



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 07:01 AM EDT

PDB ID : 1EK2
Title : CRYSTAL STRUCTURE OF MURINE SOLUBLE EPOXIDE HYDROLASE
COMPLEXED WITH CDU INHIBITOR
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Deposited on : 2000-03-06
Resolution : 3.00 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 : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

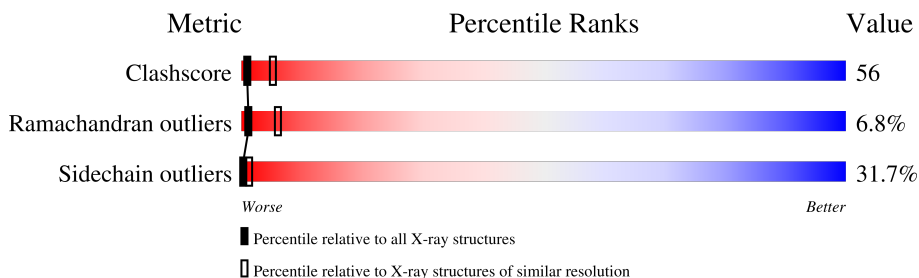
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 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	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)

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 $\leq 5\%$.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	554	 20% 47% 19% • 12%
1	B	554	 23% 51% 23% ••

2 Entry composition [i](#)

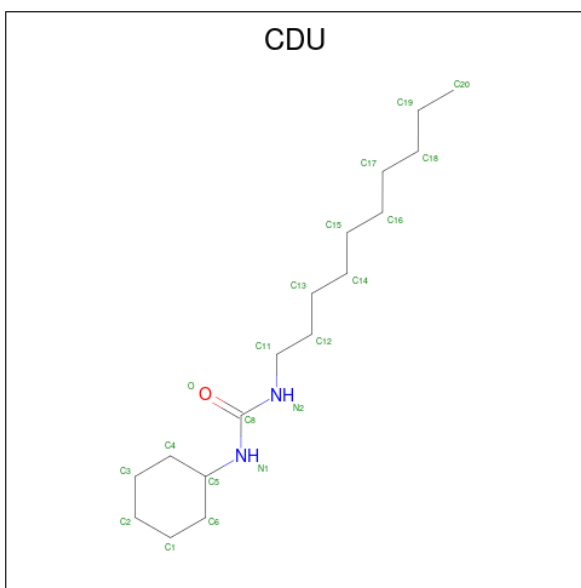
There are 3 unique types of molecules in this entry. The entry contains 8237 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 EPOXIDE HYDROLASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	487	Total 3879	C 2501	N 648	O 701	S 29	61	0	0
1	B	541	Total 4299	C 2766	N 719	O 783	S 31	71	0	0

- Molecule 2 is N-CYCLOHEXYL-N'-DECYLUREA (three-letter code: CDU) (formula: $C_{17}H_{34}N_2O$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	A	1	Total 20	C 17	N 2	O 1	0	0
2	B	1	Total 20	C 17	N 2	O 1	0	0

- Molecule 3 is water.

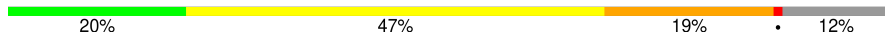
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	10	Total O 10 10	0	0
3	B	9	Total O 9 9	0	0

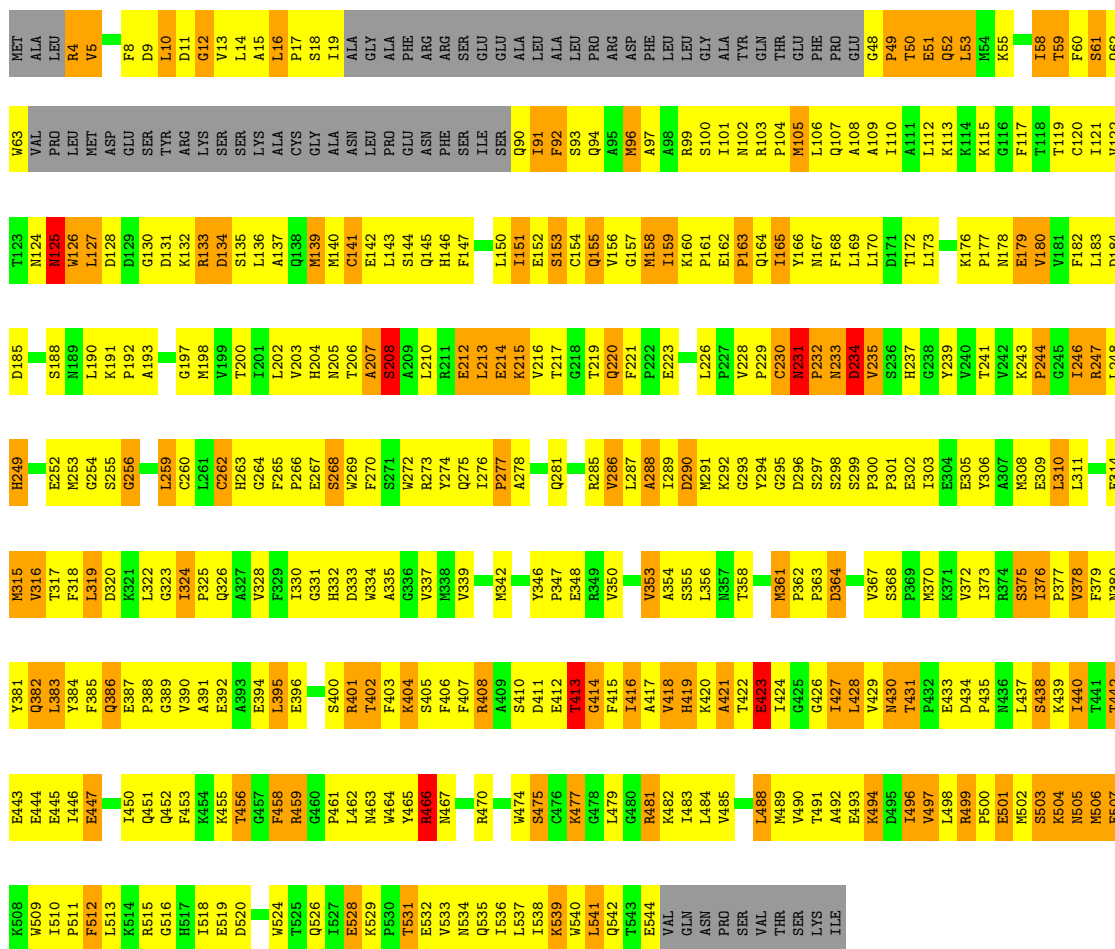
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

Note EDS was not executed.

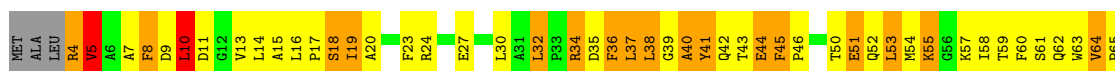
- Molecule 1: EPOXIDE HYDROLASE

Chain A: 



- Molecule 1: EPOXIDE HYDROLASE

Chain B: 



E519	K455	G389	G323	L259	P192	G130	I66
D520	T486	V390	I324	C260	G197	D131	M67
H523	G457	A391	P325	L261	G198	K132	D68
W524	F458	E392	Q326	C262	M198	R133	E69
T525	R459	L395	A327	H263	V199	D134	S70
Q526	G460	E396	V328	G264	T200	S135	Y71
I527	P461	I330	F399	F265	I201	L136	R72
E528	L462	S400	I331	P266	L202	Q138	K73
K529	M463	R401	G331	E267	V203	M139	S74
P530	W464	H332	H332	S268	H204	S75	S75
T531	Y465	T402	D333	W269	N205	K76	K76
E532	R466	F403	W334	F270	T206	A77	A77
V533	M467	K404	A335	S271	A207	C78	C78
N534	R470	S405	G386	W272	S208	L143	L143
Q535	F406	F406	V337	R273	A209	Q145	Q145
I536	F407	F407	M338	Y274	L210	H146	L82
L537	W474	R408	V339	Q275	R211	F147	P83
T538	S475	A409	M342	I276	E212	D148	E84
K539	C476	S410	M342	P277	L213	F149	N85
W540	K477	D411	Y346	A278	E214	L150	F86
L541	G478	E412	P347	Q281	K215	I151	S87
Q542	L479	T413	P347	R285	V216	E152	I88
T543	G480	G414	E348	V286	T217	S153	S89
E544	R481	F415	R349	L287	Q219	C154	Q90
VAL	K482	I416	V350	L287	Q220	Q155	I91
GLN	L483	A417	V353	A288	P221	G157	Q84
ASN	L484	V418	V353	I289	F222	M158	A95
PRO	V485	H419	A354	D290	P221	I159	M96
SER	L488	K420	S355	K291	P225	K160	R99
VAL	M489	A421	L356	M291	L296	P161	S100
THR	V490	T422	M357	K292	P227	E162	I101
SER	T491	E423	T358	C293	V228	P163	M102
LYS	A492	I424	M361	G295	P229	Q164	R103
ILE	E493	G426	P362	D296	P229	Y166	P104
	K494	I427	P363	S297	M231	M167	M105
	D495	L428	D364	S298	P232	F168	L106
	I496	V429	V367	S299	M233	L169	Q107
	V497	M430	S368	P300	D234	L170	A108
	L498	T431	P369	P301	V235	D171	A109
	R499	P432	M370	E302	S236	T172	I110
	P500	E433	M370	I303	H237	L173	A111
	E501	L437	K371	E304	G238	K174	L112
	M502	S438	I372	E305	Y239	A175	K113
	S603	K439	I373	Y306	V240	K176	K114
	K504	K439	H374	A307	T241	P177	K115
	M505	I440	S375	M308	V242	N178	G116
	M506	T441	I376	E309	K243	E179	F117
	E507	T442	P377	L310	P244	V180	T118
	K508	E443	W378	L311	G245	V181	T119
	W509	E444	F379	E314	I246	F182	C120
	I510	E445	N380	M315	R247	L183	I121
	P511	I446	Y381	V316	L248	L184	V122
	F512	E447	Q382	V316	H249	D185	T123
	L513	E447	L383	T317	H249	F186	N124
	K514	I450	Y384	F318	M253	G187	M125
	R515	Q451	F385	L319	G254	S188	W126
	G516	Q452	Q386	L319	G254	M189	W126
	H517	F453	E387	K321	G256	L190	D128
	I518	K454	P388	L322	G256	L190	D128
						K191	D129

4 Data and refinement statistics

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

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	151.90Å 143.00Å 60.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 3.00	Depositor
% Data completeness (in resolution range)	(Not available) (20.00-3.00)	Depositor
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	X-PLOR 3.851	Depositor
R, R_{free}	0.211 , 0.290	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	8237	wwPDB-VP
Average B, all atoms (Å ²)	39.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.43	0/3981	0.64	0/5397
1	B	0.42	0/4413	0.61	0/5984
All	All	0.42	0/8394	0.62	0/11381

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3879	0	3863	431	0
1	B	4299	0	4270	485	0
2	A	20	0	34	5	0
2	B	20	0	34	1	0
3	A	10	0	0	0	0
3	B	9	0	0	1	0
All	All	8237	0	8201	893	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 56.

