



# Full wwPDB X-ray Structure Validation Report ⓘ

Aug 2, 2023 – 09:11 PM EDT

PDB ID : 1F51  
Title : A TRANSIENT INTERACTION BETWEEN TWO PHOSPHORELAY PROTEINS TRAPPED IN A CRYSTAL LATTICE REVEALS THE MECHANISM OF MOLECULAR RECOGNITION AND PHOSPHOTRANSFER IN SINGAL TRANSDUCTION  
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Deposited on : 2000-06-11  
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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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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  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
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) : 2.34

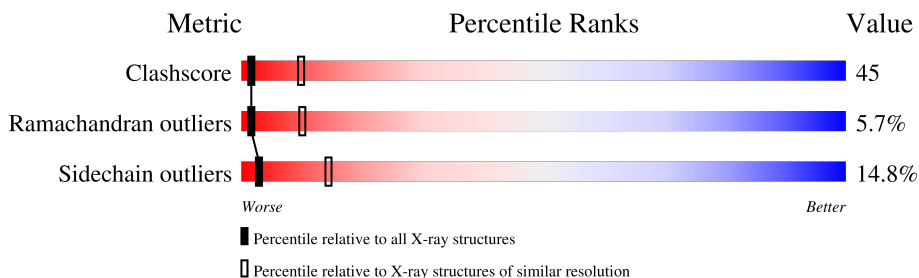
# 1 Overall quality at a glance

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	182	51% 41% 7% ..
1	B	182	42% 49% 7% .
1	C	182	25% 53% 16% 5% .
1	D	182	41% 49% 10% .
2	E	119	34% 53% 13%
2	F	119	40% 44% 15% .
2	G	119	24% 55% 18% .
2	H	119	28% 53% 15% .

## 2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 9751 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 SPORULATION INITIATION PHOSPHOTRANSFERASE B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	181	Total 1489	C 949	N 250	O 283	S 7	0	0	0
1	B	182	Total 1504	C 959	N 253	O 285	S 7	6	0	0
1	C	181	Total 1481	C 945	N 249	O 280	S 7	0	0	0
1	D	182	Total 1497	C 955	N 252	O 283	S 7	6	0	0

- Molecule 2 is a protein called SPORULATION INITIATION PHOSPHOTRANSFERASE F.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	E	119	Total 940	C 603	N 155	O 177	S 5	0	0	0
2	F	119	Total 950	C 609	N 156	O 180	S 5	0	0	0
2	G	119	Total 947	C 608	N 155	O 179	S 5	0	0	0
2	H	119	Total 940	C 603	N 155	O 177	S 5	0	0	0

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	E	1	Total 1	Mg 1	0	0
3	F	1	Total 1	Mg 1	0	0
3	H	1	Total 1	Mg 1	0	0

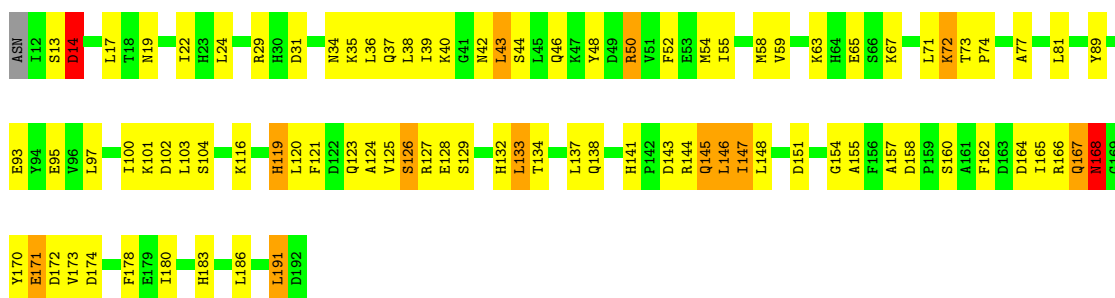
### 3 Residue-property plots

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

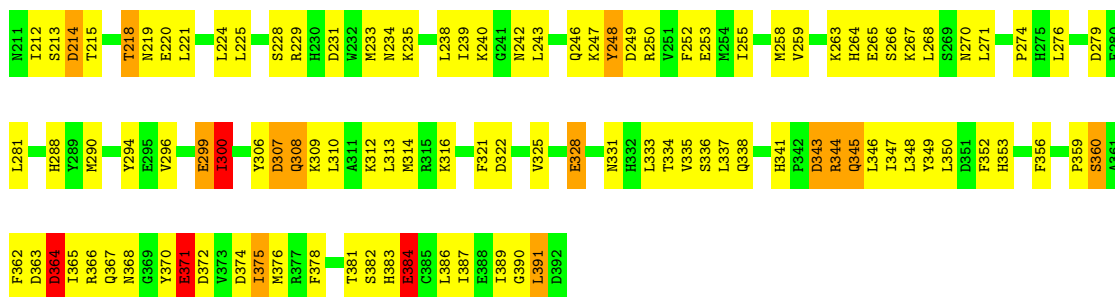
- Molecule 1: SPORULATION INITIATION PHOSPHOTRANSFERASE B

Chain A: 

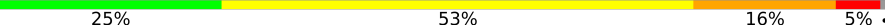


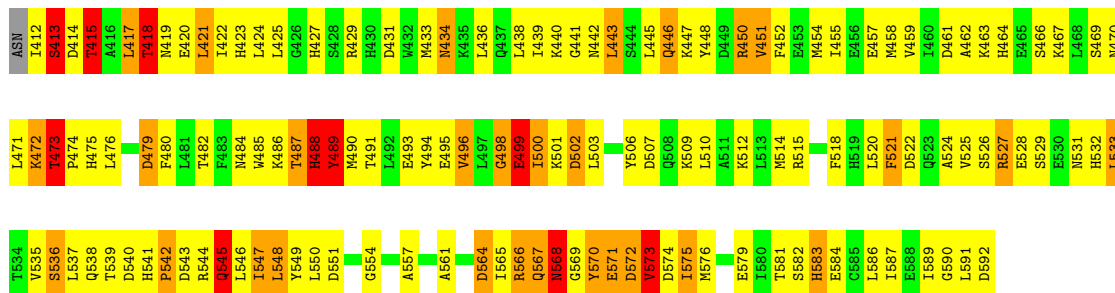
- Molecule 1: SPORULATION INITIATION PHOSPHOTRANSFERASE B

Chain B: 



- Molecule 1: SPORULATION INITIATION PHOSPHOTRANSFERASE B

Chain C: 



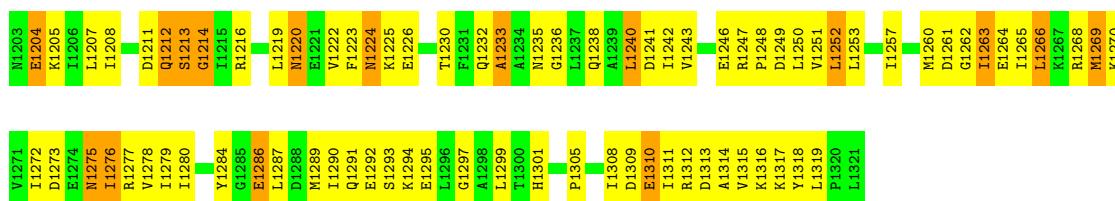
- Molecule 1: SPORULATION INITIATION PHOSPHOTRANSFERASE B

Chain D: 



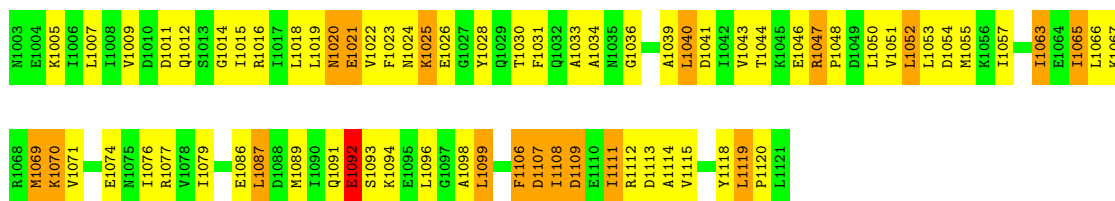
- Molecule 2: SPORULATION INITIATION PHOSPHOTRANSFERASE F

Chain E: 



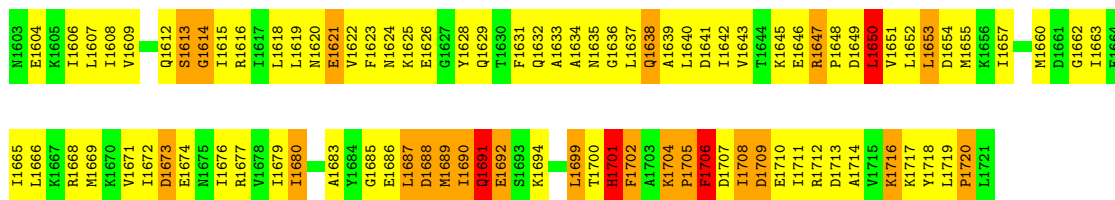
- Molecule 2: SPORULATION INITIATION PHOSPHOTRANSFERASE F

Chain F: 

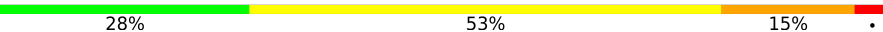


- Molecule 2: SPORULATION INITIATION PHOSPHOTRANSFERASE F

Chain G: 



- Molecule 2: SPORULATION INITIATION PHOSPHOTRANSFERASE F

Chain H: 



K1408	E1404	I1406	L1407	V1408	V1409	D1410	D1411	Q1412	S1413	G1414	I1415	K1416	L1417	L1418	L1419	N1420	E1421	V1422	F1423	N1424	K1425	E1426	G1427	V1428	F1431	Q1432	A1433	G1436	L1437	Q1438	I1439	L1440	D1441	I1442	V1443	T1444	K1445	E1446	R1447	P1448	D1449	L1450	V1451	L1452	L1453	D1454	M1455	G1459	M1460	D1461	G1462	I1463	E1464	I1465	L1466
K1467	R1468	M1469	K1470	V1471	I1472	D1473	I1476	R1477	V1478	I1479	I1480	M1481	T1482	A1483	E1486	L1487	I1490	K1494	E1495	L1496	G1497	A1498	L1499	T1500	H1501	P1505	F1506	D1507	I1508	D1509	E1510	I1511	R1512	D1513	A1514	V1515	K1516	K1517	Y1518	L1519	P1520	L1521													

## 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 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	72.97Å 117.77Å 170.74Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	45.00 – 3.00	Depositor
% Data completeness (in resolution range)	88.7 (45.00-3.00)	Depositor
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	7.60	Depositor
Refinement program	CNS 0.4	Depositor
R, $R_{free}$	0.228 , 0.268	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	9751	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	54.0	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: MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z  > 5$	RMSZ	# $ Z  > 5$
1	A	0.45	0/1522	0.74	2/2056 (0.1%)
1	B	0.50	1/1537 (0.1%)	0.78	1/2075 (0.0%)
1	C	0.46	0/1514	0.96	8/2045 (0.4%)
1	D	0.45	0/1530	0.74	1/2065 (0.0%)
2	E	0.42	0/951	0.77	0/1280
2	F	0.48	0/961	0.81	2/1293 (0.2%)
2	G	0.48	0/958	0.90	3/1289 (0.2%)
2	H	0.42	0/951	0.98	7/1280 (0.5%)
All	All	0.46	1/9924 (0.0%)	0.83	24/13383 (0.2%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	384	GLU	CD-OE2	7.28	1.33	1.25

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	567	GLN	N-CA-C	-10.70	82.12	111.00
2	G	1705	PRO	N-CA-C	-10.66	84.38	112.10
1	C	488	HIS	N-CA-C	7.60	131.52	111.00
2	H	1520	PRO	N-CA-C	6.97	130.22	112.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	1519	LEU	N-CA-C	-6.78	92.70	111.00
1	C	414	ASP	N-CA-C	6.68	129.03	111.00
1	A	168	ASN	N-CA-C	-6.53	93.36	111.00
1	C	569	GLY	N-CA-C	6.52	129.40	113.10
2	G	1701	HIS	N-CA-C	-6.17	94.34	111.00
1	C	499	GLU	N-CA-C	6.06	127.37	111.00
1	A	14	ASP	N-CA-C	-5.87	95.14	111.00
2	H	1517	LYS	N-CA-C	-5.76	95.44	111.00
1	B	300	ILE	N-CA-C	5.73	126.48	111.00
2	F	1087	LEU	CA-CB-CG	5.71	128.44	115.30
1	C	473	THR	N-CA-C	-5.70	95.62	111.00
1	D	699	GLU	N-CA-C	5.52	125.91	111.00
1	C	413	SER	N-CA-C	5.51	125.88	111.00
2	G	1685	GLY	N-CA-C	5.44	126.70	113.10
2	F	1092	GLU	N-CA-C	-5.42	96.37	111.00
2	H	1469	MET	N-CA-C	-5.20	96.96	111.00
2	H	1428	TYR	N-CA-C	5.16	124.94	111.00
1	C	545	GLN	N-CA-C	5.12	124.81	111.00
2	H	1466	LEU	N-CA-C	-5.08	97.30	111.00
2	H	1427	GLY	N-CA-C	5.04	125.71	113.10

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	570	TYR	Sidechain

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1489	0	1437	83	0
1	B	1504	0	1463	113	0
1	C	1481	0	1419	169	0
1	D	1497	0	1449	121	1
2	E	940	0	970	85	1
2	F	950	0	987	80	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	G	947	0	983	156	0
2	H	940	0	970	112	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	H	1	0	0	0	0
All	All	9751	0	9678	867	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 45.

