



Full wwPDB EM Validation Report ⓘ

Feb 28, 2024 – 04:03 PM EST

PDB ID : 8TEP
EMDB ID : EMD-41194
Title : Human cytomegalovirus portal vertex, virion configuration 1 (VC1)
Authors : Jih, J.; Liu, Y.T.; Liu, W.; Zhou, H.
Deposited on : 2023-07-06
Resolution : 3.50 Å (reported)

This is a Full wwPDB EM 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/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

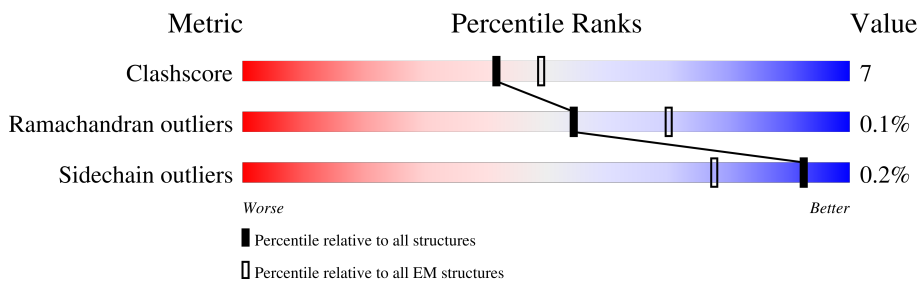
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.50 Å.

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








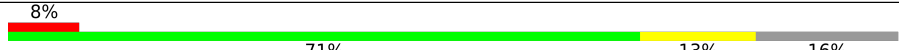
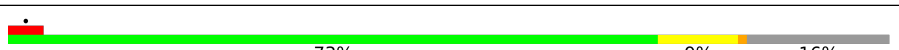
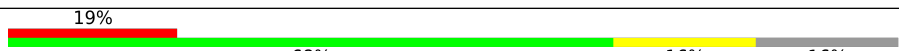
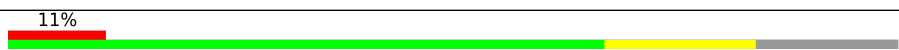

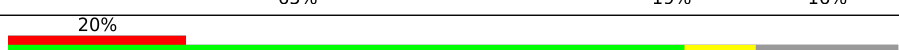


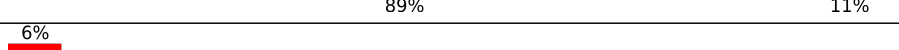
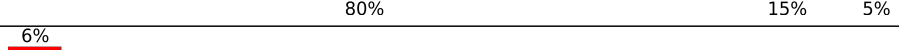
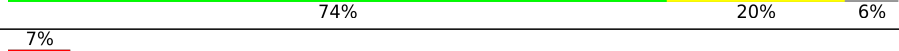


Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2241	
1	C	2241	
2	B	983	
2	D	983	
3	E	642	
3	F	642	
4	G	594	
5	H	1370	

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Mol	Chain	Length	Quality of chain
5	I	1370	 81% 18%
5	J	1370	 81% 15%
5	K	1370	 81% 14%
5	L	1370	 84% 15%
5	M	1370	 82% 16%
6	N	75	 71% 13% 16%
6	O	75	 73% 9% 16%
6	P	75	 68% 16% 16%
6	Q	75	 67% 17% 16%
6	R	75	 65% 19% 16%
6	S	75	 76% 8% 16%
7	T	290	 72% 10% 17%
7	W	290	 89% 11%
8	U	306	 80% 15% 5%
8	V	306	 74% 20% 6%
8	X	306	 84% 12%
8	Y	306	 79% 13% 7%
9	Z	1048	 23% 73%

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 112987 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Large tegument protein deneddylase.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	723	Total	C	N	O	S	0	0
			5833	3733	1026	1052	22		
1	C	699	Total	C	N	O	S	0	0
			5651	3626	997	1006	22		

- Molecule 2 is a protein called Inner tegument protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	492	Total	C	N	O	S	0	0
			3993	2535	709	734	15		
2	D	453	Total	C	N	O	S	0	0
			3685	2349	645	676	15		

- Molecule 3 is a protein called Capsid vertex component 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	E	482	Total	C	N	O	S	0	0
			3915	2516	688	699	12		
3	F	492	Total	C	N	O	S	0	0
			3986	2562	705	708	11		

- Molecule 4 is a protein called Capsid vertex component 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	G	472	Total	C	N	O	S	0	0
			3873	2422	744	693	14		

- Molecule 5 is a protein called Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	H	1311	Total	C	N	O	S	0	0
			10406	6630	1802	1913	61		

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Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	1350	Total	C	N	O	S	0	0
			10693	6809	1853	1970	61		
5	J	1317	Total	C	N	O	S	0	0
			10433	6641	1814	1919	59		
5	K	1298	Total	C	N	O	S	0	0
			10282	6544	1792	1887	59		
5	L	1350	Total	C	N	O	S	0	0
			10693	6809	1853	1970	61		
5	M	1350	Total	C	N	O	S	0	0
			10693	6809	1853	1970	61		

- Molecule 6 is a protein called Small capsomere-interacting protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	N	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
6	O	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
6	P	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
6	Q	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
6	R	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
6	S	63	Total	C	N	O	S	0	0
			513	321	97	91	4		

- Molecule 7 is a protein called Triplex capsid protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	T	240	Total	C	N	O	S	0	0
			1919	1235	335	338	11		
7	W	290	Total	C	N	O	S	0	0
			2325	1485	411	417	12		

- Molecule 8 is a protein called Triplex capsid protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	U	292	Total	C	N	O	S	0	0
			2317	1489	399	411	18		
8	V	288	Total	C	N	O	S	0	0
			2292	1471	397	407	17		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	X	295	Total	C	N	O	S	0	0
			2334	1501	402	412	19		
8	Y	285	Total	C	N	O	S	0	0
			2266	1456	387	405	18		

- Molecule 9 is a protein called Large structural phosphoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	Z	284	Total	C	N	O	S	0	0
			2320	1463	425	420	12		

Y1757	F1696	R1569	GLN	ASN	GLN	LYS	ASP	LEU	VAL	GLY	LEU	GLN	GLN	GLY	LYS	GLY	LYS	ARG	MET
I1758	C1687	D1570	THR	ALA	LEU	GLN	PRO	ARG	GLN	ALA	ASP	ALA	GLN	GLN	GLN	GLN	GLN	GLN	ARG
Y1759	L1698	R1571	LEU	ALA	THR	GLN	GLY	GLY	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ARG
I1760	L1699	R1572	G1444	ALA	TYR	GLN	GLY	ILE	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ALA
Y1761	C1633	R1573	D1445	ASN	SER	GLN	SER	ILE	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ARG
L1762	S1634	R1574	L1446	PHE	ALA	ALA	VAL	ALA	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ASP
K1763	G1635	L1575	E1447	ILE	GLU	GLY	THR	ILE	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLU
Y1764	S1701	L1576	L1448	ALA	ARG	GLN	ARG	ALA	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	SER
P1765	W1704	C1576	Q1449	GLN	THR	GLN	VAL	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	PRO
Y1766	H1705	F1577	E1450	HIS	VAL	GLN	VAL	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	THR
Q1767	Q1706	A1578	T1451	L1514	ARG	GLN	ARG	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	PHE
M1768	R1707	R1579	T1452	L1515	TRP	GLN	TRP	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	PHE
S1769	I1708	H1580	L1452	G1516	MET	LEU	MET	LEU	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	PHE
L1770	D1709	H1581	E1455	A1517	THR	THR	THR	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ASP
P1771	P1711	F1584	Y1456	T1519	ASN	GLN	ASN	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ASP
S1772	G1710	F1584	Y1456	T1519	ASN	GLN	ASN	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	ASP
L1773	GLN	L1585	F1457	R1520	ALA	GLU	ALA	GLU	GLU	GLU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
T1774	GLU	E1586	A1458	G1521	THR	GLN	THR	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
A1775	LEU	V1587	L1459	L1522	PRO	LEU	PRO	LEU	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
H1776	THR	V1588	H1461	M1523	VAL	ARG	VAL	ARG	ARG	ARG	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
L1777	ALA	D1589	G1462	A1524	VAL	ILE	VAL	ILE	ILE	ILE	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
H1778	ALA	V1590	I1463	L1525	ASP	THR	ASP	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Q1779	ASP	F1591	Q1464	E1526	VAL	THR	VAL	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
M1780	ARG	F1592	T1465	H1528	GLN	ASP	GLN	ASP	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
D1780	VAL	M1593	F1466	V1529	ALA	THR	ALA	THR	ALA	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Y1781	GLY	R1594	S1467	Q1530	VAL	GLY	VAL	GLY	VAL	VAL	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Y1785	SER	R1595	Y1468	L1531	ALA	PRO	ALA	PRO	ALA	PRO	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Y1788	GLY	I1596	G1469	G1532	VAL	THR	VAL	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
T1789	GLY	V1597	L1470	H1533	THR	GLN	THR	GLN	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Y1790	ASP	T1598	D1471	Q1534	ARG	GLN	ARG	GLN	ARG	ARG	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
H1791	VAL	Q1599	F1472	Q1534	THR	THR	THR	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
K1791	GLY	A1600	R1473	L1537	GLY	THR	THR	THR	THR	THR	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
M1792	GLY	G1601	S1474	L1537	PRO	GLY	PRO	GLY	PRO	PRO	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Y1795	ARG	E1602	Q1475	L1540	GLN	THR	GLN	THR	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
H1796	ARG	P1603	L1476	M1541	VAL	THR	VAL	THR	VAL	VAL	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
L1797	GLY	L1604	E1477	M1541	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
E1798	ARG	H1605	K1478	S1544	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
E1799	THR	L1606	D1481	L1545	GLY	THR	GLY	THR	GLY	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Q1800	THR	V1607	L1482	Y1546	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
V1801	THR	T1608	L1482	Y1547	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
K1802	THR	D1609	R1483	Y1547	ARG	THR	ARG	THR	ARG	ARG	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
A1803	THR	Y1610	T1484	L1549	HIS	THR	HIS	THR	HIS	HIS	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
F1804	THR	G1611	T1485	L1549	GLN	THR	GLN	THR	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
T1807	THR	M1612	E1488	E1550	VAL	THR	VAL	THR	VAL	VAL	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
P1808	THR	V1613	L1489	D1551	GLN	THR	GLN	THR	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
T1809	THR	A1614	A1490	T1552	GLU	THR	GLU	THR	GLU	GLU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Q1810	THR	F1615	K1491	S1554	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
L1811	THR	K1616	R1492	V1555	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
M1814	THR	Y1617	R1493	L1556	GLN	THR	GLN	THR	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
Q1815	THR	L1618	R1494	P1557	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
K1818	THR	A1619	G1494	A1558	VAL	THR	VAL	THR	VAL	VAL	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
L1819	THR	L1620	T1495	T1559	GLN	THR	GLN	THR	GLN	GLN	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
P1785	THR	R1621	R1496	H1560	GLU	THR	GLU	THR	GLU	GLU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
E1756	THR	D1622	L1497	E1561	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
E1822	THR	D1623	S1498	T1562	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
N1823	THR	G1624	N1499	D1563	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
K1824	THR	R1625	E1500	P1564	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
		P1626	G1501	A1565	LEU	THR	LEU	THR	LEU	LEU	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
		L1627	L1502	L1566	ALA	THR	ALA	THR	ALA	ALA	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
		A1628	L1503	L1567	GLY	THR	GLY	THR	GLY	GLY	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	VAL
		W1629		H1568															

LEU
SER
SER
LEU
ILE
ASP
PRO
PRO
ALA
GLY
THR
SER
VAL
SER
LEU
PRO
PRO
ALA
SER
PRO

• Molecule 3: Capsid vertex component 2



MET
SER
LEU
LEU
HIS
THR
PHE
TRP
LEU
SER
PRO
V12
A13
V14
V22
R32
E56
R43
G44
G45
M53
V56
L65
R66
D67
Q73
T74
Y75
C76
E77
E80
G81
R82
E87
A88
N91
Q92
E95
L96
ASP
GLY
PRO
PRO
PRO
ARG
THR
LEU

LEU
GLN
PRO
PRO
CYS
ARG
PRO
ARG
SER
SER
PRO
GLY
THR
VAL
VAL
ALA
GLY
ALA
SER
VAL
VAL
HIS
HIS
ASP
ALA
ILE
THR
GLY
PRO
ALA
ALA
ALA
PRO
PRO

THR
TRP
LEU
ALA
GLN
CYS
ALA
GLU
ARG
PRO
LEU
PRO
GLY
M179
V190
P181
S182
Y183
F184
G185
I186
T187
Q188
M189
D190
P191
F192
I193
R194
F195
H196
T197
H198
D198
F199
R200
G201
E202
V203
V204
N205
T206
A211
M207
F208
E209
N210
A211
S212
T213
W214
D211
C212
Y213
F218
G219
I220
W221
Y222
Y223
R224
L225

K226
R227
G228
L229
Y230
T231
Q232
P233
R234
W235
K236
R237
V238
Y239
H240
L241
A242
M244
D245
N246
F247
S248
P249
S250
Q251
E252
L253
L254
L255
G256
V257
W258
N259
A260
L261
E262
N263
V264
T265
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P268
T269
V270
D271
C272
L273
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D276
L277
E278
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A281
C282
L283
A284
A285

A286
Y287
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H289
A290
L291
W292
E293
R294
R295
D296
P297
P298
D299
S300
V301
A302
T303
V304
L305
G306
E307
L308
P309
Q310
Q311
L312
P313
R314
L315
A316
D317
D318
V319
S320
R321
E322
I323
A324
A325
W326
E327
G328
PRO
VAL
GLN
ALA
ALA
G333
N334
N335
Y336
Y337
A338
Y339
R340
D341
S342
P343
D344
L345

R346
Y347
Y348
N349
P350
LEU
SER
GLY
GLY
ARG
H356
Y357
H358
P359
G360
T361
F362
D363
H365
V366
L367
V368
R369
L370
F371
H372
K373
R374
G375
V376
I377
Q378
R379
L380
P381
G382
G384
THR
ILE
THR
GLU
GLU
LEU
VAL
GLN
GLU
ARG
LEU
SER
GLY
GLN
VAL
D401
D402
V403
L404
S405

L406
W407
S408
R409
R410
L411
L412
V413
G414
K415
L416
G417
R418
D419
V420
P421
V422
V423
V424
H425
E426
Q427
Q428
Y429
L430
R431
S432
G433
L434
T435
A436
L437
A438
G439
L440
L441
L442
L443
W444
K445
V446
T447
M448
A449
D450
S451
V452
F453
A454
P455
R456
T457
G458
K459
P460
T461
L462
A463
D464
L465

L466
G467
S468
D469
A470
V471
ALA
GLY
GLY
LEU
PRO
GLY
ARG
W495
R496
M497
F498
E499
F500
L501
V502
R503
Y504
Y505
I506
P508
W509
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D513
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V516
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S519
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L521
F522
G524
L525

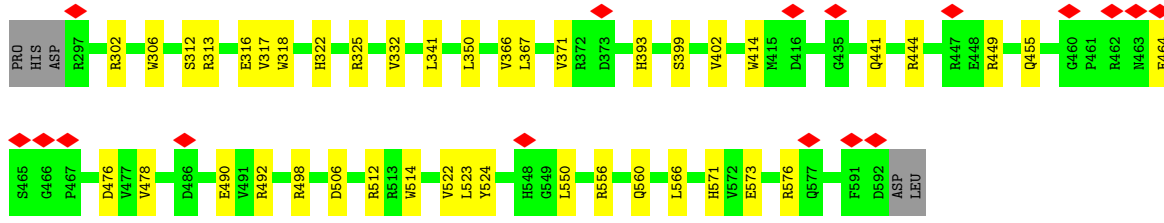
A526
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S533
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P540
S541
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ASP
SER
ALA
GLY
GLY
ASP
GLY
GLY
GLY
R562
R563
N564
P565
V566
A567
D568
Y569
M570
F571
A572
Q573
S574
S575
K576
Q577
Y578
G579
D580
L581
R582
R583
L584
E585

V586
H587
D588
A589
L590
L591
F592
H593
Y594
E595
H596
G597
L598
G599
R600
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P607
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V611
S612
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G615
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S617
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F619
N620
V621
N622
D623
I624
Y625
E626
L627
L628
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F635
L636
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S638
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V641
L642

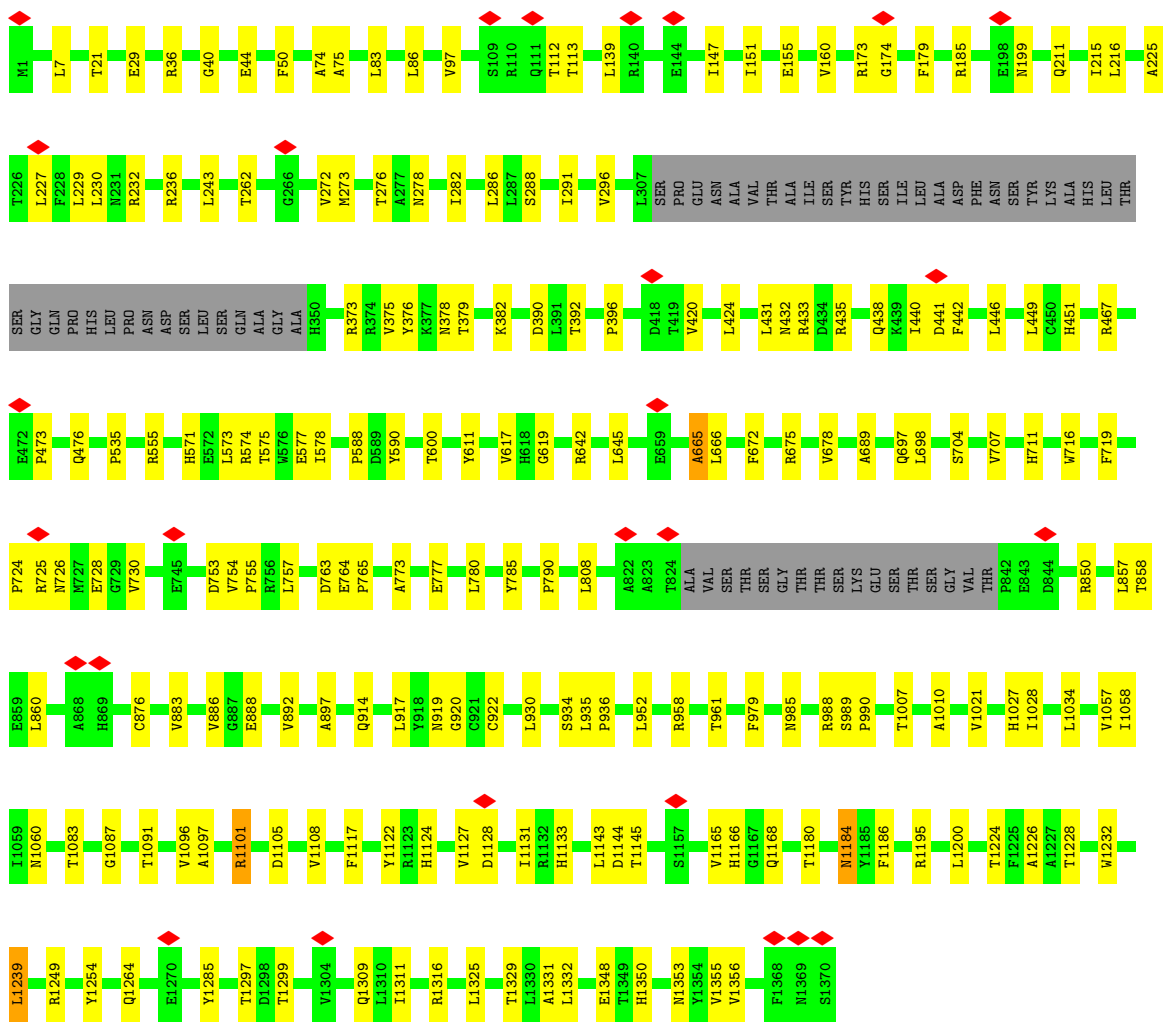
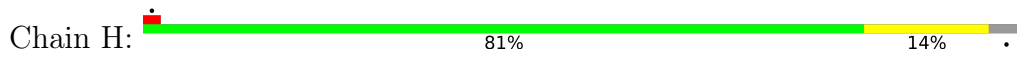
• Molecule 3: Capsid vertex component 2



