HB2	1:C:167:LEU:CD1	2.50	0.40
1:A:266:LYS:HG2	1:A:269:ARG:HH12	1.87	0.40
1:A:240:ILE:O	1:A:274:VAL:HA	2.21	0.40
1:A:321:PRO:CD	1:A:322:LEU:H	2.30	0.40
1:C:170:LEU:HD21	1:C:178:LEU:CD1	2.44	0.40
1:C:273:VAL:CG1	3:C:2025:HOH:O	2.68	0.40
1:C:417:PRO:HD3	3:C:2024:HOH:O	2.21	0.40
1:D:132:MET:N	1:D:147:LEU:HD12	2.36	0.40
1:D:132:MET:CA	1:D:147:LEU:HG	2.47	0.40
1:D:124:LEU:CD1	1:D:161:PRO:CD	2.99	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:208:LYS:NZ	1:D:213:GLU:OE2[4_446]	2.14	0.06

## 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	438/470 (93%)	398 (91%)	32 (7%)	8 (2%)	8 2
1	B	438/470 (93%)	401 (92%)	32 (7%)	5 (1%)	14 4
1	C	438/470 (93%)	398 (91%)	36 (8%)	4 (1%)	17 6
1	D	438/470 (93%)	405 (92%)	28 (6%)	5 (1%)	14 4

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	1752/1880 (93%)	1602 (91%)	128 (7%)	22 (1%)	12 3

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	414	GLY
1	C	313	GLY
1	D	313	GLY
1	D	337	ARG
1	A	88	GLY
1	A	127	ASP
1	A	313	GLY
1	B	162	GLY
1	B	313	GLY
1	B	463	ASN
1	C	126	ASP
1	D	414	GLY
1	A	126	ASP
1	A	463	ASN
1	B	88	GLY
1	C	127	ASP
1	A	337	ARG
1	C	414	GLY
1	D	126	ASP
1	D	453	SER
1	A	209	ALA
1	A	194	ILE

### 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	358/389 (92%)	349 (98%)	9 (2%)	47 34
1	B	358/389 (92%)	352 (98%)	6 (2%)	60 51
1	C	358/389 (92%)	342 (96%)	16 (4%)	27 13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	D	358/389 (92%)	348 (97%)	10 (3%)	43	30
All	All	1432/1556 (92%)	1391 (97%)	41 (3%)	42	29

All (41) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	65	LEU
1	A	95	THR
1	A	145	LYS
1	A	160	LEU
1	A	195	ARG
1	A	379	GLN
1	A	388	ARG
1	A	392	PRO
1	A	431	ARG
1	B	60	THR
1	B	67	THR
1	B	117	LEU
1	B	379	GLN
1	B	388	ARG
1	B	431	ARG
1	C	51	ARG
1	C	65	LEU
1	C	76	LYS
1	C	97	LYS
1	C	105	MET
1	C	108	VAL
1	C	117	LEU
1	C	118	SER
1	C	132	MET
1	C	147	LEU
1	C	152	LEU
1	C	195	ARG
1	C	253	VAL
1	C	379	GLN
1	C	388	ARG
1	C	431	ARG
1	D	64	LEU
1	D	67	THR
1	D	156	LYS
1	D	195	ARG
1	D	292	ASP

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Mol	Chain	Res	Type
1	D	330	THR
1	D	379	GLN
1	D	388	ARG
1	D	431	ARG
1	D	459	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	81	ASN
1	A	216	HIS
1	A	300	ASN
1	B	81	ASN
1	B	300	ASN
1	B	379	GLN
1	C	43	HIS
1	C	81	ASN
1	C	216	HIS
1	C	408	GLN
1	D	43	HIS
1	D	81	ASN
1	D	206	HIS
1	D	379	GLN
1	D	444	HIS

### 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 carbohydrates in this entry.



## 5.6 Ligand geometry [i](#)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	SO4	D	704	-	4,4,4	1.15	0	6,6,6	1.20	1 (16%)
2	SO4	B	702	-	4,4,4	1.14	0	6,6,6	1.20	1 (16%)
2	SO4	C	703	-	4,4,4	1.15	0	6,6,6	1.20	1 (16%)
2	SO4	A	701	-	4,4,4	1.15	0	6,6,6	1.20	1 (16%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	703	SO4	O4-S-O3	-2.05	100.32	109.06
2	D	704	SO4	O4-S-O3	-2.04	100.36	109.06
2	A	701	SO4	O4-S-O3	-2.03	100.40	109.06
2	B	702	SO4	O4-S-O3	-2.03	100.40	109.06