All (867) 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)
2:H:1465:ILE:O	2:H:1469:MET:HB2	1.40	1.19
1:C:520:LEU:HD13	1:C:565:ILE:HD11	1.27	1.15
1:C:544:ARG:HH21	1:C:592:ASP:HA	1.10	1.14
2:G:1677:ARG:HB3	2:G:1699:LEU:HD11	1.31	1.13
2:G:1683:ALA:HA	2:G:1704:LYS:HE3	1.28	1.13
1:C:500:ILE:HD12	1:C:500:ILE:H	1.11	1.10
2:G:1687:LEU:HA	2:G:1690:ILE:HB	1.26	1.10
1:D:699:GLU:HB2	1:D:700:ILE:HD12	1.35	1.08
2:F:1055:MET:HB3	2:F:1089:MET:HE2	1.35	1.07
2:G:1609:VAL:HG21	2:G:1639:ALA:HB2	1.32	1.05
2:H:1477:ARG:HH12	2:H:1520:PRO:CA	1.70	1.04
1:C:544:ARG:NH2	1:C:592:ASP:HA	1.75	1.00
2:H:1477:ARG:HH12	2:H:1520:PRO:HA	1.26	0.98
2:H:1449:ASP:O	2:H:1477:ARG:HG3	1.65	0.96
1:C:544:ARG:HH21	1:C:592:ASP:CA	1.78	0.96
1:C:500:ILE:H	1:C:500:ILE:CD1	1.73	0.95
1:A:71:LEU:HB2	1:A:73:THR:HG22	1.48	0.94
2:G:1683:ALA:HA	2:G:1704:LYS:CE	1.97	0.94
2:E:1223:PHE:HE1	2:E:1315:VAL:HG21	1.32	0.94
2:E:1270:LYS:NZ	2:E:1297:GLY:HA3	1.83	0.93
2:G:1608:ILE:HG21	2:G:1619:LEU:HD12	1.51	0.92
2:F:1020:ASN:HB2	2:F:1030:THR:HG21	1.50	0.91
2:H:1468:ARG:HG3	2:H:1471:VAL:HG21	1.53	0.90
1:D:737:LEU:HD21	1:D:746:LEU:HD22	1.53	0.90
1:C:520:LEU:CD1	1:C:565:ILE:HD11	2.02	0.90
2:G:1699:LEU:H	2:G:1699:LEU:HD12	1.36	0.90
2:E:1226:GLU:OE2	2:E:1312:ARG:HD2	1.72	0.89
2:E:1223:PHE:CE1	2:E:1315:VAL:HG21	2.06	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:546:LEU:HD12	1:C:591:LEU:HD12	1.53	0.88
2:G:1690:ILE:C	2:G:1692:GLU:H	1.75	0.88
2:E:1243:VAL:HA	2:E:1248:PRO:HD2	1.55	0.88
1:D:673:THR:HG22	1:D:707:ASP:HB2	1.58	0.86
2:H:1477:ARG:NH1	2:H:1520:PRO:HA	1.90	0.86
1:C:417:LEU:CD1	1:D:617:LEU:HB2	2.05	0.85
1:A:144:ARG:HH22	1:A:174:ASP:HB3	1.38	0.85
1:D:737:LEU:CD2	1:D:746:LEU:HD22	2.05	0.85
2:F:1020:ASN:C	2:F:1022:VAL:H	1.77	0.85
1:C:500:ILE:HD12	1:C:500:ILE:N	1.92	0.84
2:E:1286:GLU:O	2:E:1290:ILE:HG13	1.77	0.84
2:G:1680:ILE:HD13	2:G:1680:ILE:H	1.41	0.83
2:H:1468:ARG:HA	2:H:1471:VAL:HG23	1.59	0.83
1:B:381:THR:HG23	1:B:384:GLU:H	1.43	0.83
2:H:1407:LEU:HD13	2:H:1442:ILE:HG21	1.58	0.83
2:G:1683:ALA:CA	2:G:1704:LYS:HE3	2.08	0.83
1:B:337:LEU:HD22	1:B:348:LEU:HD11	1.61	0.83
2:G:1713:ASP:HA	2:G:1716:LYS:HG3	1.61	0.83
2:G:1677:ARG:HD2	2:G:1699:LEU:HD21	1.60	0.83
2:G:1606:ILE:HD13	2:G:1650:LEU:HD13	1.61	0.82
1:B:356:PHE:HB2	1:B:359:PRO:HG3	1.60	0.82
2:F:1055:MET:HB3	2:F:1089:MET:CE	2.08	0.82
1:C:520:LEU:HD13	1:C:565:ILE:CD1	2.09	0.82
1:C:421:LEU:O	1:C:425:LEU:HG	1.80	0.82
1:D:668:LEU:HD12	1:D:671:LEU:HD12	1.61	0.81
2:G:1707:ASP:O	2:G:1710:GLU:HG2	1.79	0.81
2:G:1607:LEU:HD12	2:G:1608:ILE:H	1.45	0.81
2:F:1051:VAL:HG11	2:F:1069:MET:CE	2.11	0.80
1:A:71:LEU:HB2	1:A:73:THR:CG2	2.11	0.80
1:C:482:THR:HB	1:C:486:LYS:HE3	1.61	0.80
1:C:538:GLN:OE1	1:C:547:ILE:HD11	1.81	0.80
1:C:541:HIS:HD2	1:C:544:ARG:H	1.30	0.80
1:C:415:THR:HG23	1:D:675:HIS:NE2	1.98	0.79
2:E:1226:GLU:OE1	2:E:1316:LYS:HD3	1.82	0.79
1:A:141:HIS:CD2	1:A:143:ASP:H	2.01	0.79
1:C:574:ASP:O	1:C:576:MET:HG3	1.82	0.79
1:D:708:GLN:HB3	1:D:712:LYS:HE2	1.64	0.78
2:E:1207:LEU:HD13	2:E:1242:ILE:HG21	1.65	0.78
2:G:1609:VAL:HG22	2:G:1633:ALA:HB3	1.63	0.78
1:A:144:ARG:NH2	1:A:174:ASP:HB3	1.98	0.78
2:E:1275:ASN:HD22	2:E:1275:ASN:H	1.28	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1490:ILE:O	2:H:1494:LYS:HB2	1.83	0.77
1:B:344:ARG:HH12	1:B:374:ASP:CG	1.86	0.77
2:G:1612:GLN:HB3	2:G:1615:ILE:HD12	1.67	0.77
1:A:141:HIS:HD2	1:A:144:ARG:H	1.32	0.76
2:G:1607:LEU:O	2:G:1608:ILE:HD13	1.86	0.76
2:G:1613:SER:O	2:G:1615:ILE:N	2.19	0.76
1:D:703:LEU:HD23	1:D:706:TYR:CD1	2.21	0.75
1:D:716:LYS:HZ2	1:D:770:TYR:HD1	1.31	0.75
2:F:1055:MET:CB	2:F:1089:MET:HE2	2.16	0.75
2:E:1270:LYS:HZ2	2:E:1297:GLY:HA3	1.49	0.75
2:H:1426:GLU:OE2	2:H:1512:ARG:HD2	1.86	0.75
1:C:433:MET:CE	1:D:659:VAL:HA	2.16	0.75
2:H:1517:LYS:O	2:H:1518:TYR:HB2	1.85	0.75
1:B:338:GLN:NE2	1:B:347:ILE:HD12	2.01	0.75
2:H:1477:ARG:HH22	2:H:1520:PRO:HA	1.52	0.75
1:B:356:PHE:CB	1:B:359:PRO:HG3	2.16	0.74
1:D:717:LEU:HA	1:D:720:LEU:HD11	1.66	0.74
2:F:1054:ASP:HB3	2:F:1057:ILE:HD11	1.68	0.74
2:H:1436:GLY:HA3	2:H:1460:MET:SD	2.26	0.74
1:C:537:LEU:HD12	1:C:548:LEU:HB3	1.70	0.74
1:D:741:HIS:ND1	1:D:742:PRO:HD2	2.01	0.74
2:H:1452:LEU:HB3	2:H:1481:MET:HE2	1.68	0.74
2:H:1490:ILE:HD12	2:H:1490:ILE:H	1.52	0.74
2:G:1633:ALA:HA	2:G:1638:GLN:HE21	1.53	0.74
2:G:1690:ILE:HG22	2:G:1691:GLN:N	2.02	0.74
2:G:1717:LYS:HE2	2:G:1718:TYR:CZ	2.22	0.74
1:D:637:GLN:NE2	2:H:1506:PHE:H	1.87	0.73
1:D:639:ILE:O	1:D:643:LEU:HB2	1.88	0.73
2:G:1700:THR:HG23	2:G:1701:HIS:H	1.52	0.73
2:H:1466:LEU:HD11	2:H:1498:ALA:HB2	1.68	0.73
2:G:1690:ILE:C	2:G:1692:GLU:N	2.42	0.73
2:G:1700:THR:HG23	2:G:1701:HIS:N	2.04	0.73
1:C:498:GLY:O	1:C:539:THR:OG1	2.05	0.73
2:G:1608:ILE:HA	2:G:1652:LEU:O	1.88	0.73
1:B:344:ARG:NH1	1:B:374:ASP:OD1	2.20	0.73
2:G:1633:ALA:HA	2:G:1638:GLN:NE2	2.03	0.73
1:C:570:TYR:HD2	1:C:573:VAL:HG11	1.51	0.72
2:H:1452:LEU:HB3	2:H:1481:MET:CE	2.18	0.72
1:C:471:LEU:HB2	1:C:473:THR:HG22	1.70	0.72
1:D:617:LEU:O	1:D:617:LEU:HG	1.87	0.72
1:C:433:MET:HE1	1:D:659:VAL:HA	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:445:LEU:O	1:C:446:GLN:HB2	1.90	0.72
1:D:770:TYR:HB3	1:D:773:VAL:CG2	2.19	0.72
1:B:337:LEU:HD22	1:B:348:LEU:CD1	2.20	0.71
2:E:1250:LEU:HD12	2:E:1277:ARG:O	1.90	0.71
1:A:127:ARG:HG3	1:A:127:ARG:HH11	1.55	0.71
2:F:1092:GLU:O	2:F:1096:LEU:HD12	1.91	0.71
2:H:1470:LYS:NZ	2:H:1496:LEU:HD22	2.05	0.71
1:C:537:LEU:HG	1:C:546:LEU:HD21	1.72	0.71
2:E:1250:LEU:HD21	2:E:1279:ILE:HD12	1.72	0.71
1:D:780:ILE:HG12	1:D:780:ILE:O	1.91	0.71
2:E:1294:LYS:HE2	2:E:1299:LEU:O	1.91	0.71
2:H:1465:ILE:O	2:H:1469:MET:CB	2.31	0.71
2:H:1519:LEU:HG	2:H:1520:PRO:HD2	1.73	0.70
2:H:1413:SER:O	2:H:1417:ILE:HG13	1.92	0.70
1:B:308:GLN:O	1:B:312:LYS:HB2	1.91	0.70
1:D:703:LEU:HD22	1:D:746:LEU:HD11	1.74	0.70
1:B:268:LEU:HA	1:B:271:LEU:HD12	1.72	0.70
2:H:1512:ARG:O	2:H:1515:VAL:HG22	1.92	0.70
2:F:1020:ASN:HB2	2:F:1030:THR:CG2	2.21	0.70
2:G:1607:LEU:HD11	2:G:1633:ALA:HB3	1.73	0.70
1:D:637:GLN:NE2	2:H:1506:PHE:N	2.40	0.69
2:E:1208:ILE:HD13	2:E:1252:LEU:HD12	1.74	0.69
1:C:567:GLN:O	1:C:568:ASN:HB2	1.91	0.69
2:E:1268:ARG:O	2:E:1272:ILE:HG13	1.93	0.69
2:H:1477:ARG:NH2	2:H:1520:PRO:HA	2.08	0.69
1:B:381:THR:HG21	1:B:384:GLU:HG3	1.73	0.69
1:D:716:LYS:HD2	1:D:770:TYR:CE1	2.28	0.69
1:D:637:GLN:HE21	2:H:1506:PHE:N	1.91	0.69
2:G:1713:ASP:OD1	2:G:1716:LYS:HE2	1.93	0.69
2:H:1477:ARG:HH12	2:H:1520:PRO:CB	2.06	0.69
1:D:699:GLU:HB2	1:D:700:ILE:CD1	2.17	0.69
1:A:170:TYR:O	1:A:173:VAL:HG22	1.93	0.68
2:G:1636:GLY:O	2:G:1640:LEU:HD13	1.94	0.68
1:B:281:LEU:HD23	1:B:294:TYR:OH	1.94	0.68
1:C:506:TYR:CZ	1:C:545:GLN:NE2	2.62	0.68
1:C:521:PHE:O	1:C:525:VAL:HG22	1.92	0.68
2:F:1020:ASN:C	2:F:1022:VAL:N	2.47	0.68
2:E:1311:ILE:O	2:E:1315:VAL:HG13	1.93	0.68
1:C:464:HIS:ND1	1:C:496:VAL:HG23	2.09	0.68
1:D:673:THR:HG22	1:D:707:ASP:CB	2.24	0.68
2:F:1053:LEU:CD1	2:F:1065:ILE:HD11	2.24	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:522:ASP:O	1:C:527:ARG:NH2	2.25	0.68
2:F:1051:VAL:HG11	2:F:1069:MET:HE1	1.75	0.68
1:B:267:LYS:HE2	1:B:299:GLU:HG2	1.75	0.68
1:C:417:LEU:HD13	1:D:617:LEU:HB2	1.74	0.68
1:D:638:LEU:O	1:D:642:ASN:OD1	2.12	0.68
2:G:1654:ASP:O	2:G:1657:ILE:HG13	1.95	0.67
1:C:541:HIS:CD2	1:C:544:ARG:H	2.11	0.67
2:E:1265:ILE:O	2:E:1269:MET:HB2	1.94	0.67
2:E:1275:ASN:H	2:E:1275:ASN:ND2	1.92	0.67
1:C:442:ASN:HA	1:C:445:LEU:HD12	1.75	0.67
2:E:1264:GLU:O	2:E:1268:ARG:HG3	1.94	0.67
1:C:412:ILE:O	1:C:413:SER:HB2	1.93	0.67
2:G:1677:ARG:CB	2:G:1699:LEU:HD11	2.18	0.67
1:D:633:MET:CE	2:H:1505:PRO:HD3	2.24	0.67
2:F:1099:LEU:HG	2:F:1118:TYR:CD1	2.30	0.67
1:D:655:ILE:O	1:D:659:VAL:HG23	1.95	0.66
2:E:1270:LYS:HZ1	2:E:1297:GLY:HA3	1.58	0.66
1:A:63:LYS:O	1:A:67:LYS:HG3	1.95	0.66
1:C:417:LEU:HD12	1:D:617:LEU:HD12	1.76	0.66