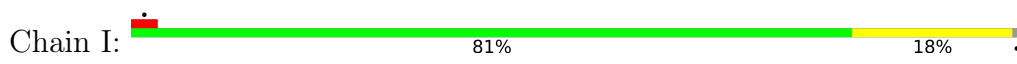
MET
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L3
L4
F7
P11
F16
H19
E20
V23
E29
V30
L34
D37
T41
M42
R43
G44
G45
GLY
TRP
ARG
GLU
GLY
ASP
VAL
LEU
LEU
MET
D54
R55
V56
R57
K58
R59
L61
R62
Q63
L68
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Y75
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G81
R82
E85

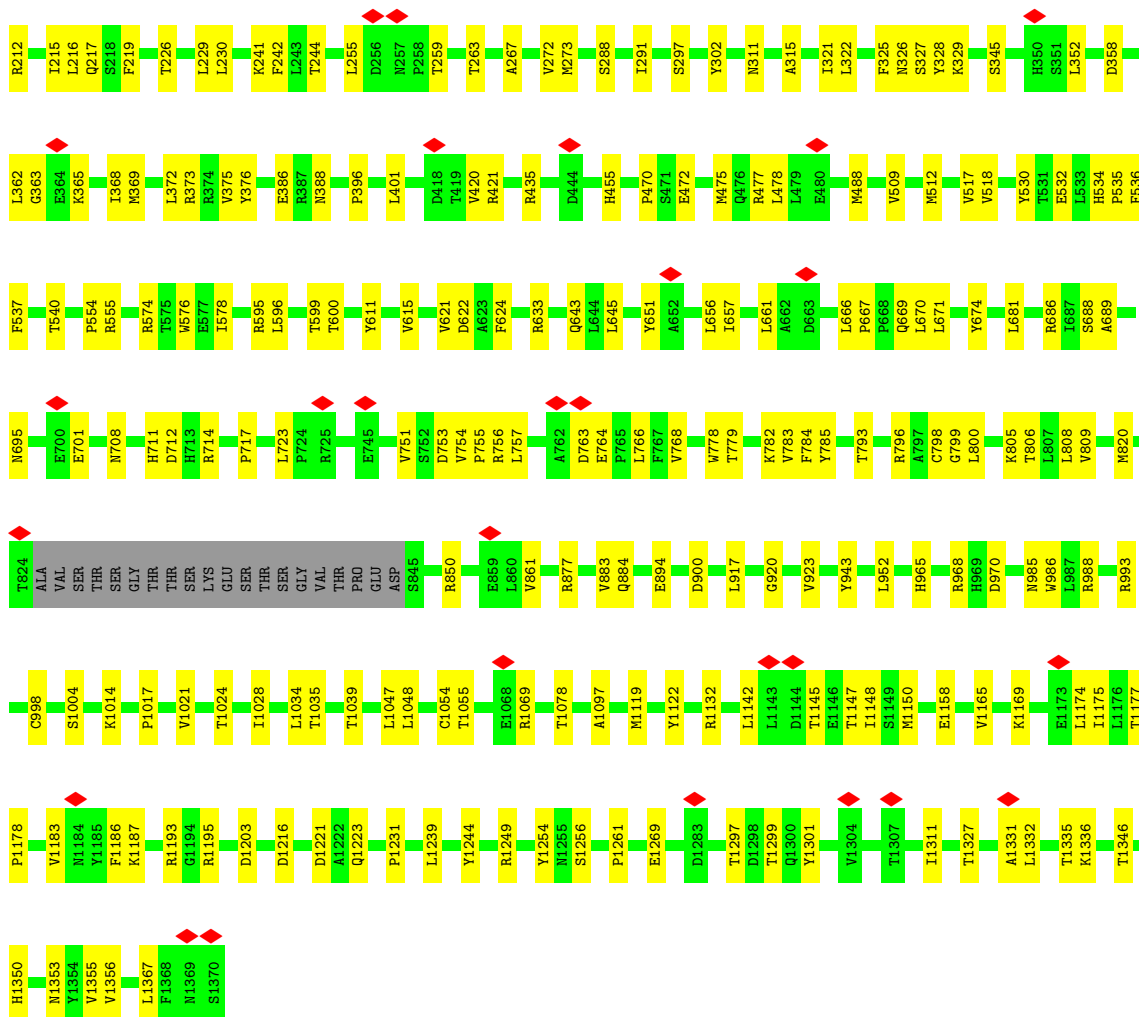


• Molecule 5: Major capsid protein

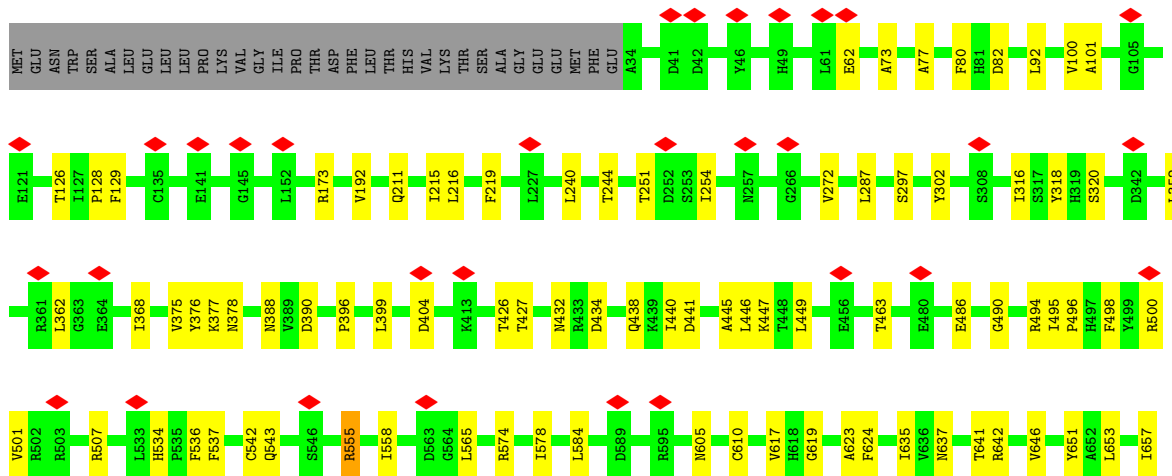
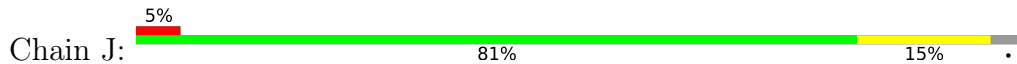


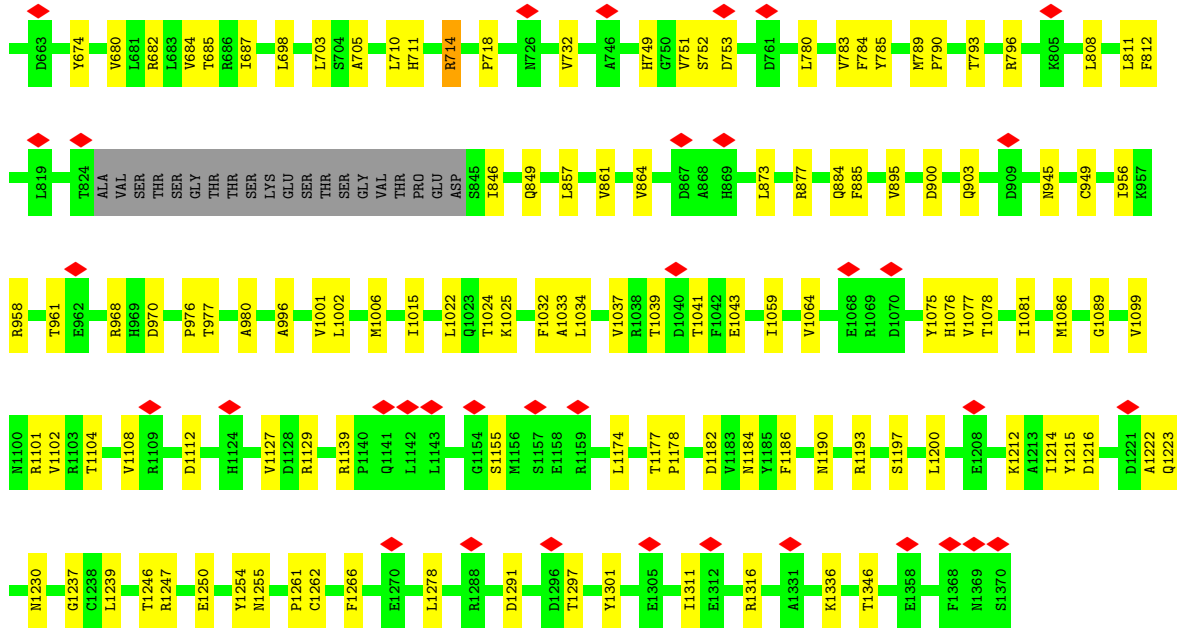
• Molecule 5: Major capsid protein



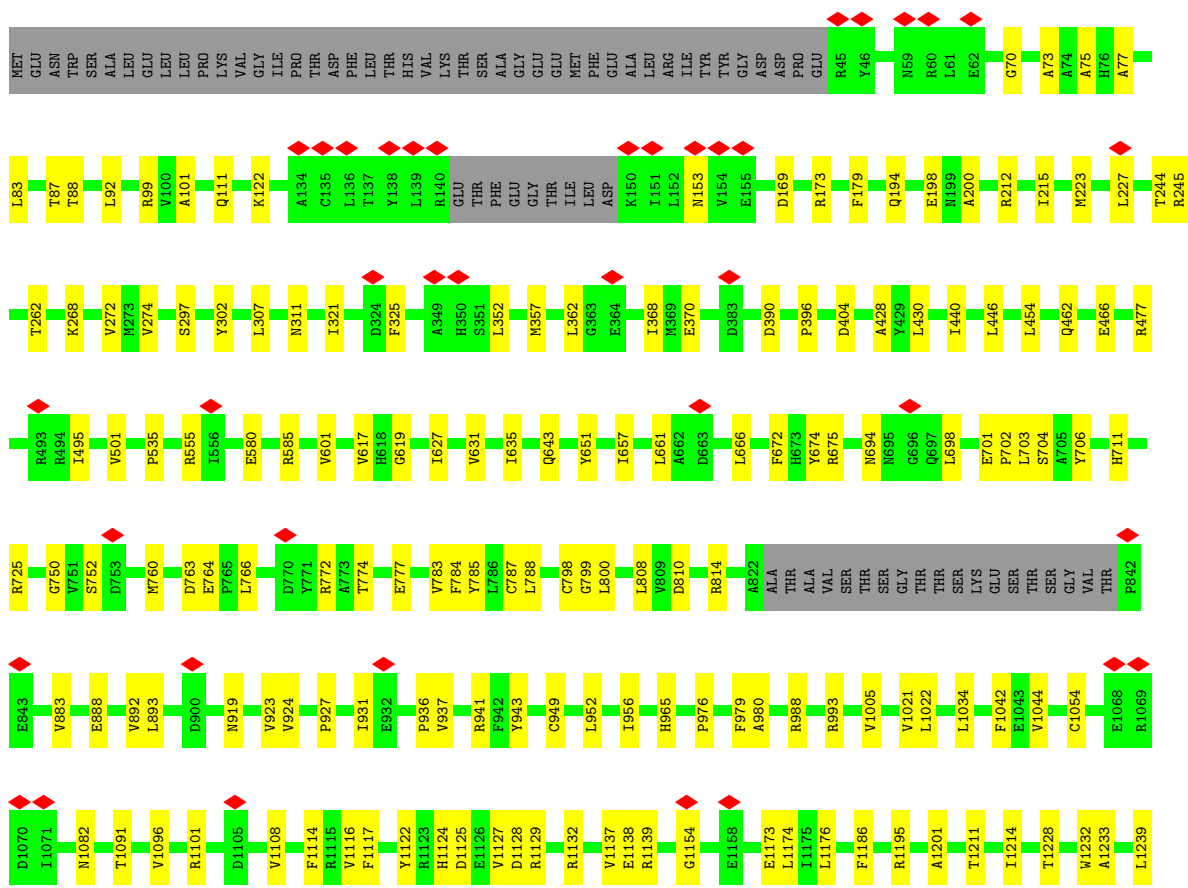
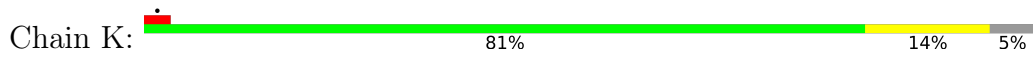


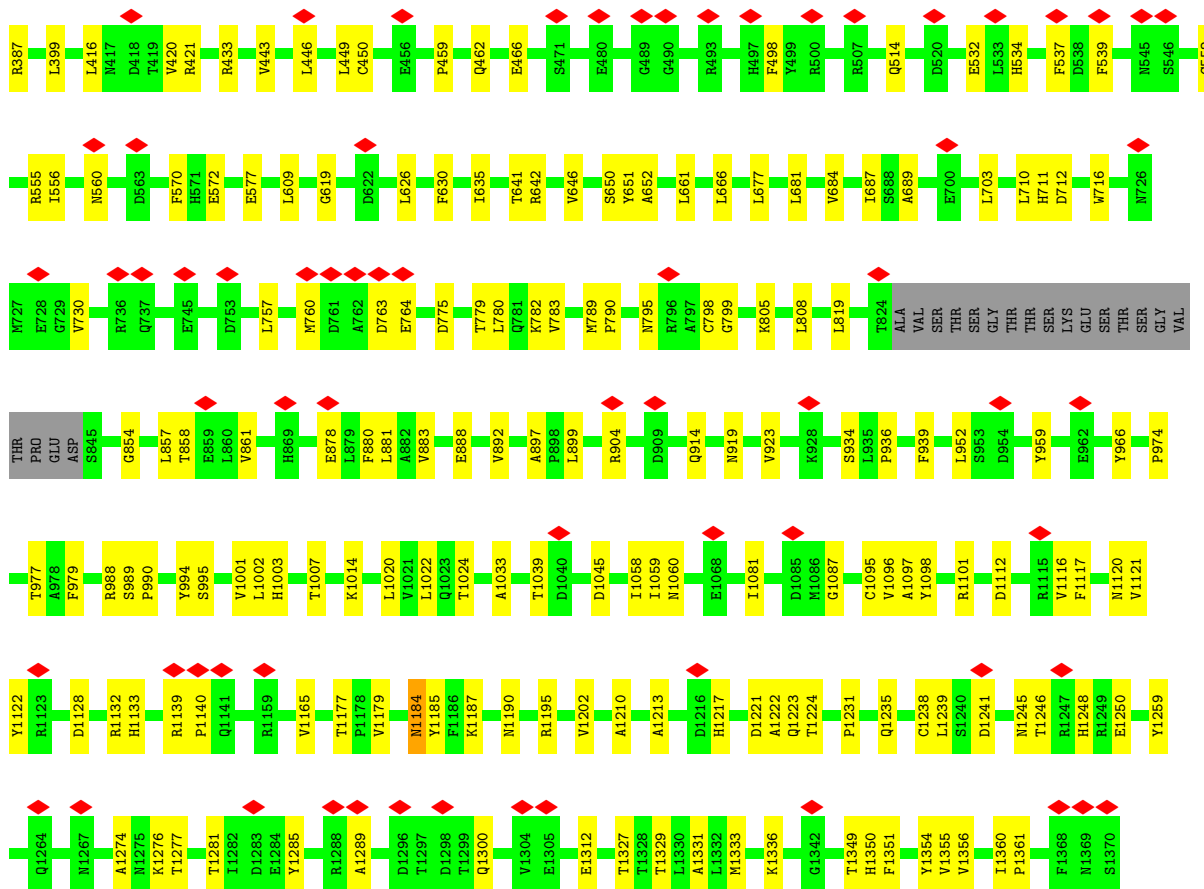
• Molecule 5: Major capsid protein





• Molecule 5: Major capsid protein

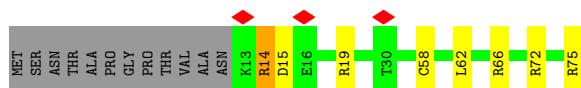




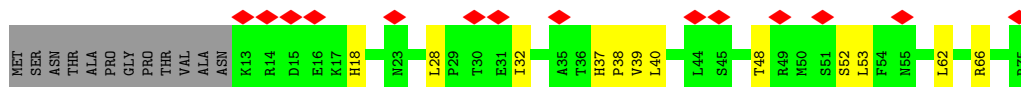
• Molecule 6: Small capsomere-interacting protein



• Molecule 6: Small capsomere-interacting protein



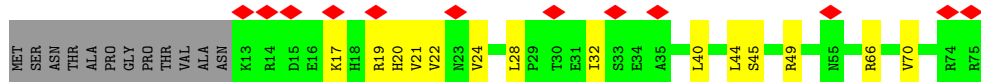
• Molecule 6: Small capsomere-interacting protein



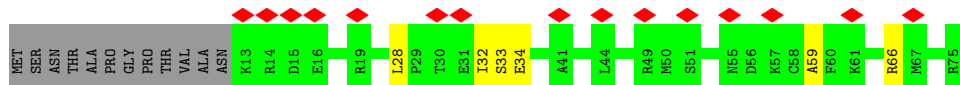
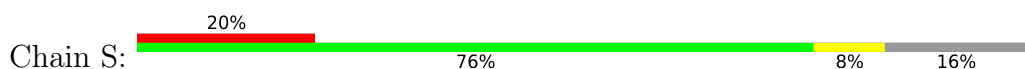
• Molecule 6: Small capsomere-interacting protein