All (893) 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:B:16:LEU:HG	1:B:17:PRO:HA	1.29	1.10
1:A:484:LEU:HD13	1:B:61:SER:HB2	1.37	1.06
1:A:348:GLU:HA	1:B:133:ARG:HG3	1.37	1.01
1:A:122:VAL:HG22	1:A:151:ILE:HG13	1.44	1.00
1:B:122:VAL:HG22	1:B:151:ILE:HG13	1.46	0.95
1:B:44:GLU:C	1:B:46:PRO:HD3	1.88	0.94
1:B:124:ASN:HA	1:B:153:SER:HB3	1.47	0.94
1:A:124:ASN:HA	1:A:153:SER:HB3	1.48	0.93
1:A:308:MET:HA	1:A:311:LEU:HD12	1.51	0.91
1:A:529:LYS:O	1:A:533:VAL:HG23	1.70	0.91
1:B:529:LYS:O	1:B:533:VAL:HG23	1.70	0.91
1:B:263:HIS:CD2	1:B:291:MET:HG2	2.06	0.91
1:A:430:ASN:HD22	1:A:430:ASN:H	1.16	0.91
1:B:215:LYS:HE3	1:B:221:PHE:H	1.36	0.91
1:A:430:ASN:H	1:A:430:ASN:ND2	1.67	0.90
1:B:308:MET:HA	1:B:311:LEU:HD12	1.52	0.90
1:A:263:HIS:CD2	1:A:291:MET:HG2	2.06	0.89
1:B:58:ILE:HB	1:B:62:GLN:NE2	1.89	0.88
1:A:155:GLN:HA	1:A:155:GLN:OE1	1.74	0.88
1:A:232:PRO:HD2	1:A:234:ASP:H	1.37	0.88
1:A:503:SER:HB2	1:A:515:ARG:HH22	1.39	0.88
1:B:503:SER:HB2	1:B:515:ARG:HH22	1.39	0.88
1:A:496:ILE:HD12	1:A:496:ILE:H	1.39	0.87
1:B:496:ILE:H	1:B:496:ILE:HD12	1.40	0.87
1:B:222:PRO:HG2	1:B:225:PRO:HG3	1.55	0.86
1:A:61:SER:HB2	1:B:484:LEU:HD13	1.58	0.86
1:A:381:TYR:HB2	1:A:427:ILE:HD12	1.58	0.86
1:A:246:ILE:HG23	1:A:298:SER:HB2	1.58	0.84
1:B:259:LEU:HB3	1:B:328:VAL:HB	1.59	0.83
1:B:230:CYS:HB3	1:B:277:PRO:HD3	1.58	0.83
1:A:259:LEU:HB3	1:A:328:VAL:HB	1.59	0.83
1:B:529:LYS:HB3	1:B:532:GLU:HG3	1.60	0.83
1:A:463:ASN:HA	1:A:466:ARG:HG3	1.61	0.82
1:B:529:LYS:HB3	1:B:532:GLU:CG	2.10	0.82
1:A:529:LYS:HB3	1:A:532:GLU:CG	2.10	0.82
1:B:416:ILE:HG23	1:B:427:ILE:HG22	1.62	0.82
1:A:4:ARG:NH1	1:A:179:GLU:HB3	1.94	0.81
1:B:246:ILE:HG23	1:B:298:SER:HB2	1.60	0.81
1:A:529:LYS:HB3	1:A:532:GLU:HG3	1.61	0.80
1:B:83:PRO:HB2	1:B:86:PHE:HB2	1.63	0.80
1:B:463:ASN:HA	1:B:466:ARG:HG3	1.64	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:183:LEU:HD12	1:B:203:VAL:HG22	1.64	0.80
1:A:493:GLU:HG2	1:A:494:LYS:HG2	1.64	0.79
1:A:535:GLN:O	1:A:539:LYS:HD3	1.82	0.79
1:A:339:VAL:HG13	1:A:353:VAL:HG12	1.64	0.79
1:B:535:GLN:HB3	1:B:539:LYS:NZ	1.98	0.79
1:B:9:ASP:HB2	1:B:160:LYS:HZ2	1.48	0.78
1:B:535:GLN:O	1:B:539:LYS:HD3	1.84	0.78
1:B:339:VAL:HG13	1:B:353:VAL:HG12	1.66	0.78
1:B:493:GLU:HG2	1:B:494:LYS:HG2	1.65	0.78
1:A:102:ASN:ND2	1:A:105:MET:HG3	2.00	0.77
1:A:535:GLN:HB3	1:A:539:LYS:NZ	1.99	0.77
1:B:262:CYS:HB3	1:B:291:MET:SD	2.26	0.76
1:B:404:LYS:O	1:B:408:ARG:HD2	1.85	0.76
1:A:382:GLN:NE2	1:A:465:TYR:CE2	2.54	0.76
1:B:72:ARG:HA	1:B:75:SER:HB2	1.67	0.76
1:A:101:ILE:HG21	1:A:106:LEU:HD12	1.68	0.76
1:A:177:PRO:O	1:A:198:MET:HA	1.86	0.76
1:A:230:CYS:O	1:A:231:ASN:HB3	1.84	0.76
1:A:442:THR:HG23	1:A:445:GLU:HB2	1.68	0.75
1:A:531:THR:O	1:A:535:GLN:HG3	1.87	0.75
1:B:380:ASN:HD21	1:B:422:THR:HB	1.50	0.75
1:A:300:PRO:HG2	1:A:305:GLU:HG2	1.68	0.75
1:A:230:CYS:HB3	1:A:277:PRO:HD3	1.68	0.75
1:B:16:LEU:HG	1:B:17:PRO:CA	2.15	0.74
1:B:10:LEU:HD23	1:B:11:ASP:N	2.01	0.74
1:B:442:THR:HG23	1:B:445:GLU:HB2	1.68	0.74
1:A:215:LYS:HG2	1:A:220:GLN:HA	1.68	0.74
1:A:404:LYS:O	1:A:408:ARG:HD2	1.85	0.74
1:A:430:ASN:HD22	1:A:430:ASN:N	1.79	0.74
1:B:300:PRO:HG2	1:B:305:GLU:HG2	1.70	0.74
1:B:120:CYS:HB2	1:B:149:PHE:O	1.88	0.74
1:A:262:CYS:HB3	1:A:291:MET:SD	2.26	0.74
1:B:106:LEU:HD21	1:B:146:HIS:CD2	2.22	0.74
1:B:531:THR:O	1:B:535:GLN:HG3	1.87	0.74
1:B:124:ASN:HA	1:B:153:SER:CB	2.19	0.73
1:B:50:THR:HB	1:B:67:MET:HE2	1.69	0.73
1:B:61:SER:O	1:B:64:VAL:HG23	1.88	0.73
1:B:424:ILE:HD12	1:B:424:ILE:H	1.52	0.73
1:B:162:GLU:O	1:B:165:ILE:HG13	1.88	0.73
1:A:263:HIS:HD2	1:A:291:MET:HG2	1.54	0.73
1:B:39:GLY:HA2	1:B:43:THR:CG2	2.18	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:119:THR:OG1	1:A:147:PHE:HA	1.89	0.72
1:B:429:VAL:HG13	1:B:430:ASN:H	1.53	0.72
1:A:191:LYS:HB3	1:A:192:PRO:HD3	1.72	0.72
1:B:215:LYS:HD3	1:B:220:GLN:HA	1.71	0.72
1:B:35:ASP:HA	1:B:38:LEU:HB2	1.71	0.72
1:B:58:ILE:HB	1:B:62:GLN:HE21	1.55	0.72
1:B:5:VAL:HG12	1:B:118:THR:HB	1.72	0.71
1:B:263:HIS:HD2	1:B:291:MET:HG2	1.53	0.71
1:A:17:PRO:HD2	1:A:99:ARG:HA	1.71	0.71
1:A:364:ASP:HB3	1:A:367:VAL:HB	1.72	0.71
1:B:50:THR:HB	1:B:67:MET:CE	2.19	0.71
1:A:453:PHE:HA	1:A:456:THR:CG2	2.21	0.70
1:A:60:PHE:O	1:A:62:GLN:N	2.23	0.70
1:B:37:LEU:HD13	1:B:37:LEU:H	1.56	0.70
1:A:306:TYR:O	1:A:311:LEU:HD11	1.91	0.70
1:A:4:ARG:HH11	1:A:179:GLU:HB3	1.53	0.70
1:A:60:PHE:C	1:A:62:GLN:H	1.95	0.70
1:A:303:ILE:HA	1:A:463:ASN:HD22	1.57	0.70
1:B:23:PHE:HB3	1:B:38:LEU:HD22	1.73	0.70
1:B:453:PHE:HA	1:B:456:THR:CG2	2.21	0.69
1:B:306:TYR:O	1:B:311:LEU:HD11	1.92	0.69
1:A:13:VAL:CG2	1:A:203:VAL:HG21	2.21	0.69
1:A:424:ILE:HD12	1:A:429:VAL:HB	1.75	0.69
1:B:10:LEU:HD23	1:B:11:ASP:H	1.56	0.69
1:B:177:PRO:O	1:B:198:MET:HA	1.93	0.69
1:B:364:ASP:HB3	1:B:367:VAL:HB	1.73	0.69
1:A:381:TYR:CG	1:A:382:GLN:N	2.59	0.69
1:A:158:MET:HB3	1:A:164:GLN:HE21	1.58	0.69
1:B:104:PRO:O	1:B:107:GLN:HB2	1.93	0.69
1:B:112:LEU:HB3	1:B:117:PHE:HB2	1.75	0.69
1:A:382:GLN:NE2	1:A:465:TYR:HE2	1.91	0.68
1:B:535:GLN:HB3	1:B:539:LYS:HZ1	1.59	0.68
1:A:481:ARG:HB3	1:B:58:ILE:HA	1.76	0.68
1:B:303:ILE:HA	1:B:463:ASN:HD22	1.57	0.68
1:B:27:GLU:CD	1:B:38:LEU:HD23	2.13	0.68
1:B:83:PRO:O	1:B:86:PHE:HB3	1.94	0.68
1:B:381:TYR:CG	1:B:382:GLN:N	2.61	0.67
1:B:8:PHE:CD1	1:B:8:PHE:N	2.61	0.67
1:A:166:TYR:O	1:A:170:LEU:HD12	1.95	0.67
1:B:44:GLU:O	1:B:46:PRO:HD3	1.94	0.67
1:B:231:ASN:HB2	1:B:232:PRO:HA	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:417:ALA:HB2	1:A:430:ASN:OD1	1.95	0.67
1:A:139:MET:O	1:A:143:LEU:HG	1.95	0.67
1:B:39:GLY:HA2	1:B:43:THR:HG23	1.75	0.66
1:A:193:ALA:O	1:A:198:MET:HB2	1.94	0.66
1:A:433:GLU:O	1:A:435:PRO:HD3	1.96	0.66
1:B:43:THR:C	1:B:45:PHE:H	1.98	0.66
1:A:13:VAL:HG22	1:A:203:VAL:HG21	1.77	0.66
1:A:452:GLN:O	1:A:455:LYS:HG2	1.96	0.66
1:B:5:VAL:HG12	1:B:118:THR:CB	2.25	0.66
1:B:392:GLU:HG3	1:B:462:LEU:HD12	1.76	0.66
1:B:4:ARG:O	1:B:5:VAL:HG22	1.95	0.66
1:B:303:ILE:HD13	1:B:463:ASN:ND2	2.11	0.66
1:A:474:TRP:O	1:A:477:LYS:HG3	1.96	0.66
1:A:453:PHE:HA	1:A:456:THR:HG23	1.77	0.66
1:A:233:ASN:C	1:A:235:VAL:H	1.99	0.66
1:A:303:ILE:HD13	1:A:463:ASN:ND2	2.11	0.66
1:A:422:THR:O	1:A:423:GLU:HB2	1.94	0.66
1:B:263:HIS:O	1:B:335:ALA:HB2	1.96	0.66
1:A:392:GLU:HG3	1:A:462:LEU:HD12	1.77	0.65
1:B:51:GLU:O	1:B:55:LYS:HB2	1.96	0.65
1:B:474:TRP:O	1:B:477:LYS:HG3	1.96	0.65
1:B:452:GLN:O	1:B:455:LYS:HG2	1.95	0.65
1:B:453:PHE:HA	1:B:456:THR:HG23	1.77	0.65
1:B:510:ILE:HB	1:B:513:LEU:HD12	1.79	0.65
1:A:184:ASP:O	1:A:202:LEU:HD12	1.97	0.65
1:A:391:ALA:O	1:A:395:LEU:HD12	1.97	0.65
1:B:103:ARG:HB2	1:B:104:PRO:HD3	1.78	0.65
1:B:13:VAL:HG23	1:B:14:LEU:N	2.11	0.65
1:B:416:ILE:HG23	1:B:427:ILE:CG2	2.27	0.65
1:A:159:ILE:HD13	1:A:159:ILE:O	1.96	0.64
1:A:168:PHE:O	1:A:172:THR:HG23	1.97	0.64
1:A:216:VAL:HG23	1:A:217:THR:N	2.12	0.64
1:A:496:ILE:H	1:A:496:ILE:CD1	2.09	0.64
1:A:263:HIS:O	1:A:335:ALA:HB2	1.97	0.64
1:B:5:VAL:HA	1:B:118:THR:O	1.97	0.64
1:B:496:ILE:H	1:B:496:ILE:CD1	2.10	0.64
1:B:230:CYS:SG	1:B:276:ILE:HB	2.38	0.64
1:B:347:PRO:HD2	1:B:348:GLU:OE2	1.98	0.64
1:B:424:ILE:H	1:B:424:ILE:CD1	2.08	0.64
1:A:92:PHE:C	1:A:92:PHE:CD2	2.70	0.64
1:A:216:VAL:HG23	1:A:217:THR:HG23	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:484:LEU:HD13	1:B:61:SER:CB	2.23	0.64
1:A:270:PHE:O	1:A:273:ARG:HB3	1.98	0.64
1:A:348:GLU:HA	1:B:133:ARG:CG	2.20	0.64
1:B:102:ASN:ND2	1:B:105:MET:HG3	2.13	0.64
1:A:452:GLN:O	1:A:456:THR:HG22	1.98	0.64
1:A:107:GLN:HA	1:A:107:GLN:NE2	2.12	0.64
1:A:9:ASP:OD2	1:A:160:LYS:NZ	2.29	0.64
1:A:481:ARG:HB2	1:B:59:THR:HG23	1.79	0.64
1:A:383:LEU:O	1:A:386:GLN:HB2	1.98	0.63
1:B:160:LYS:HA	1:B:165:ILE:CD1	2.28	0.63
1:A:190:LEU:HD22	1:A:200:THR:OG1	1.99	0.63
1:A:362:PRO:HG2	1:A:509:TRP:CE2	2.34	0.63
1:A:394:GLU:OE2	1:A:428:LEU:HB2	1.99	0.63
1:A:419:HIS:CD2	1:A:419:HIS:H	2.16	0.63
1:A:158:MET:HG2	1:A:164:GLN:HG3	1.79	0.63
1:A:137:ALA:HB1	1:B:325:PRO:O	1.99	0.63
1:B:37:LEU:HA	1:B:71:TYR:CE2	2.34	0.63
1:B:183:LEU:CD1	1:B:203:VAL:HG22	2.28	0.63
1:B:391:ALA:O	1:B:395:LEU:HD12	1.97	0.63
1:A:119:THR:HG1	1:A:147:PHE:HA	1.63	0.63
1:A:162:GLU:O	1:A:165:ILE:HG13	1.99	0.63
1:A:165:ILE:HD12	1:A:166:TYR:CE1	2.34	0.63
1:B:362:PRO:HG2	1:B:509:TRP:CE2	2.34	0.63
1:B:503:SER:O	1:B:505:ASN:N	2.32	0.63
1:B:16:LEU:CG	1:B:17:PRO:HA	2.19	0.62
1:B:230:CYS:CB	1:B:277:PRO:HD3	2.27	0.62
1:B:270:PHE:O	1:B:273:ARG:HB3	2.00	0.62
1:B:500:PRO:O	1:B:502:MET:N	2.32	0.62
1:B:13:VAL:HG23	1:B:14:LEU:HG	1.82	0.62
1:B:8:PHE:HB2	1:B:13:VAL:HG21	1.81	0.62
1:B:27:GLU:HG2	1:B:37:LEU:HD21	1.80	0.62
1:B:55:LYS:HG3	1:B:157:GLY:O	1.99	0.62
1:A:212:GLU:C	1:A:214:GLU:H	2.01	0.62
1:A:215:LYS:HG3	1:A:221:PHE:CD2	2.34	0.62
1:A:347:PRO:HD2	1:A:348:GLU:OE2	1.99	0.62
1:A:482:LYS:HG2	1:B:62:GLN:OE1	2.00	0.62
1:A:503:SER:O	1:A:505:ASN:N	2.32	0.62
1:A:58:ILE:HG22	1:A:62:GLN:OE1	1.99	0.62
1:B:452:GLN:O	1:B:456:THR:HG22	1.99	0.62
1:A:510:ILE:HB	1:A:513:LEU:HD12	1.81	0.62
1:B:8:PHE:O	1:B:121:ILE:HG23	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:419:HIS:H	1:B:419:HIS:CD2	2.17	0.62
1:A:408:ARG:HH21	1:A:412:GLU:HG2	1.64	0.62
1:B:383:LEU:O	1:B:386:GLN:HB2	2.00	0.61
1:A:15:ALA:HB1	1:A:99:ARG:HD2	1.82	0.61
1:A:377:PRO:O	1:A:419:HIS:HB3	2.00	0.61
1:A:165:ILE:O	1:A:168:PHE:HB3	1.99	0.61
1:A:124:ASN:HA	1:A:153:SER:CB	2.28	0.61
1:B:187:GLY:HA2	1:B:190:LEU:HD12	1.82	0.61
1:B:372:VAL:HG22	1:B:373:ILE:HD13	1.83	0.61
1:B:276:ILE:HG23	1:B:286:VAL:HG21	1.82	0.61
1:B:408:ARG:HH21	1:B:412:GLU:HG2	1.64	0.61
1:A:15:ALA:HA	1:A:100:SER:O	2.01	0.61
1:A:426:GLY:O	1:A:429:VAL:HG23	2.01	0.61
1:B:231:ASN:HD22	1:B:273:ARG:HB2	1.65	0.61
1:A:215:LYS:HE2	1:A:221:PHE:HD2	1.66	0.60
1:B:377:PRO:O	1:B:419:HIS:HB3	2.01	0.60
1:A:496:ILE:HD12	1:A:496:ILE:N	2.15	0.60