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	704	SO4	1	0
2	B	702	SO4	2	0
2	C	703	SO4	3	0
2	A	701	SO4	1	0

## 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

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	446/470 (94%)	1.06	79 (17%) <b>1</b> <b>1</b>	12, 27, 59, 87	0
1	B	446/470 (94%)	1.13	81 (18%) <b>1</b> <b>0</b>	12, 27, 59, 87	0
1	C	446/470 (94%)	1.36	106 (23%) <b>0</b> <b>0</b>	11, 27, 59, 88	0
1	D	446/470 (94%)	1.12	65 (14%) <b>2</b> <b>1</b>	11, 27, 59, 88	0
All	All	1784/1880 (94%)	1.16	331 (18%) <b>1</b> <b>0</b>	11, 27, 59, 88	0

All (331) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	313	GLY	7.2
1	C	100	ILE	7.1
1	C	99	VAL	6.6
1	C	37	HIS	6.4
1	C	313	GLY	6.2
1	C	102	ASN	6.0
1	C	155	ASN	5.9
1	C	137	ILE	5.9
1	D	314	GLU	5.8
1	C	80	GLY	5.7
1	C	153	GLY	5.7
1	B	12	PRO	5.7
1	C	77	LEU	5.6
1	C	98	SER	5.6
1	D	424	THR	5.5
1	D	1	MET	5.5
1	C	314	GLU	5.4
1	B	1	MET	5.3
1	C	36	SER	5.2
1	B	11	GLY	5.2
1	C	152	LEU	5.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	313	GLY	5.1
1	D	58	GLY	4.9
1	A	171	ALA	4.8
1	B	135	THR	4.8
1	A	458	PRO	4.8
1	A	134	VAL	4.8
1	C	134	VAL	4.8
1	A	424	THR	4.6
1	B	314	GLU	4.6
1	C	81	ASN	4.6
1	C	103	SER	4.6
1	C	119	VAL	4.6
1	C	90	THR	4.5
1	B	107	ALA	4.5
1	C	108	VAL	4.4
1	C	138	GLU	4.4
1	C	143	ILE	4.4
1	D	106	VAL	4.4
1	C	79	GLY	4.3
1	B	457	VAL	4.3
1	C	105	MET	4.3
1	C	141	LYS	4.3
1	B	37	HIS	4.2
1	C	144	CYS	4.2
1	A	313	GLY	4.1
1	C	438	LEU	4.1
1	D	77	LEU	4.1
1	C	35	PHE	4.0
1	B	459	SER	4.0
1	C	135	THR	4.0
1	C	115	THR	4.0
1	D	79	GLY	4.0
1	C	107	ALA	4.0
1	D	249	VAL	3.9
1	A	115	THR	3.8
1	D	83	VAL	3.8
1	A	119	VAL	3.8
1	A	137	ILE	3.7
1	A	314	GLU	3.7
1	C	1	MET	3.7
1	B	458	PRO	3.7
1	C	75	MET	3.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	120	GLY	3.6
1	A	428	ASP	3.6
1	C	142	VAL	3.6
1	B	460	GLY	3.6
1	C	127	ASP	3.5
1	C	162	GLY	3.5
1	C	111	GLU	3.5
1	C	101	GLY	3.5
1	B	57	THR	3.5
1	C	154	GLU	3.4
1	C	312	SER	3.4
1	D	312	SER	3.4
1	B	291	THR	3.4
1	C	40	TYR	3.4
1	C	74	THR	3.4
1	D	55	SER	3.4
1	B	134	VAL	3.4
1	C	95	THR	3.4
1	D	105	MET	3.4
1	C	106	VAL	3.4
1	C	92	THR	3.3
1	D	233	ILE	3.3
1	D	38	GLY	3.3
1	D	443	ALA	3.3
1	A	143	ILE	3.3
1	A	249	VAL	3.3
1	C	109	THR	3.3
1	C	104	GLU	3.3
1	C	289	ARG	3.3
1	C	327	ILE	3.3
1	A	462	THR	3.2