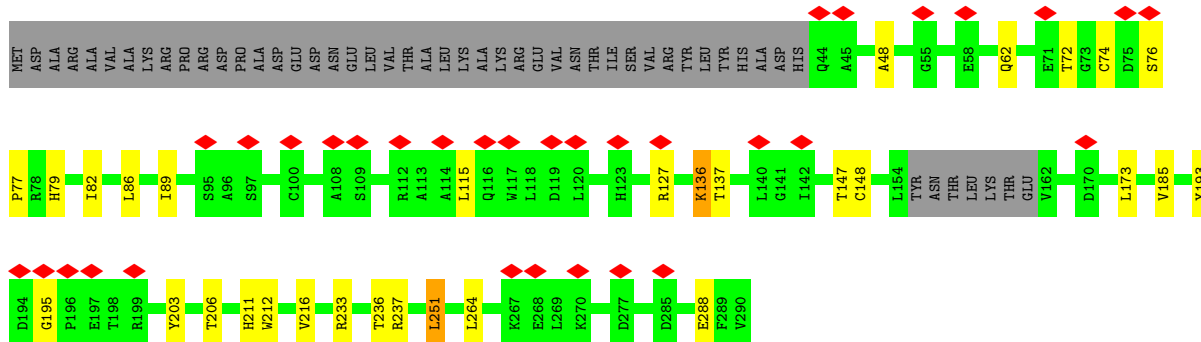
• Molecule 6: Small capsomere-interacting protein



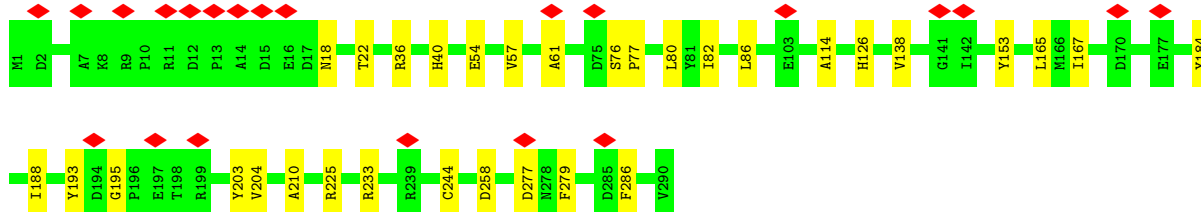
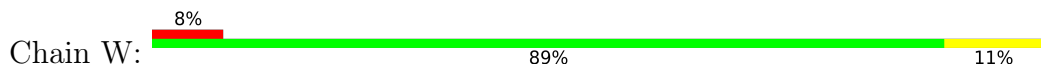
• Molecule 6: Small capsomere-interacting protein



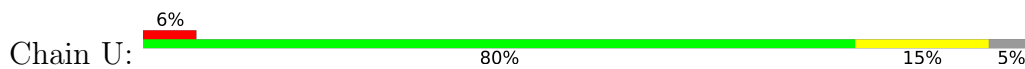
• Molecule 7: Triplex capsid protein 1



• Molecule 7: Triplex capsid protein 1



• Molecule 8: Triplex capsid protein 2



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C5	Depositor
Number of particles used	35055	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	47.2	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.035	Depositor
Minimum map value	-0.023	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.005	Depositor
Map size (Å)	489.6, 489.6, 489.6	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.36, 1.36, 1.36	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	0.25	0/5975	0.51	0/8149
1	C	0.26	0/5787	0.54	1/7885 (0.0%)
2	B	0.25	0/4082	0.52	1/5535 (0.0%)
2	D	0.27	0/3768	0.51	0/5111
3	E	0.25	0/4015	0.52	0/5453
3	F	0.24	0/4090	0.50	1/5557 (0.0%)
4	G	0.25	0/3962	0.60	0/5371
5	H	0.33	0/10653	0.62	7/14508 (0.0%)
5	I	0.31	0/10949	0.59	5/14916 (0.0%)
5	J	0.29	0/10682	0.55	2/14553 (0.0%)
5	K	0.30	0/10527	0.58	6/14339 (0.0%)
5	L	0.28	0/10949	0.54	3/14916 (0.0%)
5	M	0.25	0/10949	0.51	0/14916
6	N	0.23	0/520	0.53	0/697
6	O	0.23	0/520	0.51	0/697
6	P	0.23	0/520	0.56	0/697
6	Q	0.25	0/520	0.57	0/697
6	R	0.24	0/520	0.58	0/697
6	S	0.23	0/520	0.53	0/697
7	T	0.25	0/1960	0.56	1/2658 (0.0%)
7	W	0.33	0/2374	0.62	0/3221
8	U	0.25	0/2361	0.51	0/3206
8	V	0.27	0/2333	0.57	0/3164
8	X	0.25	0/2379	0.51	0/3230
8	Y	0.25	0/2305	0.54	0/3126
9	Z	0.25	0/2358	0.53	0/3182
All	All	0.28	0/115578	0.55	27/157178 (0.0%)

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
5	H	0	1
5	J	0	1
All	All	0	2

There are no bond length outliers.

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	H	555	ARG	NE-CZ-NH2	10.46	125.53	120.30
5	H	1195	ARG	NE-CZ-NH2	10.05	125.33	120.30
5	K	988	ARG	NE-CZ-NH2	8.23	124.41	120.30
5	K	555	ARG	NE-CZ-NH2	7.65	124.12	120.30
5	K	1195	ARG	NE-CZ-NH2	7.28	123.94	120.30
5	H	185	ARG	NE-CZ-NH2	7.11	123.85	120.30
5	J	555	ARG	NE-CZ-NH2	7.01	123.80	120.30
5	K	993	ARG	NE-CZ-NH2	6.59	123.60	120.30
5	I	633	ARG	NE-CZ-NH2	6.30	123.45	120.30
5	I	850	ARG	NE-CZ-NH2	6.17	123.38	120.30
5	H	1316	ARG	NE-CZ-NH2	6.09	123.34	120.30
7	T	251	LEU	CA-CB-CG	5.89	128.84	115.30
5	L	19	PHE	CB-CG-CD1	5.73	124.81	120.80
5	H	1195	ARG	NE-CZ-NH1	-5.73	117.44	120.30
5	H	642	ARG	NE-CZ-NH2	5.69	123.15	120.30
5	J	714	ARG	NE-CZ-NH1	5.64	123.12	120.30
5	L	19	PHE	CB-CG-CD2	-5.57	116.90	120.80
5	I	1132	ARG	NE-CZ-NH2	5.46	123.03	120.30
5	K	941	ARG	NE-CZ-NH2	5.37	122.99	120.30
5	L	1109	ARG	NE-CZ-NH2	5.37	122.99	120.30
2	B	55	LEU	CA-CB-CG	5.30	127.49	115.30
3	F	606	LEU	CA-CB-CG	5.24	127.35	115.30
1	C	1697	CYS	CA-CB-SG	5.21	123.38	114.00
5	K	1195	ARG	CD-NE-CZ	5.12	130.76	123.60
5	H	467	ARG	NE-CZ-NH2	5.11	122.86	120.30
5	I	877	ARG	NE-CZ-NH2	5.10	122.85	120.30
5	I	1122	TYR	CB-CG-CD1	-5.04	117.98	121.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	H	611	TYR	Sidechain
5	J	555	ARG	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5833	0	5848	153	0
1	C	5651	0	5691	129	0
2	B	3993	0	3925	121	0
2	D	3685	0	3611	95	0
3	E	3915	0	3838	84	0
3	F	3986	0	3912	65	0
4	G	3873	0	3792	48	0
5	H	10406	0	10362	127	0
5	I	10693	0	10635	162	0
5	J	10433	0	10379	133	0
5	K	10282	0	10238	118	0
5	L	10693	0	10635	137	0
5	M	10693	0	10635	147	0
6	N	513	0	539	8	0
6	O	513	0	539	8	0
6	P	513	0	539	10	0
6	Q	513	0	539	9	0
6	R	513	0	539	9	0
6	S	513	0	539	5	0
7	T	1919	0	1957	20	0
7	W	2325	0	2363	21	0
8	U	2317	0	2405	35	0
8	V	2292	0	2379	42	0
8	X	2334	0	2431	25	0
8	Y	2266	0	2355	25	0
9	Z	2320	0	2351	23	0
All	All	112987	0	112976	1638	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 7.