1:C:544:ARG:CZ	1:C:592:ASP:HA	2.26	0.66
1:D:654:MET:O	1:D:658:MET:HG3	1.95	0.66
1:C:464:HIS:CE1	1:C:496:VAL:H	2.13	0.66
1:A:29:ARG:HD3	1:B:265:GLU:OE1	1.96	0.66
2:E:1257:ILE:HD12	2:E:1260:MET:HE2	1.78	0.66
1:A:144:ARG:HH22	1:A:174:ASP:CB	2.08	0.66
1:D:616:ALA:C	1:D:618:THR:H	1.94	0.66
1:A:141:HIS:HD2	1:A:143:ASP:H	1.44	0.66
1:D:629:ARG:O	1:D:633:MET:HG2	1.96	0.66
2:G:1614:GLY:O	2:G:1618:LEU:N	2.24	0.66
1:B:255:ILE:O	1:B:259:VAL:HG23	1.95	0.66
2:G:1680:ILE:HD13	2:G:1680:ILE:N	2.11	0.66
2:G:1701:HIS:O	2:G:1702:PHE:HD2	1.78	0.66
2:E:1253:LEU:CD2	2:E:1265:ILE:HD11	2.26	0.65
1:B:246:GLN:C	1:B:248:TYR:H	2.00	0.65
1:D:781:THR:HG23	1:D:784:GLU:H	1.61	0.65
2:E:1257:ILE:HD12	2:E:1260:MET:CE	2.27	0.65
1:A:65:GLU:HG3	1:A:81:LEU:HD21	1.78	0.65
2:G:1687:LEU:C	2:G:1689:MET:H	1.99	0.65
2:H:1477:ARG:NH1	2:H:1520:PRO:CA	2.51	0.65
1:C:570:TYR:HD2	1:C:573:VAL:CG1	2.09	0.65
1:C:490:MET:CE	1:C:533:LEU:HD12	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1461:ASP:OD1	2:H:1464:GLU:OE1	2.14	0.65
1:B:288:HIS:HD2	1:B:322:ASP:OD2	1.79	0.65
2:G:1609:VAL:O	2:G:1657:ILE:HD11	1.97	0.65
2:G:1618:LEU:O	2:G:1618:LEU:HD23	1.96	0.65
1:D:620:GLU:O	1:D:623:HIS:HB3	1.97	0.65
1:B:220:GLU:O	1:B:224:LEU:HG	1.96	0.65
1:B:375:ILE:HG22	1:B:375:ILE:O	1.96	0.65
2:G:1636:GLY:HA2	2:G:1665:ILE:HG12	1.79	0.64
2:G:1677:ARG:NH2	2:G:1720:PRO:HG2	2.12	0.64
1:A:48:TYR:O	1:A:52:PHE:HD1	1.79	0.64
1:A:34:ASN:O	1:A:37:GLN:HB3	1.96	0.64
1:D:703:LEU:O	1:D:704:SER:C	2.35	0.64
2:E:1220:ASN:O	2:E:1224:ASN:HB2	1.98	0.64
2:F:1077:ARG:NE	2:F:1120:PRO:HG2	2.13	0.64
2:H:1420:ASN:ND2	2:H:1432:GLN:HE21	1.94	0.64
2:H:1436:GLY:O	2:H:1440:LEU:HD22	1.97	0.64
1:A:154:GLY:O	1:A:183:HIS:HB3	1.97	0.64
2:E:1251:VAL:HB	2:E:1278:VAL:HG22	1.80	0.64
2:H:1477:ARG:CZ	2:H:1520:PRO:HA	2.27	0.64
1:C:436:LEU:HD23	1:C:439:ILE:HD12	1.79	0.64
1:C:445:LEU:HD21	2:G:1618:LEU:HD21	1.80	0.64
1:D:775:ILE:HG13	1:D:775:ILE:O	1.97	0.64
2:H:1420:ASN:ND2	2:H:1432:GLN:NE2	2.46	0.64
2:H:1511:ILE:O	2:H:1511:ILE:HG13	1.98	0.64
1:B:306:TYR:CD2	1:B:391:LEU:HD22	2.33	0.64
1:C:531:ASN:OD1	1:C:554:GLY:HA3	1.98	0.64
1:C:570:TYR:O	1:C:570:TYR:CD2	2.51	0.64
2:E:1236:GLY:O	2:E:1240:LEU:HD22	1.98	0.63
1:C:445:LEU:HD11	2:G:1618:LEU:HG	1.81	0.63
1:C:509:LYS:NZ	1:C:592:ASP:OD2	2.32	0.63
2:E:1223:PHE:C	2:E:1225:LYS:H	1.99	0.63
1:A:141:HIS:CD2	1:A:144:ARG:H	2.15	0.63
2:E:1250:LEU:HD11	2:E:1279:ILE:HG13	1.80	0.63
2:H:1467:LYS:O	2:H:1470:LYS:HB2	1.99	0.63
2:E:1310:GLU:HA	2:E:1313:ASP:HB2	1.81	0.63
1:B:338:GLN:HE21	1:B:341:HIS:HB2	1.63	0.63
2:H:1490:ILE:HD12	2:H:1490:ILE:N	2.13	0.63
2:H:1490:ILE:HG21	2:H:1501:HIS:CD2	2.34	0.63
1:A:44:SER:CB	2:E:1308:ILE:HG21	2.29	0.62
1:C:510:LEU:CD2	1:C:591:LEU:HD11	2.29	0.62
2:F:1051:VAL:HG11	2:F:1069:MET:HE3	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1287:LEU:HA	2:E:1290:ILE:HD12	1.81	0.62
2:G:1633:ALA:HB1	2:G:1638:GLN:HB3	1.80	0.62
1:B:214:ASP:OD2	1:B:214:ASP:N	2.28	0.62
1:C:443:LEU:HD22	1:C:451:VAL:HG21	1.81	0.62
2:H:1463:ILE:HG22	2:H:1464:GLU:N	2.15	0.62
1:B:366:ARG:NH2	1:C:579:GLU:OE1	2.32	0.62
1:B:370:TYR:O	1:B:371:GLU:O	2.18	0.62
1:C:570:TYR:CD2	1:C:573:VAL:HG11	2.33	0.62
1:D:637:GLN:NE2	2:H:1505:PRO:HA	2.15	0.62
2:G:1608:ILE:CG2	2:G:1619:LEU:HD12	2.28	0.62
2:H:1465:ILE:O	2:H:1465:ILE:HD12	2.00	0.61
1:C:575:ILE:HG12	1:C:575:ILE:O	2.00	0.61
1:C:490:MET:HE3	1:C:533:LEU:HD12	1.83	0.61
2:G:1614:GLY:O	2:G:1618:LEU:HB2	2.01	0.61
1:C:488:HIS:ND1	1:C:488:HIS:N	2.47	0.61
2:G:1621:GLU:HG3	2:G:1622:VAL:N	2.15	0.61
2:G:1672:ILE:HG22	2:G:1673:ASP:OD1	2.00	0.61
2:G:1650:LEU:HD23	2:G:1651:VAL:N	2.15	0.61
2:F:1021:GLU:HG2	2:F:1025:LYS:NZ	2.16	0.61
2:G:1609:VAL:HA	2:G:1633:ALA:O	2.01	0.61
1:A:43:LEU:HD12	1:B:252:PHE:CZ	2.36	0.61
2:E:1207:LEU:HB3	2:E:1251:VAL:HG22	1.81	0.61
2:H:1449:ASP:O	2:H:1477:ARG:CG	2.44	0.60
2:H:1468:ARG:HG3	2:H:1471:VAL:CG2	2.29	0.60
1:B:250:ARG:O	1:B:253:GLU:HB2	2.02	0.60
1:B:367:GLN:HG2	1:B:367:GLN:O	2.00	0.60
1:B:310:LEU:HD22	1:B:348:LEU:HD22	1.83	0.60
2:G:1687:LEU:HD13	2:G:1687:LEU:H	1.66	0.60
2:G:1653:LEU:HD12	2:G:1657:ILE:HD11	1.84	0.60
2:E:1261:ASP:HB3	2:E:1264:GLU:HB2	1.83	0.60
2:G:1613:SER:O	2:G:1616:ARG:N	2.35	0.60
1:A:39:ILE:O	1:A:43:LEU:HB2	2.01	0.60
1:B:266:SER:O	1:B:270:ASN:ND2	2.34	0.60
1:C:514:MET:HE3	1:C:548:LEU:HD13	1.84	0.60
1:C:510:LEU:HD21	1:C:591:LEU:CD1	2.32	0.60
2:G:1666:LEU:O	2:G:1669:MET:HB2	2.01	0.60
2:G:1691:GLN:HG3	2:G:1694:LYS:HD3	1.84	0.60
2:E:1250:LEU:HD12	2:E:1251:VAL:H	1.67	0.60
1:B:306:TYR:HD2	1:B:391:LEU:HD22	1.66	0.59
1:B:300:ILE:HD11	2:E:1287:LEU:HD12	1.84	0.59
1:C:573:VAL:O	1:C:573:VAL:CG2	2.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1250:LEU:HA	2:E:1277:ARG:O	2.03	0.59
2:G:1686:GLU:O	2:G:1690:ILE:HG13	2.02	0.59
1:C:544:ARG:HG2	1:C:592:ASP:O	2.02	0.59
2:G:1628:TYR:CE1	2:G:1719:LEU:HG	2.36	0.59
2:G:1609:VAL:HG12	2:G:1657:ILE:CD1	2.33	0.59
1:D:698:GLY:HA3	1:D:740:ASP:HB2	1.84	0.59
1:C:472:LYS:C	1:C:474:PRO:HD3	2.22	0.59
1:B:306:TYR:OH	1:B:345:GLN:NE2	2.35	0.59
2:G:1609:VAL:HG12	2:G:1657:ILE:HD11	1.85	0.59
2:G:1633:ALA:HB1	2:G:1638:GLN:CB	2.32	0.59
1:B:381:THR:CG2	1:B:384:GLU:H	2.16	0.59
1:D:770:TYR:O	1:D:771:GLU:HB2	2.01	0.58
2:G:1677:ARG:HB3	2:G:1699:LEU:CD1	2.21	0.58
1:C:431:ASP:O	1:C:434:ASN:HB2	2.03	0.58
1:D:631:ASP:HA	1:D:634:ASN:HB2	1.85	0.58
1:C:441:GLY:O	1:C:445:LEU:HG	2.03	0.58
2:H:1507:ASP:O	2:H:1509:ASP:N	2.36	0.58
1:C:573:VAL:HB	1:C:589:ILE:CG2	2.33	0.58
1:D:690:MET:HE3	1:D:733:LEU:CD2	2.34	0.58
1:A:167:GLN:O	1:A:168:ASN:CG	2.41	0.58
1:D:670:ASN:O	1:D:700:ILE:CG2	2.52	0.58
2:E:1249:ASP:HB3	2:E:1319:LEU:HD11	1.86	0.58
2:F:1070:LYS:HG2	2:F:1076:ILE:CG2	2.33	0.58
2:G:1620:ASN:O	2:G:1624:ASN:HB2	2.04	0.58
1:C:514:MET:CE	1:C:548:LEU:HD13	2.33	0.58
1:C:554:GLY:O	1:C:583:HIS:HB3	2.03	0.58
1:C:574:ASP:O	1:C:576:MET:N	2.37	0.58
2:F:1053:LEU:HD13	2:F:1065:ILE:HD11	1.85	0.58
2:F:1050:LEU:HD12	2:F:1077:ARG:CB	2.34	0.58
2:G:1607:LEU:HD11	2:G:1633:ALA:CB	2.34	0.58
2:H:1468:ARG:HA	2:H:1471:VAL:CG2	2.31	0.58
1:D:759:PRO:HB2	1:D:780:ILE:HD11	1.86	0.57
1:D:762:PHE:O	1:D:765:ILE:HG22	2.03	0.57
1:A:129:SER:OG	1:A:155:ALA:HB3	2.04	0.57
1:D:640:LYS:O	1:D:643:LEU:HB3	2.05	0.57
2:H:1441:ASP:O	2:H:1445:LYS:HG2	2.05	0.57
2:G:1713:ASP:HA	2:G:1716:LYS:CG	2.33	0.57
2:H:1468:ARG:CG	2:H:1471:VAL:HG21	2.31	0.57
1:A:137:LEU:HD11	1:A:146:LEU:HD21	1.87	0.57
1:B:263:LYS:HG2	2:E:1284:TYR:CE2	2.39	0.57
2:F:1036:GLY:O	2:F:1040:LEU:HD22	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1517:LYS:O	2:H:1518:TYR:CB	2.53	0.57
1:D:744:ARG:NH2	1:D:774:ASP:OD2	2.38	0.57
2:F:1091:GLN:NE2	2:F:1094:LYS:HD3	2.20	0.57
2:G:1711:ILE:O	2:G:1714:ALA:HB3	2.05	0.57
1:D:729:SER:OG	1:D:755:ALA:HB3	2.04	0.57
1:C:417:LEU:HD12	1:D:617:LEU:HB2	1.86	0.57
2:G:1666:LEU:C	2:G:1666:LEU:HD23	2.25	0.57
1:A:164:ASP:O	1:A:168:ASN:HB2	2.05	0.56
1:D:633:MET:HE2	2:H:1505:PRO:HD3	1.85	0.56
2:H:1470:LYS:HZ3	2:H:1496:LEU:HD22	1.70	0.56
1:B:238:LEU:O	1:B:242:ASN:HB2	2.04	0.56
1:A:103:LEU:HD13	1:A:146:LEU:HD11	1.86	0.56
1:B:363:ASP:OD1	1:B:363:ASP:O	2.23	0.56
1:C:495:GLU:HB3	1:C:536:SER:HB3	1.88	0.56
1:B:238:LEU:HD21	2:F:1014:GLY:HA3	1.88	0.56
2:F:1047:ARG:HG2	2:F:1047:ARG:HH11	1.70	0.56
1:C:573:VAL:HA	1:C:590:GLY:O	2.05	0.56
2:F:1020:ASN:O	2:F:1022:VAL:N	2.38	0.56
2:H:1408:ILE:HD12	2:H:1452:LEU:HD22	1.86	0.56
1:C:451:VAL:HG11	1:D:643:LEU:HD21	1.87	0.56
2:H:1433:ALA:HB1	2:H:1438:GLN:HB2	1.88	0.56
1:C:412:ILE:O	1:C:413:SER:CB	2.54	0.56
1:C:459:VAL:O	1:C:462:ALA:HB3	2.05	0.56
1:C:522:ASP:OD1	1:C:527:ARG:NH2	2.39	0.56
1:D:775:ILE:HG22	1:D:789:ILE:HG12	1.87	0.56
2:E:1313:ASP:O	2:E:1316:LYS:HB2	2.06	0.56
2:G:1634:ALA:H	2:G:1638:GLN:NE2	2.03	0.56
2:F:1091:GLN:HE22	2:F:1094:LYS:HD3	1.70	0.56
1:B:263:LYS:HG2	2:E:1284:TYR:CZ	2.41	0.55