1	D	461	THR	3.2
1	D	85	LEU	3.2
1	A	423	ILE	3.2
1	B	456	LEU	3.2
1	D	147	LEU	3.2
1	C	82	ASP	3.2
1	D	325	VAL	3.2
1	D	80	GLY	3.2
1	D	107	ALA	3.2
1	C	118	SER	3.1
1	A	37	HIS	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	1	MET	3.1
1	C	78	GLU	3.1
1	C	133	GLU	3.1
1	A	454	GLY	3.1
1	B	139	GLY	3.1
1	B	106	VAL	3.1
1	C	94	THR	3.1
1	C	76	LYS	3.1
1	A	379	GLN	3.1
1	C	323	GLU	3.1
1	A	279	MET	3.1
1	C	171	ALA	3.1
1	B	142	VAL	3.0
1	C	83	VAL	3.0
1	B	100	ILE	3.0
1	C	469	VAL	3.0
1	B	98	SER	3.0
1	B	58	GLY	3.0
1	C	41	ALA	3.0
1	D	207	LEU	3.0
1	C	151	ASP	3.0
1	C	93	PHE	2.9
1	A	457	VAL	2.9
1	C	170	LEU	2.9
1	D	139	GLY	2.9
1	D	76	LYS	2.9
1	C	174	ASP	2.9
1	B	401	THR	2.9
1	C	57	THR	2.9
1	A	420	VAL	2.9
1	B	470	LEU	2.9
1	A	107	ALA	2.9
1	B	113	PHE	2.9
1	A	106	VAL	2.8
1	B	303	LEU	2.8
1	A	122	THR	2.8
1	C	156	LYS	2.8
1	B	120	GLY	2.8
1	D	449	VAL	2.8
1	A	135	THR	2.8
1	A	77	LEU	2.8
1	A	85	LEU	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	38	GLY	2.8
1	A	422	GLU	2.8
1	A	41	ALA	2.8
1	C	147	LEU	2.8
1	D	81	ASN	2.8
1	C	39	ASP	2.8
1	D	457	VAL	2.8
1	C	128	GLY	2.7
1	B	103	SER	2.7
1	A	40	TYR	2.7
1	A	139	GLY	2.7
1	B	127	ASP	2.7
1	D	290	PRO	2.7
1	A	456	LEU	2.7
1	B	96	ASP	2.7
1	C	91	PHE	2.7
1	D	455	ALA	2.7
1	A	419	LEU	2.7
1	B	461	THR	2.7
1	A	201	ILE	2.6
1	C	470	LEU	2.6
1	A	95	THR	2.6
1	C	117	LEU	2.6
1	A	114	THR	2.6
1	A	58	GLY	2.6
1	D	448	VAL	2.6
1	A	443	ALA	2.6
1	C	458	PRO	2.6
1	C	461	THR	2.6
1	B	104	GLU	2.6
1	B	379	GLN	2.5
1	D	439	GLN	2.5
1	D	401	THR	2.5
1	C	73	ARG	2.5
1	B	93	PHE	2.5
1	D	460	GLY	2.5
1	B	143	ILE	2.5
1	A	311	LEU	2.5
1	D	438	LEU	2.5
1	D	82	ASP	2.5
1	B	146	VAL	2.5
1	C	88	GLY	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	147	LEU	2.5
1	D	95	THR	2.5
1	C	423	ILE	2.5
1	D	209	ALA	2.5
1	A	146	VAL	2.5
1	B	189	VAL	2.5
1	B	39	ASP	2.5
1	C	424	THR	2.5
1	D	269	ARG	2.5
1	C	45	GLN	2.4
1	D	155	ASN	2.4
1	A	90	THR	2.4
1	B	312	SER	2.4
1	B	20	LEU	2.4
1	B	91	PHE	2.4
1	D	458	PRO	2.4
1	C	460	GLY	2.4
1	B	119	VAL	2.4
1	D	267	CYS	2.4
1	A	312	SER	2.4
1	D	143	ILE	2.4
1	B	129	LEU	2.4
1	C	121	ASN	2.4
1	B	193	PHE	2.4
1	A	138	GLU	2.4
1	A	182	CYS	2.4
1	B	178	LEU	2.4
1	D	178	LEU	2.4
1	C	110	TYR	2.4
1	B	293	ALA	2.4
1	D	279	MET	2.4
1	B	152	LEU	2.3
1	D	117	LEU	2.3
1	A	214	ASN	2.3
1	A	461	THR	2.3
1	C	14	THR	2.3