All (1638) 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)
5:K:1327:THR:HG21	5:K:1333:MET:HB2	1.58	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:446:LEU:HD21	5:M:1024:THR:HG21	1.61	0.83
1:A:1553:PRO:HB3	2:B:402:ILE:HA	1.62	0.80
5:H:446:LEU:HD11	5:H:1021:VAL:HG23	1.64	0.80
1:C:1700:VAL:HG11	1:C:1750:ILE:HG21	1.66	0.78
1:C:2232:ILE:HB	3:E:65:LEU:HD21	1.66	0.77
4:G:514:TRP:CD1	4:G:522:VAL:HG11	2.21	0.76
7:T:137:THR:HB	7:T:147:THR:HG22	1.68	0.75
5:M:760:MET:HG2	5:M:805:LYS:HB2	1.67	0.75
1:C:1697:CYS:HA	1:C:1700:VAL:HG12	1.69	0.75
5:L:212:ARG:HH22	5:L:1203:ASP:HA	1.52	0.75
3:E:505:TYR:HA	3:E:509:TRP:HD1	1.52	0.74
3:F:606:LEU:HD13	3:F:609:HIS:HB2	1.69	0.74
5:I:470:PRO:HB2	5:I:475:MET:HG2	1.68	0.74
7:W:61:ALA:HA	7:W:138:VAL:HG11	1.68	0.74
5:H:672:PHE:HE2	5:I:643:GLN:HB2	1.52	0.73
5:H:716:TRP:O	5:H:914:GLN:NE2	2.21	0.73
5:I:701:GLU:OE2	5:I:714:ARG:NH2	2.22	0.72
5:L:760:MET:HG3	5:L:888:GLU:HB2	1.70	0.72
5:J:1039:THR:HG23	5:J:1261:PRO:HB3	1.70	0.72
5:H:575:THR:HG21	5:H:1007:THR:HA	1.70	0.72
3:E:604:VAL:HB	3:E:607:PRO:HG3	1.70	0.72
2:D:210:GLN:NE2	2:D:435:TYR:O	2.22	0.72
5:I:1047:LEU:HD22	5:I:1097:ALA:HB2	1.72	0.72
5:K:783:VAL:O	5:K:787:CYS:HB3	1.89	0.72
1:A:1618:LEU:HA	1:A:1621:ARG:HD3	1.72	0.71
8:U:72:LEU:HD11	8:U:94:VAL:HG12	1.73	0.71
9:Z:129:LEU:HD11	9:Z:204:VAL:HA	1.71	0.71
2:B:55:LEU:HD12	2:B:66:ARG:HH22	1.54	0.70
5:M:99:ARG:NH2	5:M:109:SER:O	2.24	0.70
5:H:432:ASN:OD1	5:H:438:GLN:NE2	2.25	0.70
1:A:1586:GLU:HB3	1:A:1596:ILE:HG12	1.73	0.70
2:B:223:VAL:HA	2:B:226:ARG:HH11	1.57	0.70
5:H:1101:ARG:HH22	5:I:202:LEU:HG	1.57	0.70
5:J:446:LEU:HD11	5:J:1024:THR:HG21	1.72	0.70
5:I:681:LEU:HD21	5:I:784:PHE:HB2	1.72	0.70
1:A:1579:ARG:NH2	1:A:1831:GLN:O	2.24	0.69
1:A:1797:LEU:O	1:A:1800:GLN:NE2	2.25	0.69
1:A:1859:LEU:HD12	1:A:1877:VAL:HG11	1.74	0.69
5:L:474:ALA:HA	5:M:1133:HIS:CE1	2.28	0.69
5:K:70:GLY:N	5:K:370:GLU:OE2	2.25	0.69
2:B:74:LEU:HD21	2:B:96:LEU:HD11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:272:VAL:HG12	5:J:368:ILE:HB	1.74	0.68
4:G:132:LEU:HD11	4:G:149:LEU:HD13	1.75	0.68
5:I:1142:LEU:HD13	5:I:1147:THR:HB	1.76	0.68
5:K:194:GLN:HE22	5:K:245:ARG:HG2	1.58	0.68
2:B:48:VAL:HB	2:B:99:PHE:CZ	2.28	0.68
5:H:139:LEU:HD22	5:H:160:VAL:HG21	1.76	0.68
3:F:293:GLU:O	4:G:313:ARG:NH1	2.26	0.68
7:W:258:ASP:OD2	7:W:277:ASP:N	2.27	0.68
2:D:447:ARG:HH11	2:D:476:VAL:HG11	1.58	0.68
5:K:274:VAL:HG12	5:K:370:GLU:HB2	1.76	0.68
5:J:617:VAL:HG13	5:J:619:GLY:H	1.57	0.67
7:W:167:ILE:HD13	7:W:204:VAL:HG11	1.74	0.67
1:A:1548:ARG:HE	1:A:1549:LEU:H	1.43	0.67
5:I:173:ARG:HB3	5:J:100:VAL:HG12	1.75	0.67
5:K:694:ASN:ND2	5:K:704:SER:OG	2.28	0.67
5:L:750:GLY:HA2	6:R:70:VAL:HG11	1.77	0.67
5:J:710:LEU:HD21	5:J:783:VAL:HG22	1.76	0.67
5:H:36:ARG:NH2	5:H:44:GLU:OE2	2.27	0.67
5:L:600:THR:HG23	5:L:644:LEU:HD12	1.77	0.67
1:C:1519:THR:HA	1:C:1522:LEU:HD12	1.77	0.67
5:J:732:VAL:HG12	5:J:895:VAL:HG12	1.77	0.67
5:J:703:LEU:HD22	5:J:1022:LEU:HD11	1.77	0.66
5:I:1195:ARG:NH1	5:I:1216:ASP:O	2.28	0.66
5:I:666:LEU:HD12	5:I:667:PRO:HD2	1.76	0.66
5:I:1332:LEU:HD23	5:I:1355:VAL:HG23	1.77	0.66
5:K:1124:HIS:HB3	5:K:1127:VAL:HG12	1.77	0.66
1:A:1957:PRO:HG3	1:A:2036:PHE:HD1	1.61	0.66
1:C:1753:LEU:HD23	1:C:1803:ALA:HB3	1.78	0.66
5:M:1235:GLN:HB2	5:M:1238:CYS:HB3	1.77	0.66
5:L:610:CYS:HA	5:L:647:PHE:HE1	1.61	0.66
5:H:440:ILE:HB	5:H:1108:VAL:HG21	1.77	0.66
5:K:1154:GLY:HA3	5:K:1257:LYS:HE3	1.77	0.66
1:C:1843:LYS:NZ	1:C:1938:PHE:O	2.29	0.65
5:M:462:GLN:O	5:M:466:GLU:HG2	1.95	0.65
8:U:202:LEU:HD22	8:V:230:LEU:HD11	1.79	0.65
2:D:222:TYR:O	2:D:226:ARG:NH2	2.29	0.65
3:E:377:ILE:HD12	3:E:380:LEU:HD11	1.78	0.65
1:A:1596:ILE:HB	1:A:1604:ILE:HD11	1.79	0.65
4:G:571:HIS:HA	8:U:188:VAL:HG23	1.79	0.65
5:J:1214:ILE:HG22	5:J:1215:TYR:HD1	1.62	0.65
2:D:399:MET:HA	2:D:402:ILE:HB	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:1037:VAL:HG21	5:J:1262:CYS:HB3	1.79	0.64
2:B:32:GLN:HA	2:B:35:ILE:HG12	1.79	0.64
1:A:1862:LEU:HD11	1:A:1952:TRP:HH2	1.60	0.64
8:X:154:GLY:HA3	8:X:193:LEU:HD21	1.79	0.64
5:J:641:THR:HG23	5:J:642:ARG:HG3	1.77	0.64
1:C:1983:SER:OG	1:C:1984:ARG:NH2	2.30	0.64
5:K:766:LEU:HD11	5:K:893:LEU:HD21	1.80	0.64
2:B:492:HIS:HD2	2:B:493:THR:HG23	1.63	0.64
1:A:1952:TRP:O	1:A:1995:ARG:NH1	2.28	0.64
1:A:2228:VAL:HG11	3:F:72:VAL:HG11	1.80	0.64
2:B:447:ARG:NH2	2:B:480:PHE:O	2.30	0.64
5:M:716:TRP:O	5:M:914:GLN:NE2	2.31	0.64
2:B:331:HIS:CD2	2:B:334:LEU:H	2.15	0.64
4:G:42:TYR:HB2	4:G:152:VAL:HB	1.79	0.64
8:U:24:LEU:HD21	8:U:81:ILE:HD12	1.80	0.64
8:U:62:ARG:NH2	8:U:147:ASN:OD1	2.31	0.64
6:S:28:LEU:HD12	6:S:32:ILE:HD11	1.79	0.63
1:C:1765:PRO:HB3	1:C:2119:ILE:HA	1.79	0.63
8:U:149:ARG:HD2	8:U:175:ILE:HD11	1.80	0.63
1:C:1566:LEU:HA	1:C:1569:ARG:HG2	1.80	0.63
1:A:1627:LEU:HD23	1:A:1630:ARG:HG3	1.80	0.63
1:A:1607:VAL:HG13	1:A:1608:THR:HG23	1.80	0.63
5:M:278:ASN:ND2	5:M:1098:TYR:OH	2.31	0.63
1:A:1602:GLU:HG2	1:A:1607:VAL:HB	1.81	0.63
8:Y:74:ARG:HG3	8:Y:75:ARG:H	1.63	0.63
1:A:1548:ARG:HG3	1:A:1550:GLU:H	1.64	0.63
4:G:316:GLU:OE1	4:G:325:ARG:NH2	2.32	0.63
5:K:1239:LEU:HA	5:K:1242:VAL:HG12	1.81	0.63
5:I:104:ALA:HB3	8:V:42:LYS:HE2	1.80	0.63
5:J:1177:THR:OG1	5:J:1230:ASN:ND2	2.32	0.62
5:H:1168:GLN:NE2	5:H:1297:THR:O	2.32	0.62
5:H:1224:THR:HG23	5:H:1226:ALA:H	1.63	0.62
5:I:315:ALA:HB2	5:I:321:ILE:HD11	1.79	0.62
8:V:72:LEU:O	8:V:84:HIS:N	2.31	0.62
1:C:1604:ILE:HA	1:C:1607:VAL:HG12	1.80	0.62
3:F:23:VAL:HG12	4:G:393:HIS:HB2	1.81	0.62
5:J:682:ARG:HH11	5:J:780:LEU:HD11	1.64	0.62
2:B:300:GLN:O	2:B:302:ARG:NH2	2.31	0.62
8:U:65:LEU:HD21	8:U:110:VAL:HG22	1.80	0.62
2:B:505:TYR:OH	2:B:515:HIS:ND1	2.31	0.62
1:A:1789:THR:O	1:A:1790:HIS:ND1	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1835:GLN:HG3	1:C:1836:LYS:H	1.63	0.62
3:E:411:LEU:HD12	3:E:412:LEU:HG	1.79	0.62
9:Z:174:VAL:HG13	9:Z:181:VAL:HG11	1.82	0.62
5:L:446:LEU:HD11	5:L:1021:VAL:HG23	1.82	0.62
1:C:1486:PHE:HD2	1:C:1522:LEU:HD11	1.63	0.62
1:C:1501:GLY:O	1:C:1520:ARG:NH2	2.33	0.62
2:D:293:LYS:HA	2:D:296:VAL:HG12	1.82	0.62
5:H:730:VAL:HG23	5:H:897:ALA:HB2	1.82	0.62
5:L:701:GLU:OE1	5:L:714:ARG:NH1	2.29	0.62
5:M:798:CYS:SG	5:M:799:GLY:N	2.73	0.61
3:E:278:GLU:OE2	3:E:415:LYS:NZ	2.33	0.61
4:G:312:SER:O	4:G:313:ARG:HG3	2.00	0.61
5:J:534:HIS:CE1	5:J:1239:LEU:HD12	2.36	0.61
5:K:657:ILE:HA	5:K:661:LEU:HD13	1.82	0.61
2:B:399:MET:HA	2:B:402:ILE:HB	1.82	0.61
4:G:476:ASP:HB2	4:G:523:LEU:HD23	1.81	0.61
5:H:40:GLY:HA2	5:K:111:GLN:HB2	1.82	0.61
5:I:1336:LYS:HE3	5:I:1355:VAL:HG11	1.81	0.61
5:J:624:PHE:HZ	5:J:657:ILE:HD13	1.65	0.61
5:K:169:ASP:OD1	5:K:173:ARG:NH2	2.31	0.61
5:K:244:THR:HA	5:K:362:LEU:HD23	1.82	0.61
5:L:558:ILE:HD13	5:L:1015:ILE:HD13	1.82	0.61
2:D:378:GLN:HA	2:D:381:MET:SD	2.40	0.61
5:I:820:MET:O	6:O:72:ARG:NH2	2.34	0.61
8:Y:32:VAL:O	8:Y:71:THR:OG1	2.17	0.61
2:B:5:ARG:HH11	2:B:199:ARG:HE	1.48	0.61
5:L:535:PRO:HG3	5:L:1232:TRP:CD2	2.35	0.61
1:A:1586:GLU:HA	1:A:1596:ILE:HA	1.82	0.61
1:C:1584:PHE:HZ	1:C:1596:ILE:HB	1.64	0.61
5:H:617:VAL:HG13	5:H:619:GLY:H	1.64	0.61
5:M:710:LEU:HD21	5:M:783:VAL:HG22	1.82	0.61
6:Q:43:MET:HE3	6:Q:67:MET:HG2	1.81	0.61
5:I:970:ASP:OD2	5:I:993:ARG:NH2	2.32	0.61
5:L:473:PRO:HA	5:L:476:GLN:HB2	1.82	0.61
2:B:70:VAL:HG22	2:B:96:LEU:HD22	1.82	0.60
1:C:1990:ARG:NH2	1:C:2168:PHE:O	2.34	0.60
2:D:422:GLN:O	2:D:426:ASN:ND2	2.29	0.60
5:J:1193:ARG:NH1	5:J:1197:SER:OG	2.25	0.60
1:A:1567:ILE:O	1:A:1571:ARG:HG2	2.00	0.60
5:K:965:HIS:CE1	5:L:696:GLY:H	2.19	0.60
1:C:1846:LEU:HD11	1:C:1950:GLY:HA2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:1155:SER:HA	5:J:1255:ASN:HD21	1.66	0.60
5:M:1327:THR:HG21	5:M:1333:MET:HB2	1.83	0.60
5:H:578:ILE:HD13	5:H:1028:ILE:HD12	1.83	0.60
5:L:631:VAL:HG23	5:L:647:PHE:CD2	2.37	0.60
5:M:1139:ARG:HD3	5:M:1140:PRO:HD2	1.83	0.60
1:A:1659:LEU:HD21	1:A:1693:LEU:HD22	1.84	0.60
2:D:75:SER:HA	2:D:198:CYS:HA	1.84	0.60
3:E:308:LEU:HG	3:E:309:PRO:HD3	1.83	0.60
3:F:284:LEU:HD13	3:F:315:LEU:HD22	1.82	0.60
8:Y:33:PRO:HB2	8:Y:68:MET:HG2	1.84	0.60
2:D:485:THR:HG22	2:D:487:GLU:H	1.67	0.60
5:L:631:VAL:HG23	5:L:647:PHE:HD2	1.67	0.60
1:A:1867:LYS:HD2	1:A:1872:GLU:HA	1.82	0.60
1:C:1656:CYS:HB3	1:C:1660:ARG:HH22	1.65	0.60
4:G:316:GLU:HB3	4:G:325:ARG:HD3	1.84	0.60
1:A:1875:ALA:HB3	1:A:1879:GLU:HG2	1.83	0.59
1:A:1992:GLN:OE1	1:A:1995:ARG:NH1	2.35	0.59
5:I:624:PHE:HZ	5:I:657:ILE:HD13	1.67	0.59
5:I:985:ASN:O	5:I:988:ARG:NH2	2.35	0.59
5:L:1222:ALA:O	5:L:1223:GLN:HG3	2.01	0.59
5:M:1329:THR:HG22	5:M:1331:ALA:H	1.67	0.59
8:U:268:LEU:HD22	8:V:152:ILE:HG23	1.84	0.59
5:K:99:ARG:NH1	5:K:111:GLN:OE1	2.35	0.59
1:A:2016:TRP:O	1:A:2020:GLN:NE2	2.35	0.59
3:E:278:GLU:HG2	3:E:412:LEU:HD21	1.84	0.59
5:H:433:ARG:HH22	5:I:217:GLN:HB2	1.67	0.59
5:I:373:ARG:NH2	5:I:376:TYR:O	2.35	0.59
5:K:446:LEU:HD11	5:K:1021:VAL:HG22	1.83	0.59
1:C:1814:MET:HG3	1:C:2054:ARG:HB2	1.84	0.59
3:E:538:TRP:HZ3	3:E:593:HIS:HA	1.68	0.59
5:I:1193:ARG:HH21	5:I:1195:ARG:HB3	1.67	0.59
5:K:763:ASP:OD1	5:K:764:GLU:N	2.35	0.59
5:M:514:GLN:NE2	5:M:989:SER:OG	2.35	0.59
1:A:1585:LEU:N	1:A:1597:VAL:O	2.27	0.59
5:K:643:GLN:HB2	5:L:672:PHE:CE2	2.38	0.59
2:D:198:CYS:HB2	2:D:201:VAL:HG22	1.84	0.59
2:B:113:LEU:HD12	2:B:116:TYR:H	1.67	0.59
1:C:1790:HIS:HA	1:C:2056:PRO:HD2	1.84	0.59
3:E:460:PHE:HE1	3:E:465:LEU:HD11	1.68	0.59
5:H:112:THR:HG22	5:H:113:THR:HG23	1.85	0.59
1:C:1452:LEU:HB3	1:C:1486:PHE:HE1	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1620:LEU:HD11	1:C:2006:THR:HG22	1.84	0.59
3:E:444:TRP:O	3:E:448:ASN:ND2	2.35	0.59
2:B:368:ARG:HA	2:B:478:THR:HG23	1.84	0.58
1:C:1536:LEU:HA	1:C:1539:LYS:HE3	1.85	0.58
1:C:1566:LEU:HD23	1:C:1569:ARG:HD3	1.84	0.58
5:M:888:GLU:H	5:M:919:ASN:ND2	2.01	0.58
5:M:899:LEU:O	5:M:904:ARG:NH2	2.32	0.58
5:J:574:ARG:O	5:J:578:ILE:HG12	2.03	0.58
1:A:1903:GLN:HA	1:A:1909:PRO:HA	1.85	0.58
2:B:196:VAL:HG13	2:B:440:THR:HG22	1.85	0.58
1:C:1859:LEU:HD23	1:C:1862:LEU:HD21	1.85	0.58
5:H:757:LEU:HD11	6:N:62:LEU:HD22	1.85	0.58
5:K:1332:LEU:HD23	5:K:1355:VAL:HG23	1.83	0.58
2:D:199:ARG:HG3	2:D:511:LYS:HE3	1.85	0.58
5:L:106:LEU:HD12	5:L:107:PRO:HD2	1.85	0.58
7:T:86:LEU:HD11	7:T:115:LEU:HD21	1.84	0.58
1:A:2014:HIS:O	1:A:2018:GLN:HG2	2.03	0.58
5:H:934:SER:OG	5:H:952:LEU:HD11	2.03	0.58
7:W:76:SER:HB3	7:W:77:PRO:HD2	1.85	0.58
9:Z:239:LEU:HD22	9:Z:251:ARG:HG3	1.85	0.58
5:K:101:ALA:HB3	5:L:174:GLY:HA3	1.86	0.58
5:L:798:CYS:SG	5:L:799:GLY:N	2.77	0.58
5:M:1327:THR:HB	5:M:1355:VAL:HG12	1.85	0.58
5:K:1176:LEU:HB2	5:K:1239:LEU:HD21	1.86	0.58
5:K:1284:GLU:OE1	5:K:1288:ARG:NH2	2.36	0.58
5:K:1336:LYS:NZ	5:K:1346:THR:O	2.35	0.58
2:D:206:ASP:O	2:D:210:GLN:HG2	2.04	0.58
4:G:5:LEU:HD13	4:G:306:TRP:CD1	2.39	0.58
3:E:289:HIS:HB2	3:E:407:TRP:HE1	1.69	0.57
1:C:1613:VAL:HG11	1:C:2021:ILE:HD11	1.85	0.57
3:E:226:LYS:HG3	3:E:241:LEU:HD22	1.85	0.57
6:R:28:LEU:HD12	6:R:32:ILE:HG21	1.85	0.57
9:Z:197:VAL:HA	9:Z:200:VAL:HG12	1.85	0.57
1:A:1785:VAL:HG13	1:A:1804:PHE:HA	1.86	0.57
5:I:230:LEU:HD23	5:I:1097:ALA:HB1	1.85	0.57
5:K:1336:LYS:NZ	5:K:1343:ALA:O	2.29	0.57
5:L:661:LEU:HD23	5:L:666:LEU:HD11	1.85	0.57
6:Q:42:THR:O	6:Q:45:SER:OG	2.22	0.57
3:E:243:GLN:HE21	3:E:246:ASN:HB3	1.70	0.57
5:H:689:ALA:HB2	5:H:711:HIS:CE1	2.39	0.57