1:B:125:ASN:HB3	1:B:154:CYS:SG	2.41	0.60
1:B:264:GLY:HA3	1:B:333:ASP:HB3	1.83	0.60
1:B:381:TYR:O	1:B:384:TYR:HB3	2.01	0.60
1:A:380:ASN:O	1:A:383:LEU:N	2.34	0.60
1:A:276:ILE:HG23	1:A:286:VAL:HG21	1.82	0.60
1:A:422:THR:O	1:A:423:GLU:CB	2.50	0.60
1:A:92:PHE:HA	1:A:94:GLN:HE22	1.65	0.60
1:A:325:PRO:O	1:B:137:ALA:HB1	2.02	0.60
1:A:380:ASN:HB3	1:A:419:HIS:HA	1.84	0.60
1:A:500:PRO:O	1:A:502:MET:N	2.34	0.60
1:A:206:THR:O	1:A:207:ALA:CB	2.49	0.59
1:A:372:VAL:HG22	1:A:373:ILE:HD13	1.84	0.59
1:B:380:ASN:HB3	1:B:419:HIS:HA	1.83	0.59
1:A:332:HIS:CD2	1:A:333:ASP:HB2	2.37	0.59
1:A:381:TYR:O	1:A:384:TYR:HB3	2.02	0.59
1:A:48:GLY:O	1:A:51:GLU:HB3	2.02	0.59
1:A:223:GLU:CD	1:A:223:GLU:H	2.05	0.59
1:A:264:GLY:HA3	1:A:333:ASP:HB3	1.84	0.59
1:B:378:VAL:HG22	1:B:418:VAL:HG21	1.83	0.59
1:B:72:ARG:O	1:B:75:SER:HB3	2.03	0.59
1:B:380:ASN:O	1:B:383:LEU:N	2.36	0.59
1:A:53:LEU:HA	1:A:58:ILE:HG13	1.84	0.59
1:B:191:LYS:HB3	1:B:192:PRO:HD3	1.84	0.59
1:B:332:HIS:CD2	1:B:333:ASP:HB2	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:5:VAL:HG11	1:B:173:LEU:HD23	1.85	0.59
1:B:27:GLU:OE1	1:B:38:LEU:HD23	2.02	0.59
1:B:143:LEU:HD23	1:B:143:LEU:N	2.16	0.59
1:B:292:LYS:NZ	1:B:305:GLU:HG3	2.17	0.59
1:B:533:VAL:HA	1:B:536:ILE:HD12	1.85	0.59
1:A:381:TYR:HD2	1:A:418:VAL:O	1.86	0.59
1:B:4:ARG:HG2	1:B:179:GLU:HB2	1.84	0.58
1:B:127:LEU:HD12	1:B:127:LEU:H	1.68	0.58
1:B:331:GLY:HA3	1:B:339:VAL:HG21	1.85	0.58
1:B:529:LYS:O	1:B:532:GLU:HG2	2.02	0.58
1:A:533:VAL:HA	1:A:536:ILE:HD12	1.85	0.58
1:A:61:SER:CB	1:B:484:LEU:HD13	2.33	0.58
1:A:378:VAL:O	1:A:378:VAL:HG13	2.02	0.58
1:B:301:PRO:HD2	1:B:302:GLU:OE2	2.04	0.58
1:A:49:PRO:O	1:A:52:GLN:HB2	2.04	0.58
1:A:293:GLY:HA2	1:A:299:SER:HA	1.86	0.58
1:B:36:PHE:CE1	1:B:82:LEU:HD13	2.38	0.58
1:A:134:ASP:N	1:A:134:ASP:OD1	2.35	0.58
1:B:214:GLU:CD	1:B:214:GLU:C	2.62	0.58
1:A:301:PRO:HD2	1:A:302:GLU:OE2	2.04	0.58
1:A:529:LYS:O	1:A:532:GLU:HG2	2.04	0.58
1:B:429:VAL:HG13	1:B:430:ASN:N	2.17	0.58
1:A:229:PRO:HB3	1:A:274:TYR:CE2	2.38	0.58
1:A:292:LYS:NZ	1:A:305:GLU:HG3	2.19	0.57
1:B:64:VAL:HB	1:B:65:PRO:HD3	1.86	0.57
1:A:381:TYR:CD2	1:A:418:VAL:HG23	2.39	0.57
1:B:23:PHE:HB3	1:B:38:LEU:CD2	2.34	0.57
1:B:42:GLN:O	1:B:43:THR:HG23	2.05	0.57
1:B:226:LEU:HD22	1:B:226:LEU:N	2.20	0.57
1:A:134:ASP:O	1:A:137:ALA:HB3	2.04	0.57
1:A:232:PRO:CD	1:A:233:ASN:H	2.17	0.57
1:A:262:CYS:HB2	1:A:335:ALA:HB1	1.87	0.57
1:A:330:ILE:HD13	1:A:537:LEU:HD22	1.87	0.57
1:A:379:PHE:O	1:A:382:GLN:HB3	2.04	0.57
1:B:19:ILE:HD11	1:B:96:MET:HA	1.87	0.57
1:B:159:ILE:O	1:B:165:ILE:HD11	2.04	0.57
1:A:230:CYS:O	1:A:231:ASN:CB	2.52	0.57
1:A:4:ARG:HD3	1:A:179:GLU:HA	1.87	0.57
1:A:185:ASP:HA	1:A:203:VAL:HB	1.86	0.57
1:B:39:GLY:HA2	1:B:43:THR:HG21	1.87	0.57
1:B:125:ASN:O	1:B:154:CYS:HB3	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:381:TYR:HD2	1:B:418:VAL:O	1.87	0.57
1:B:378:VAL:O	1:B:378:VAL:HG13	2.05	0.56
1:B:458:PHE:O	1:B:461:PRO:HD2	2.05	0.56
1:A:424:ILE:O	1:A:429:VAL:HG21	2.05	0.56
1:B:424:ILE:HD12	1:B:424:ILE:N	2.20	0.56
1:A:232:PRO:CG	1:A:233:ASN:H	2.17	0.56
1:A:458:PHE:O	1:A:461:PRO:HD2	2.04	0.56
1:B:293:GLY:HA2	1:B:299:SER:HA	1.86	0.56
1:B:402:THR:O	1:B:406:PHE:HD2	1.88	0.56
1:B:160:LYS:HA	1:B:165:ILE:HD13	1.86	0.56
1:B:213:LEU:HD13	1:B:213:LEU:O	2.06	0.56
1:A:262:CYS:O	1:A:272:TRP:HZ2	1.89	0.56
1:A:331:GLY:HA3	1:A:339:VAL:HG21	1.87	0.56
1:A:378:VAL:O	1:A:379:PHE:HD1	1.89	0.56
1:B:8:PHE:CE1	1:B:147:PHE:HE2	2.24	0.56
1:B:42:GLN:HB2	1:B:186:PHE:CE2	2.41	0.56
1:B:262:CYS:O	1:B:272:TRP:HZ2	1.88	0.56
1:B:263:HIS:NE2	1:B:291:MET:HB2	2.21	0.56
1:B:155:GLN:OE1	1:B:155:GLN:HA	2.06	0.56
1:A:378:VAL:HG22	1:A:418:VAL:HG21	1.86	0.56
1:A:402:THR:O	1:A:406:PHE:HD2	1.89	0.56
1:A:263:HIS:HD1	1:A:267:GLU:C	2.09	0.56
1:B:17:PRO:O	1:B:18:SER:C	2.44	0.56
1:B:330:ILE:HD13	1:B:537:LEU:HD22	1.87	0.56
1:B:379:PHE:O	1:B:382:GLN:HB3	2.05	0.56
1:B:230:CYS:SG	1:B:230:CYS:O	2.64	0.56
1:A:10:LEU:O	1:A:12:GLY:N	2.39	0.55
1:A:8:PHE:O	1:A:121:ILE:HG23	2.07	0.55
1:B:5:VAL:HG12	1:B:118:THR:OG1	2.07	0.55
1:B:262:CYS:HB2	1:B:335:ALA:HB1	1.88	0.55
1:B:381:TYR:CD2	1:B:418:VAL:HG23	2.42	0.55
1:B:13:VAL:CG2	1:B:14:LEU:N	2.68	0.55
1:B:73:LYS:HD2	1:B:74:SER:OG	2.07	0.55
1:A:4:ARG:HD3	1:A:179:GLU:CA	2.35	0.55
1:A:208:SER:O	1:A:212:GLU:HB2	2.06	0.55
1:A:215:LYS:HG3	1:A:221:PHE:CE2	2.42	0.55
1:B:355:SER:C	1:B:356:LEU:HD23	2.27	0.55
1:B:496:ILE:HD12	1:B:496:ILE:N	2.16	0.55
1:A:202:LEU:HD12	1:A:203:VAL:H	1.71	0.55
1:A:230:CYS:HB3	1:A:277:PRO:CD	2.36	0.55
1:B:74:SER:HA	1:B:77:ALA:O	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:170:LEU:HD22	1:A:177:PRO:HD3	1.88	0.55
1:B:14:LEU:HD11	1:B:121:ILE:HG12	1.89	0.55
1:A:4:ARG:HH11	1:A:179:GLU:CB	2.18	0.55
1:A:101:ILE:HG12	1:A:143:LEU:HD21	1.88	0.55
1:A:263:HIS:NE2	1:A:291:MET:HB2	2.21	0.55
1:A:243:LYS:HG2	1:A:244:PRO:HD2	1.88	0.55
1:A:158:MET:HB3	1:A:164:GLN:NE2	2.22	0.54
1:B:7:ALA:HB2	1:B:120:CYS:SG	2.48	0.54
1:B:207:ALA:O	1:B:209:ALA:N	2.40	0.54
1:B:215:LYS:HE3	1:B:221:PHE:N	2.15	0.54
1:A:62:GLN:O	1:A:63:TRP:HB2	2.07	0.54
1:B:410:SER:HB2	1:B:494:LYS:HB2	1.90	0.54
1:B:421:ALA:O	1:B:424:ILE:HD12	2.08	0.54
1:B:120:CYS:HA	1:B:147:PHE:HB3	1.89	0.54
1:A:310:LEU:HD22	1:A:314:GLU:HG3	1.88	0.54
1:B:9:ASP:HB2	1:B:160:LYS:NZ	2.21	0.54
1:B:263:HIS:HD1	1:B:267:GLU:C	2.10	0.54
1:A:122:VAL:HA	1:A:151:ILE:HB	1.90	0.54
1:A:416:ILE:HG23	1:A:427:ILE:HG13	1.89	0.54
1:B:54:MET:HA	1:B:125:ASN:O	2.06	0.54
1:B:88:ILE:HG12	1:B:88:ILE:O	2.07	0.54
1:B:204:HIS:O	1:B:205:ASN:HB3	2.08	0.54
1:B:310:LEU:HD22	1:B:314:GLU:HG3	1.88	0.54
1:B:420:LYS:O	1:B:421:ALA:C	2.46	0.54
1:A:9:ASP:CG	1:A:10:LEU:H	2.11	0.54
1:A:16:LEU:HA	1:A:17:PRO:C	2.28	0.54
1:A:55:LYS:HE2	1:A:159:ILE:HD12	1.90	0.54
1:A:178:ASN:HA	1:A:197:GLY:O	2.08	0.54
1:A:294:TYR:CZ	1:A:461:PRO:HB3	2.42	0.54
1:A:346:TYR:O	1:A:350:VAL:HG23	2.08	0.54
1:A:378:VAL:C	1:A:379:PHE:HD1	2.11	0.54
1:A:381:TYR:CZ	1:A:382:GLN:HB2	2.43	0.54
1:A:524:TRP:CH2	2:A:1100:CDU:HC31	2.43	0.54
1:B:101:ILE:HD12	1:B:101:ILE:H	1.72	0.54
1:A:220:GLN:HG3	1:A:221:PHE:N	2.21	0.54
1:A:524:TRP:O	1:A:528:GLU:HB2	2.08	0.54
1:B:119:THR:O	1:B:120:CYS:HB3	2.08	0.54
1:B:243:LYS:HG2	1:B:244:PRO:HD2	1.88	0.54
1:B:294:TYR:CZ	1:B:461:PRO:HB3	2.43	0.54
1:A:140:MET:HE3	1:A:140:MET:HA	1.90	0.53
1:B:19:ILE:HD11	1:B:96:MET:CA	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:228:VAL:O	1:B:277:PRO:HG2	2.08	0.53
1:B:442:THR:HG22	1:B:445:GLU:OE2	2.08	0.53
1:A:177:PRO:O	1:A:198:MET:HG2	2.09	0.53
1:A:381:TYR:HA	1:A:421:ALA:CB	2.38	0.53
1:A:434:ASP:CG	1:A:434:ASP:O	2.46	0.53
1:B:330:ILE:HG23	1:B:354:ALA:HB3	1.91	0.53
1:A:354:ALA:HB2	1:A:540:TRP:CZ3	2.44	0.53
1:A:442:THR:HG22	1:A:445:GLU:OE2	2.08	0.53
1:B:58:ILE:HG13	1:B:58:ILE:O	2.08	0.53
1:B:208:SER:O	1:B:212:GLU:N	2.41	0.53
1:B:524:TRP:O	1:B:528:GLU:HB2	2.08	0.53
1:A:419:HIS:CD2	1:A:419:HIS:N	2.76	0.53
1:B:126:TRP:C	1:B:126:TRP:CD1	2.82	0.53
1:B:378:VAL:O	1:B:379:PHE:HD1	1.90	0.53
1:B:378:VAL:C	1:B:379:PHE:HD1	2.12	0.53
1:A:92:PHE:HD2	1:A:93:SER:N	2.06	0.53
1:A:136:LEU:O	1:A:140:MET:HG2	2.08	0.53
1:A:233:ASN:C	1:A:233:ASN:HD22	2.12	0.53
1:B:5:VAL:HG21	1:B:173:LEU:HD23	1.89	0.53
1:B:488:LEU:HD22	1:B:489:MET:N	2.24	0.53
1:B:125:ASN:OD1	1:B:152:GLU:HG2	2.09	0.53
1:B:510:ILE:HG22	1:B:513:LEU:HB2	1.90	0.53
1:A:102:ASN:HD21	1:A:105:MET:HG3	1.72	0.53
1:A:355:SER:C	1:A:356:LEU:HD23	2.29	0.53
1:B:42:GLN:HB2	1:B:186:PHE:HE2	1.73	0.53
1:A:115:LYS:HG2	1:A:117:PHE:HE1	1.74	0.52
1:A:510:ILE:HG22	1:A:513:LEU:HB2	1.90	0.52
1:B:354:ALA:HB2	1:B:540:TRP:CZ3	2.44	0.52
1:A:410:SER:HB2	1:A:494:LYS:HB2	1.90	0.52
1:B:108:ALA:O	1:B:112:LEU:HD23	2.08	0.52
1:B:125:ASN:C	1:B:154:CYS:HB3	2.29	0.52
1:A:396:GLU:OE2	1:A:458:PHE:HB2	2.09	0.52
1:A:249:HIS:CD2	1:A:296:ASP:HB2	2.44	0.52
1:A:490:VAL:HA	1:A:516:GLY:O	2.09	0.52
1:A:265:PHE:C	1:A:265:PHE:CD2	2.82	0.52
1:B:396:GLU:OE2	1:B:458:PHE:HB2	2.10	0.52
1:B:537:LEU:O	1:B:540:TRP:HB3	2.09	0.52
1:B:63:TRP:CZ2	1:B:67:MET:HG2	2.44	0.52
1:B:121:ILE:HD11	1:B:147:PHE:CD1	2.45	0.52
1:B:333:ASP:OD1	1:B:523:HIS:NE2	2.41	0.52
1:B:356:LEU:HD23	1:B:356:LEU:N	2.23	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:ASN:ND2	1:A:234:ASP:N	2.58	0.52
1:A:483:ILE:HB	1:A:510:ILE:HG12	1.92	0.52
1:B:121:ILE:HB	1:B:150:LEU:CD1	2.39	0.52
1:B:278:ALA:HA	1:B:281:GLN:NE2	2.25	0.52
1:B:510:ILE:O	1:B:513:LEU:HB2	2.09	0.52
1:A:255:SER:O	1:A:256:GLY:O	2.28	0.52
1:A:510:ILE:O	1:A:513:LEU:HB2	2.10	0.52
1:B:158:MET:HE2	1:B:164:GLN:O	2.10	0.52
1:A:216:VAL:HG23	1:A:217:THR:H	1.73	0.52
1:B:239:TYR:CE2	1:B:249:HIS:HB2	2.45	0.52
1:B:331:GLY:CA	1:B:339:VAL:HG21	2.40	0.52
1:B:433:GLU:HA	1:B:433:GLU:OE1	2.09	0.52
1:A:160:LYS:HA	1:A:165:ILE:CD1	2.40	0.52
1:A:254:GLY:HA2	1:B:323:GLY:O	2.09	0.52
1:B:483:ILE:HB	1:B:510:ILE:HG12	1.92	0.52
1:A:232:PRO:CD	1:A:233:ASN:N	2.73	0.51
1:B:400:SER:O	1:B:404:LYS:HG2	2.10	0.51
1:B:419:HIS:CD2	1:B:419:HIS:N	2.78	0.51
1:A:58:ILE:HA	1:A:62:GLN:OE1	2.10	0.51
1:A:330:ILE:HG23	1:A:354:ALA:HB3	1.92	0.51
1:B:381:TYR:CZ	1:B:382:GLN:HB2	2.45	0.51
1:B:255:SER:O	1:B:256:GLY:O	2.29	0.51
1:B:292:LYS:CE	1:B:305:GLU:HG3	2.40	0.51
1:A:232:PRO:HD2	1:A:233:ASN:H	1.75	0.51
1:A:278:ALA:HA	1:A:281:GLN:NE2	2.25	0.51
1:B:346:TYR:O	1:B:350:VAL:HG23	2.10	0.51
1:B:490:VAL:HA	1:B:516:GLY:O	2.10	0.51
1:A:292:LYS:CE	1:A:305:GLU:HG3	2.41	0.51
1:A:339:VAL:CG1	1:A:353:VAL:HG12	2.37	0.51
1:A:481:ARG:HA	1:B:62:GLN:OE1	2.10	0.51
1:B:228:VAL:HG21	1:B:281:GLN:HE22	1.76	0.51
1:B:265:PHE:C	1:B:265:PHE:CD2	2.84	0.51
1:B:272:TRP:HA	1:B:275:GLN:NE2	2.26	0.51
1:B:339:VAL:CG1	1:B:353:VAL:HG12	2.39	0.51
1:B:407:PHE:HA	1:B:524:TRP:NE1	2.25	0.51
1:B:503:SER:O	1:B:506:MET:N	2.43	0.51
1:A:322:LEU:HB3	1:A:324:ILE:HG12	1.93	0.51