1:D:716:LYS:NZ	1:D:770:TYR:HD1	2.02	0.55
2:G:1690:ILE:O	2:G:1692:GLU:N	2.40	0.55
1:B:362:PHE:CD1	1:B:378:PHE:HZ	2.23	0.55
1:C:487:THR:C	1:C:488:HIS:ND1	2.60	0.55
1:C:564:ASP:OD1	1:C:567:GLN:OE1	2.25	0.55
2:E:1289:MET:O	2:E:1293:SER:HB3	2.06	0.55
2:F:1053:LEU:HD11	2:F:1065:ILE:HD11	1.88	0.55
2:G:1623:PHE:HE1	2:G:1712:ARG:HA	1.68	0.55
2:G:1626:GLU:OE1	2:G:1626:GLU:HA	2.05	0.55
2:F:1026:GLU:HG3	2:F:1112:ARG:HD2	1.88	0.55
1:B:346:LEU:HD11	1:B:348:LEU:HD13	1.89	0.55
1:B:352:PHE:C	1:B:352:PHE:CD2	2.79	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1204:GLU:HA	2:E:1204:GLU:OE1	2.06	0.55
2:E:1223:PHE:C	2:E:1225:LYS:N	2.60	0.55
2:H:1431:PHE:HB3	2:H:1442:ILE:HD13	1.88	0.55
1:D:670:ASN:O	1:D:700:ILE:HG22	2.06	0.55
2:F:1053:LEU:HD11	2:F:1065:ILE:CD1	2.37	0.55
2:E:1265:ILE:C	2:E:1265:ILE:HD12	2.27	0.55
1:B:235:LYS:HB3	1:B:258:MET:CE	2.37	0.55
1:C:490:MET:HA	1:C:531:ASN:O	2.05	0.55
1:C:586:LEU:HD23	1:C:587:ILE:N	2.22	0.55
1:A:138:GLN:OE1	1:A:147:ILE:HD11	2.08	0.54
1:D:703:LEU:HD21	1:D:746:LEU:HG	1.88	0.54
2:F:1021:GLU:O	2:F:1025:LYS:HD3	2.07	0.54
1:A:116:LYS:O	1:A:120:LEU:HG	2.06	0.54
1:C:544:ARG:NE	1:C:592:ASP:HA	2.23	0.54
2:E:1243:VAL:HA	2:E:1248:PRO:CD	2.33	0.54
2:H:1408:ILE:HG21	2:H:1419:LEU:HD12	1.88	0.54
2:H:1453:LEU:HG	2:H:1455:MET:SD	2.47	0.54
1:B:276:LEU:O	1:B:279:ASP:HB2	2.07	0.54
1:B:328:GLU:O	1:B:328:GLU:HG3	2.04	0.54
2:H:1404:GLU:HB2	2:H:1428:TYR:HD1	1.72	0.54
1:C:544:ARG:HE	1:C:592:ASP:HA	1.73	0.54
1:D:770:TYR:HB3	1:D:773:VAL:HG21	1.89	0.54
1:A:37:GLN:OE1	2:E:1305:PRO:HA	2.08	0.54
1:A:50:ARG:O	1:A:54:MET:HG3	2.08	0.54
1:C:433:MET:HE2	1:D:659:VAL:HA	1.87	0.54
1:D:716:LYS:NZ	1:D:770:TYR:CD1	2.72	0.54
1:B:238:LEU:CD2	2:F:1014:GLY:HA3	2.38	0.54
1:C:506:TYR:CE2	1:C:545:GLN:NE2	2.76	0.54
2:F:1115:VAL:O	2:F:1119:LEU:HB2	2.08	0.54
2:E:1226:GLU:OE2	2:E:1312:ARG:CD	2.49	0.54
2:H:1443:VAL:HA	2:H:1448:PRO:HD2	1.90	0.54
1:B:239:ILE:O	1:B:243:LEU:HB2	2.08	0.54
1:B:374:ASP:OD1	1:B:374:ASP:O	2.26	0.54
1:C:445:LEU:HD13	1:C:447:LYS:HE2	1.90	0.54
1:C:526:SER:C	1:C:528:GLU:H	2.11	0.54
2:G:1700:THR:O	2:G:1701:HIS:HB3	2.08	0.54
2:G:1663:ILE:O	2:G:1666:LEU:HB3	2.08	0.53
1:C:541:HIS:NE2	1:C:543:ASP:HB2	2.22	0.53
2:G:1620:ASN:CG	2:G:1632:GLN:HE21	2.12	0.53
1:A:126:SER:HB3	1:A:155:ALA:HB3	1.89	0.53
1:C:502:ASP:O	1:C:503:LEU:HD23	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:1077:ARG:HG2	2:F:1077:ARG:HH11	1.73	0.53
2:G:1607:LEU:HA	2:G:1631:PHE:O	2.09	0.53
2:G:1608:ILE:HD12	2:G:1619:LEU:HD13	1.90	0.53
2:F:1016:ARG:HH12	2:F:1034:ALA:HB2	1.74	0.53
2:F:1019:LEU:O	2:F:1022:VAL:HB	2.09	0.53
2:F:1050:LEU:HD12	2:F:1077:ARG:HB2	1.90	0.53
1:A:123:GLN:O	1:A:123:GLN:HG3	2.09	0.53
2:H:1490:ILE:CG2	2:H:1501:HIS:CD2	2.92	0.53
1:C:571:GLU:N	1:C:571:GLU:OE2	2.41	0.53
1:B:268:LEU:HD12	1:B:271:LEU:HD12	1.90	0.53
1:C:544:ARG:HH21	1:C:592:ASP:N	2.07	0.53
1:D:624:LEU:O	1:D:627:HIS:N	2.40	0.53
2:E:1253:LEU:HD22	2:E:1265:ILE:HD11	1.91	0.53
2:F:1054:ASP:HB3	2:F:1057:ILE:CD1	2.37	0.53
2:F:1070:LYS:HD2	2:F:1096:LEU:O	2.09	0.53
2:F:1111:ILE:O	2:F:1114:ALA:HB3	2.09	0.53
1:D:690:MET:HE3	1:D:733:LEU:HD22	1.90	0.53
2:E:1211:ASP:HB3	2:E:1257:ILE:HG12	1.91	0.53
2:E:1311:ILE:O	2:E:1315:VAL:HG22	2.09	0.53
2:G:1643:VAL:O	2:G:1647:ARG:HA	2.08	0.53
1:B:337:LEU:N	1:B:337:LEU:HD23	2.24	0.52
2:G:1692:GLU:C	2:G:1694:LYS:N	2.63	0.52
1:B:343:ASP:O	1:B:344:ARG:HB2	2.10	0.52
1:C:494:TYR:HA	1:C:535:VAL:O	2.08	0.52
1:D:708:GLN:O	1:D:712:LYS:HG3	2.09	0.52
2:F:1028:TYR:CE1	2:F:1119:LEU:HD21	2.45	0.52
2:G:1613:SER:O	2:G:1614:GLY:C	2.48	0.52
1:B:308:GLN:NE2	1:B:308:GLN:HA	2.24	0.52
1:C:488:HIS:O	1:C:489:TYR:CG	2.62	0.52
1:C:490:MET:HE1	1:C:533:LEU:HD12	1.91	0.52
2:G:1700:THR:CG2	2:G:1701:HIS:H	2.15	0.52
1:B:336:SER:HB2	1:B:349:TYR:HB2	1.91	0.52
2:G:1607:LEU:HD21	2:G:1639:ALA:HA	1.91	0.52
1:C:476:LEU:HD22	1:C:510:LEU:CD1	2.39	0.52
2:H:1423:PHE:CE1	2:H:1515:VAL:HG11	2.45	0.52
1:A:154:GLY:N	1:A:183:HIS:O	2.42	0.52
1:D:724:ALA:HB2	1:D:761:ALA:HB3	1.92	0.52
2:F:1036:GLY:O	2:F:1039:ALA:HB3	2.10	0.52
2:G:1676:ILE:O	2:G:1676:ILE:HG23	2.10	0.52
2:G:1708:ILE:O	2:G:1710:GLU:N	2.43	0.52
1:C:450:ARG:NH1	1:C:457:GLU:OE1	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:781:THR:OG1	1:D:782:SER:N	2.42	0.52
2:G:1620:ASN:ND2	2:G:1632:GLN:HE21	2.08	0.52
2:G:1687:LEU:CD1	2:G:1687:LEU:N	2.73	0.52
2:H:1490:ILE:H	2:H:1490:ILE:CD1	2.21	0.52
1:B:343:ASP:O	1:B:344:ARG:CB	2.57	0.51
1:B:349:TYR:C	1:B:350:LEU:HD12	2.30	0.51
1:D:637:GLN:HE22	2:H:1506:PHE:H	1.55	0.51
1:A:162:PHE:O	1:A:166:ARG:HG3	2.10	0.51
1:B:306:TYR:CE2	1:B:391:LEU:HB3	2.45	0.51
2:F:1028:TYR:HE1	2:F:1119:LEU:HD21	1.75	0.51
1:D:781:THR:CG2	1:D:784:GLU:HB2	2.40	0.51
2:G:1609:VAL:O	2:G:1609:VAL:HG12	2.10	0.51
2:G:1691:GLN:CG	2:G:1694:LYS:HD3	2.40	0.51
2:G:1718:TYR:O	2:G:1720:PRO:HD3	2.11	0.51
2:H:1405:LYS:HD3	2:H:1446:GLU:OE1	2.11	0.51
1:D:700:ILE:HD12	1:D:700:ILE:N	2.26	0.51
2:E:1273:ASP:O	2:E:1276:ILE:HB	2.11	0.51
2:F:1012:GLN:HB3	2:F:1015:ILE:HD12	1.93	0.51
2:F:1052:LEU:HD12	2:F:1079:ILE:HB	1.93	0.51
2:G:1650:LEU:C	2:G:1650:LEU:CD2	2.79	0.51
2:H:1410:ASP:O	2:H:1416:ARG:HD3	2.11	0.51
2:H:1512:ARG:O	2:H:1514:ALA:N	2.38	0.51
1:B:353:HIS:HA	1:B:384:GLU:HA	1.92	0.51
1:C:424:LEU:HD13	1:D:621:LEU:HD22	1.93	0.51
2:E:1314:ALA:O	2:E:1318:TYR:HD2	1.94	0.51
2:G:1707:ASP:HB3	2:G:1710:GLU:CD	2.31	0.51
2:E:1247:ARG:NH2	2:E:1272:ILE:O	2.43	0.51
2:F:1067:LYS:HG2	2:F:1096:LEU:HD22	1.93	0.51
2:G:1633:ALA:HB2	2:G:1642:ILE:HD12	1.93	0.51
2:G:1713:ASP:O	2:G:1716:LYS:HB2	2.11	0.51
1:B:381:THR:OG1	1:B:382:SER:N	2.42	0.50
1:D:703:LEU:CD2	1:D:746:LEU:HD11	2.42	0.50
2:H:1512:ARG:C	2:H:1514:ALA:H	2.14	0.50
2:H:1416:ARG:HD2	2:H:1433:ALA:O	2.11	0.50
2:H:1423:PHE:O	2:H:1428:TYR:HB2	2.11	0.50
1:C:514:MET:O	1:C:518:PHE:N	2.38	0.50
1:A:22:ILE:HD11	1:B:274:PRO:O	2.11	0.50
2:G:1638:GLN:O	2:G:1642:ILE:HG13	2.11	0.50
1:B:212:ILE:HD12	1:B:212:ILE:N	2.26	0.50
1:B:344:ARG:NH1	1:B:390:GLY:HA3	2.26	0.50
2:G:1607:LEU:HD12	2:G:1631:PHE:O	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:19:ASN:OD1	1:B:274:PRO:HB3	2.11	0.50
2:H:1459:GLY:O	2:H:1460:MET:O	2.30	0.50
1:B:290:MET:CE	1:B:321:PHE:CB	2.90	0.50
1:C:541:HIS:HD2	1:C:544:ARG:N	2.03	0.50
1:C:538:GLN:HB3	1:C:547:ILE:HG13	1.94	0.50
2:H:1454:ASP:HA	2:H:1481:MET:HB2	1.94	0.50
1:C:524:ALA:HB2	1:C:561:ALA:HB3	1.94	0.49
2:E:1222:VAL:HG21	2:E:1308:ILE:HD11	1.94	0.49
2:F:1005:LYS:HD3	2:F:1046:GLU:O	2.11	0.49
1:A:167:GLN:O	1:A:168:ASN:CB	2.60	0.49
1:C:476:LEU:HD22	1:C:510:LEU:HD12	1.93	0.49
1:D:703:LEU:O	1:D:706:TYR:N	2.39	0.49
2:G:1647:ARG:HG2	2:G:1673:ASP:OD2	2.12	0.49
2:H:1450:LEU:HD12	2:H:1477:ARG:O	2.11	0.49
2:E:1314:ALA:O	2:E:1318:TYR:CD2	2.65	0.49
2:H:1404:GLU:HB2	2:H:1428:TYR:CD1	2.47	0.49
1:B:310:LEU:O	1:B:314:MET:HG2	2.12	0.49
1:B:375:ILE:O	1:B:375:ILE:CG2	2.61	0.49
1:C:418:THR:HA	1:C:421:LEU:HD12	1.95	0.49
1:C:450:ARG:HD2	1:C:454:MET:HG3	1.94	0.49
1:C:482:THR:HA	1:C:485:TRP:CE3	2.47	0.49
1:D:647:LYS:NZ	2:H:1421:GLU:OE1	2.45	0.49
2:F:1020:ASN:ND2	2:F:1024:ASN:HD21	2.09	0.49
2:F:1077:ARG:NE	2:F:1120:PRO:CG	2.75	0.49
2:G:1606:ILE:HD13	2:G:1650:LEU:CD1	2.40	0.49
2:H:1452:LEU:HD21	2:H:1511:ILE:HD11	1.94	0.49
1:C:489:TYR:CD1	1:C:522:ASP:OD1	2.66	0.49
1:D:626:GLY:HA2	1:D:629:ARG:NH2	2.28	0.49
2:H:1408:ILE:CD1	2:H:1452:LEU:HD22	2.43	0.49
1:A:59:VAL:O	1:A:63:LYS:HB2	2.12	0.49
1:C:443:LEU:CD2	1:C:451:VAL:HG21	2.43	0.49
1:C:564:ASP:O	1:C:567:GLN:HB3	2.12	0.49
1:C:482:THR:HG22	1:C:485:TRP:CE3	2.47	0.49
1:C:526:SER:HA	1:C:557:ALA:HB2	1.93	0.49
1:B:310:LEU:HD21	1:B:391:LEU:CD1	2.42	0.49
1:B:360:SER:O	1:B:363:ASP:OD1	2.31	0.49
1:C:445:LEU:O	1:C:446:GLN:CB	2.61	0.49
2:E:1208:ILE:HD13	2:E:1252:LEU:CD1	2.42	0.49
2:H:1512:ARG:C	2:H:1514:ALA:N	2.66	0.49