5:L:192:VAL:HG11	5:L:1282:ILE:HD12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:241:PHE:HA	2:D:244:THR:HG22	1.86	0.57
3:F:291:LEU:HD11	3:F:314:ARG:HG3	1.86	0.57
5:H:704:SER:HA	5:H:707:VAL:HG12	1.86	0.57
5:K:1125:ASP:OD2	5:K:1129:ARG:NH1	2.37	0.57
5:K:1128:ASP:O	5:K:1132:ARG:HG2	2.05	0.57
5:I:596:LEU:O	5:I:600:THR:HG23	2.04	0.57
5:M:626:LEU:HD21	5:M:881:LEU:HB2	1.86	0.57
5:H:1124:HIS:HB3	5:H:1127:VAL:HG12	1.87	0.57
5:I:534:HIS:CE1	5:I:1239:LEU:HD12	2.40	0.57
5:I:1169:LYS:HE2	5:I:1299:THR:HG22	1.87	0.57
5:J:1297:THR:HG21	5:J:1301:TYR:HD2	1.70	0.57
2:B:501:ARG:HD2	2:B:519:LEU:HD23	1.86	0.57
5:I:600:THR:HG21	5:I:645:LEU:HG	1.86	0.57
5:K:272:VAL:HG12	5:K:368:ILE:HB	1.87	0.57
5:M:1285:TYR:HA	5:M:1289:ALA:HB3	1.86	0.57
1:A:1755:PRO:HB2	1:A:2105:VAL:HG23	1.87	0.57
2:B:113:LEU:HD13	2:B:115:PHE:HB3	1.87	0.57
1:C:1707:ARG:NH1	1:C:1779:GLN:OE1	2.37	0.57
1:C:2205:GLN:HG2	3:F:90:LEU:HA	1.86	0.57
3:F:330:VAL:HG21	3:F:364:ARG:HA	1.87	0.57
5:H:390:ASP:HB2	5:H:1311:ILE:HG21	1.87	0.57
5:L:1193:ARG:HH12	5:L:1197:SER:HB3	1.69	0.57
5:M:416:LEU:HD21	5:M:1329:THR:HG21	1.86	0.57
8:Y:296:ASP:O	8:Y:298:LYS:N	2.38	0.57
1:A:1754:TYR:HB2	1:A:1757:TYR:CE2	2.40	0.57
2:B:293:LYS:HB3	2:B:299:LEU:HD13	1.87	0.57
5:H:1122:TYR:HB2	5:H:1128:ASP:HB2	1.87	0.57
8:X:265:ILE:HD11	8:Y:148:GLN:HB3	1.87	0.57
5:K:454:LEU:HD21	5:K:1243:LEU:HD11	1.86	0.56
5:L:173:ARG:NH2	5:L:375:VAL:O	2.37	0.56
5:L:1291:ASP:OD1	5:L:1316:ARG:NH1	2.33	0.56
7:T:136:LYS:HD2	7:T:136:LYS:O	2.05	0.56
2:B:65:VAL:O	2:B:69:VAL:HB	2.05	0.56
2:B:497:THR:HG23	2:B:499:ALA:H	1.69	0.56
5:H:155:GLU:HG3	5:L:9:LEU:HD13	1.87	0.56
5:J:432:ASN:HB2	5:J:434:ASP:O	2.06	0.56
8:V:264:GLU:O	8:V:268:LEU:HD12	2.06	0.56
4:G:91:ARG:NH2	8:U:159:ASP:OD1	2.37	0.56
5:H:433:ARG:HD2	5:H:1105:ASP:HA	1.88	0.56
5:H:449:LEU:HD21	5:H:1034:LEU:HD21	1.88	0.56
5:K:70:GLY:HA3	5:K:357:MET:HE1	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:633:ARG:NH1	5:L:878:GLU:OE2	2.26	0.56
8:U:202:LEU:HB2	8:V:230:LEU:HD21	1.86	0.56
1:A:1815:GLN:HB2	1:A:1818:LYS:HE2	1.88	0.56
1:A:2236:ARG:HA	1:A:2240:LEU:HD23	1.87	0.56
5:H:216:LEU:HD13	5:H:1200:LEU:HD12	1.86	0.56
5:I:311:ASN:HD21	5:I:325:PHE:HB2	1.70	0.56
5:J:440:ILE:HD12	5:J:1108:VAL:HB	1.86	0.56
3:E:264:VAL:HG21	3:E:590:LEU:HD22	1.86	0.56
5:H:83:LEU:HA	5:H:86:LEU:HD23	1.87	0.56
5:H:1105:ASP:HB3	5:H:1166:HIS:O	2.05	0.56
1:A:1814:MET:HB2	1:C:1631:ARG:HH22	1.70	0.56
2:B:112:ARG:NH2	2:B:500:GLU:OE2	2.38	0.56
5:I:1034:LEU:HD12	5:I:1174:LEU:HB3	1.87	0.56
5:J:1250:GLU:OE2	5:J:1254:TYR:OH	2.22	0.56
8:U:280:ASP:OD1	8:V:283:ARG:NH1	2.36	0.56
5:M:291:ILE:HG22	5:M:360:ILE:HG22	1.86	0.56
1:C:2218:ARG:NH1	3:E:87:GLU:OE1	2.39	0.56
5:I:965:HIS:O	5:I:968:ARG:NH2	2.38	0.56
5:K:949:CYS:HB3	5:K:956:ILE:HD13	1.88	0.56
8:V:215:THR:HG22	8:V:238:LEU:HD22	1.88	0.56
2:B:315:ARG:HH12	2:B:347:ALA:HB2	1.70	0.56
2:D:337:ARG:HH12	2:D:343:VAL:HG13	1.71	0.56
5:H:886:VAL:HG21	6:N:62:LEU:HD21	1.87	0.56
8:V:218:TYR:OH	8:V:268:LEU:HD11	2.06	0.56
1:C:1688:HIS:NE2	1:C:2115:ASN:OD1	2.37	0.56
5:H:424:LEU:HD13	5:H:573:LEU:HD23	1.88	0.56
8:Y:49:HIS:O	8:Y:52:VAL:HG12	2.06	0.56
2:D:453:GLN:O	2:D:457:THR:HG22	2.06	0.55
5:H:1027:HIS:CD2	5:I:517:VAL:HG11	2.41	0.55
5:M:1350:HIS:CG	5:M:1351:PHE:H	2.24	0.55
1:A:2179:CYS:SG	1:A:2180:ARG:N	2.79	0.55
1:A:1799:GLU:HG3	1:A:2164:GLY:HA3	1.86	0.55
5:H:1329:THR:HG22	5:H:1331:ALA:H	1.70	0.55
8:V:151:LEU:HD11	8:V:281:LEU:HD13	1.88	0.55
1:A:1800:GLN:HE21	1:A:1801:VAL:HG12	1.70	0.55
1:C:1586:GLU:HG3	1:C:1596:ILE:HG22	1.88	0.55
1:C:1597:VAL:HG12	1:C:1603:PRO:HA	1.88	0.55
2:D:34:GLU:OE2	2:D:72:TYR:OH	2.25	0.55
2:D:278:GLY:HA2	2:D:281:LYS:HE2	1.89	0.55
5:H:571:HIS:O	5:H:575:THR:HG23	2.06	0.55
6:N:28:LEU:HD12	6:N:29:PRO:HD2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:U:10:CYS:HB3	8:U:81:ILE:HG23	1.88	0.55
2:D:127:LYS:O	2:D:131:THR:HG23	2.06	0.55
5:M:572:GLU:OE2	5:M:994:TYR:OH	2.16	0.55
7:T:236:THR:HG23	7:T:237:ARG:HG3	1.89	0.55
8:X:293:VAL:HG23	8:X:300:ALA:HB2	1.88	0.55
1:C:1806:ILE:HD11	1:C:1811:TRP:CE2	2.41	0.55
3:E:592:PHE:HA	3:E:595:GLU:OE1	2.07	0.55
5:H:574:ARG:O	5:H:578:ILE:HG12	2.07	0.55
8:Y:70:LEU:HD21	8:Y:110:VAL:HG21	1.89	0.55
3:E:456:ARG:NH2	3:E:458:GLY:O	2.35	0.55
5:I:712:ASP:O	5:I:782:LYS:NZ	2.40	0.55
5:I:800:LEU:HD23	5:I:923:VAL:HG11	1.88	0.55
5:M:84:ASN:OD1	5:M:1060:ASN:ND2	2.39	0.55
3:F:315:LEU:HD23	3:F:441:LEU:HD13	1.89	0.55
5:I:211:GLN:O	5:I:215:ILE:HG12	2.07	0.55
5:K:390:ASP:OD1	5:K:1313:ASN:ND2	2.40	0.55
5:L:1018:VAL:HA	5:L:1021:VAL:HG12	1.89	0.55
5:M:619:GLY:HA3	5:M:652:ALA:HB1	1.87	0.55
5:M:795:ASN:ND2	5:M:995:SER:OG	2.39	0.55
1:A:1796:HIS:HB2	1:A:1800:GLN:NE2	2.22	0.55
5:J:486:GLU:OE2	5:J:977:THR:OG1	2.23	0.55
5:K:198:GLU:OE2	5:K:245:ARG:NH2	2.40	0.55
1:A:2001:GLN:HG2	1:A:2002:LEU:HD12	1.89	0.54
5:I:272:VAL:HG22	5:I:368:ILE:HB	1.89	0.54
5:M:274:VAL:HG12	5:M:370:GLU:HB2	1.89	0.54
8:U:56:ARG:HG2	8:U:57:GLY:H	1.72	0.54
1:A:1749:LEU:HD11	1:A:1974:LEU:HG	1.87	0.54
1:A:1772:SER:O	1:A:1776:HIS:ND1	2.29	0.54
1:A:2221:LEU:HD23	3:F:80:GLU:HB2	1.88	0.54
3:E:438:ALA:HB1	3:E:602:LEU:HD11	1.89	0.54
5:K:297:SER:HB3	5:K:352:LEU:HD12	1.89	0.54
1:A:1468:TYR:HB3	1:A:1475:GLN:NE2	2.22	0.54
5:H:174:GLY:HA3	5:I:101:ALA:HB3	1.88	0.54
5:I:1178:PRO:HG3	5:I:1231:PRO:HD2	1.90	0.54
5:M:936:PRO:HB3	5:M:952:LEU:HD23	1.89	0.54
8:U:103:GLU:OE1	8:U:178:ARG:NH2	2.39	0.54
9:Z:172:GLU:OE2	9:Z:176:ARG:NH1	2.40	0.54
2:B:319:VAL:HG11	2:B:334:LEU:HD11	1.88	0.54
3:F:37:ASP:HB3	5:K:501:VAL:HG23	1.89	0.54
5:H:672:PHE:CE2	5:I:643:GLN:HB2	2.39	0.54
1:A:1987:ASP:HB3	1:A:2168:PHE:HD2	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:79:VAL:HG13	2:B:88:ALA:HB3	1.90	0.54
2:D:284:ALA:HA	2:D:287:MET:HG2	1.89	0.54
5:J:646:VAL:O	5:J:674:TYR:OH	2.25	0.54
9:Z:121:ASP:OD1	9:Z:122:ALA:N	2.40	0.54
1:A:1545:LEU:HD13	1:A:1825:LEU:HD21	1.89	0.54
2:B:379:MET:O	2:B:383:LEU:HG	2.08	0.54
1:C:1476:LEU:HD23	1:C:1479:ILE:HD11	1.90	0.54
1:C:1756:GLU:HB2	1:C:2102:PHE:CE1	2.42	0.54
5:H:211:GLN:O	5:H:215:ILE:HG12	2.08	0.54
5:I:688:SER:OG	5:I:708:ASN:ND2	2.41	0.54
8:Y:74:ARG:HG3	8:Y:75:ARG:HD3	1.90	0.54
2:B:85:PRO:HG2	2:B:86:LEU:HD12	1.89	0.54
1:C:1663:TRP:HA	1:C:1666:ILE:HG22	1.89	0.54
3:E:264:VAL:O	3:E:587:HIS:NE2	2.40	0.54
5:I:1165:VAL:HG22	5:J:1222:ALA:HB1	1.89	0.54
7:W:126:HIS:HE1	7:W:286:PHE:HB3	1.73	0.54
2:B:135:ILE:HG12	2:B:185:LEU:HD11	1.90	0.54
2:D:327:ARG:HH22	2:D:386:LEU:HD23	1.73	0.54
5:I:1165:VAL:HG21	5:J:1223:GLN:HB3	1.90	0.54
5:L:801:GLY:HA3	5:L:890:VAL:HG11	1.88	0.54
1:C:2003:LEU:HD23	1:C:2014:HIS:CD2	2.43	0.53
5:J:495:ILE:HD12	5:J:976:PRO:HG2	1.89	0.53
5:M:1360:ILE:HD12	5:M:1361:PRO:HD2	1.90	0.53
8:V:296:ASP:O	8:V:298:LYS:N	2.41	0.53
5:J:463:THR:HG21	5:J:1237:GLY:HA3	1.89	0.53
5:M:146:THR:OG1	5:M:149:ASP:OD2	2.24	0.53
1:A:1802:LYS:HZ2	1:A:2163:PHE:HE2	1.55	0.53
1:C:1520:ARG:HA	1:C:1523:ASN:ND2	2.22	0.53
2:D:174:GLN:HA	2:D:177:LEU:HD12	1.91	0.53
5:H:382:LYS:HD3	5:H:1309:GLN:HE22	1.72	0.53
5:I:241:LYS:HA	5:I:244:THR:HG22	1.90	0.53
5:K:635:ILE:HD11	5:K:674:TYR:HE2	1.73	0.53
5:M:399:LEU:HD22	5:M:1033:ALA:HB1	1.90	0.53
5:M:539:PHE:HE1	5:M:552:CYS:HG	1.54	0.53
5:M:857:LEU:O	5:M:861:VAL:HG22	2.08	0.53
1:A:1585:LEU:HD23	1:A:1913:MET:HG3	1.89	0.53
1:A:1818:LYS:HA	1:A:1822:GLU:HB3	1.89	0.53
1:C:1936:ASP:O	1:C:1939:ILE:N	2.42	0.53
1:A:1575:LEU:HD13	1:A:1914:ILE:HG21	1.91	0.53
1:A:1579:ARG:NH1	1:A:1835:GLN:O	2.41	0.53
1:A:1772:SER:HB2	1:A:2100:VAL:H	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1573:ARG:HH12	1:C:1620:LEU:HB3	1.74	0.53
1:C:1584:PHE:CZ	1:C:1596:ILE:HB	2.43	0.53
5:J:297:SER:HB3	5:J:352:LEU:HD12	1.89	0.53
5:K:651:TYR:HB2	5:K:784:PHE:CD1	2.43	0.53
5:M:1122:TYR:HB2	5:M:1128:ASP:HB2	1.89	0.53
7:T:86:LEU:O	7:T:89:ILE:HG22	2.08	0.53
1:A:2215:ARG:HE	1:A:2218:ARG:HD3	1.73	0.53
5:H:936:PRO:HB3	5:H:952:LEU:HD23	1.91	0.53
2:D:314:THR:HG23	2:D:331:HIS:HE1	1.73	0.53
3:E:296:ASP:O	3:E:298:PRO:HD3	2.09	0.53
5:H:21:THR:HA	5:K:200:ALA:HB1	1.89	0.53
5:H:83:LEU:HB2	5:H:1060:ASN:HD21	1.73	0.53
5:J:610:CYS:SG	5:J:646:VAL:HG22	2.49	0.53
5:J:653:LEU:O	5:J:657:ILE:HG12	2.08	0.53
5:M:42:ASP:N	5:M:42:ASP:OD1	2.42	0.53
5:M:703:LEU:HD21	5:M:1022:LEU:HG	1.91	0.53
2:D:327:ARG:NH1	2:D:385:GLU:O	2.42	0.53
3:E:287:TYR:OH	3:E:318:ASP:OD2	2.24	0.53
3:F:323:ILE:HA	3:F:326:TRP:CD1	2.44	0.53
8:X:144:LEU:HD13	8:Y:276:ARG:HD2	1.91	0.53
1:A:1618:LEU:HA	1:A:1621:ARG:CD	2.37	0.53
1:C:1569:ARG:HA	1:C:1572:LEU:HG	1.91	0.53
1:C:1701:SER:O	1:C:1705:HIS:ND1	2.40	0.53
1:C:2235:MET:HE1	3:F:68:LEU:HD22	1.91	0.53
2:D:65:VAL:O	2:D:69:VAL:HB	2.09	0.53
5:I:73:ALA:HB3	5:I:272:VAL:HG21	1.91	0.53
5:J:445:ALA:HB1	5:J:449:LEU:HD23	1.90	0.53
5:M:1185:TYR:O	5:M:1190:ASN:ND2	2.40	0.53
1:C:1674:TYR:OH	1:C:2117:PRO:O	2.26	0.52
5:H:392:THR:HG21	5:H:1264:GLN:HE22	1.73	0.52
5:K:725:ARG:HH11	5:K:772:ARG:HB2	1.74	0.52
5:L:143:PHE:HD2	5:L:144:GLU:HG2	1.74	0.52
5:L:211:GLN:O	5:L:215:ILE:HG12	2.09	0.52
4:G:399:SER:O	4:G:402:VAL:HG22	2.10	0.52
5:M:387:ARG:NH2	5:M:1312:GLU:OE2	2.42	0.52
1:A:1587:VAL:HB	1:A:1908:GLU:HB3	1.92	0.52
1:C:1581:HIS:CE1	1:C:1600:ALA:HB2	2.44	0.52
3:F:365:HIS:HD2	3:F:368:VAL:HG13	1.73	0.52
5:I:65:TYR:HA	5:I:172:GLU:HG2	1.90	0.52
5:K:888:GLU:O	5:K:919:ASN:ND2	2.43	0.52
9:Z:111:ARG:HD2	9:Z:111:ARG:O	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:Z:201:ASN:HA	9:Z:204:VAL:HG12	1.91	0.52
9:Z:239:LEU:HD21	9:Z:247:SER:HB3	1.91	0.52
1:A:1952:TRP:HA	1:A:1992:GLN:HE22	1.74	0.52
2:B:52:VAL:HG22	2:B:66:ARG:HH11	1.74	0.52
3:E:589:ALA:O	3:E:593:HIS:ND1	2.43	0.52
5:K:635:ILE:HD11	5:K:674:TYR:CE2	2.44	0.52
5:K:1360:ILE:O	5:K:1362:LEU:N	2.42	0.52
5:L:1327:THR:HG22	5:L:1329:THR:H	1.73	0.52
5:L:1331:ALA:O	5:L:1335:THR:HG23	2.10	0.52
5:M:1231:PRO:O	5:M:1235:GLN:HG2	2.09	0.52
1:C:1486:PHE:CD2	1:C:1522:LEU:HD11	2.43	0.52
1:C:1998:ASN:O	1:C:2001:GLN:NE2	2.36	0.52
4:G:366:VAL:HG13	4:G:550:LEU:HD21	1.90	0.52
5:H:50:PHE:CE1	5:I:86:LEU:HB3	2.44	0.52
5:J:244:THR:HA	5:J:362:LEU:HD12	1.91	0.52
5:J:1190:ASN:OD1	5:J:1223:GLN:NE2	2.42	0.52
5:K:703:LEU:HD21	5:K:1022:LEU:HD11	1.92	0.52
1:A:1957:PRO:HG3	1:A:2036:PHE:CD1	2.41	0.52
2:B:356:CYS:HA	2:B:359:VAL:HG22	1.91	0.52
5:I:753:ASP:O	5:I:756:ARG:HG2	2.09	0.52
6:Q:18:HIS:HA	6:Q:21:VAL:HG12	1.91	0.52
1:A:1828:GLN:NE2	1:A:1831:GLN:OE1	2.43	0.52
1:C:1694:LYS:O	1:C:1698:TYR:HB2	2.10	0.52
3:E:280:ALA:HB2	3:E:436:CYS:HB3	1.91	0.52
4:G:455:GLN:HE21	5:I:1119:MET:HG3	1.74	0.52
5:H:985:ASN:O	5:H:988:ARG:NH2	2.42	0.52
5:L:1113:LEU:HA	5:L:1116:VAL:HG12	1.91	0.52
1:A:1572:LEU:HA	1:A:1575:LEU:HG	1.91	0.52
1:A:1745:GLU:HG2	1:A:1967:LEU:HD22	1.90	0.52
2:B:316:ILE:HA	2:B:319:VAL:HB	1.91	0.52
2:B:459:ILE:HA	2:B:465:LEU:HD22	1.91	0.52
3:F:407:TRP:O	3:F:410:ARG:HG2	2.10	0.52
2:B:138:VAL:HA	2:B:141:GLU:HG2	1.90	0.52
1:C:1957:PRO:HG3	1:C:2036:PHE:CD2	2.45	0.52
5:H:1143:LEU:HD21	8:U:233:LYS:HB3	1.92	0.52
7:T:72:THR:HG22	7:T:74:CYS:H	1.74	0.52
1:C:1607:VAL:HG13	1:C:1608:THR:HG23	1.91	0.52
2:D:40:ALA:HB1	2:D:92:LEU:HB2	1.92	0.52
2:D:210:GLN:HE22	2:D:436:VAL:HA	1.75	0.52
5:H:725:ARG:HD2	5:H:726:ASN:HB3	1.91	0.52