1:A:400:SER:O	1:A:404:LYS:HG2	2.10	0.51
1:A:488:LEU:HD22	1:A:489:MET:N	2.26	0.51
1:A:535:GLN:HB3	1:A:539:LYS:HZ1	1.75	0.51
1:B:40:ALA:HB3	1:B:71:TYR:OH	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:249:HIS:CD2	1:B:296:ASP:HB2	2.46	0.51
1:A:278:ALA:HA	1:A:281:GLN:HE21	1.76	0.51
1:A:538:ILE:HG22	1:A:539:LYS:N	2.26	0.51
1:B:39:GLY:C	1:B:41:TYR:H	2.15	0.51
1:A:401:ARG:O	1:A:402:THR:C	2.49	0.51
1:B:278:ALA:HA	1:B:281:GLN:HE21	1.76	0.51
1:A:168:PHE:C	1:A:168:PHE:CD2	2.85	0.50
1:A:426:GLY:O	1:A:428:LEU:N	2.44	0.50
1:B:322:LEU:HB3	1:B:324:ILE:HG12	1.92	0.50
1:B:230:CYS:SG	1:B:277:PRO:HD3	2.51	0.50
1:B:259:LEU:HD12	1:B:259:LEU:O	2.11	0.50
1:A:115:LYS:HG2	1:A:117:PHE:CE1	2.46	0.50
1:A:430:ASN:O	1:A:431:THR:O	2.29	0.50
1:B:511:PRO:C	1:B:513:LEU:H	2.15	0.50
1:A:8:PHE:CE2	1:A:105:MET:HE1	2.47	0.50
1:A:59:THR:OG1	1:A:60:PHE:N	2.45	0.50
1:A:232:PRO:CD	1:A:234:ASP:HB2	2.42	0.50
1:A:415:PHE:O	1:A:431:THR:HG23	2.11	0.50
1:B:5:VAL:HG23	1:B:180:VAL:HG23	1.94	0.50
1:B:380:ASN:ND2	1:B:422:THR:HB	2.21	0.50
1:A:239:TYR:CE2	1:A:249:HIS:HB2	2.46	0.50
1:A:337:VAL:HG21	2:A:1100:CDU:H142	1.93	0.50
1:A:524:TRP:CZ2	2:A:1100:CDU:HC31	2.46	0.50
1:B:121:ILE:HB	1:B:150:LEU:HD13	1.94	0.50
1:A:535:GLN:HB3	1:A:539:LYS:HZ2	1.76	0.50
1:B:214:GLU:O	1:B:215:LYS:C	2.49	0.50
1:A:203:VAL:O	1:A:205:ASN:N	2.42	0.50
1:A:231:ASN:HB2	1:A:232:PRO:HA	1.94	0.50
1:A:446:ILE:O	1:A:450:ILE:HG13	2.11	0.50
1:A:506:MET:HE2	1:A:513:LEU:HD11	1.94	0.50
1:B:50:THR:HA	1:B:63:TRP:HE1	1.77	0.50
1:B:500:PRO:C	1:B:502:MET:H	2.15	0.50
1:A:375:SER:OG	1:A:376:ILE:N	2.43	0.49
1:B:60:PHE:O	1:B:63:TRP:N	2.45	0.49
1:B:112:LEU:HA	1:B:115:LYS:HB3	1.94	0.49
1:B:331:GLY:N	1:B:339:VAL:HG21	2.27	0.49
1:A:263:HIS:CE1	1:A:268:SER:HA	2.47	0.49
1:A:331:GLY:CA	1:A:339:VAL:HG21	2.42	0.49
1:A:407:PHE:HA	1:A:524:TRP:NE1	2.27	0.49
1:A:494:LYS:HE3	1:A:520:ASP:HA	1.93	0.49
1:A:537:LEU:O	1:A:540:TRP:HB3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:152:GLU:HB2	1:B:155:GLN:HB2	1.94	0.49
1:A:49:PRO:C	1:A:51:GLU:H	2.16	0.49
1:A:252:GLU:HG2	3:B:2010:HOH:O	2.11	0.49
1:B:134:ASP:O	1:B:137:ALA:N	2.45	0.49
1:B:401:ARG:O	1:B:402:THR:C	2.50	0.49
1:A:259:LEU:HD12	1:A:259:LEU:O	2.12	0.49
1:B:34:ARG:O	1:B:35:ASP:HB2	2.11	0.49
1:A:165:ILE:HD12	1:A:166:TYR:CD1	2.47	0.49
1:A:492:ALA:O	1:A:500:PRO:HD3	2.13	0.49
1:B:83:PRO:HB2	1:B:86:PHE:CB	2.40	0.49
1:B:183:LEU:HD13	1:B:201:ILE:HG23	1.94	0.49
1:B:184:ASP:N	1:B:203:VAL:HG23	2.28	0.49
1:A:331:GLY:N	1:A:339:VAL:HG21	2.28	0.49
1:B:207:ALA:O	1:B:208:SER:C	2.51	0.49
1:B:263:HIS:CE1	1:B:268:SER:HA	2.48	0.49
1:A:323:GLY:O	1:B:254:GLY:HA2	2.13	0.49
1:B:43:THR:C	1:B:45:PHE:N	2.65	0.49
1:B:63:TRP:O	1:B:67:MET:HB2	2.13	0.49
1:B:70:SER:O	1:B:73:LYS:HB3	2.13	0.49
1:B:112:LEU:HB3	1:B:117:PHE:CB	2.43	0.49
1:B:492:ALA:O	1:B:500:PRO:HD3	2.12	0.49
1:B:538:ILE:HG22	1:B:539:LYS:N	2.27	0.49
1:B:134:ASP:O	1:B:135:SER:C	2.51	0.49
1:B:494:LYS:HE3	1:B:520:ASP:HA	1.94	0.49
1:A:62:GLN:HE22	1:B:481:ARG:HA	1.78	0.49
1:A:233:ASN:HD22	1:A:234:ASP:N	2.11	0.49
1:A:315:MET:CE	1:A:315:MET:HA	2.43	0.49
1:A:491:THR:HB	1:A:500:PRO:HB3	1.94	0.49
1:B:58:ILE:HB	1:B:62:GLN:HE22	1.75	0.49
1:B:8:PHE:CB	1:B:13:VAL:HG21	2.43	0.48
1:B:183:LEU:HB3	1:B:203:VAL:HG21	1.94	0.48
1:B:447:GLU:HA	1:B:450:ILE:HD12	1.94	0.48
1:A:144:SER:OG	1:A:145:GLN:N	2.46	0.48
1:A:182:PHE:O	1:A:183:LEU:HD22	2.13	0.48
1:A:356:LEU:HD23	1:A:356:LEU:N	2.27	0.48
1:A:484:LEU:HB2	1:B:129:ASP:OD1	2.13	0.48
1:B:162:GLU:N	1:B:165:ILE:HD11	2.28	0.48
1:B:446:ILE:O	1:B:450:ILE:HG13	2.13	0.48
1:A:381:TYR:CD1	1:A:382:GLN:N	2.82	0.48
1:A:458:PHE:C	1:A:461:PRO:HD2	2.34	0.48
1:B:178:ASN:HA	1:B:197:GLY:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:510:ILE:CB	1:B:513:LEU:HD12	2.41	0.48
1:B:531:THR:HG23	1:B:532:GLU:OE2	2.13	0.48
1:A:531:THR:HG23	1:A:532:GLU:OE2	2.14	0.48
1:B:4:ARG:O	1:B:179:GLU:O	2.31	0.48
1:B:491:THR:HB	1:B:500:PRO:HB3	1.94	0.48
1:A:511:PRO:C	1:A:513:LEU:H	2.16	0.48
1:A:272:TRP:HA	1:A:275:GLN:NE2	2.27	0.48
1:A:381:TYR:HB3	1:A:418:VAL:HA	1.96	0.48
1:B:19:ILE:HD11	1:B:96:MET:CB	2.44	0.48
1:B:165:ILE:O	1:B:168:PHE:HB3	2.14	0.48
1:A:380:ASN:O	1:A:381:TYR:C	2.52	0.48
1:A:380:ASN:O	1:A:383:LEU:HB2	2.13	0.48
1:B:381:TYR:HB3	1:B:418:VAL:HA	1.95	0.48
1:A:500:PRO:C	1:A:502:MET:H	2.17	0.48
1:B:88:ILE:O	1:B:88:ILE:CG1	2.62	0.48
1:B:272:TRP:HA	1:B:275:GLN:HE21	1.79	0.48
1:B:458:PHE:C	1:B:461:PRO:HD2	2.33	0.48
1:A:367:VAL:O	1:A:368:SER:C	2.52	0.48
1:A:447:GLU:HA	1:A:450:ILE:HD12	1.95	0.48
1:B:46:PRO:C	1:B:51:GLU:HG3	2.35	0.48
1:B:499:ARG:O	1:B:502:MET:HG3	2.13	0.48
1:A:152:GLU:HB2	1:A:155:GLN:HB2	1.96	0.47
1:A:510:ILE:CB	1:A:513:LEU:HD12	2.43	0.47
1:B:62:GLN:O	1:B:65:PRO:HD2	2.14	0.47
1:B:367:VAL:O	1:B:368:SER:C	2.52	0.47
1:B:158:MET:HB2	1:B:165:ILE:HG23	1.95	0.47
1:B:315:MET:HA	1:B:315:MET:CE	2.43	0.47
1:B:427:ILE:HD12	1:B:428:LEU:HD22	1.97	0.47
1:B:529:LYS:HA	1:B:529:LYS:HD3	1.61	0.47
1:A:55:LYS:HD3	1:A:157:GLY:O	2.15	0.47
1:A:156:VAL:HG23	1:A:156:VAL:O	2.14	0.47
1:A:161:PRO:O	1:A:163:PRO:HD3	2.14	0.47
1:B:53:LEU:HD22	1:B:126:TRP:HB2	1.95	0.47
1:B:334:TRP:HZ2	1:B:465:TYR:CD2	2.31	0.47
1:A:499:ARG:O	1:A:502:MET:HG3	2.13	0.47
1:B:15:ALA:HB1	1:B:99:ARG:HD2	1.96	0.47
1:B:119:THR:OG1	1:B:147:PHE:HA	2.14	0.47
1:A:63:TRP:HE3	1:A:63:TRP:O	1.96	0.47
1:A:414:GLY:O	1:A:431:THR:HG22	2.15	0.47
1:A:442:THR:O	1:A:443:GLU:C	2.53	0.47
1:B:423:GLU:OE2	1:B:423:GLU:HA	2.12	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:334:TRP:HZ2	1:A:465:TYR:CD2	2.32	0.47
1:B:13:VAL:CG2	1:B:14:LEU:H	2.28	0.47
1:B:375:SER:OG	1:B:376:ILE:N	2.44	0.47
1:B:380:ASN:O	1:B:383:LEU:HB2	2.14	0.47
1:A:50:THR:OG1	1:A:53:LEU:HD23	2.14	0.47
1:A:193:ALA:C	1:A:198:MET:HB2	2.34	0.47
1:B:408:ARG:HE	1:B:408:ARG:HB3	1.57	0.47
1:A:233:ASN:O	1:A:235:VAL:N	2.46	0.47
1:B:309:GLU:HG3	1:B:474:TRP:NE1	2.29	0.47
1:B:420:LYS:CB	1:B:424:ILE:HD11	2.45	0.47
1:B:497:VAL:HG22	1:B:498:LEU:N	2.30	0.47
1:A:212:GLU:C	1:A:214:GLU:N	2.66	0.47
1:B:381:TYR:CD1	1:B:382:GLN:N	2.83	0.47
1:A:60:PHE:C	1:A:62:GLN:N	2.62	0.46
1:A:233:ASN:C	1:A:235:VAL:N	2.68	0.46
1:A:481:ARG:HB2	1:B:59:THR:CG2	2.44	0.46
1:A:503:SER:O	1:A:506:MET:N	2.44	0.46
1:B:226:LEU:HD22	1:B:226:LEU:H	1.80	0.46
1:B:5:VAL:CA	1:B:118:THR:O	2.63	0.46
1:B:363:PRO:HG3	1:B:475:SER:HB2	1.96	0.46
1:A:213:LEU:C	1:A:216:VAL:HG22	2.36	0.46
1:A:334:TRP:O	1:A:337:VAL:HB	2.15	0.46
1:A:104:PRO:O	1:A:107:GLN:HB2	2.15	0.46
1:A:182:PHE:C	1:A:183:LEU:HD22	2.36	0.46
1:B:45:PHE:N	1:B:46:PRO:HD3	2.26	0.46
1:B:102:ASN:HD22	1:B:105:MET:HG3	1.78	0.46
1:B:270:PHE:CE1	1:B:273:ARG:HD3	2.50	0.46
1:A:112:LEU:HD12	1:A:117:PHE:CE2	2.50	0.46
1:A:191:LYS:HB3	1:A:192:PRO:CD	2.45	0.46
1:A:309:GLU:HG3	1:A:474:TRP:NE1	2.31	0.46
1:A:140:MET:HA	1:A:140:MET:CE	2.43	0.46
1:A:232:PRO:HD2	1:A:233:ASN:N	2.30	0.46
1:A:430:ASN:ND2	1:A:430:ASN:N	2.39	0.46
1:B:176:LYS:O	1:B:180:VAL:HG12	2.16	0.46
1:A:230:CYS:HB3	1:A:277:PRO:HG3	1.98	0.46
1:B:13:VAL:HG23	1:B:14:LEU:CG	2.45	0.46
1:B:301:PRO:HD2	1:B:302:GLU:CD	2.36	0.46
1:A:102:ASN:O	1:A:105:MET:HB2	2.16	0.46
1:A:263:HIS:HD1	1:A:268:SER:N	2.14	0.46
1:B:4:ARG:HH11	1:B:4:ARG:HB3	1.81	0.46
1:B:222:PRO:HG2	1:B:225:PRO:CG	2.38	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:506:MET:HE2	1:B:513:LEU:HD11	1.96	0.46
1:A:363:PRO:HG3	1:A:475:SER:HB2	1.97	0.46
1:A:442:THR:O	1:A:445:GLU:N	2.48	0.46
1:A:497:VAL:HG22	1:A:498:LEU:N	2.29	0.46
1:A:533:VAL:HG12	1:A:537:LEU:HD12	1.98	0.46
1:B:459:ARG:HG2	1:B:463:ASN:OD1	2.16	0.46
1:A:416:ILE:HG23	1:A:427:ILE:CG1	2.45	0.46
1:A:512:PHE:N	1:A:512:PHE:CD2	2.81	0.46
1:B:231:ASN:CB	1:B:232:PRO:HA	2.46	0.46
1:B:334:TRP:O	1:B:337:VAL:HB	2.15	0.46
1:A:270:PHE:CE1	1:A:273:ARG:HD3	2.51	0.45
1:A:389:GLY:H	1:A:392:GLU:CD	2.20	0.45
1:B:11:ASP:OD2	1:B:99:ARG:NH1	2.49	0.45
1:A:122:VAL:HG22	1:A:151:ILE:CG1	2.30	0.45
1:A:301:PRO:HD2	1:A:302:GLU:CD	2.36	0.45
1:A:9:ASP:CG	1:A:10:LEU:N	2.70	0.45
1:A:272:TRP:HA	1:A:275:GLN:HE21	1.81	0.45
1:A:529:LYS:HD3	1:A:529:LYS:HA	1.62	0.45
1:B:222:PRO:CG	1:B:225:PRO:HG3	2.36	0.45
1:B:230:CYS:HB3	1:B:277:PRO:CD	2.37	0.45
1:B:429:VAL:HG13	1:B:430:ASN:OD1	2.15	0.45
1:A:115:LYS:O	1:A:115:LYS:HG3	2.16	0.45
1:A:413:THR:HB	1:A:414:GLY:H	1.55	0.45
1:B:63:TRP:CE2	1:B:67:MET:HG2	2.50	0.45
1:B:139:MET:O	1:B:143:LEU:HG	2.15	0.45
1:B:339:VAL:O	1:B:342:MET:HB2	2.16	0.45
1:B:380:ASN:O	1:B:381:TYR:C	2.55	0.45
1:B:467:ASN:OD1	1:B:470:ARG:HD3	2.16	0.45
1:A:339:VAL:O	1:A:342:MET:HB2	2.15	0.45
1:B:112:LEU:N	1:B:112:LEU:HD22	2.32	0.45
1:B:161:PRO:O	1:B:163:PRO:HD3	2.16	0.45
1:B:533:VAL:HG12	1:B:537:LEU:HD12	1.97	0.45
1:A:5:VAL:HG21	1:A:173:LEU:HD23	1.98	0.45
1:A:241:THR:OG1	1:A:247:ARG:HB2	2.17	0.45
1:A:424:ILE:O	1:A:429:VAL:HG11	2.16	0.45
1:B:215:LYS:CD	1:B:220:GLN:HA	2.43	0.45
1:A:216:VAL:CG2	1:A:217:THR:N	2.78	0.45
1:B:4:ARG:HB3	1:B:4:ARG:NH1	2.32	0.45
1:B:228:VAL:O	1:B:277:PRO:CG	2.64	0.45
1:B:442:THR:O	1:B:443:GLU:C	2.54	0.45
1:A:506:MET:CE	1:A:513:LEU:HD11	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:10:LEU:HD23	1:A:14:LEU:HB2	1.99	0.45
1:A:160:LYS:HA	1:A:165:ILE:HD13	1.98	0.45
1:B:424:ILE:O	1:B:429:VAL:HG21	2.17	0.45
1:A:119:THR:O	1:A:120:CYS:HB3	2.16	0.44
1:A:130:GLY:N	1:A:133:ARG:HG2	2.32	0.44
1:A:265:PHE:O	2:A:1100:CDU:HC42	2.17	0.44
1:B:30:LEU:O	1:B:32:LEU:HD22	2.17	0.44
1:B:263:HIS:HD1	1:B:268:SER:N	2.16	0.44
1:B:64:VAL:CB	1:B:65:PRO:HD3	2.47	0.44
1:B:82:LEU:HA	1:B:83:PRO:HD2	1.84	0.44
1:B:86:PHE:CE1	1:B:87:SER:O	2.71	0.44
1:B:162:GLU:O	1:B:165:ILE:CG1	2.62	0.44
1:B:172:THR:O	1:B:174:LYS:HG2	2.17	0.44
1:A:106:LEU:O	1:A:110:ILE:HG12	2.18	0.44
1:A:112:LEU:HD12	1:A:117:PHE:CD2	2.53	0.44
1:B:19:ILE:HD11	1:B:96:MET:HB2	1.98	0.44