1:C:442:ASN:ND2	1:C:447:LYS:HD2	2.28	0.49
1:C:448:TYR:CE2	1:D:648:TYR:CE1	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:1020:ASN:ND2	2:F:1024:ASN:ND2	2.61	0.49
2:F:1031:PHE:CE1	2:F:1046:GLU:HG3	2.47	0.49
2:G:1692:GLU:C	2:G:1694:LYS:H	2.15	0.49
2:H:1455:MET:HG2	2:H:1480:ILE:HB	1.93	0.49
1:B:325:VAL:HA	1:B:356:PHE:HA	1.94	0.48
1:C:510:LEU:HD21	1:C:591:LEU:HD11	1.92	0.48
2:H:1407:LEU:HB3	2:H:1451:VAL:HG22	1.94	0.48
1:B:344:ARG:HH11	1:B:390:GLY:HA3	1.77	0.48
1:D:614:ASP:O	1:D:615:THR:OG1	2.20	0.48
1:B:344:ARG:NH1	1:B:374:ASP:CG	2.63	0.48
2:F:1093:SER:O	2:F:1098:ALA:CB	2.61	0.48
1:D:633:MET:HE3	2:H:1505:PRO:HD3	1.93	0.48
1:C:451:VAL:O	1:C:452:PHE:C	2.51	0.48
2:E:1257:ILE:CD1	2:E:1260:MET:HE2	2.42	0.48
2:G:1701:HIS:O	2:G:1702:PHE:CD2	2.62	0.48
1:A:72:LYS:HB3	1:A:104:SER:HB3	1.96	0.48
1:B:239:ILE:HG22	1:B:240:LYS:N	2.27	0.48
1:B:264:HIS:HA	1:B:267:LYS:HB2	1.95	0.48
1:B:313:LEU:O	1:B:316:LYS:HB3	2.13	0.48
2:H:1420:ASN:HD22	2:H:1432:GLN:NE2	2.10	0.48
1:C:427:HIS:HB3	1:C:485:TRP:CD1	2.49	0.48
1:C:455:ILE:O	1:C:459:VAL:HG23	2.13	0.48
1:C:475:HIS:O	1:C:479:ASP:OD1	2.32	0.48
2:E:1223:PHE:HE1	2:E:1315:VAL:CG2	2.16	0.48
2:G:1637:LEU:HB3	2:G:1641:ASP:OD2	2.14	0.48
1:B:333:LEU:HD12	1:B:334:THR:N	2.29	0.48
1:A:14:ASP:HB3	1:A:17:LEU:HB3	1.95	0.48
1:B:212:ILE:HD12	1:B:212:ILE:H	1.79	0.48
2:F:1016:ARG:HH12	2:F:1034:ALA:CB	2.26	0.48
2:G:1717:LYS:HE2	2:G:1718:TYR:CE2	2.48	0.48
1:B:375:ILE:HG13	1:B:389:ILE:HG12	1.96	0.48
1:D:717:LEU:HA	1:D:720:LEU:CD1	2.40	0.48
2:G:1612:GLN:CB	2:G:1615:ILE:HD12	2.42	0.48
2:G:1635:ASN:H	2:G:1638:GLN:HG3	1.79	0.48
1:C:488:HIS:C	1:C:489:TYR:CD1	2.88	0.47
1:D:680:PHE:HB3	1:D:694:TYR:CE2	2.49	0.47
2:H:1459:GLY:O	2:H:1460:MET:C	2.52	0.47
1:A:72:LYS:C	1:A:74:PRO:HD3	2.35	0.47
1:D:752:PHE:HB3	1:D:785:CYS:HB3	1.96	0.47
2:E:1275:ASN:ND2	2:E:1275:ASN:N	2.62	0.47
1:A:44:SER:C	1:A:46:GLN:H	2.16	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:127:ARG:HG3	1:A:127:ARG:NH1	2.27	0.47
2:F:1021:GLU:HG2	2:F:1025:LYS:HZ1	1.78	0.47
2:G:1606:ILE:HG12	2:G:1650:LEU:HB3	1.95	0.47
2:G:1628:TYR:CZ	2:G:1719:LEU:HG	2.49	0.47
1:A:171:GLU:HB3	1:A:172:ASP:H	1.47	0.47
1:D:693:GLU:O	1:D:734:THR:HA	2.14	0.47
1:D:706:TYR:OH	1:D:745:GLN:HG2	2.14	0.47
1:D:762:PHE:CD1	1:D:778:PHE:HZ	2.33	0.47
2:G:1615:ILE:O	2:G:1619:LEU:N	2.43	0.47
1:B:344:ARG:NH1	1:B:374:ASP:OD2	2.47	0.47
1:D:638:LEU:HB3	1:D:654:MET:SD	2.55	0.47
2:F:1041:ASP:O	2:F:1044:THR:N	2.44	0.47
2:G:1647:ARG:CZ	2:G:1673:ASP:OD1	2.62	0.47
1:B:218:THR:HG22	1:B:219:ASN:N	2.28	0.47
2:E:1312:ARG:NH1	2:E:1312:ARG:HB3	2.29	0.47
2:G:1638:GLN:O	2:G:1642:ILE:CG1	2.62	0.47
2:H:1407:LEU:O	2:H:1451:VAL:HA	2.15	0.47
1:D:627:HIS:HB3	1:D:685:TRP:CE2	2.50	0.47
2:G:1679:ILE:HG23	2:G:1701:HIS:HA	1.96	0.47
1:C:480:PHE:CE2	1:C:514:MET:HG2	2.50	0.47
2:E:1291:GLN:O	2:E:1295:GLU:HB2	2.15	0.47
1:A:119:HIS:O	1:A:123:GLN:HG2	2.15	0.47
1:B:229:ARG:O	1:B:233:MET:HG2	2.15	0.47
1:D:635:LYS:O	1:D:639:ILE:HG13	2.15	0.47
1:D:710:LEU:O	1:D:714:MET:HG2	2.15	0.47
1:A:77:ALA:O	1:A:81:LEU:HD12	2.15	0.46
2:G:1717:LYS:HG3	2:G:1718:TYR:N	2.29	0.46
2:H:1416:ARG:HG2	2:H:1432:GLN:HB3	1.97	0.46
1:C:506:TYR:HE1	1:C:592:ASP:HB2	1.80	0.46
2:E:1224:ASN:HD22	2:E:1224:ASN:HA	1.50	0.46
1:A:101:LYS:HE2	1:A:103:LEU:HD21	1.98	0.46
1:C:572:ASP:CG	1:C:573:VAL:H	2.18	0.46
1:D:693:GLU:HB2	1:D:732:HIS:CE1	2.51	0.46
2:F:1009:VAL:HG22	2:F:1033:ALA:HB3	1.97	0.46
2:H:1473:ASP:OD2	2:H:1476:ILE:HG13	2.15	0.46
1:A:24:LEU:HD13	1:B:221:LEU:HD22	1.97	0.46
1:A:67:LYS:HB3	1:A:100:ILE:HD11	1.95	0.46
1:A:121:PHE:O	1:A:125:VAL:HG13	2.15	0.46
1:A:133:LEU:HD22	1:A:134:THR:N	2.31	0.46
1:A:158:ASP:OD1	1:A:160:SER:OG	2.32	0.46
1:C:417:LEU:HG	1:C:421:LEU:HD11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:502:ASP:O	1:C:502:ASP:OD1	2.33	0.46
2:G:1645:LYS:HE3	2:G:1646:GLU:HG2	1.97	0.46
1:B:378:PHE:HD2	1:B:378:PHE:O	1.99	0.46
1:C:445:LEU:HD11	2:G:1618:LEU:CG	2.44	0.46
1:D:627:HIS:O	1:D:628:SER:C	2.54	0.46
2:G:1690:ILE:HG22	2:G:1691:GLN:H	1.78	0.46
2:H:1490:ILE:O	2:H:1494:LYS:CB	2.59	0.46
1:C:451:VAL:CG1	1:D:643:LEU:HD21	2.45	0.46
1:B:335:VAL:HA	1:B:349:TYR:O	2.14	0.46
1:A:40:LYS:HA	1:A:43:LEU:HB2	1.98	0.46
1:B:290:MET:CE	1:B:321:PHE:HB2	2.45	0.46
1:C:566:ARG:C	1:C:568:ASN:N	2.50	0.46
1:D:647:LYS:NZ	2:H:1421:GLU:OE2	2.49	0.46
2:F:1063:ILE:O	2:F:1067:LYS:HG3	2.15	0.46
1:C:471:LEU:HB2	1:C:473:THR:CG2	2.41	0.45
2:F:1093:SER:HA	2:F:1096:LEU:HD12	1.98	0.45
2:H:1509:ASP:HB3	2:H:1512:ARG:NH2	2.30	0.45
1:A:73:THR:HG23	1:A:73:THR:O	2.17	0.45
1:B:341:HIS:CD2	1:B:347:ILE:HD11	2.51	0.45
1:C:544:ARG:HE	1:C:592:ASP:CA	2.29	0.45
2:E:1262:GLY:O	2:E:1266:LEU:HB2	2.16	0.45
1:C:549:TYR:N	1:C:549:TYR:CD2	2.83	0.45
1:D:692:LEU:HD12	1:D:693:GLU:H	1.81	0.45
2:E:1220:ASN:OD1	2:E:1232:GLN:NE2	2.35	0.45
2:F:1024:ASN:HB3	2:G:1625:LYS:HG3	1.98	0.45
2:G:1700:THR:CG2	2:G:1701:HIS:N	2.70	0.45
1:D:703:LEU:O	1:D:705:ALA:N	2.50	0.45
2:G:1687:LEU:C	2:G:1689:MET:N	2.66	0.45
2:H:1449:ASP:C	2:H:1477:ARG:HG3	2.32	0.45
1:D:653:GLU:O	1:D:655:ILE:N	2.50	0.45
2:G:1677:ARG:HH22	2:G:1720:PRO:HG2	1.81	0.45
1:C:440:LYS:CE	2:G:1705:PRO:HB2	2.47	0.45
1:D:682:THR:OG1	1:D:683:PHE:N	2.49	0.45
1:D:765:ILE:CG2	1:D:766:ARG:N	2.79	0.45
2:G:1618:LEU:O	2:G:1622:VAL:HG23	2.17	0.45
2:G:1639:ALA:O	2:G:1643:VAL:HG23	2.17	0.45
2:G:1643:VAL:HA	2:G:1648:PRO:CD	2.46	0.45
2:H:1443:VAL:HA	2:H:1448:PRO:CD	2.47	0.45
1:A:93:GLU:CG	1:A:132:HIS:NE2	2.79	0.45
1:A:141:HIS:HB2	1:A:147:ILE:HD13	1.97	0.45
1:C:486:LYS:O	1:C:487:THR:OG1	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:570:TYR:HB3	1:C:573:VAL:CG2	2.47	0.45
2:E:1293:SER:OG	2:E:1294:LYS:N	2.50	0.45
2:H:1425:LYS:HB2	2:H:1426:GLU:OE1	2.16	0.45
1:C:495:GLU:O	1:C:536:SER:HA	2.17	0.45
1:C:502:ASP:OD1	1:C:502:ASP:C	2.55	0.45
2:F:1018:LEU:O	2:F:1022:VAL:HG23	2.16	0.45
2:G:1604:GLU:HB2	2:G:1628:TYR:HD1	1.82	0.45
2:H:1471:VAL:O	2:H:1471:VAL:HG12	2.17	0.45
2:H:1509:ASP:CG	2:H:1512:ARG:HH22	2.20	0.45
1:C:544:ARG:CG	1:C:592:ASP:O	2.64	0.44
1:C:566:ARG:HA	1:C:566:ARG:HD3	1.66	0.44
2:H:1445:LYS:O	2:H:1446:GLU:HG2	2.17	0.44
1:A:93:GLU:O	1:A:134:THR:HA	2.17	0.44
1:B:338:GLN:NE2	1:B:341:HIS:HB2	2.32	0.44
2:G:1638:GLN:HE21	2:G:1638:GLN:HB3	1.59	0.44
1:C:567:GLN:CG	1:C:568:ASN:N	2.79	0.44
2:F:1026:GLU:CG	2:F:1112:ARG:HD2	2.47	0.44
2:G:1677:ARG:NH2	2:G:1720:PRO:CG	2.79	0.44
1:A:59:VAL:O	1:A:59:VAL:HG12	2.17	0.44
2:G:1687:LEU:H	2:G:1687:LEU:CD1	2.30	0.44
1:A:89:TYR:CD1	1:A:127:ARG:NH2	2.86	0.44
1:C:528:GLU:O	1:C:529:SER:HB2	2.17	0.44
1:A:42:ASN:H	1:A:42:ASN:HD22	1.65	0.44
1:B:352:PHE:CE2	1:B:356:PHE:CZ	3.06	0.44
1:C:547:ILE:HD12	1:C:549:TYR:OH	2.18	0.44
1:C:570:TYR:HB3	1:C:573:VAL:HG21	1.99	0.44
2:G:1634:ALA:H	2:G:1638:GLN:CD	2.21	0.44
1:A:38:LEU:HD21	2:E:1214:GLY:HA3	2.00	0.44
1:A:38:LEU:O	1:A:42:ASN:ND2	2.51	0.44
1:B:221:LEU:HG	1:B:225:LEU:HD12	1.99	0.44
1:B:307:ASP:O	1:B:309:LYS:N	2.50	0.44
1:C:550:LEU:HB2	1:C:587:ILE:HB	1.99	0.44
1:D:628:SER:O	1:D:632:TRP:HB2	2.18	0.44
1:D:682:THR:O	1:D:683:PHE:C	2.55	0.44
2:G:1662:GLY:HA2	2:G:1665:ILE:HG22	1.99	0.44
2:H:1443:VAL:O	2:H:1447:ARG:HA	2.18	0.44
1:A:124:ALA:O	1:A:157:ALA:N	2.47	0.44
1:A:137:LEU:CD1	1:A:146:LEU:HD21	2.47	0.44
2:F:1052:LEU:HD12	2:F:1052:LEU:HA	1.76	0.44
1:C:445:LEU:HB2	1:C:447:LYS:HG3	2.00	0.44
1:C:470:ASN:O	1:C:500:ILE:HG22	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1466:LEU:HD23	2:H:1469:MET:CE	2.48	0.44
1:B:350:LEU:HB2	1:B:387:ILE:HB	2.00	0.43
1:B:383:HIS:HB2	1:C:584:GLU:OE1	2.17	0.43
1:C:573:VAL:O	1:C:573:VAL:HG23	2.15	0.43
1:C:575:ILE:O	1:C:575:ILE:CG1	2.65	0.43
1:D:706:TYR:CD1	1:D:706:TYR:N	2.86	0.43
2:H:1514:ALA:HA	2:H:1517:LYS:HB3	2.00	0.43
2:H:1516:LYS:O	2:H:1519:LEU:N	2.51	0.43
1:A:40:LYS:HD3	2:E:1305:PRO:HB2	2.00	0.43