1	C	67	THR	2.3
1	C	201	ILE	2.3
1	D	354	ILE	2.3
1	A	136	ALA	2.3
1	B	85	LEU	2.3
1	C	85	LEU	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	133	GLU	2.3
1	B	221	ILE	2.3
1	B	233	ILE	2.3
1	C	445	LYS	2.3
1	C	136	ALA	2.3
1	A	33	LEU	2.3
1	C	129	LEU	2.3
1	C	456	LEU	2.3
1	D	33	LEU	2.3
1	D	470	LEU	2.3
1	B	55	SER	2.3
1	B	149	ASN	2.3
1	A	441	GLY	2.3
1	A	446	GLY	2.3
1	D	108	VAL	2.3
1	B	209	ALA	2.3
1	D	324	ALA	2.3
1	B	50	LEU	2.3
1	B	430	TYR	2.2
1	A	120	GLY	2.2
1	D	132	MET	2.2
1	A	142	VAL	2.2
1	B	26	ALA	2.2
1	A	164	SER	2.2
1	B	444	HIS	2.2
1	A	144	CYS	2.2
1	D	141	LYS	2.2
1	A	36	SER	2.2
1	D	41	ALA	2.2
1	A	253	VAL	2.2
1	B	137	ILE	2.2
1	A	162	GLY	2.2
1	B	368	LYS	2.2
1	A	96	ASP	2.2
1	D	138	GLU	2.2
1	B	439	GLN	2.2
1	C	97	LYS	2.2
1	B	153	GLY	2.2
1	D	140	ASN	2.2
1	B	117	LEU	2.2
1	B	431	ARG	2.2
1	D	152	LEU	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	118	SER	2.2
1	B	279	MET	2.2
1	C	459	SER	2.2
1	A	163	VAL	2.2
1	A	431	ARG	2.2
1	A	439	GLN	2.2
1	C	293	ALA	2.2
1	B	370	ASP	2.2
1	A	125	VAL	2.2
1	B	53	VAL	2.2
1	C	457	VAL	2.2
1	A	105	MET	2.1
1	B	19	MET	2.1
1	B	462	THR	2.1
1	D	88	GLY	2.1
1	A	39	ASP	2.1
1	C	221	ILE	2.1
1	A	18	GLU	2.1
1	A	35	PHE	2.1
1	C	370	ASP	2.1
1	D	11	GLY	2.1
1	D	90	THR	2.1
1	C	165	ILE	2.1
1	D	321	PRO	2.1
1	B	101	GLY	2.1
1	A	449	VAL	2.1
1	B	125	VAL	2.1
1	A	149	ASN	2.1
1	A	155	ASN	2.1
1	B	121	ASN	2.1
1	C	321	PRO	2.1
1	A	79	GLY	2.1
1	B	40	TYR	2.1
1	A	340	ASN	2.1
1	B	18	GLU	2.1
1	B	81	ASN	2.1
1	C	140	ASN	2.1
1	C	214	ASN	2.1
1	A	331	ILE	2.1
1	B	331	ILE	2.1
1	A	170	LEU	2.1
1	C	58	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	224	GLN	2.0
1	A	113	PHE	2.0
1	D	70	PRO	2.0
1	B	247	LEU	2.0
1	C	167	LEU	2.0
1	D	100	ILE	2.0
1	D	322	LEU	2.0
1	A	78	GLU	2.0
1	D	67	THR	2.0
1	C	206	HIS	2.0
1	A	10	ILE	2.0
1	A	121	ASN	2.0
1	B	92	THR	2.0
1	B	210	HIS	2.0
1	B	289	ARG	2.0
1	B	138	GLU	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 carbohydrates 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, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	SO4	B	702	5/5	0.85	0.31	18,19,20,22	0
2	SO4	D	704	5/5	0.92	0.25	18,19,20,22	0
2	SO4	A	701	5/5	0.92	0.23	18,19,20,22	0
2	SO4	C	703	5/5	0.93	0.25	18,19,20,22	0

## 6.5 Other polymers

There are no such residues in this entry.