1:A:287:LEU:O	1:A:289:ILE:HG13	2.16	0.44
1:A:381:TYR:HA	1:A:421:ALA:HB2	1.98	0.44
1:B:363:PRO:HD2	1:B:479:LEU:HD21	1.99	0.44
1:B:382:GLN:O	1:B:385:PHE:HB2	2.17	0.44
1:B:438:SER:C	1:B:440:ILE:H	2.21	0.44
1:B:162:GLU:HA	1:B:163:PRO:HD2	1.86	0.44
1:B:187:GLY:HA2	1:B:190:LEU:HB2	2.00	0.44
1:B:241:THR:OG1	1:B:247:ARG:HB2	2.17	0.44
1:B:403:PHE:C	1:B:405:SER:N	2.69	0.44
1:B:442:THR:O	1:B:445:GLU:N	2.50	0.44
1:A:361:MET:H	1:A:361:MET:HG2	1.70	0.44
1:A:438:SER:C	1:A:440:ILE:H	2.20	0.44
1:B:19:ILE:HG22	1:B:20:ALA:N	2.33	0.44
1:B:512:PHE:CD2	1:B:512:PHE:N	2.83	0.44
1:A:143:LEU:N	1:A:143:LEU:HD23	2.32	0.44
1:A:246:ILE:HA	1:A:298:SER:OG	2.18	0.44
1:B:8:PHE:HB2	1:B:13:VAL:CG2	2.45	0.44
1:B:269:TRP:HD1	1:B:290:ASP:OD2	2.01	0.44
1:A:92:PHE:CA	1:A:94:GLN:HE22	2.31	0.44
1:A:233:ASN:C	1:A:233:ASN:ND2	2.71	0.44
1:A:295:GLY:HA2	1:A:452:GLN:HG3	2.00	0.44
1:A:408:ARG:HE	1:A:408:ARG:HB3	1.57	0.44
1:A:467:ASN:OD1	1:A:470:ARG:HD3	2.18	0.44
1:B:10:LEU:HA	1:B:14:LEU:HG	1.99	0.44
1:B:50:THR:HA	1:B:63:TRP:NE1	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:413:THR:HB	1:B:414:GLY:H	1.56	0.44
1:B:122:VAL:HG22	1:B:151:ILE:CG1	2.30	0.44
1:B:165:ILE:HG13	1:B:165:ILE:H	1.53	0.44
1:B:182:PHE:HD2	1:B:190:LEU:HD23	1.82	0.44
1:B:275:GLN:HG3	1:B:534:ASN:OD1	2.18	0.44
1:A:372:VAL:HG21	2:A:1100:CDU:H202	1.99	0.43
1:B:52:GLN:HB2	1:B:58:ILE:HG12	2.00	0.43
1:B:263:HIS:CD2	1:B:291:MET:H	2.36	0.43
1:B:276:ILE:HD11	1:B:288:ALA:HB2	2.00	0.43
1:B:387:GLU:HA	1:B:388:PRO:HD3	1.83	0.43
1:B:500:PRO:C	1:B:502:MET:N	2.72	0.43
1:A:243:LYS:HB3	1:A:246:ILE:HD12	2.00	0.43
1:A:316:VAL:O	1:A:319:LEU:HB2	2.18	0.43
1:B:96:MET:O	1:B:99:ARG:HG2	2.18	0.43
1:B:106:LEU:HD21	1:B:146:HIS:HD2	1.77	0.43
1:B:292:LYS:HE2	1:B:305:GLU:O	2.18	0.43
1:B:295:GLY:HA2	1:B:452:GLN:HG3	2.00	0.43
1:B:316:VAL:HG12	1:B:317:THR:N	2.32	0.43
1:A:126:TRP:CD1	1:A:126:TRP:C	2.91	0.43
1:B:55:LYS:HB3	1:B:57:LYS:HG3	2.00	0.43
1:B:226:LEU:H	1:B:226:LEU:CD2	2.30	0.43
1:B:273:ARG:NH1	1:B:445:GLU:OE1	2.46	0.43
1:A:10:LEU:C	1:A:12:GLY:N	2.72	0.43
1:A:202:LEU:CD1	1:A:203:VAL:H	2.31	0.43
1:A:212:GLU:O	1:A:215:LYS:HB2	2.19	0.43
1:A:316:VAL:HG12	1:A:317:THR:N	2.33	0.43
1:A:380:ASN:CB	1:A:419:HIS:O	2.66	0.43
1:B:5:VAL:CG2	1:B:180:VAL:HG23	2.48	0.43
1:B:243:LYS:HB3	1:B:246:ILE:HD12	2.01	0.43
1:A:165:ILE:HG13	1:A:165:ILE:H	1.49	0.43
1:A:263:HIS:CD2	1:A:291:MET:H	2.37	0.43
1:A:489:MET:HB3	1:A:513:LEU:HD21	2.01	0.43
1:B:287:LEU:O	1:B:289:ILE:HG13	2.18	0.43
1:B:431:THR:O	1:B:432:PRO:O	2.37	0.43
1:B:226:LEU:N	1:B:226:LEU:CD2	2.82	0.43
1:B:421:ALA:HA	1:B:426:GLY:O	2.19	0.43
1:B:489:MET:HB3	1:B:513:LEU:HD21	2.00	0.43
1:A:269:TRP:HD1	1:A:290:ASP:OD2	2.02	0.43
1:B:10:LEU:CD2	1:B:11:ASP:N	2.78	0.43
1:B:259:LEU:CB	1:B:328:VAL:HB	2.40	0.43
1:B:375:SER:O	1:B:376:ILE:C	2.57	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:ARG:O	1:A:134:ASP:C	2.57	0.43
1:A:142:GLU:HG3	1:A:281:GLN:HG2	2.01	0.43
1:A:403:PHE:C	1:A:405:SER:N	2.69	0.43
1:A:497:VAL:CG2	1:A:498:LEU:N	2.82	0.43
1:B:158:MET:HG2	1:B:164:GLN:HG3	2.01	0.43
1:B:506:MET:CE	1:B:513:LEU:HD11	2.49	0.43
1:A:14:LEU:HD23	1:A:105:MET:HB3	2.00	0.43
1:A:92:PHE:CD2	1:A:93:SER:N	2.87	0.43
1:A:107:GLN:O	1:A:109:ALA:N	2.51	0.43
1:A:162:GLU:HA	1:A:163:PRO:HD2	1.73	0.43
1:A:169:LEU:O	1:A:170:LEU:C	2.56	0.43
1:A:350:VAL:O	1:B:133:ARG:NH1	2.52	0.43
1:A:363:PRO:HD2	1:A:479:LEU:HD21	2.00	0.43
1:B:533:VAL:CA	1:B:536:ILE:HD12	2.48	0.43
1:A:15:ALA:CB	1:A:99:ARG:HD2	2.47	0.43
1:B:103:ARG:H	1:B:103:ARG:HG2	1.63	0.43
1:B:372:VAL:CG2	1:B:373:ILE:HD13	2.49	0.43
1:B:389:GLY:H	1:B:392:GLU:CD	2.22	0.43
1:A:159:ILE:O	1:A:165:ILE:HD11	2.20	0.42
1:B:107:GLN:HG3	1:B:225:PRO:HG2	2.01	0.42
1:B:291:MET:HE3	1:B:291:MET:HA	2.00	0.42
1:B:428:LEU:HD22	1:B:428:LEU:N	2.34	0.42
1:B:112:LEU:CD2	1:B:112:LEU:H	2.32	0.42
1:A:230:CYS:HB3	1:A:277:PRO:CG	2.49	0.42
1:A:372:VAL:HG22	1:A:373:ILE:CD1	2.49	0.42
1:A:387:GLU:HA	1:A:388:PRO:HD3	1.83	0.42
1:B:310:LEU:HD22	1:B:314:GLU:CG	2.49	0.42
1:B:386:GLN:NE2	1:B:386:GLN:CA	2.82	0.42
1:B:428:LEU:HA	1:B:431:THR:CG2	2.50	0.42
1:B:497:VAL:CG2	1:B:498:LEU:N	2.82	0.42
1:B:535:GLN:HB3	1:B:539:LYS:CE	2.48	0.42
1:A:96:MET:HE3	1:A:97:ALA:N	2.34	0.42
1:A:106:LEU:CD2	1:A:110:ILE:HD11	2.49	0.42
1:A:535:GLN:HB3	1:A:539:LYS:CE	2.49	0.42
1:B:128:ASP:O	1:B:133:ARG:HD3	2.19	0.42
1:B:237:HIS:ND1	1:B:249:HIS:HE1	2.17	0.42
1:A:433:GLU:C	1:A:435:PRO:HD3	2.40	0.42
1:B:322:LEU:HB3	1:B:324:ILE:CG1	2.50	0.42
1:B:462:LEU:C	1:B:464:TRP:H	2.23	0.42
1:B:538:ILE:HA	1:B:541:LEU:HD12	2.00	0.42
1:A:12:GLY:HA2	1:A:15:ALA:O	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:107:GLN:HA	1:B:107:GLN:NE2	2.34	0.42
1:B:291:MET:HA	1:B:291:MET:CE	2.50	0.42
1:B:332:HIS:O	1:B:335:ALA:HB3	2.19	0.42
1:A:237:HIS:ND1	1:A:249:HIS:HE1	2.18	0.42
1:B:62:GLN:HE21	1:B:62:GLN:HB2	1.61	0.42
1:B:71:TYR:C	1:B:73:LYS:N	2.73	0.42
1:A:110:ILE:HD13	1:A:146:HIS:HB3	2.01	0.42
1:A:239:TYR:CD2	1:A:249:HIS:HB2	2.55	0.42
1:A:273:ARG:NH1	1:A:445:GLU:OE1	2.47	0.42
1:A:276:ILE:HD11	1:A:288:ALA:HB2	2.01	0.42
1:A:310:LEU:HD22	1:A:314:GLU:CG	2.49	0.42
1:B:239:TYR:CD2	1:B:249:HIS:HB2	2.54	0.42
1:B:246:ILE:HA	1:B:298:SER:OG	2.20	0.42
1:B:405:SER:O	1:B:408:ARG:CG	2.67	0.42
1:B:427:ILE:HD12	1:B:428:LEU:CD2	2.49	0.42
1:A:158:MET:HG2	1:A:164:GLN:CG	2.47	0.42
1:A:291:MET:HA	1:A:291:MET:CE	2.50	0.42
1:B:9:ASP:O	1:B:13:VAL:HG22	2.20	0.42
1:B:27:GLU:OE2	1:B:37:LEU:HD22	2.19	0.42
1:B:36:PHE:HD1	1:B:37:LEU:HD13	1.84	0.42
1:B:54:MET:HB2	1:B:159:ILE:HG21	2.00	0.42
1:B:228:VAL:O	1:B:228:VAL:HG23	2.20	0.42
1:A:59:THR:CG2	1:B:481:ARG:HB2	2.50	0.42
1:A:241:THR:HA	1:A:247:ARG:HA	2.00	0.42
1:A:275:GLN:HG3	1:A:534:ASN:OD1	2.20	0.42
1:A:362:PRO:HG2	1:A:509:TRP:NE1	2.35	0.42
1:A:375:SER:O	1:A:376:ILE:C	2.57	0.42
1:A:405:SER:O	1:A:408:ARG:CG	2.67	0.42
1:A:538:ILE:HA	1:A:541:LEU:HD12	2.00	0.42
1:B:112:LEU:HD12	1:B:117:PHE:CD2	2.55	0.42
1:B:440:ILE:HA	1:B:440:ILE:HD12	1.74	0.42
1:A:184:ASP:O	1:A:203:VAL:HG23	2.20	0.41
1:B:37:LEU:HA	1:B:71:TYR:HE2	1.81	0.41
1:A:482:LYS:CG	1:B:62:GLN:OE1	2.68	0.41
1:B:112:LEU:HD22	1:B:112:LEU:H	1.85	0.41
1:B:159:ILE:O	1:B:165:ILE:CD1	2.68	0.41
1:B:170:LEU:HD12	1:B:170:LEU:H	1.85	0.41
1:B:390:VAL:O	1:B:391:ALA:C	2.58	0.41
1:A:291:MET:HA	1:A:291:MET:HE3	2.01	0.41
1:B:362:PRO:HG2	1:B:509:TRP:NE1	2.35	0.41
1:B:380:ASN:CB	1:B:419:HIS:O	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:125:ASN:OD1	1:A:152:GLU:HB3	2.20	0.41
1:A:176:LYS:O	1:A:180:VAL:HG12	2.20	0.41
1:A:232:PRO:HD2	1:A:234:ASP:HB2	2.03	0.41
1:A:347:PRO:O	1:B:133:ARG:HD2	2.20	0.41
1:A:461:PRO:O	1:A:464:TRP:HB2	2.20	0.41
1:B:24:ARG:HD3	1:B:24:ARG:HA	1.82	0.41
1:B:401:ARG:O	1:B:403:PHE:N	2.54	0.41
1:B:504:LYS:HE2	1:B:505:ASN:HD21	1.85	0.41
1:A:136:LEU:HD23	1:B:348:GLU:HG2	2.02	0.41
1:A:504:LYS:HE2	1:A:505:ASN:HD21	1.86	0.41
1:B:14:LEU:O	1:B:102:ASN:N	2.51	0.41
1:B:119:THR:HB	1:B:147:PHE:CD2	2.55	0.41
1:B:241:THR:HA	1:B:247:ARG:HA	2.01	0.41
1:B:385:PHE:HA	1:B:391:ALA:HB2	2.03	0.41
1:A:48:GLY:C	1:A:51:GLU:HB3	2.41	0.41
1:A:50:THR:O	1:A:50:THR:HG23	2.20	0.41
1:A:372:VAL:CG2	1:A:373:ILE:HD13	2.49	0.41
1:B:276:ILE:HD11	1:B:288:ALA:CB	2.50	0.41
1:B:316:VAL:O	1:B:319:LEU:HB2	2.21	0.41
1:A:356:LEU:O	1:A:358:THR:N	2.51	0.41
1:A:401:ARG:O	1:A:403:PHE:N	2.53	0.41
1:A:459:ARG:HG2	1:A:463:ASN:OD1	2.19	0.41
1:B:208:SER:O	1:B:209:ALA:C	2.58	0.41
1:B:256:GLY:N	1:B:285:ARG:HB2	2.36	0.41
1:B:422:THR:HG22	1:B:423:GLU:N	2.36	0.41
1:A:256:GLY:N	1:A:285:ARG:HB2	2.36	0.41
1:B:13:VAL:HG23	1:B:14:LEU:CD2	2.50	0.41
1:B:68:ASP:O	1:B:71:TYR:HB2	2.21	0.41
1:B:120:CYS:N	1:B:147:PHE:HD2	2.18	0.41
1:B:263:HIS:CD2	1:B:263:HIS:H	2.39	0.41
1:B:356:LEU:O	1:B:358:THR:N	2.50	0.41
1:B:372:VAL:HG22	1:B:373:ILE:CD1	2.49	0.41
1:A:141:CYS:O	1:A:141:CYS:SG	2.78	0.41
1:A:259:LEU:CB	1:A:328:VAL:HB	2.40	0.41
1:A:265:PHE:CE1	1:A:462:LEU:HD23	2.56	0.41
1:A:420:LYS:O	1:A:421:ALA:C	2.59	0.41
1:A:462:LEU:C	1:A:464:TRP:N	2.74	0.41
1:A:529:LYS:HB3	1:A:532:GLU:HG2	2.01	0.41
1:B:183:LEU:HD13	1:B:201:ILE:CG2	2.51	0.41
1:B:232:PRO:HB2	1:B:233:ASN:H	1.73	0.41
1:B:314:GLU:O	1:B:315:MET:C	2.59	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:361:MET:CE	2:B:1200:CDU:H151	2.51	0.41
1:B:417:ALA:H	1:B:427:ILE:HG22	1.86	0.41
1:A:105:MET:HB3	1:A:105:MET:HE2	1.94	0.40
1:A:202:LEU:HD12	1:A:203:VAL:N	2.36	0.40
1:A:292:LYS:HE2	1:A:305:GLU:O	2.20	0.40
1:A:348:GLU:HG2	1:B:136:LEU:HD23	2.03	0.40
1:B:77:ALA:C	1:B:78:CYS:SG	2.99	0.40
1:B:169:LEU:HD23	1:B:170:LEU:HD12	2.02	0.40
1:A:127:LEU:HG	1:A:154:CYS:SG	2.61	0.40
1:A:385:PHE:HA	1:A:391:ALA:HB2	2.04	0.40
1:A:206:THR:O	1:A:207:ALA:HB3	2.22	0.40
1:A:380:ASN:OD1	1:A:419:HIS:O	2.40	0.40
1:A:407:PHE:C	1:A:408:ARG:HG2	2.40	0.40
1:A:426:GLY:C	1:A:428:LEU:H	2.24	0.40
1:A:507:GLU:H	1:A:507:GLU:HG2	1.49	0.40
1:A:532:GLU:O	1:A:533:VAL:C	2.60	0.40
1:B:126:TRP:CD1	1:B:126:TRP:O	2.74	0.40
1:B:151:ILE:H	1:B:151:ILE:HG12	1.72	0.40
1:B:228:VAL:HA	1:B:229:PRO:HD3	1.86	0.40
1:B:265:PHE:CE1	1:B:462:LEU:HD23	2.56	0.40
1:A:216:VAL:CG2	1:A:217:THR:H	2.34	0.40
1:A:276:ILE:HD11	1:A:288:ALA:CB	2.51	0.40
1:A:322:LEU:HB3	1:A:324:ILE:CG1	2.51	0.40
1:A:386:GLN:NE2	1:A:386:GLN:CA	2.83	0.40
1:B:8:PHE:HE1	1:B:147:PHE:HE2	1.66	0.40
1:B:9:ASP:O	1:B:10:LEU:C	2.60	0.40
1:B:378:VAL:HG22	1:B:418:VAL:CG2	2.50	0.40
1:B:462:LEU:C	1:B:464:TRP:N	2.74	0.40
1:A:215:LYS:HG3	1:A:221:PHE:HD2	1.84	0.40
1:A:462:LEU:C	1:A:464:TRP:H	2.24	0.40
1:B:82:LEU:O	1:B:83:PRO:C	2.60	0.40
1:B:306:TYR:CD1	1:B:306:TYR:N	2.90	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	481/554 (87%)	350 (73%)	98 (20%)	33 (7%)	1	6
1	B	539/554 (97%)	393 (73%)	110 (20%)	36 (7%)	1	6
All	All	1020/1108 (92%)	743 (73%)	208 (20%)	69 (7%)	1	6