1:C:464:HIS:ND1	1:C:496:VAL:N	2.54	0.43
2:G:1655:MET:HG2	2:G:1680:ILE:HB	2.00	0.43
2:G:1677:ARG:HD2	2:G:1699:LEU:CD2	2.40	0.43
1:A:73:THR:N	1:A:74:PRO:HD3	2.32	0.43
1:D:771:GLU:O	1:D:772:ASP:HB2	2.17	0.43
2:G:1641:ASP:O	2:G:1645:LYS:HB3	2.18	0.43
1:A:72:LYS:HD2	1:A:102:ASP:OD2	2.19	0.43
1:C:499:GLU:O	1:C:539:THR:OG1	2.32	0.43
1:D:616:ALA:C	1:D:618:THR:N	2.63	0.43
2:F:1005:LYS:HB2	2:F:1048:PRO:HA	2.01	0.43
2:F:1091:GLN:O	2:F:1092:GLU:HB2	2.17	0.43
2:H:1440:LEU:HD12	2:H:1472:ILE:HD13	1.99	0.43
1:A:178:PHE:HA	1:A:186:LEU:O	2.18	0.43
1:B:333:LEU:HD13	1:B:352:PHE:HB2	1.99	0.43
2:E:1232:GLN:O	2:E:1233:ALA:HB2	2.18	0.43
2:F:1093:SER:O	2:F:1098:ALA:HB2	2.18	0.43
2:G:1708:ILE:C	2:G:1710:GLU:H	2.21	0.43
1:A:125:VAL:O	1:A:127:ARG:NH1	2.52	0.43
1:C:442:ASN:HA	1:C:445:LEU:CD1	2.47	0.43
2:E:1240:LEU:O	2:E:1241:ASP:C	2.57	0.43
2:G:1609:VAL:HG22	2:G:1633:ALA:CB	2.42	0.43
2:E:1291:GLN:O	2:E:1292:GLU:C	2.57	0.43
2:F:1020:ASN:CB	2:F:1030:THR:HG21	2.35	0.43
2:G:1674:GLU:H	2:G:1674:GLU:HG2	1.41	0.43
1:A:145:GLN:N	1:A:145:GLN:HE21	2.16	0.43
1:C:420:GLU:O	1:C:423:HIS:N	2.52	0.43
1:C:463:LYS:O	1:C:467:LYS:HB2	2.19	0.43
2:E:1213:SER:O	2:E:1214:GLY:C	2.57	0.43
2:G:1691:GLN:C	2:G:1694:LYS:HB3	2.39	0.43
2:H:1508:ILE:HD12	2:H:1508:ILE:HA	1.83	0.43
1:A:95:GLU:OE2	1:A:97:LEU:HD21	2.19	0.43
1:C:439:ILE:O	1:C:443:LEU:HB2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:650:ARG:O	1:D:654:MET:HB2	2.19	0.43
2:E:1213:SER:O	2:E:1216:ARG:N	2.52	0.43
2:F:1016:ARG:NH1	2:F:1034:ALA:HA	2.34	0.43
2:F:1016:ARG:NH1	2:F:1034:ALA:HB2	2.33	0.43
1:B:281:LEU:CD2	1:B:294:TYR:OH	2.66	0.43
1:D:617:LEU:O	1:D:617:LEU:CG	2.61	0.43
2:G:1620:ASN:ND2	2:G:1632:GLN:NE2	2.67	0.43
1:B:290:MET:HE2	1:B:321:PHE:CB	2.49	0.42
1:D:653:GLU:O	1:D:656:GLU:N	2.52	0.42
2:E:1263:ILE:HD13	2:E:1263:ILE:HA	1.90	0.42
2:G:1628:TYR:OH	2:G:1719:LEU:HG	2.19	0.42
2:G:1655:MET:HE1	2:G:1663:ILE:HD13	2.00	0.42
2:G:1668:ARG:O	2:G:1671:VAL:HB	2.19	0.42
2:G:1705:PRO:O	2:G:1706:PHE:O	2.37	0.42
1:A:128:GLU:OE1	2:E:1238:GLN:HG2	2.19	0.42
1:B:294:TYR:O	1:B:294:TYR:CD1	2.72	0.42
1:B:331:ASN:HB3	1:B:352:PHE:CE1	2.54	0.42
2:E:1220:ASN:ND2	2:E:1230:THR:OG1	2.52	0.42
2:E:1253:LEU:CD1	2:E:1265:ILE:HD11	2.49	0.42
1:C:541:HIS:ND1	1:C:542:PRO:HD2	2.35	0.42
1:C:567:GLN:HG2	1:C:568:ASN:N	2.34	0.42
1:C:572:ASP:C	1:C:573:VAL:HG13	2.40	0.42
1:D:703:LEU:HD22	1:D:746:LEU:CD1	2.47	0.42
1:B:364:ASP:OD1	1:B:364:ASP:C	2.58	0.42
1:C:489:TYR:HB2	1:C:490:MET:H	1.56	0.42
1:C:572:ASP:O	1:C:573:VAL:HG22	2.18	0.42
2:E:1235:ASN:OD1	2:E:1238:GLN:HG3	2.20	0.42
2:G:1662:GLY:O	2:G:1665:ILE:HG22	2.19	0.42
2:G:1688:ASP:OD1	2:G:1688:ASP:N	2.51	0.42
2:H:1410:ASP:OD1	2:H:1412:GLN:HB2	2.19	0.42
2:H:1450:LEU:HD11	2:H:1479:ILE:HG13	2.01	0.42
1:A:31:ASP:O	1:A:35:LYS:HG3	2.20	0.42
1:B:308:GLN:CA	1:B:308:GLN:HE21	2.33	0.42
1:B:378:PHE:C	1:B:378:PHE:CD2	2.93	0.42
2:G:1616:ARG:HG2	2:G:1616:ARG:HH11	1.84	0.42
2:G:1687:LEU:HA	2:G:1690:ILE:CB	2.19	0.42
2:G:1690:ILE:CG2	2:G:1691:GLN:N	2.74	0.42
1:B:267:LYS:HD3	1:B:296:VAL:HB	2.02	0.42
1:C:448:TYR:O	1:C:451:VAL:HB	2.19	0.42
1:C:549:TYR:C	1:C:550:LEU:HD12	2.39	0.42
1:D:727:ARG:O	2:H:1437:LEU:HD13	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:471:LEU:HA	1:C:501:LYS:O	2.19	0.42
1:D:702:ASP:OD2	1:D:704:SER:HB3	2.19	0.42
2:F:1051:VAL:HG21	2:F:1069:MET:CE	2.50	0.42
2:H:1483:ALA:HB3	2:H:1486:GLU:HB2	2.02	0.42
2:H:1500:THR:OG1	2:H:1501:HIS:N	2.52	0.42
1:A:127:ARG:NH1	1:A:127:ARG:CG	2.78	0.42
1:D:682:THR:HA	1:D:685:TRP:CE3	2.55	0.42
2:E:1222:VAL:O	2:E:1225:LYS:HB2	2.19	0.42
2:F:1046:GLU:O	2:F:1047:ARG:C	2.57	0.42
1:A:121:PHE:C	1:A:123:GLN:H	2.23	0.42
1:C:467:LYS:HD3	1:C:496:VAL:HB	2.01	0.42
1:D:700:ILE:CD1	1:D:700:ILE:N	2.83	0.42
1:D:708:GLN:O	1:D:712:LYS:CE	2.67	0.42
2:G:1713:ASP:HA	2:G:1716:LYS:HB2	2.00	0.42
1:B:345:GLN:HE21	1:B:345:GLN:HB2	1.71	0.42
1:B:364:ASP:C	1:B:366:ARG:N	2.72	0.42
1:D:749:TYR:C	1:D:750:LEU:HD12	2.39	0.42
2:H:1477:ARG:NH1	2:H:1520:PRO:CB	2.79	0.42
1:C:582:SER:HB2	1:C:583:HIS:ND1	2.34	0.41
1:D:717:LEU:O	1:D:720:LEU:HD12	2.19	0.41
2:F:1065:ILE:O	2:F:1069:MET:HB2	2.20	0.41
2:F:1107:ASP:C	2:F:1109:ASP:H	2.23	0.41
2:G:1691:GLN:CD	2:G:1694:LYS:HD3	2.40	0.41
2:H:1477:ARG:H	2:H:1477:ARG:HG2	1.27	0.41
1:C:440:LYS:NZ	2:G:1705:PRO:HB2	2.35	0.41
1:C:514:MET:CE	1:C:548:LEU:CD1	2.98	0.41
1:C:572:ASP:O	1:C:573:VAL:O	2.38	0.41
1:D:621:LEU:HD11	1:D:625:LEU:HD11	2.01	0.41
1:D:637:GLN:HB2	2:H:1505:PRO:HB3	2.00	0.41
2:E:1205:LYS:HB2	2:E:1248:PRO:HA	2.02	0.41
2:E:1261:ASP:CB	2:E:1264:GLU:HB2	2.50	0.41
2:F:1077:ARG:HH11	2:F:1077:ARG:CG	2.33	0.41
2:G:1687:LEU:HD13	2:G:1687:LEU:N	2.32	0.41
2:G:1708:ILE:C	2:G:1710:GLU:N	2.72	0.41
1:A:132:HIS:HE1	1:A:134:THR:OG1	2.02	0.41
1:B:231:ASP:O	1:B:235:LYS:HG3	2.19	0.41
1:B:243:LEU:HD12	1:B:243:LEU:HA	1.92	0.41
1:C:490:MET:H	1:C:490:MET:HG2	1.70	0.41
2:E:1219:LEU:O	2:E:1222:VAL:HB	2.20	0.41
2:G:1650:LEU:CD2	2:G:1651:VAL:N	2.83	0.41
1:A:141:HIS:CD2	1:A:144:ARG:HG2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242:ASN:OD1	2:F:1018:LEU:HD13	2.21	0.41
1:B:364:ASP:O	1:B:368:ASN:N	2.54	0.41
1:C:566:ARG:HG2	1:C:566:ARG:NH1	2.36	0.41
1:D:690:MET:CE	1:D:733:LEU:HD23	2.50	0.41
2:G:1647:ARG:NH1	2:G:1673:ASP:OD2	2.53	0.41
2:G:1679:ILE:HG23	2:G:1701:HIS:CA	2.51	0.41
1:C:438:LEU:HD21	2:G:1615:ILE:HG13	2.02	0.41
1:D:624:LEU:O	1:D:627:HIS:HB2	2.21	0.41
1:A:173:VAL:O	1:A:173:VAL:HG23	2.20	0.41
1:B:240:LYS:HZ3	2:F:1106:PHE:C	2.24	0.41
1:C:420:GLU:O	1:C:422:ILE:N	2.53	0.41
1:D:693:GLU:CG	1:D:732:HIS:HE1	2.34	0.41
1:D:721:PHE:O	1:D:725:VAL:HG13	2.19	0.41
2:G:1719:LEU:HA	2:G:1719:LEU:HD13	1.86	0.41
2:H:1407:LEU:HD12	2:H:1431:PHE:O	2.20	0.41
2:H:1412:GLN:HE21	2:H:1412:GLN:HB3	1.65	0.41
1:A:146:LEU:O	1:A:191:LEU:N	2.52	0.41
1:D:653:GLU:C	1:D:655:ILE:N	2.74	0.41
2:E:1240:LEU:O	2:E:1243:VAL:N	2.53	0.41
1:A:13:SER:O	1:A:14:ASP:CB	2.68	0.41
1:B:267:LYS:HE2	1:B:299:GLU:CG	2.47	0.41
1:B:268:LEU:HA	1:B:271:LEU:CD1	2.48	0.41
1:B:374:ASP:O	1:B:376:MET:HG3	2.21	0.41
1:C:458:MET:HA	1:C:461:ASP:OD2	2.20	0.41
1:C:488:HIS:O	1:C:489:TYR:CD1	2.74	0.41
1:C:582:SER:HB2	1:C:583:HIS:CE1	2.55	0.41
1:D:763:ASP:O	1:D:764:ASP:C	2.59	0.41
2:F:1026:GLU:HG3	2:F:1112:ARG:CD	2.49	0.41
2:F:1039:ALA:O	2:F:1043:VAL:HG23	2.20	0.41
2:H:1420:ASN:HD21	2:H:1432:GLN:HE21	1.64	0.41
1:A:55:ILE:HD13	1:B:240:LYS:HB2	2.02	0.41
1:C:420:GLU:C	1:C:422:ILE:N	2.73	0.41
2:F:1050:LEU:HD12	2:F:1077:ARG:HB3	2.02	0.41
2:G:1652:LEU:HD12	2:G:1679:ILE:HB	2.03	0.41
2:H:1409:VAL:O	2:H:1454:ASP:HB3	2.21	0.41
1:A:36:LEU:O	1:A:40:LYS:HG2	2.21	0.40
1:C:493:GLU:HB2	1:C:532:HIS:CE1	2.56	0.40
2:E:1280:ILE:O	2:E:1301:HIS:HA	2.22	0.40
2:F:1077:ARG:HE	2:F:1120:PRO:HG2	1.83	0.40
1:A:93:GLU:HG3	1:A:132:HIS:NE2	2.36	0.40
1:B:344:ARG:CZ	1:B:376:MET:CE	3.00	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:671:LEU:CD2	1:D:700:ILE:HA	2.52	0.40
2:G:1637:LEU:O	2:G:1638:GLN:C	2.58	0.40
1:B:247:LYS:NZ	2:G:1629:GLN:HE22	2.19	0.40
1:D:690:MET:HE3	1:D:733:LEU:HB2	2.03	0.40
1:D:737:LEU:HD22	1:D:746:LEU:HD22	1.96	0.40
1:D:741:HIS:HB3	1:D:744:ARG:O	2.20	0.40
2:F:1019:LEU:O	2:F:1023:PHE:CD2	2.74	0.40
1:C:545:GLN:HB2	1:C:592:ASP:O	2.21	0.40
2:E:1205:LYS:HD2	2:E:1246:GLU:O	2.21	0.40
2:H:1469:MET:HE3	2:H:1478:VAL:CG2	2.52	0.40
1:A:55:ILE:O	1:A:58:MET:HB2	2.22	0.40
1:B:242:ASN:O	1:B:247:LYS:HB2	2.22	0.40
1:B:313:LEU:HD21	1:B:389:ILE:HD13	2.03	0.40
2:E:1212:GLN:HE21	2:E:1212:GLN:HB2	1.48	0.40
2:F:1007:LEU:HD12	2:F:1031:PHE:O	2.21	0.40
2:F:1070:LYS:HG2	2:F:1076:ILE:HG21	2.01	0.40
2:G:1653:LEU:HG	2:G:1654:ASP:N	2.36	0.40
2:G:1666:LEU:C	2:G:1666:LEU:CD2	2.90	0.40
2:H:1440:LEU:HD12	2:H:1472:ILE:CD1	2.52	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:D:743:ASP:O	2:E:1294:LYS:NZ[4_565]	1.99	0.21