7:T:48:ALA:N	7:T:148:CYS:O	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:630:PHE:HB2	3:F:636:LEU:HB2	1.91	0.51
5:H:276:THR:HG1	5:H:373:ARG:HH11	1.58	0.51
5:I:917:LEU:HD21	5:I:920:GLY:HA3	1.92	0.51
5:J:1222:ALA:O	5:J:1223:GLN:HG2	2.10	0.51
7:T:76:SER:OG	7:T:77:PRO:HD3	2.10	0.51
1:A:1586:GLU:CB	1:A:1596:ILE:HG12	2.39	0.51
1:A:1770:LEU:HD12	1:A:1773:LEU:HD11	1.92	0.51
2:D:100:LEU:HD21	2:D:118:ASN:HB3	1.91	0.51
3:E:91:ASN:OD1	3:E:92:GLN:N	2.43	0.51
6:P:37:HIS:ND1	6:P:40:LEU:HD23	2.26	0.51
1:C:1555:VAL:HG21	1:C:2014:HIS:CE1	2.45	0.51
1:C:2034:LEU:HD13	1:C:2054:ARG:HH22	1.75	0.51
3:E:217:SER:N	3:E:638:SER:O	2.37	0.51
4:G:573:GLU:OE1	4:G:576:ARG:NH2	2.42	0.51
5:J:584:LEU:HD12	5:J:687:ILE:HD11	1.91	0.51
5:L:610:CYS:HA	5:L:647:PHE:CE1	2.43	0.51
2:B:399:MET:HB2	2:B:403:GLN:HE21	1.76	0.51
2:D:516:LEU:HD12	2:D:517:PHE:HB2	1.90	0.51
5:I:244:THR:HA	5:I:362:LEU:HD23	1.91	0.51
5:J:192:VAL:HG23	5:J:219:PHE:CZ	2.45	0.51
5:J:753:ASP:OD1	6:P:66:ARG:NH2	2.43	0.51
3:F:365:HIS:HB3	3:F:368:VAL:HG22	1.92	0.51
5:J:399:LEU:HD22	5:J:1033:ALA:HB1	1.91	0.51
5:J:884:GLN:O	6:P:66:ARG:NH1	2.37	0.51
2:D:328:MET:HG3	2:D:334:LEU:HD23	1.91	0.51
5:M:231:ASN:OD1	5:M:1098:TYR:HB2	2.09	0.51
5:M:808:LEU:HD21	5:M:883:VAL:HG23	1.92	0.51
2:B:93:HIS:CE1	2:B:126:GLN:HB3	2.46	0.51
2:B:379:MET:HA	2:B:382:ARG:HG2	1.93	0.51
1:C:1556:LEU:HD12	1:C:1557:PRO:HD2	1.93	0.51
1:C:1903:GLN:HG2	1:C:1909:PRO:HA	1.92	0.51
3:F:59:ARG:O	3:F:62:ARG:HG2	2.11	0.51
3:F:186:ILE:HG22	3:F:501:LEU:HA	1.91	0.51
5:I:174:GLY:HA3	5:J:101:ALA:HB3	1.93	0.51
1:A:2149:ASP:HB3	1:A:2152:ARG:HG3	1.92	0.51
5:H:276:THR:OG1	5:H:373:ARG:NH1	2.42	0.51
5:I:1331:ALA:O	5:I:1335:THR:HG23	2.11	0.51
5:M:1003:HIS:O	5:M:1007:THR:HG23	2.11	0.51
8:Y:31:VAL:HG21	8:Y:137:ILE:HD11	1.92	0.51
1:A:1988:PHE:O	1:A:1992:GLN:HG2	2.11	0.51
1:C:1574:ARG:HE	1:C:1605:HIS:HA	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:808:LEU:HD21	5:H:883:VAL:HG13	1.93	0.51
5:K:477:ARG:HD3	5:L:1133:HIS:CE1	2.46	0.51
1:A:1968:LEU:O	1:A:1969:LYS:HG3	2.11	0.51
5:K:404:ASP:HB3	5:L:421:ARG:HG2	1.92	0.51
5:M:78:ILE:HB	5:M:1058:ILE:HG22	1.93	0.51
7:W:165:LEU:HD13	7:W:279:PHE:CE2	2.46	0.51
8:Y:41:ILE:HD11	8:Y:45:GLN:HG3	1.92	0.51
9:Z:86:ALA:O	9:Z:90:ARG:HG2	2.10	0.51
1:C:1663:TRP:CE2	1:C:1744:GLN:HB3	2.47	0.50
5:I:751:VAL:O	6:O:66:ARG:NH2	2.41	0.50
5:L:148:LEU:HA	5:L:151:ILE:HG22	1.92	0.50
1:A:1688:HIS:CD2	1:A:2116:PRO:HD3	2.46	0.50
1:C:1584:PHE:HD2	1:C:1914:ILE:HB	1.76	0.50
5:I:764:GLU:O	5:I:766:LEU:N	2.45	0.50
5:K:1034:LEU:HD13	5:K:1174:LEU:HD13	1.93	0.50
5:M:681:LEU:HB3	5:M:780:LEU:HD11	1.93	0.50
8:Y:144:LEU:O	8:Y:148:GLN:HG2	2.12	0.50
1:A:1851:THR:HG22	1:A:1877:VAL:HB	1.94	0.50
1:C:1617:TYR:HA	1:C:2006:THR:HG21	1.93	0.50
5:I:798:CYS:SG	5:I:799:GLY:N	2.84	0.50
5:K:617:VAL:HG23	5:K:619:GLY:H	1.77	0.50
8:Y:100:VAL:HG21	8:Y:142:LEU:HD13	1.94	0.50
9:Z:5:PHE:CZ	9:Z:13:VAL:HG22	2.47	0.50
2:D:342:GLU:OE2	2:D:407:GLN:NE2	2.44	0.50
3:E:338:ALA:HB1	3:E:340:ARG:HE	1.77	0.50
4:G:302:ARG:N	8:V:236:GLU:OE2	2.27	0.50
5:H:29:GLU:OE1	5:K:1277:THR:OG1	2.21	0.50
5:I:1035:THR:HG1	5:I:1186:PHE:HE1	1.59	0.50
5:J:496:PRO:O	5:J:500:ARG:HG3	2.12	0.50
5:L:101:ALA:HB3	5:M:174:GLY:HA3	1.93	0.50
5:L:156:ALA:O	5:L:159:THR:HG22	2.12	0.50
5:L:760:MET:HE1	5:L:805:LYS:HB2	1.94	0.50
5:L:785:TYR:O	5:L:943:TYR:OH	2.26	0.50
5:L:1292:CYS:HA	5:L:1311:ILE:HG12	1.92	0.50
1:A:1621:ARG:NH1	1:A:1627:LEU:HD11	2.27	0.50
2:B:360:LEU:HB2	2:B:423:ILE:HD11	1.93	0.50
1:C:1971:GLN:HB3	1:C:1972:ARG:HH21	1.76	0.50
2:D:239:MET:HE1	2:D:257:PHE:HA	1.93	0.50
2:D:296:VAL:HG13	2:D:298:ASN:H	1.77	0.50
3:E:318:ASP:HA	3:E:321:ARG:HD2	1.93	0.50
4:G:76:VAL:HG23	4:G:556:ARG:HH21	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:498:ARG:HH12	7:W:225:ARG:HG2	1.77	0.50
5:I:1249:ARG:HD2	5:I:1254:TYR:CD1	2.46	0.50
5:J:1291:ASP:OD1	5:J:1316:ARG:NH1	2.45	0.50
5:L:71:LEU:HD13	5:L:274:VAL:HG11	1.92	0.50
5:L:122:LYS:HD2	5:L:1082:ASN:ND2	2.27	0.50
1:A:2037:ILE:N	1:A:2038:PRO:HD3	2.26	0.50
1:C:1663:TRP:CD2	1:C:1744:GLN:HB3	2.46	0.50
1:C:2039:LEU:HD23	1:C:2053:LEU:HB2	1.93	0.50
1:C:2239:TYR:HB3	3:F:61:LEU:HD12	1.94	0.50
3:F:624:ILE:HA	3:F:627:LEU:HB3	1.94	0.50
5:I:478:LEU:HD12	5:I:512:MET:HE2	1.94	0.50
5:J:73:ALA:HB3	5:J:272:VAL:HG11	1.93	0.50
5:M:297:SER:HB3	5:M:352:LEU:HD23	1.93	0.50
7:W:80:LEU:HD23	7:W:114:ALA:HB2	1.93	0.50
2:B:116:TYR:HE2	2:B:492:HIS:CE1	2.30	0.50
3:F:305:LEU:HD13	3:F:506:ILE:HG22	1.92	0.50
5:I:488:MET:HG3	5:I:894:GLU:HG3	1.93	0.50
5:J:173:ARG:NH2	5:J:375:VAL:O	2.45	0.50
5:J:900:ASP:HB2	5:J:903:GLN:HE22	1.76	0.50
1:A:1958:VAL:H	1:A:1981:TYR:HB2	1.76	0.50
1:A:2034:LEU:HD22	1:C:1632:ARG:HA	1.94	0.50
3:F:362:PHE:HZ	3:F:380:LEU:HB3	1.77	0.50
5:H:7:LEU:HD22	5:K:92:LEU:HD12	1.92	0.50
5:H:225:ALA:O	5:H:232:ARG:NH2	2.39	0.50
5:H:724:PRO:HA	5:H:773:ALA:HB3	1.93	0.50
5:M:959:TYR:HH	5:M:966:TYR:HE2	1.59	0.50
1:A:2224:LEU:HD21	3:E:75:TYR:HB3	1.94	0.49
5:K:1211:THR:HA	5:K:1214:ILE:HG12	1.94	0.49
5:M:443:VAL:HA	5:M:446:LEU:HD23	1.93	0.49
9:Z:121:ASP:OD2	9:Z:214:ARG:NH2	2.41	0.49
3:E:239:TYR:O	3:E:250:SER:OG	2.22	0.49
5:K:311:ASN:HD21	5:K:325:PHE:HB2	1.76	0.49
5:K:1116:VAL:HG23	5:K:1117:PHE:HD1	1.77	0.49
5:M:560:ASN:CG	5:M:988:ARG:HG3	2.32	0.49
1:A:1490:ALA:HA	1:A:1493:ARG:HG2	1.94	0.49
1:A:1674:TYR:OH	1:A:2117:PRO:O	2.31	0.49
2:D:355:VAL:HG22	2:D:358:ARG:HH11	1.76	0.49
5:H:83:LEU:HD11	5:H:1058:ILE:HG22	1.94	0.49
5:H:883:VAL:O	5:H:886:VAL:HG13	2.12	0.49
2:D:448:ARG:O	2:D:451:LEU:HG	2.12	0.49
5:J:216:LEU:HD12	5:J:1200:LEU:HB2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:396:PRO:HB3	5:J:1186:PHE:CZ	2.47	0.49
5:J:1336:LYS:NZ	5:J:1346:THR:OG1	2.45	0.49
2:B:176:PRO:O	2:B:180:ARG:HG2	2.12	0.49
2:B:423:ILE:HA	2:B:426:ASN:HD21	1.78	0.49
1:C:1947:TYR:HE2	1:C:2049:VAL:HG11	1.78	0.49
3:F:226:LYS:HG3	3:F:241:LEU:HD13	1.95	0.49
5:J:751:VAL:HG22	5:J:752:SER:H	1.78	0.49
5:M:1223:GLN:O	5:M:1224:THR:HG23	2.11	0.49
8:U:290:VAL:HG12	8:U:302:CYS:SG	2.52	0.49
1:A:1549:LEU:HD23	1:A:1552:ILE:HD12	1.93	0.49
2:B:236:VAL:HG12	2:B:240:HIS:NE2	2.28	0.49
2:D:423:ILE:HG23	2:D:427:PHE:CE2	2.48	0.49
5:I:666:LEU:HD11	5:I:670:LEU:HB2	1.95	0.49
5:K:750:GLY:HA2	6:Q:70:VAL:HG21	1.95	0.49
5:K:752:SER:O	6:Q:66:ARG:NH2	2.45	0.49
5:L:808:LEU:HD21	5:L:883:VAL:HG13	1.94	0.49
1:A:1456:TYR:HB2	1:A:1482:LEU:HD21	1.95	0.49
5:J:949:CYS:SG	5:J:956:ILE:HG21	2.53	0.49
5:M:883:VAL:HG13	6:S:66:ARG:HA	1.94	0.49
8:X:13:ASP:OD1	8:X:43:HIS:NE2	2.35	0.49
2:D:316:ILE:HD13	2:D:347:ALA:HB1	1.93	0.49
3:E:524:GLY:HA3	3:E:631:LEU:HA	1.94	0.49
5:I:532:GLU:OE2	5:I:555:ARG:NH1	2.46	0.49
5:L:291:ILE:HA	5:L:360:ILE:HG22	1.94	0.49
1:A:2240:LEU:HD11	3:F:61:LEU:HD22	1.93	0.49
2:B:103:GLN:O	2:B:107:GLY:N	2.42	0.49
1:C:1692:ASN:HB3	1:C:1762:LEU:HD13	1.94	0.49
1:C:2222:ARG:NH1	3:E:80:GLU:OE2	2.46	0.49
3:F:249:ILE:HG23	3:F:253:LEU:HD23	1.94	0.49
5:J:215:ILE:HG21	5:J:1278:LEU:HD11	1.93	0.49
5:K:430:LEU:HD12	5:K:1108:VAL:HG12	1.95	0.49
5:L:399:LEU:HD22	5:L:1033:ALA:HB1	1.94	0.49
2:D:124:ALA:HB1	2:D:195:TYR:CE2	2.48	0.49
4:G:414:TRP:HB2	4:G:478:VAL:HG11	1.94	0.49
5:K:73:ALA:HB3	5:K:272:VAL:HG11	1.95	0.49
5:L:626:LEU:HD21	5:L:881:LEU:HB2	1.93	0.49
1:A:1649:ILE:HD13	1:A:1978:HIS:ND1	2.28	0.48
1:A:1792:MET:HB3	1:A:2055:PRO:HG3	1.95	0.48
1:C:1772:SER:HB2	1:C:2100:VAL:H	1.77	0.48
5:I:805:LYS:HE2	6:O:58:CYS:HB2	1.94	0.48
5:L:455:HIS:CD2	5:L:1017:PRO:HG3	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:710:LEU:HD21	5:L:783:VAL:HG22	1.94	0.48
5:M:1277:THR:O	5:M:1281:THR:N	2.41	0.48
9:Z:14:VAL:HA	9:Z:17:VAL:HG12	1.95	0.48
1:A:1839:PRO:HG2	1:A:1939:ILE:HD13	1.95	0.48
1:A:2238:LEU:HD13	4:G:350:LEU:HD22	1.94	0.48
1:C:1459:LEU:HD13	1:C:1478:LYS:HD3	1.96	0.48
3:F:274:LEU:H	3:F:429:TYR:HE2	1.61	0.48
3:F:301:VAL:O	3:F:305:LEU:HG	2.13	0.48
5:J:432:ASN:ND2	5:J:438:GLN:HE21	2.11	0.48
1:A:1760:THR:HG21	1:A:2102:PHE:HE1	1.76	0.48
2:B:338:LEU:HD11	2:B:349:LEU:HD13	1.94	0.48
2:D:64:PHE:HB2	2:D:500:GLU:OE1	2.13	0.48
5:I:534:HIS:CD2	5:I:537:PHE:HD2	2.31	0.48
5:I:578:ILE:HD13	5:I:1028:ILE:HD12	1.94	0.48
7:T:195:GLY:O	7:T:233:ARG:NH1	2.46	0.48
8:U:219:VAL:HG11	8:V:206:MET:HE2	1.94	0.48
9:Z:57:MET:CE	9:Z:272:ILE:HD11	2.44	0.48
2:B:70:VAL:HG13	2:B:96:LEU:HD13	1.95	0.48
3:F:462:LEU:HD12	3:F:465:LEU:HD12	1.94	0.48
4:G:367:LEU:O	4:G:371:VAL:HG23	2.12	0.48
5:H:1127:VAL:O	5:H:1131:ILE:HG12	2.13	0.48
5:H:1239:LEU:C	5:H:1239:LEU:HD12	2.33	0.48
5:I:212:ARG:NH1	5:I:1203:ASP:OD1	2.40	0.48
5:I:1021:VAL:HA	5:I:1024:THR:HG22	1.95	0.48
5:J:565:LEU:HB3	5:J:1178:PRO:HB3	1.96	0.48
5:J:1246:THR:O	5:J:1250:GLU:HG2	2.13	0.48
8:V:199:THR:HA	8:V:202:LEU:HG	1.96	0.48
1:C:1700:VAL:HG21	1:C:1750:ILE:HG12	1.96	0.48
3:E:599:GLY:HA2	3:E:602:LEU:HD12	1.95	0.48
4:G:105:ASP:O	4:G:109:GLN:HG2	2.13	0.48
4:G:318:TRP:CE3	4:G:325:ARG:HB2	2.49	0.48
5:H:892:VAL:HG11	5:H:979:PHE:CE1	2.49	0.48
5:I:226:THR:HG22	5:I:226:THR:O	2.13	0.48
5:K:1122:TYR:N	5:K:1128:ASP:OD2	2.44	0.48
5:L:1033:ALA:HB2	5:L:1179:VAL:HA	1.95	0.48
8:X:225:GLU:OE1	8:X:225:GLU:N	2.47	0.48
1:A:1698:TYR:CE2	1:A:2074:THR:HB	2.49	0.48
1:A:1830:CYS:HB2	1:A:1841:LEU:HB2	1.95	0.48
5:H:600:THR:HG21	5:H:645:LEU:CD1	2.44	0.48
5:J:388:ASN:HB2	5:J:1311:ILE:HD12	1.94	0.48
5:J:1214:ILE:HG22	5:J:1215:TYR:CD1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:390:ASP:OD1	5:L:1039:THR:OG1	2.31	0.48
5:M:1350:HIS:CD2	5:M:1351:PHE:H	2.32	0.48
1:A:1830:CYS:SG	1:A:1842:GLY:N	2.86	0.48
2:B:291:SER:O	2:B:294:LEU:HG	2.13	0.48
1:C:1620:LEU:HD21	1:C:2006:THR:HB	1.96	0.48
1:C:1830:CYS:O	1:C:1834:PRO:HD2	2.14	0.48
2:D:227:ARG:HH11	2:D:327:ARG:HG2	1.79	0.48
3:E:365:HIS:CE1	3:E:434:LEU:HD21	2.49	0.48
5:J:427:THR:HG22	5:J:441:ASP:HB3	1.96	0.48
5:J:438:GLN:OE1	5:J:1108:VAL:HG22	2.13	0.48
5:K:477:ARG:HD3	5:L:1133:HIS:NE2	2.29	0.48
5:K:810:ASP:O	5:K:814:ARG:NH2	2.46	0.48
5:M:244:THR:HA	5:M:362:LEU:HD23	1.96	0.48
8:V:262:ASP:N	8:V:262:ASP:OD1	2.46	0.48
2:B:459:ILE:HG23	2:B:465:LEU:HB2	1.96	0.48
5:H:719:PHE:CZ	5:H:922:CYS:HB3	2.49	0.48
5:J:861:VAL:HA	5:J:864:VAL:HG12	1.95	0.48
5:M:1045:ASP:HB2	5:M:1097:ALA:HB3	1.96	0.48
8:U:57:GLY:HA2	8:U:188:VAL:HG12	1.96	0.48
1:A:1614:ALA:HB3	1:A:1845:TRP:CZ3	2.49	0.48
1:A:1874:TYR:HB3	1:A:1879:GLU:OE2	2.14	0.48
2:B:181:VAL:O	2:B:185:LEU:HD23	2.14	0.48
2:D:132:LEU:HA	2:D:135:ILE:HG12	1.96	0.48
2:D:379:MET:O	2:D:383:LEU:HG	2.14	0.48
3:F:71:ARG:NH1	3:F:75:TYR:OH	2.46	0.48
4:G:45:TYR:HB3	4:G:132:LEU:HD22	1.96	0.48
5:J:254:ILE:HG12	5:J:1086:MET:O	2.14	0.48
5:L:638:MET:SD	5:L:642:ARG:HD2	2.54	0.48
5:L:1190:ASN:OD1	5:L:1223:GLN:NE2	2.46	0.48
5:L:1276:LYS:O	5:L:1281:THR:OG1	2.32	0.48
5:M:421:ARG:NH2	5:M:577:GLU:OE2	2.40	0.48
6:R:20:HIS:O	6:R:24:VAL:HG22	2.13	0.48
7:W:54:GLU:O	7:W:57:VAL:HG12	2.13	0.48
1:A:1982:THR:HG22	1:A:1984:ARG:H	1.79	0.48
3:F:285:ALA:HB3	3:F:407:TRP:HH2	1.78	0.48
7:T:185:VAL:HB	7:T:206:THR:HG22	1.96	0.48
8:V:33:PRO:HB2	8:V:68:MET:SD	2.54	0.48
2:D:70:VAL:HG13	2:D:96:LEU:HD13	1.94	0.47
2:D:135:ILE:HG13	2:D:136:GLN:N	2.29	0.47
2:D:447:ARG:HA	2:D:450:ILE:HB	1.96	0.47
4:G:514:TRP:HE1	4:G:522:VAL:HG21	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:605:ASN:ND2	5:J:642:ARG:HD3	2.29	0.47
5:K:800:LEU:HD22	5:K:952:LEU:HD21	1.96	0.47