All (69) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	18	SER
1	A	61	SER
1	A	207	ALA
1	A	231	ASN
1	A	232	PRO
1	A	244	PRO
1	A	256	GLY
1	A	421	ALA
1	A	423	GLU
1	A	501	GLU
1	A	504	LYS
1	B	5	VAL
1	B	208	SER
1	B	232	PRO
1	B	244	PRO
1	B	256	GLY
1	B	421	ALA
1	B	501	GLU
1	B	504	LYS
1	A	11	ASP
1	A	208	SER
1	A	234	ASP
1	A	390	VAL
1	A	414	GLY
1	A	427	ILE
1	B	10	LEU
1	B	75	SER
1	B	89	SER
1	B	203	VAL
1	B	206	THR
1	B	207	ALA

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Mol	Chain	Res	Type
1	B	227	PRO
1	B	390	VAL
1	B	414	GLY
1	B	425	GLY
1	A	125	ASN
1	A	163	PRO
1	A	413	THR
1	A	431	THR
1	A	466	ARG
1	A	496	ILE
1	B	83	PRO
1	B	413	THR
1	B	432	PRO
1	B	466	ARG
1	B	496	ILE
1	A	49	PRO
1	A	108	ALA
1	A	210	LEU
1	A	266	PRO
1	A	288	ALA
1	B	40	ALA
1	B	205	ASN
1	B	216	VAL
1	B	266	PRO
1	A	318	PHE
1	A	402	THR
1	B	36	PHE
1	B	41	TYR
1	B	90	GLN
1	B	201	ILE
1	B	288	ALA
1	B	44	GLU
1	A	12	GLY
1	B	163	PRO
1	A	91	ILE
1	B	277	PRO
1	A	277	PRO
1	B	429	VAL