## 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	179/182 (98%)	154 (86%)	22 (12%)	3 (2%)	<b>9</b> 39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	180/182 (99%)	148 (82%)	24 (13%)	8 (4%)	2	15
1	C	179/182 (98%)	139 (78%)	23 (13%)	17 (10%)	0	3
1	D	180/182 (99%)	145 (81%)	27 (15%)	8 (4%)	2	15
2	E	117/119 (98%)	94 (80%)	19 (16%)	4 (3%)	3	20
2	F	117/119 (98%)	101 (86%)	13 (11%)	3 (3%)	5	27
2	G	117/119 (98%)	79 (68%)	26 (22%)	12 (10%)	0	2
2	H	117/119 (98%)	89 (76%)	15 (13%)	13 (11%)	0	2
All	All	1186/1204 (98%)	949 (80%)	169 (14%)	68 (6%)	1	10

All (68) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	14	ASP
1	A	168	ASN
1	B	248	TYR
1	B	300	ILE
1	B	307	ASP
1	B	344	ARG
1	B	364	ASP
1	B	371	GLU
1	C	413	SER
1	C	415	THR
1	C	489	TYR
1	C	499	GLU
1	C	545	GLN
1	C	568	ASN
1	C	575	ILE
1	D	615	THR
1	D	683	PHE
1	D	700	ILE
2	F	1092	GLU
2	G	1613	SER
2	G	1614	GLY
2	G	1699	LEU
2	G	1701	HIS
2	G	1708	ILE
2	H	1428	TYR
2	H	1460	MET
2	H	1487	LEU
2	H	1499	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	H	1508	ILE
1	B	308	GLN
1	B	343	ASP
1	C	446	GLN
1	C	498	GLY
1	C	572	ASP
1	D	654	MET
1	D	707	ASP
1	D	771	GLU
2	E	1310	GLU
2	F	1108	ILE
2	G	1650	LEU
2	G	1706	PHE
2	G	1709	ASP
2	H	1446	GLU
2	H	1514	ALA
2	H	1518	TYR
1	A	171	GLU
1	C	542	PRO
1	D	763	ASP
2	E	1233	ALA
2	F	1021	GLU
2	H	1467	LYS
1	C	487	THR
1	C	507	ASP
1	C	573	VAL
2	E	1309	ASP
2	H	1462	GLY
2	H	1496	LEU
1	C	421	LEU
1	D	684	ASN
2	G	1716	LYS
2	H	1448	PRO
1	C	418	THR
2	E	1214	GLY
2	G	1691	GLN
2	G	1690	ILE
2	H	1520	PRO
1	C	451	VAL
2	G	1720	PRO