5:L:142:THR:O	7:W:36:ARG:NH1	2.47	0.47
5:L:1193:ARG:NH1	5:L:1197:SER:HB3	2.29	0.47
5:M:446:LEU:HD21	5:M:1024:THR:CG2	2.40	0.47
5:M:730:VAL:HG13	5:M:897:ALA:HB2	1.95	0.47
9:Z:63:TYR:HB2	9:Z:224:CYS:SG	2.53	0.47
1:A:1456:TYR:CZ	1:A:1460:LEU:HD11	2.50	0.47
1:A:1602:GLU:CG	1:A:1607:VAL:HB	2.42	0.47
1:A:1868:PRO:HD2	1:A:1871:ALA:HB3	1.95	0.47
1:C:1869:GLN:HB2	1:C:2046:ASP:HA	1.96	0.47
2:D:319:VAL:HA	2:D:323:LEU:HD13	1.96	0.47
5:H:665:ALA:C	5:H:666:LEU:HD12	2.34	0.47
5:K:785:TYR:O	5:K:943:TYR:OH	2.32	0.47
5:K:1116:VAL:HG12	5:K:1258:PHE:CD1	2.50	0.47
5:M:1039:THR:HG21	5:M:1259:TYR:HE2	1.79	0.47
8:X:203:SER:O	8:X:207:VAL:HG13	2.14	0.47
1:C:1957:PRO:HG3	1:C:2036:PHE:HD2	1.79	0.47
5:H:857:LEU:HD21	5:H:876:CYS:SG	2.54	0.47
5:L:786:LEU:HD11	5:L:987:LEU:HD22	1.96	0.47
5:L:1114:PHE:HB2	5:L:1137:VAL:HG11	1.96	0.47
5:M:684:VAL:HA	5:M:687:ILE:HG22	1.96	0.47
5:M:854:GLY:O	5:M:858:THR:HG23	2.14	0.47
6:N:27:GLU:OE2	6:N:61:LYS:NZ	2.45	0.47
8:V:142:LEU:HD12	8:V:177:PHE:CG	2.49	0.47
2:B:30:VAL:HG22	2:B:72:TYR:OH	2.13	0.47
2:B:257:PHE:O	2:B:261:VAL:HG23	2.13	0.47
1:C:1807:THR:HG22	1:C:1809:THR:HG22	1.96	0.47
2:D:383:LEU:HD13	2:D:427:PHE:HE1	1.78	0.47
3:F:469:ASP:OD1	3:F:469:ASP:N	2.45	0.47
5:H:1144:ASP:OD1	5:H:1145:THR:N	2.48	0.47
5:H:1249:ARG:HG2	5:H:1254:TYR:CD1	2.50	0.47
5:K:698:LEU:HD21	5:K:1127:VAL:HB	1.97	0.47
5:L:1116:VAL:HG13	5:L:1117:PHE:HD1	1.80	0.47
2:B:9:PHE:O	2:B:13:ILE:HG12	2.15	0.47
2:B:238:LEU:HD21	2:B:327:ARG:HD2	1.97	0.47
1:C:2003:LEU:HD23	1:C:2014:HIS:NE2	2.29	0.47
3:E:641:VAL:O	3:E:641:VAL:HG12	2.14	0.47
3:F:68:LEU:HA	3:F:71:ARG:HG2	1.97	0.47
5:I:785:TYR:O	5:I:943:TYR:OH	2.32	0.47
5:K:1044:VAL:HG11	5:K:1096:VAL:HG13	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:420:VAL:HG11	5:M:577:GLU:HA	1.97	0.47
5:M:1001:VAL:HG12	5:M:1002:LEU:HD23	1.97	0.47
5:M:1039:THR:HG23	5:M:1300:GLN:HE22	1.79	0.47
7:W:18:ASN:O	7:W:22:THR:HG23	2.15	0.47
1:A:1969:LYS:HG2	1:C:2155:ASP:HB3	1.96	0.47
3:E:183:TYR:HB2	3:E:192:PHE:HB3	1.96	0.47
3:E:338:ALA:HB1	3:E:340:ARG:NE	2.30	0.47
3:E:506:ILE:HG23	3:E:510:TYR:CE2	2.50	0.47
3:F:340:ARG:HB3	3:F:361:THR:HA	1.96	0.47
5:H:229:LEU:HD12	5:H:230:LEU:HD22	1.96	0.47
5:I:595:ARG:O	5:I:599:THR:HG23	2.15	0.47
5:I:1039:THR:HG23	5:I:1261:PRO:HB3	1.97	0.47
5:J:498:PHE:O	5:J:501:VAL:HG12	2.14	0.47
5:K:643:GLN:HB2	5:L:672:PHE:HE2	1.78	0.47
5:M:534:HIS:HB3	5:M:537:PHE:O	2.14	0.47
9:Z:161:ASP:HA	9:Z:164:VAL:HG12	1.96	0.47
1:A:1493:ARG:HG3	1:A:1495:THR:H	1.80	0.47
2:B:227:ARG:HH12	2:B:326:GLU:HB2	1.79	0.47
2:B:245:HIS:ND1	2:B:389:ASN:OD1	2.48	0.47
2:B:296:VAL:HG13	2:B:298:ASN:H	1.79	0.47
2:B:391:ASP:N	2:B:391:ASP:OD1	2.48	0.47
1:C:1951:SER:HA	1:C:1956:ILE:HG22	1.97	0.47
3:E:305:LEU:HD11	3:E:510:TYR:HD2	1.79	0.47
3:E:531:THR:HG21	3:E:619:PHE:HZ	1.80	0.47
5:J:884:GLN:HA	6:P:66:ARG:HB2	1.97	0.47
5:K:212:ARG:NH2	5:K:1201:ALA:O	2.42	0.47
5:K:672:PHE:HE1	5:K:675:ARG:HH12	1.61	0.47
5:L:1221:ASP:OD1	5:L:1222:ALA:N	2.46	0.47
5:M:689:ALA:HB2	5:M:711:HIS:NE2	2.29	0.47
5:M:712:ASP:O	5:M:782:LYS:NZ	2.47	0.47
5:M:760:MET:SD	5:M:888:GLU:HA	2.55	0.47
6:S:33:SER:OG	6:S:34:GLU:OE1	2.31	0.47
7:T:251:LEU:HD12	7:T:251:LEU:O	2.14	0.47
3:E:365:HIS:CD2	3:E:368:VAL:HG23	2.49	0.47
5:I:421:ARG:NH2	5:J:404:ASP:OD2	2.46	0.47
5:L:1116:VAL:HG13	5:L:1117:PHE:CD1	2.50	0.47
1:A:1645:ARG:HA	1:A:2163:PHE:CE1	2.50	0.47
2:D:439:PRO:HA	2:D:482:VAL:HG22	1.97	0.47
2:D:441:PHE:HB3	2:D:512:TRP:CE2	2.50	0.47
5:H:698:LEU:HD21	5:H:1127:VAL:HG23	1.97	0.47
5:K:99:ARG:NH2	5:K:111:GLN:OE1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:651:TYR:CZ	5:L:655:THR:HG21	2.50	0.47
5:M:287:LEU:O	5:M:291:ILE:HG23	2.15	0.47
5:M:641:THR:HG23	5:M:642:ARG:HG3	1.96	0.47
8:U:116:HIS:O	8:U:119:LEU:HD22	2.15	0.47
1:A:1461:HIS:HA	1:A:1464:GLN:HG2	1.97	0.47
1:A:2027:TYR:HD1	1:A:2028:LEU:HD22	1.80	0.47
2:B:117:HIS:O	2:B:121:THR:N	2.33	0.47
2:B:292:TYR:CE1	2:B:307:LEU:HD11	2.50	0.47
2:B:422:GLN:HG2	2:B:468:VAL:HG23	1.96	0.47
5:H:1297:THR:HG22	5:H:1299:THR:H	1.79	0.47
5:M:118:LYS:NZ	5:M:1087:GLY:O	2.46	0.47
8:X:229:MET:HA	8:X:232:VAL:HG12	1.96	0.47
1:C:1545:LEU:HB3	1:C:2023:ARG:HG2	1.97	0.46
1:C:1642:VAL:O	1:C:2192:SER:N	2.35	0.46
3:E:447:THR:HG22	3:E:628:LEU:HD21	1.97	0.46
5:H:575:THR:HG22	5:H:1010:ALA:HB3	1.97	0.46
5:I:229:LEU:HD22	5:I:242:PHE:CD2	2.49	0.46
5:I:358:ASP:HB2	5:I:369:MET:HB2	1.97	0.46
5:J:440:ILE:HB	5:J:1108:VAL:HG21	1.97	0.46
5:J:846:ILE:HD12	5:J:849:GLN:HE21	1.81	0.46
5:L:559:GLY:HA3	5:L:991:PHE:HE1	1.80	0.46
5:L:684:VAL:HG23	5:L:1006:MET:HG2	1.97	0.46
5:M:532:GLU:CD	5:M:555:ARG:HH12	2.18	0.46
5:M:757:LEU:HB3	6:S:59:ALA:HB1	1.98	0.46
9:Z:105:HIS:HA	9:Z:108:VAL:HG22	1.96	0.46
1:A:1573:ARG:NH2	1:A:1619:ALA:O	2.48	0.46
1:A:1862:LEU:HD11	1:A:1952:TRP:CH2	2.45	0.46
2:B:326:GLU:HA	2:B:355:VAL:HG11	1.97	0.46
4:G:96:VAL:HA	4:G:128:VAL:HA	1.97	0.46
5:L:214:ASN:HB3	5:M:1101:ARG:HD2	1.98	0.46
5:L:388:ASN:HB2	5:L:1311:ILE:HD12	1.97	0.46
5:L:567:PRO:HB2	5:L:569:PRO:HD2	1.97	0.46
1:A:1792:MET:HB2	1:A:1811:TRP:HH2	1.81	0.46
2:B:412:PHE:O	2:B:416:ILE:HG12	2.16	0.46
1:C:1859:LEU:O	1:C:1862:LEU:HG	2.15	0.46
4:G:85:GLU:O	4:G:88:THR:HG22	2.15	0.46
4:G:449:ARG:NH2	4:G:464:GLU:OE1	2.44	0.46
5:I:326:ASN:O	5:I:329:LYS:HG2	2.15	0.46
5:J:749:HIS:NE2	5:J:885:PHE:HA	2.30	0.46
5:J:1193:ARG:HD3	5:J:1266:PHE:CE2	2.50	0.46
5:M:635:ILE:HG22	5:M:646:VAL:HG23	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1531:LEU:O	1:A:1534:GLN:HG3	2.15	0.46
1:A:2234:HIS:CE1	1:A:2238:LEU:HD12	2.50	0.46
3:E:22:ASN:HB3	3:F:7:PHE:H	1.80	0.46
3:E:615:GLY:HA3	3:E:621:VAL:HB	1.98	0.46
5:H:785:TYR:O	5:H:790:PRO:HD3	2.16	0.46
5:I:534:HIS:CD2	5:I:536:PHE:H	2.33	0.46
5:K:1173:GLU:HG3	5:K:1261:PRO:HD2	1.98	0.46
5:L:789:MET:O	5:L:793:THR:HG22	2.15	0.46
5:L:884:GLN:HA	6:R:66:ARG:HB2	1.98	0.46
5:M:1184:ASN:O	5:M:1184:ASN:ND2	2.48	0.46
6:Q:16:GLU:O	6:Q:20:HIS:ND1	2.48	0.46
2:D:233:LEU:HD13	2:D:323:LEU:HD11	1.97	0.46
3:E:348:TYR:O	3:E:431:ARG:NH1	2.48	0.46
4:G:566:LEU:HD12	8:U:157:SER:HB2	1.97	0.46
5:H:860:LEU:HD11	5:H:930:LEU:HD21	1.97	0.46
5:J:1064:VAL:HG22	5:J:1077:VAL:HG12	1.97	0.46
5:K:215:ILE:HG21	5:K:1278:LEU:HD11	1.97	0.46
5:M:192:VAL:HG23	5:M:219:PHE:CZ	2.51	0.46
5:M:280:MET:HG3	5:M:371:ASN:HB3	1.97	0.46
8:U:154:GLY:HA3	8:U:193:LEU:HD21	1.98	0.46
1:C:1982:THR:HG22	1:C:1983:SER:H	1.81	0.46
2:D:131:THR:HA	2:D:134:GLU:HG2	1.96	0.46
3:E:82:ARG:HD3	3:E:82:ARG:HA	1.73	0.46
3:F:59:ARG:O	3:F:63:GLN:OE1	2.32	0.46
5:H:935:LEU:HD12	5:H:936:PRO:HD2	1.98	0.46
5:J:240:LEU:HD12	5:J:287:LEU:HD11	1.98	0.46
5:J:376:TYR:O	5:J:378:ASN:N	2.48	0.46
5:K:307:LEU:HD23	5:K:307:LEU:H	1.80	0.46
5:K:798:CYS:SG	5:K:799:GLY:N	2.89	0.46
5:L:1034:LEU:HD12	5:L:1174:LEU:HB3	1.96	0.46
5:M:1121:VAL:HA	5:M:1132:ARG:HH11	1.81	0.46
8:X:58:TYR:CE1	8:X:112:PRO:HG2	2.51	0.46
1:A:1500:GLU:HA	1:A:1520:ARG:HH11	1.81	0.46
2:B:92:LEU:HD12	2:B:95:GLN:NE2	2.31	0.46
1:C:1570:ASP:OD1	1:C:1571:ARG:N	2.49	0.46
1:C:1784:ALA:O	1:C:1788:ASN:N	2.49	0.46
1:C:1843:LYS:NZ	1:C:1941:THR:O	2.42	0.46
2:D:182:ILE:O	2:D:186:GLU:HG3	2.15	0.46
2:D:334:LEU:HA	2:D:337:ARG:HG2	1.98	0.46
3:E:621:VAL:HG22	3:E:636:LEU:HD22	1.98	0.46
3:F:30:VAL:O	3:F:34:LEU:HD23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:1057:VAL:HG12	5:H:1083:THR:HG22	1.97	0.46
5:K:698:LEU:HD22	5:K:706:TYR:HE2	1.80	0.46
5:M:556:ILE:HD11	5:M:1014:LYS:HE3	1.97	0.46
8:Y:195:ILE:O	8:Y:199:THR:HG23	2.16	0.46
1:A:1920:ASP:OD1	1:A:1921:THR:N	2.38	0.46
2:B:332:PRO:HB3	2:B:396:TYR:CZ	2.51	0.46
5:H:753:ASP:N	5:H:753:ASP:OD1	2.49	0.46
5:J:1034:LEU:HD13	5:J:1174:LEU:HG	1.97	0.46
5:L:192:VAL:HG13	5:L:219:PHE:CZ	2.51	0.46
5:M:459:PRO:O	5:M:462:GLN:HG3	2.16	0.46
8:X:153:MET:SD	8:X:169:VAL:HG22	2.56	0.46
8:X:262:ASP:O	8:X:265:ILE:HG22	2.16	0.46
1:C:2179:CYS:SG	1:C:2180:ARG:N	2.89	0.46
3:F:606:LEU:HD12	3:F:606:LEU:O	2.16	0.46
5:H:1332:LEU:HD13	5:H:1355:VAL:HG13	1.98	0.46
5:L:1177:THR:OG1	5:L:1230:ASN:ND2	2.40	0.46
5:M:77:ALA:HB1	5:M:302:TYR:CD2	2.50	0.46
6:Q:14:ARG:HB2	6:Q:18:HIS:CE1	2.50	0.46
8:U:230:LEU:HD21	8:V:202:LEU:HD11	1.96	0.46
8:V:287:VAL:HG23	8:V:288:PHE:HD2	1.81	0.46
2:D:473:THR:HA	2:D:476:VAL:HG12	1.96	0.46
3:E:278:GLU:HB3	3:E:412:LEU:HD11	1.98	0.46
3:F:423:PHE:HB2	3:F:426:GLU:HB2	1.98	0.46
5:I:651:TYR:HB2	5:I:784:PHE:CD1	2.51	0.46
5:I:689:ALA:HB2	5:I:711:HIS:NE2	2.31	0.46
5:J:635:ILE:HG13	5:J:646:VAL:HG12	1.98	0.46
1:A:1899:TYR:HB2	1:A:1913:MET:SD	2.55	0.45
1:A:2043:ASN:ND2	1:A:2046:ASP:OD1	2.49	0.45
2:D:240:HIS:HE1	2:D:293:LYS:HG3	1.81	0.45
4:G:514:TRP:HZ2	4:G:524:TYR:HH	1.64	0.45
5:H:1133:HIS:CE1	5:I:477:ARG:HD3	2.51	0.45
5:I:1327:THR:HB	5:I:1355:VAL:HG22	1.97	0.45
8:U:63:GLY:HA2	8:U:66:ARG:HG2	1.98	0.45
1:A:1753:LEU:HD21	1:A:1785:VAL:HG11	1.98	0.45
1:A:2177:PRO:HB2	2:B:307:LEU:HD13	1.97	0.45
2:B:351:ALA:HA	2:B:354:ARG:NE	2.31	0.45
2:B:361:GLU:O	2:B:365:HIS:ND1	2.34	0.45
3:F:460:PHE:CZ	3:F:465:LEU:HD11	2.51	0.45
4:G:168:LEU:HD23	4:G:317:VAL:HG21	1.98	0.45
5:H:757:LEU:HB3	6:N:59:ALA:HB1	1.99	0.45
5:K:661:LEU:HD23	5:K:666:LEU:HD21	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:653:LEU:O	5:L:657:ILE:HG12	2.16	0.45
5:M:77:ALA:HB1	5:M:302:TYR:HD2	1.81	0.45
8:V:8:ILE:HB	8:V:83:LEU:HB2	1.98	0.45
7:W:244:CYS:SG	8:X:273:VAL:HG11	2.57	0.45
8:X:204:MET:O	8:X:207:VAL:HG22	2.16	0.45
1:A:1524:ALA:O	1:A:1527:ARG:HG2	2.17	0.45
2:B:96:LEU:HB3	2:B:122:LEU:HD21	1.98	0.45
2:D:271:PHE:HD1	2:D:312:ILE:HG23	1.80	0.45
3:E:318:ASP:HB3	3:E:370:LEU:HD21	1.98	0.45
5:I:754:VAL:N	5:I:755:PRO:HD2	2.31	0.45
5:J:1001:VAL:HG12	5:J:1002:LEU:HD23	1.98	0.45
5:J:1059:ILE:HG22	5:J:1081:ILE:HG22	1.97	0.45
5:L:214:ASN:OD1	5:M:433:ARG:NH1	2.49	0.45
5:M:1033:ALA:HB2	5:M:1179:VAL:HA	1.98	0.45
2:B:48:VAL:HG11	2:B:73:LEU:HD11	1.99	0.45
2:D:213:ILE:HG12	2:D:434:LEU:HG	1.97	0.45
2:D:325:PRO:HB2	2:D:355:VAL:HG21	1.99	0.45
3:E:301:VAL:HG23	3:E:411:LEU:HD13	1.99	0.45
4:G:441:GLN:OE1	4:G:444:ARG:NH1	2.50	0.45
5:H:753:ASP:OD1	6:N:66:ARG:NH2	2.37	0.45
5:I:455:HIS:CE1	5:I:1017:PRO:HD3	2.51	0.45
5:J:211:GLN:O	5:J:215:ILE:HG12	2.17	0.45
5:J:318:TYR:CD2	5:J:320:SER:HB2	2.51	0.45
5:K:580:GLU:OE1	5:K:585:ARG:NH2	2.49	0.45
5:L:624:PHE:HZ	5:L:657:ILE:HD13	1.81	0.45
6:O:75:ARG:OXT	9:Z:251:ARG:NH1	2.38	0.45
7:T:79:HIS:CD2	8:V:103:GLU:HG2	2.51	0.45
8:V:270:ALA:HA	8:V:273:VAL:HG12	1.98	0.45
2:B:315:ARG:HD2	2:B:337:ARG:HH12	1.82	0.45
2:B:351:ALA:O	2:B:354:ARG:HG2	2.16	0.45
3:E:498:PHE:HE1	3:E:501:LEU:HD22	1.82	0.45
5:I:388:ASN:HB2	5:I:1311:ILE:HD12	1.98	0.45
5:I:1035:THR:HG22	5:I:1177:THR:OG1	2.17	0.45
5:L:1178:PRO:HG3	5:L:1231:PRO:HD2	1.99	0.45
6:P:18:HIS:HA	6:P:48:THR:HG21	1.98	0.45
8:U:152:ILE:HD12	8:V:268:LEU:HB3	1.99	0.45
8:V:59:VAL:HB	8:V:196:ASP:OD2	2.16	0.45
9:Z:74:SER:HA	9:Z:77:LEU:HD12	1.97	0.45
1:C:2037:ILE:N	1:C:2038:PRO:HD3	2.31	0.45
3:E:309:PRO:HA	3:E:312:LEU:HD12	1.98	0.45
3:F:526:ALA:HA	3:F:594:TYR:CD1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:36:GLU:HB2	4:G:153:TRP:CE2	2.51	0.45
5:I:475:MET:SD	5:I:530:TYR:CE1	3.10	0.45
5:J:1043:GLU:OE1	5:J:1101:ARG:NE	2.40	0.45
5:M:450:CYS:O	5:M:1122:TYR:OH	2.23	0.45
7:T:127:ARG:NH2	7:T:288:GLU:OE2	2.42	0.45