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	424/480 (88%)	293 (69%)	131 (31%)	0	1
1	B	468/480 (98%)	316 (68%)	152 (32%)	0	1
All	All	892/960 (93%)	609 (68%)	283 (32%)	0	1

All (283) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	ARG
1	A	5	VAL
1	A	10	LEU
1	A	16	LEU
1	A	19	ILE
1	A	50	THR
1	A	51	GLU
1	A	52	GLN
1	A	53	LEU
1	A	58	ILE
1	A	59	THR
1	A	90	GLN
1	A	91	ILE
1	A	92	PHE
1	A	96	MET
1	A	103	ARG
1	A	105	MET
1	A	113	LYS
1	A	125	ASN
1	A	126	TRP
1	A	127	LEU
1	A	128	ASP
1	A	131	ASP
1	A	132	LYS
1	A	133	ARG
1	A	134	ASP
1	A	135	SER

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Mol	Chain	Res	Type
1	A	139	MET
1	A	141	CYS
1	A	150	LEU
1	A	151	ILE
1	A	153	SER
1	A	155	GLN
1	A	158	MET
1	A	159	ILE
1	A	165	ILE
1	A	167	ASN
1	A	179	GLU
1	A	180	VAL
1	A	188	SER
1	A	204	HIS
1	A	208	SER
1	A	212	GLU
1	A	213	LEU
1	A	214	GLU
1	A	215	LYS
1	A	219	THR
1	A	220	GLN
1	A	226	LEU
1	A	228	VAL
1	A	230	CYS
1	A	231	ASN
1	A	233	ASN
1	A	234	ASP
1	A	235	VAL
1	A	246	ILE
1	A	247	ARG
1	A	248	LEU
1	A	249	HIS
1	A	253	MET
1	A	259	LEU
1	A	260	CYS
1	A	262	CYS
1	A	268	SER
1	A	286	VAL
1	A	290	ASP
1	A	297	SER
1	A	310	LEU
1	A	315	MET

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Mol	Chain	Res	Type
1	A	316	VAL
1	A	319	LEU
1	A	320	ASP
1	A	324	ILE
1	A	326	GLN
1	A	353	VAL
1	A	361	MET
1	A	364	ASP
1	A	370	MET
1	A	375	SER
1	A	376	ILE
1	A	378	VAL
1	A	382	GLN
1	A	383	LEU
1	A	386	GLN
1	A	395	LEU
1	A	401	ARG
1	A	404	LYS
1	A	408	ARG
1	A	411	ASP
1	A	413	THR
1	A	416	ILE
1	A	418	VAL
1	A	419	HIS
1	A	423	GLU
1	A	428	LEU
1	A	430	ASN
1	A	437	LEU
1	A	438	SER
1	A	439	LYS
1	A	440	ILE
1	A	442	THR
1	A	444	GLU
1	A	447	GLU
1	A	451	GLN
1	A	456	THR
1	A	458	PHE
1	A	459	ARG
1	A	466	ARG
1	A	475	SER
1	A	477	LYS
1	A	481	ARG