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

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	164/167 (98%)	149 (91%)	15 (9%)	9	34
1	B	167/167 (100%)	148 (89%)	19 (11%)	5	24
1	C	161/167 (96%)	122 (76%)	39 (24%)	0	3
1	D	165/167 (99%)	149 (90%)	16 (10%)	8	31
2	E	102/105 (97%)	88 (86%)	14 (14%)	3	17
2	F	105/105 (100%)	82 (78%)	23 (22%)	1	5
2	G	104/105 (99%)	86 (83%)	18 (17%)	2	10
2	H	102/105 (97%)	88 (86%)	14 (14%)	3	17
All	All	1070/1088 (98%)	912 (85%)	158 (15%)	3	14

All (158) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	43	LEU
1	A	50	ARG
1	A	72	LYS
1	A	119	HIS
1	A	126	SER
1	A	133	LEU
1	A	145	GLN
1	A	146	LEU
1	A	147	ILE
1	A	148	LEU
1	A	151	ASP
1	A	165	ILE
1	A	167	GLN
1	A	180	ILE
1	A	191	LEU
1	B	213	SER
1	B	214	ASP
1	B	215	THR
1	B	218	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	228	SER
1	B	234	ASN
1	B	249	ASP
1	B	299	GLU
1	B	328	GLU
1	B	345	GLN
1	B	360	SER
1	B	364	ASP
1	B	365	ILE
1	B	371	GLU
1	B	372	ASP
1	B	375	ILE
1	B	384	GLU
1	B	386	LEU
1	B	391	LEU
1	C	413	SER
1	C	415	THR
1	C	417	LEU
1	C	418	THR
1	C	419	ASN
1	C	429	ARG
1	C	434	ASN
1	C	443	LEU
1	C	450	ARG
1	C	466	SER
1	C	469	SER
1	C	472	LYS
1	C	473	THR
1	C	479	ASP
1	C	484	ASN
1	C	488	HIS
1	C	489	TYR
1	C	491	THR
1	C	496	VAL
1	C	500	ILE
1	C	502	ASP
1	C	512	LYS
1	C	515	ARG
1	C	521	PHE
1	C	527	ARG
1	C	533	LEU
1	C	536	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	540	ASP
1	C	545	GLN
1	C	547	ILE
1	C	548	LEU
1	C	551	ASP
1	C	564	ASP
1	C	566	ARG
1	C	568	ASN
1	C	571	GLU
1	C	573	VAL
1	C	581	THR
1	C	583	HIS
1	D	617	LEU
1	D	638	LEU
1	D	642	ASN
1	D	649	ASP
1	D	656	GLU
1	D	672	LYS
1	D	700	ILE
1	D	720	LEU
1	D	721	PHE
1	D	726	SER
1	D	736	SER
1	D	737	LEU
1	D	745	GLN
1	D	773	VAL
1	D	778	PHE
1	D	780	ILE
2	E	1204	GLU
2	E	1212	GLN
2	E	1213	SER
2	E	1220	ASN
2	E	1224	ASN
2	E	1240	LEU
2	E	1252	LEU
2	E	1263	ILE
2	E	1266	LEU
2	E	1269	MET
2	E	1275	ASN
2	E	1276	ILE
2	E	1286	GLU
2	E	1317	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	F	1011	ASP
2	F	1020	ASN
2	F	1025	LYS
2	F	1040	LEU
2	F	1047	ARG
2	F	1052	LEU
2	F	1063	ILE
2	F	1065	ILE
2	F	1066	LEU
2	F	1069	MET
2	F	1070	LYS
2	F	1071	VAL
2	F	1074	GLU
2	F	1086	GLU
2	F	1087	LEU
2	F	1099	LEU
2	F	1106	PHE
2	F	1107	ASP
2	F	1108	ILE
2	F	1109	ASP
2	F	1111	ILE
2	F	1113	ASP
2	F	1119	LEU
2	G	1621	GLU
2	G	1638	GLN
2	G	1647	ARG
2	G	1649	ASP
2	G	1650	LEU
2	G	1653	LEU
2	G	1660	MET
2	G	1673	ASP
2	G	1680	ILE
2	G	1687	LEU
2	G	1688	ASP
2	G	1689	MET
2	G	1691	GLN
2	G	1692	GLU
2	G	1702	PHE
2	G	1704	LYS
2	G	1706	PHE
2	G	1709	ASP
2	H	1412	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	H	1415	ILE
2	H	1440	LEU
2	H	1460	MET
2	H	1461	ASP
2	H	1465	ILE
2	H	1466	LEU
2	H	1476	ILE
2	H	1477	ARG
2	H	1482	THR
2	H	1499	LEU
2	H	1507	ASP
2	H	1508	ILE
2	H	1511	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (45) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	27	HIS
1	A	42	ASN
1	A	108	GLN
1	A	119	HIS
1	A	141	HIS
1	A	145	GLN
1	A	168	ASN
1	B	227	HIS
1	B	270	ASN
1	B	288	HIS
1	B	308	GLN
1	B	341	HIS
1	B	345	GLN
1	C	523	GLN
1	C	541	HIS
1	C	545	GLN
1	C	553	HIS
1	D	627	HIS
1	D	637	GLN
1	D	646	GLN
1	D	708	GLN
1	D	723	GLN
1	D	732	HIS
1	D	741	HIS
2	E	1212	GLN

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Mol	Chain	Res	Type
2	E	1224	ASN
2	E	1238	GLN
2	E	1275	ASN
2	E	1291	GLN
2	F	1020	ASN
2	F	1038	GLN
2	F	1091	GLN
2	G	1612	GLN
2	G	1624	ASN
2	G	1629	GLN
2	G	1632	GLN
2	G	1638	GLN
2	G	1691	GLN
2	H	1412	GLN
2	H	1424	ASN
2	H	1432	GLN
2	H	1438	GLN
2	H	1475	ASN
2	H	1491	GLN
2	H	1501	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](#)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 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

### 6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

### 6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

### 6.4 Ligands

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers

EDS was not executed - this section is therefore empty.