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Mol	Chain	Res	Type
1	A	485	VAL
1	A	488	LEU
1	A	494	LYS
1	A	497	VAL
1	A	499	ARG
1	A	501	GLU
1	A	503	SER
1	A	505	ASN
1	A	506	MET
1	A	507	GLU
1	A	512	PHE
1	A	518	ILE
1	A	519	GLU
1	A	526	GLN
1	A	528	GLU
1	A	531	THR
1	A	539	LYS
1	A	541	LEU
1	A	542	GLN
1	A	544	GLU
1	B	4	ARG
1	B	5	VAL
1	B	8	PHE
1	B	10	LEU
1	B	18	SER
1	B	19	ILE
1	B	32	LEU
1	B	34	ARG
1	B	37	LEU
1	B	38	LEU
1	B	45	PHE
1	B	51	GLU
1	B	53	LEU
1	B	55	LYS
1	B	64	VAL
1	B	67	MET
1	B	69	GLU
1	B	71	TYR
1	B	72	ARG
1	B	73	LYS
1	B	74	SER
1	B	76	LYS

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Mol	Chain	Res	Type
1	B	78	CYS
1	B	84	GLU
1	B	85	ASN
1	B	91	ILE
1	B	94	GLN
1	B	96	MET
1	B	103	ARG
1	B	105	MET
1	B	106	LEU
1	B	110	ILE
1	B	113	LYS
1	B	114	LYS
1	B	118	THR
1	B	125	ASN
1	B	131	ASP
1	B	132	LYS
1	B	133	ARG
1	B	134	ASP
1	B	135	SER
1	B	136	LEU
1	B	139	MET
1	B	144	SER
1	B	150	LEU
1	B	151	ILE
1	B	154	CYS
1	B	158	MET
1	B	159	ILE
1	B	165	ILE
1	B	167	ASN
1	B	169	LEU
1	B	179	GLU
1	B	181	VAL
1	B	188	SER
1	B	200	THR
1	B	201	ILE
1	B	202	LEU
1	B	204	HIS
1	B	208	SER
1	B	210	LEU
1	B	211	ARG
1	B	213	LEU
1	B	214	GLU

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Mol	Chain	Res	Type
1	B	216	VAL
1	B	217	THR
1	B	219	THR
1	B	220	GLN
1	B	226	LEU
1	B	231	ASN
1	B	233	ASN
1	B	234	ASP
1	B	235	VAL
1	B	246	ILE
1	B	247	ARG
1	B	248	LEU
1	B	249	HIS
1	B	253	MET
1	B	259	LEU
1	B	260	CYS
1	B	262	CYS
1	B	268	SER
1	B	286	VAL
1	B	290	ASP
1	B	297	SER
1	B	310	LEU
1	B	315	MET
1	B	316	VAL
1	B	319	LEU
1	B	320	ASP
1	B	324	ILE
1	B	326	GLN
1	B	353	VAL
1	B	361	MET
1	B	364	ASP
1	B	370	MET
1	B	375	SER
1	B	376	ILE
1	B	378	VAL
1	B	383	LEU
1	B	386	GLN
1	B	395	LEU
1	B	401	ARG
1	B	404	LYS
1	B	408	ARG
1	B	411	ASP

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Mol	Chain	Res	Type
1	B	413	THR
1	B	416	ILE
1	B	418	VAL
1	B	419	HIS
1	B	422	THR
1	B	423	GLU
1	B	424	ILE
1	B	427	ILE
1	B	430	ASN
1	B	433	GLU
1	B	437	LEU
1	B	438	SER
1	B	439	LYS
1	B	440	ILE
1	B	442	THR
1	B	444	GLU
1	B	447	GLU
1	B	451	GLN
1	B	456	THR
1	B	458	PHE
1	B	459	ARG
1	B	466	ARG
1	B	475	SER
1	B	477	LYS
1	B	481	ARG
1	B	482	LYS
1	B	485	VAL
1	B	488	LEU
1	B	494	LYS
1	B	497	VAL
1	B	499	ARG
1	B	501	GLU
1	B	503	SER
1	B	505	ASN
1	B	506	MET
1	B	507	GLU
1	B	512	PHE
1	B	518	ILE
1	B	519	GLU
1	B	526	GLN
1	B	528	GLU
1	B	531	THR

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Mol	Chain	Res	Type
1	B	539	LYS
1	B	541	LEU
1	B	542	GLN
1	B	544	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	107	GLN
1	A	145	GLN
1	A	220	GLN
1	A	231	ASN
1	A	233	ASN
1	A	249	HIS
1	A	275	GLN
1	A	281	GLN
1	A	332	HIS
1	A	341	ASN
1	A	382	GLN
1	A	386	GLN
1	A	419	HIS
1	A	430	ASN
1	A	517	HIS
1	B	85	ASN
1	B	90	GLN
1	B	107	GLN
1	B	146	HIS
1	B	178	ASN
1	B	205	ASN
1	B	231	ASN
1	B	249	HIS
1	B	275	GLN
1	B	281	GLN
1	B	332	HIS
1	B	382	GLN
1	B	386	GLN
1	B	419	HIS
1	B	463	ASN
1	B	517	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 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	CDU	B	1200	-	20,20,20	1.88	8 (40%)	22,22,22	2.01	4 (18%)
2	CDU	A	1100	-	20,20,20	1.88	8 (40%)	22,22,22	2.00	4 (18%)

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	CDU	B	1200	-	-	4/15/23/23	0/1/1/1
2	CDU	A	1100	-	-	2/15/23/23	0/1/1/1

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1200	CDU	C6-C5	3.29	1.59	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1100	CDU	C5-N1	3.27	1.53	1.46
2	A	1100	CDU	C6-C5	3.25	1.59	1.52
2	B	1200	CDU	C5-N1	3.23	1.53	1.46
2	A	1100	CDU	C4-C5	2.93	1.58	1.52
2	B	1200	CDU	C4-C5	2.90	1.58	1.52
2	B	1200	CDU	C3-C4	2.82	1.60	1.53
2	A	1100	CDU	C3-C4	2.78	1.60	1.53
2	A	1100	CDU	C1-C6	2.63	1.59	1.53
2	B	1200	CDU	C1-C6	2.63	1.59	1.53
2	B	1200	CDU	C2-C1	2.21	1.59	1.51
2	A	1100	CDU	C2-C1	2.20	1.59	1.51
2	A	1100	CDU	C3-C2	2.15	1.59	1.51
2	B	1200	CDU	C3-C2	2.14	1.59	1.51
2	B	1200	CDU	C11-N2	2.04	1.50	1.46
2	A	1100	CDU	C11-N2	2.03	1.50	1.46

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1200	CDU	N2-C8-N1	5.42	129.38	115.82
2	A	1100	CDU	N2-C8-N1	5.39	129.31	115.82
2	A	1100	CDU	O-C8-N2	-4.44	114.84	122.47
2	B	1200	CDU	O-C8-N2	-4.44	114.84	122.47
2	B	1200	CDU	C5-N1-C8	4.18	131.92	122.92
2	A	1100	CDU	C5-N1-C8	4.15	131.85	122.92
2	B	1200	CDU	O-C8-N1	-3.23	115.77	122.67
2	A	1100	CDU	O-C8-N1	-3.20	115.84	122.67

There are no chirality outliers.

All (6) torsion outliers are listed below:

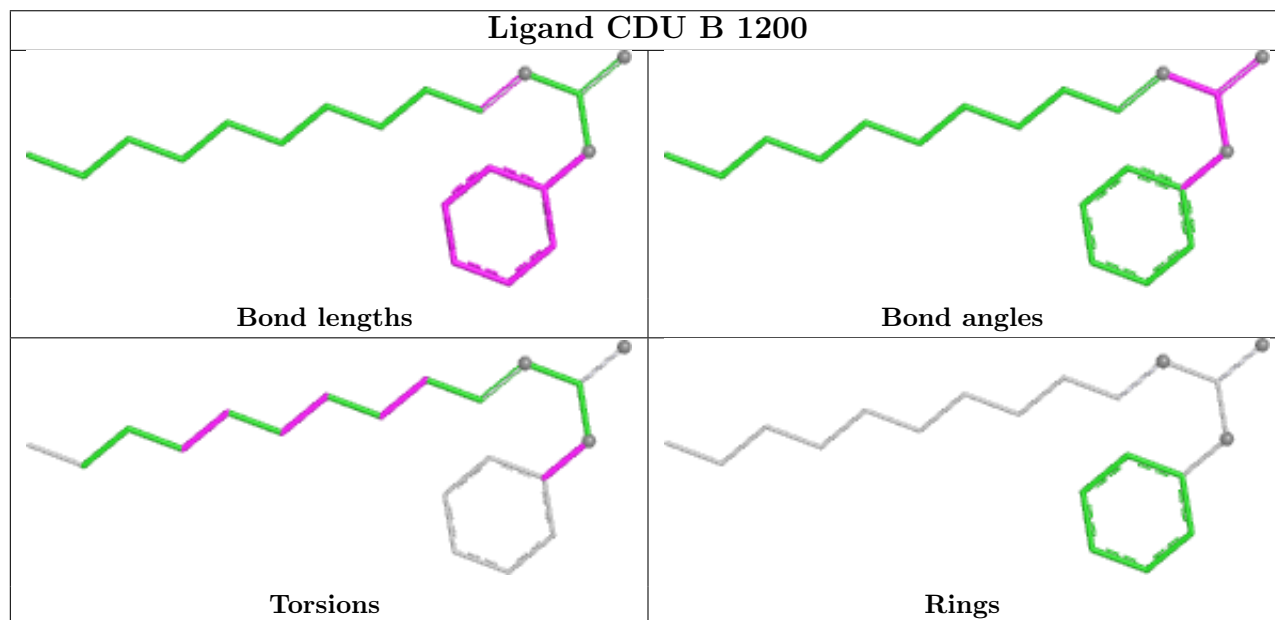
Mol	Chain	Res	Type	Atoms
2	A	1100	CDU	C4-C5-N1-C8
2	B	1200	CDU	C4-C5-N1-C8
2	B	1200	CDU	C15-C16-C17-C18
2	B	1200	CDU	C11-C12-C13-C14
2	B	1200	CDU	C13-C14-C15-C16
2	A	1100	CDU	C13-C14-C15-C16

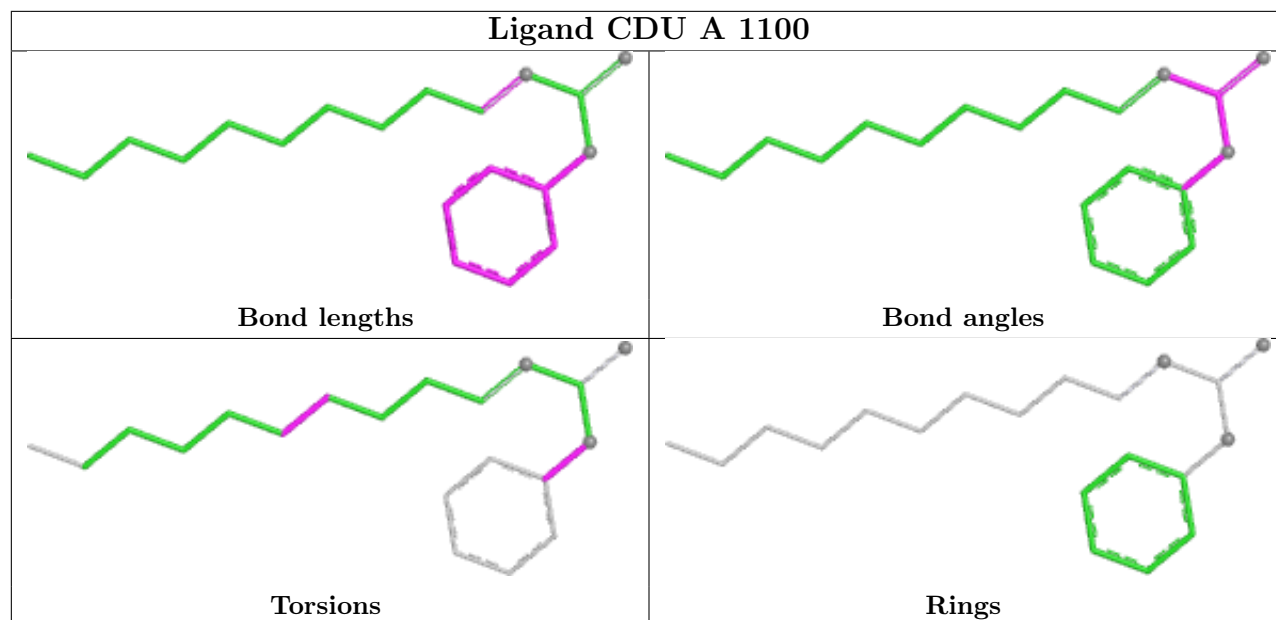
There are no ring outliers.

2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1200	CDU	1	0
2	A	1100	CDU	5	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

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

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

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.