7:W:193:TYR:CD1	7:W:233:ARG:HD2	2.51	0.45
8:X:214:LEU:HA	8:X:217:THR:HG22	1.99	0.45
1:A:1527:ARG:O	1:A:1531:LEU:HB2	2.16	0.45
1:A:1685:ALA:O	1:A:1688:HIS:ND1	2.50	0.45
1:A:1857:ASP:O	1:A:1860:GLN:HG3	2.16	0.45
1:A:1953:LEU:O	1:A:2028:LEU:HD12	2.17	0.45
1:A:2040:VAL:HG22	1:A:2052:VAL:HG12	1.98	0.45
2:B:271:PHE:HB3	2:B:322:TYR:CD2	2.52	0.45
2:D:239:MET:HB2	2:D:253:LEU:HD11	1.99	0.45
3:E:371:PHE:HB3	3:E:376:VAL:HB	1.98	0.45
3:E:635:PHE:HD2	3:E:637:PRO:HD3	1.80	0.45
4:G:5:LEU:HD13	4:G:306:TRP:CG	2.52	0.45
5:I:194:GLN:HA	5:I:197:VAL:HG12	1.98	0.45
5:I:326:ASN:OD1	5:I:327:SER:N	2.49	0.45
5:K:1286:LEU:HD12	5:K:1287:LEU:HG	1.98	0.45
5:M:449:LEU:HD13	5:M:1020:LEU:HD21	1.99	0.45
1:A:1703:ALA:HB2	1:A:1773:LEU:HD13	1.98	0.45
1:C:1449:GLN:OE1	1:C:1493:ARG:NH2	2.49	0.45
1:C:1574:ARG:NH1	1:C:1608:THR:O	2.49	0.45
2:D:209:TYR:HA	2:D:212:LEU:HG	1.99	0.45
2:D:279:ASP:N	2:D:279:ASP:OD1	2.50	0.45
2:D:399:MET:HB2	2:D:403:GLN:HE21	1.81	0.45
3:F:239:TYR:OH	3:F:570:MET:SD	2.69	0.45
3:F:362:PHE:CE1	3:F:380:LEU:HD13	2.51	0.45
3:F:427:GLN:HB3	3:F:429:TYR:HD1	1.82	0.45
5:H:754:VAL:N	5:H:755:PRO:HD2	2.32	0.45
5:H:917:LEU:HD21	5:H:920:GLY:HA3	1.99	0.45
5:I:33:GLU:HG2	5:I:34:ALA:N	2.32	0.45
5:I:1054:CYS:SG	5:I:1055:THR:HG23	2.57	0.45
5:L:70:GLY:N	5:L:370:GLU:OE1	2.49	0.45
5:L:507:ARG:NH1	5:L:968:ARG:HH12	2.15	0.45
5:L:1055:THR:OG1	5:L:1083:THR:OG1	2.34	0.45
8:X:115:PHE:HD2	8:X:183:THR:HB	1.82	0.45
2:D:508:LEU:HD23	2:D:516:LEU:HD21	1.99	0.45
3:F:339:TYR:HB3	3:F:364:ARG:HD2	1.98	0.45
5:J:534:HIS:CD2	5:J:537:PHE:HD2	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:K:223:MET:O	5:K:227:LEU:HG	2.17	0.45
5:K:760:MET:SD	5:K:888:GLU:HA	2.57	0.45
5:K:937:VAL:HG13	5:K:937:VAL:O	2.16	0.45
5:L:559:GLY:HA3	5:L:991:PHE:CE1	2.52	0.45
5:L:601:VAL:HG13	5:L:924:VAL:HG11	1.99	0.45
5:L:611:TYR:CZ	5:L:923:VAL:HG23	2.52	0.45
5:M:1222:ALA:C	5:M:1224:THR:H	2.20	0.45
6:N:21:VAL:O	6:N:25:VAL:HB	2.16	0.45
7:T:211:HIS:CE1	8:U:66:ARG:HD3	2.52	0.45
8:V:66:ARG:NH1	8:V:280:ASP:O	2.50	0.45
8:V:93:THR:HG22	8:V:301:THR:HG22	1.98	0.45
2:B:92:LEU:O	2:B:95:GLN:HG3	2.17	0.45
1:C:1575:LEU:O	1:C:1579:ARG:NH2	2.50	0.45
5:J:447:LYS:HB3	5:J:1112:ASP:HA	1.99	0.45
5:J:1212:LYS:HA	5:J:1216:ASP:OD1	2.17	0.45
5:K:698:LEU:HD11	5:K:1127:VAL:HA	1.99	0.45
5:M:75:ALA:HB2	5:M:179:PHE:CZ	2.52	0.45
9:Z:98:ASP:OD1	9:Z:98:ASP:N	2.50	0.45
2:B:454:HIS:O	2:B:458:LEU:HB2	2.17	0.44
1:C:1536:LEU:HA	1:C:1539:LYS:HG2	1.98	0.44
2:D:62:PHE:HA	2:D:65:VAL:HG12	1.99	0.44
2:D:383:LEU:HD13	2:D:427:PHE:CE1	2.52	0.44
5:I:126:THR:HG22	5:I:1078:THR:HG22	1.99	0.44
5:I:297:SER:HB3	5:I:352:LEU:HD12	1.98	0.44
5:J:718:PRO:HD2	5:J:785:TYR:HB3	1.99	0.44
5:K:122:LYS:HE3	5:K:1082:ASN:HD21	1.82	0.44
5:L:146:THR:HG23	5:L:149:ASP:H	1.82	0.44
5:L:610:CYS:SG	5:L:647:PHE:HD1	2.40	0.44
5:M:677:LEU:O	5:M:681:LEU:HG	2.17	0.44
5:M:888:GLU:H	5:M:919:ASN:HD21	1.64	0.44
7:W:184:TYR:CE1	7:W:210:ALA:HB2	2.52	0.44
1:A:2046:ASP:OD1	1:A:2046:ASP:N	2.46	0.44
2:B:296:VAL:HG11	2:B:301:ALA:HB3	1.98	0.44
2:B:398:GLN:O	2:B:402:ILE:HG13	2.16	0.44
5:J:396:PRO:HB2	5:J:399:LEU:HD23	1.98	0.44
5:J:534:HIS:CD2	5:J:536:PHE:H	2.35	0.44
5:J:623:ALA:HB2	5:J:885:PHE:CD2	2.52	0.44
5:J:811:LEU:HD23	5:J:812:PHE:CE1	2.52	0.44
5:J:968:ARG:NH2	5:J:970:ASP:OD1	2.49	0.44
5:K:75:ALA:HB2	5:K:179:PHE:CZ	2.53	0.44
5:M:555:ARG:HA	5:M:560:ASN:HD22	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:V:55:THR:HG23	8:V:56:ARG:HG2	1.99	0.44
7:W:258:ASP:OD1	7:W:277:ASP:HB2	2.17	0.44
2:B:400:ALA:HB3	2:B:425:TYR:OH	2.17	0.44
2:D:316:ILE:HD11	2:D:337:ARG:NH2	2.33	0.44
3:E:73:GLN:NE2	3:E:77:GLU:HG3	2.32	0.44
5:J:426:THR:HG23	5:J:427:THR:HG23	1.99	0.44
5:J:796:ARG:O	5:J:945:ASN:ND2	2.50	0.44
5:K:800:LEU:HD23	5:K:923:VAL:HG21	2.00	0.44
5:K:808:LEU:HD23	5:K:883:VAL:HG23	1.99	0.44
5:L:857:LEU:O	5:L:861:VAL:HG22	2.17	0.44
5:M:880:PHE:O	5:M:883:VAL:HG12	2.17	0.44
7:T:193:TYR:HB3	7:T:233:ARG:HB2	2.00	0.44
2:B:262:LYS:HD2	2:B:262:LYS:HA	1.68	0.44
3:E:296:ASP:OD1	3:E:296:ASP:N	2.47	0.44
3:F:54:ASP:OD1	3:F:57:ARG:NH2	2.51	0.44
5:H:473:PRO:HA	5:H:476:GLN:HB2	2.00	0.44
5:I:57:PHE:HE2	5:J:254:ILE:HD12	1.82	0.44
5:I:517:VAL:HG22	5:I:518:VAL:H	1.81	0.44
5:K:1114:PHE:CD1	5:K:1137:VAL:HG11	2.51	0.44
5:L:180:LEU:HD23	5:L:384:PRO:HG2	2.00	0.44
5:M:1112:ASP:OD1	5:M:1112:ASP:N	2.50	0.44
2:D:74:LEU:HD13	2:D:125:PHE:CZ	2.53	0.44
5:H:147:ILE:O	5:H:151:ILE:HG12	2.17	0.44
5:H:726:ASN:HB2	5:H:728:GLU:OE1	2.17	0.44
5:I:1069:ARG:HD2	8:Y:301:THR:HG21	1.99	0.44
5:I:1187:LYS:HG2	5:I:1356:VAL:HG12	2.00	0.44
5:J:637:ASN:O	5:J:641:THR:HG22	2.17	0.44
5:J:749:HIS:CE1	5:J:885:PHE:HA	2.53	0.44
4:G:85:GLU:HB3	4:G:560:GLN:HE22	1.82	0.44
5:H:97:VAL:O	5:H:97:VAL:HG13	2.18	0.44
5:I:998:CYS:SG	5:I:1004:SER:HB3	2.58	0.44
5:K:495:ILE:HD12	5:K:976:PRO:HG2	2.00	0.44
5:K:1054:CYS:SG	5:K:1091:THR:HB	2.58	0.44
5:L:629:THR:OG1	5:L:878:GLU:OE1	2.31	0.44
5:M:534:HIS:NE2	5:M:1239:LEU:HD12	2.32	0.44
2:B:34:GLU:HB2	2:B:72:TYR:OH	2.17	0.44
2:B:55:LEU:HD12	2:B:55:LEU:O	2.18	0.44
2:B:55:LEU:O	2:B:66:ARG:NH2	2.49	0.44
2:B:87:TYR:O	2:B:90:GLU:HG3	2.18	0.44
2:B:113:LEU:HB3	2:B:495:GLY:HA3	1.99	0.44
2:D:319:VAL:O	2:D:323:LEU:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:447:ARG:NH2	2:D:451:LEU:HB3	2.33	0.44
5:H:1348:GLU:H	5:H:1355:VAL:HG22	1.83	0.44
5:I:574:ARG:O	5:I:578:ILE:HG12	2.18	0.44
5:L:580:GLU:HG2	5:L:585:ARG:HD3	1.99	0.44
5:M:322:LEU:HD21	5:M:328:TYR:CD2	2.52	0.44
5:M:1033:ALA:O	5:M:1177:THR:HB	2.18	0.44
5:M:1246:THR:O	5:M:1250:GLU:HG2	2.17	0.44
8:Y:149:ARG:HA	8:Y:152:ILE:HG22	2.00	0.44
1:A:2003:LEU:HD11	1:A:2017:LEU:HB3	1.99	0.44
5:I:793:THR:HG23	5:I:796:ARG:H	1.83	0.44
5:L:446:LEU:HD12	5:L:1024:THR:HG21	2.00	0.44
5:M:789:MET:HB3	5:M:790:PRO:HD3	2.00	0.44
1:A:1762:LEU:HA	1:A:2117:PRO:HG3	2.00	0.44
2:D:237:LEU:HD21	2:D:331:HIS:HB2	1.99	0.44
4:G:322:HIS:ND1	4:G:322:HIS:O	2.51	0.44
5:H:1350:HIS:HB3	5:H:1353:ASN:HB2	2.00	0.44
5:I:611:TYR:O	5:I:615:VAL:HG23	2.18	0.44
5:I:621:VAL:HG13	5:I:622:ASP:H	1.83	0.44
5:K:1332:LEU:O	5:K:1335:THR:HG22	2.17	0.44
5:M:966:TYR:CE2	5:M:974:PRO:HG2	2.53	0.44
7:T:82:ILE:HG23	7:T:86:LEU:HD23	2.00	0.44
1:A:1743:LEU:HA	1:A:2068:LEU:HD11	2.00	0.43
1:A:2221:LEU:HD12	1:A:2224:LEU:HD12	1.98	0.43
2:B:9:PHE:HA	2:B:12:LEU:HB2	2.00	0.43
2:B:200:ALA:O	2:B:203:GLU:HG3	2.17	0.43
1:C:1579:ARG:HG3	1:C:1581:HIS:O	2.18	0.43
1:C:1862:LEU:O	1:C:1866:LEU:HG	2.18	0.43
1:C:2213:ILE:HG21	3:F:86:ALA:HB1	2.00	0.43
2:D:240:HIS:CE1	2:D:290:VAL:HA	2.52	0.43
5:H:173:ARG:HB3	5:I:100:VAL:HG23	2.00	0.43
8:U:268:LEU:HD22	8:V:152:ILE:CG2	2.47	0.43
2:B:423:ILE:HA	2:B:426:ASN:ND2	2.33	0.43
3:F:280:ALA:HB1	3:F:437:LEU:HB3	1.99	0.43
4:G:512:ARG:HA	4:G:512:ARG:HD3	1.77	0.43
5:H:278:ASN:O	5:H:282:ILE:HG12	2.18	0.43
5:H:888:GLU:H	5:H:919:ASN:ND2	2.15	0.43
5:H:1165:VAL:HG23	5:I:216:LEU:HD23	2.00	0.43
5:I:1158:GLU:HG3	5:I:1301:TYR:OH	2.19	0.43
5:L:78:ILE:HB	5:L:1058:ILE:HG22	1.99	0.43
5:L:419:THR:HG22	5:L:421:ARG:H	1.81	0.43
5:M:1185:TYR:CZ	5:M:1190:ASN:HB3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1612:ASN:HB3	1:A:1845:TRP:CH2	2.53	0.43
1:C:1685:ALA:HA	1:C:1688:HIS:NE2	2.34	0.43
4:G:21:LEU:HD22	4:G:341:LEU:HD21	2.00	0.43
5:I:169:ASP:OD2	5:I:173:ARG:NH2	2.47	0.43
5:K:927:PRO:O	5:K:931:ILE:HG13	2.17	0.43
5:M:4:TRP:CG	5:M:36:ARG:HD3	2.54	0.43
6:N:34:GLU:OE1	6:N:34:GLU:N	2.48	0.43
8:V:262:ASP:O	8:V:265:ILE:HG22	2.18	0.43
2:B:516:LEU:HD12	2:B:517:PHE:HD1	1.82	0.43
1:C:1452:LEU:HD12	1:C:1489:LEU:HD11	2.00	0.43
5:I:1269:GLU:OE1	5:I:1269:GLU:N	2.49	0.43
5:J:390:ASP:CG	5:J:1311:ILE:HG21	2.39	0.43
5:K:704:SER:HB3	5:K:711:HIS:CD2	2.52	0.43
5:L:631:VAL:HG21	5:L:657:ILE:HD11	2.00	0.43
6:O:14:ARG:H	6:O:14:ARG:HD3	1.83	0.43
8:U:142:LEU:HB2	8:U:177:PHE:CD1	2.53	0.43
8:U:145:GLU:OE2	8:U:149:ARG:NH1	2.38	0.43
1:A:1488:GLU:HA	1:A:1491:LYS:HE3	2.00	0.43
1:A:1663:TRP:CD1	1:A:1744:GLN:HB3	2.54	0.43
1:C:1858:MET:SD	1:C:1862:LEU:HD23	2.58	0.43
3:E:365:HIS:CD2	3:E:434:LEU:HD11	2.53	0.43
3:E:498:PHE:CE1	3:E:501:LEU:HD22	2.54	0.43
4:G:506:ASP:OD2	4:G:512:ARG:NH1	2.52	0.43
5:I:192:VAL:HG23	5:I:219:PHE:CZ	2.54	0.43
5:K:774:THR:HG23	5:K:777:GLU:H	1.83	0.43
5:L:645:LEU:HD23	5:L:645:LEU:H	1.84	0.43
5:M:1187:LYS:HG2	5:M:1356:VAL:HG12	2.01	0.43
6:P:28:LEU:HD12	6:P:32:ILE:HD11	2.00	0.43
7:W:76:SER:HB3	7:W:77:PRO:CD	2.49	0.43
8:X:153:MET:HE1	8:X:187:PRO:HB2	2.00	0.43
8:Y:91:LEU:HD23	8:Y:91:LEU:H	1.84	0.43
1:A:1862:LEU:HD21	1:A:1952:TRP:CH2	2.54	0.43
2:B:325:PRO:HB2	2:B:355:VAL:HG21	2.01	0.43
1:C:1503:LEU:HD12	1:C:1590:VAL:HA	2.00	0.43
3:E:365:HIS:HD2	3:E:368:VAL:HG23	1.82	0.43
4:G:48:VAL:HG13	4:G:53:ARG:O	2.19	0.43
5:H:396:PRO:HB3	5:H:1186:PHE:CZ	2.54	0.43
5:I:396:PRO:HB3	5:I:1186:PHE:CZ	2.54	0.43
5:I:808:LEU:HD21	5:I:883:VAL:HG13	2.01	0.43
5:J:705:ALA:HA	5:J:711:HIS:HB2	2.00	0.43
5:K:535:PRO:HD2	5:K:1239:LEU:HD23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:2:GLU:OE1	5:L:2:GLU:N	2.50	0.43
5:L:122:LYS:HD2	5:L:1082:ASN:HD21	1.83	0.43
5:L:451:HIS:CE1	5:L:453:VAL:HG13	2.53	0.43
6:R:45:SER:O	6:R:49:ARG:HG2	2.18	0.43
8:V:149:ARG:NH2	8:V:175:ILE:HD13	2.32	0.43
8:X:114:LEU:HD21	8:X:146:ILE:HD11	2.01	0.43
1:A:1758:ILE:HD12	1:A:2111:PHE:CE2	2.54	0.43
2:B:320:ASN:OD1	2:B:321:LEU:N	2.51	0.43
2:B:443:PHE:CE2	2:B:480:PHE:HB3	2.54	0.43
2:D:135:ILE:HG13	2:D:136:GLN:H	1.83	0.43
2:D:135:ILE:HD13	2:D:208:THR:HG23	2.01	0.43
3:E:283:LEU:HA	3:E:404:LEU:HD21	2.00	0.43
5:I:900:ASP:OD2	5:I:1014:LYS:NZ	2.33	0.43
5:I:985:ASN:OD1	5:I:986:TRP:N	2.51	0.43
5:M:230:LEU:HD22	5:M:279:VAL:HG23	2.01	0.43
7:W:82:ILE:HD11	7:W:86:LEU:HD22	2.00	0.43
1:C:1646:TYR:HA	1:C:1649:ILE:HG22	2.00	0.43
1:C:1957:PRO:O	1:C:2038:PRO:HG2	2.18	0.43
3:E:340:ARG:HB2	3:E:361:THR:HA	2.01	0.43
3:F:410:ARG:NH1	4:G:332:VAL:HG11	2.33	0.43
3:F:635:PHE:CD2	3:F:637:PRO:HD3	2.54	0.43
5:I:77:ALA:HB1	5:I:302:TYR:HD1	1.84	0.43
5:J:1102:VAL:HG23	5:J:1102:VAL:O	2.19	0.43
5:M:779:THR:O	5:M:783:VAL:HG23	2.19	0.43
2:B:399:MET:O	2:B:403:GLN:HG2	2.19	0.43
1:C:1982:THR:HG22	1:C:1983:SER:N	2.34	0.43
2:D:175:GLN:HG2	2:D:221:PRO:HG3	2.01	0.43
3:E:14:VAL:HG22	3:F:11:PRO:HB2	2.00	0.43
5:H:74:ALA:HB2	5:H:272:VAL:HG21	2.00	0.43
5:H:420:VAL:HG11	5:H:577:GLU:HA	2.01	0.43
5:I:322:LEU:HD21	5:I:328:TYR:CD2	2.53	0.43
5:I:401:LEU:HD23	5:I:1183:VAL:HG21	2.01	0.43
5:I:420:VAL:HG11	5:I:576:TRP:HB3	2.00	0.43
5:J:900:ASP:HB2	5:J:903:GLN:NE2	2.33	0.43
5:K:701:GLU:HG3	5:K:702:PRO:HD2	2.00	0.43
5:K:965:HIS:HD2	5:L:697:GLN:OE1	2.02	0.43
5:M:1336:LYS:HE2	5:M:1355:VAL:HG21	2.01	0.43
1:A:1614:ALA:O	1:A:1618:LEU:HG	2.19	0.43
1:C:1920:ASP:N	1:C:1920:ASP:OD1	2.50	0.43
2:D:113:LEU:HD13	2:D:495:GLY:H	1.84	0.43
5:H:262:THR:O	5:H:296:VAL:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:763:ASP:O	5:H:765:PRO:HD2	2.19	0.43
5:K:122:LYS:HG2	5:K:1082:ASN:ND2	2.33	0.43
5:L:148:LEU:O	5:L:152:LEU:HD23	2.19	0.43
6:P:52:SER:OG	6:P:53:LEU:N	2.51	0.43
2:B:331:HIS:HD2	2:B:334:LEU:H	1.63	0.42
2:B:383:LEU:HD22	2:B:427:PHE:CZ	2.54	0.42
1:C:1788:ASN:HB3	1:C:1804:PHE:HE1	1.82	0.42
3:F:210:ASN:HD22	3:F:466:LEU:HG	1.83	0.42
3:F:536:SER:OG	3:F:600:ARG:HD2	2.19	0.42
5:I:666:LEU:HD23	5:I:671:LEU:HB2	2.00	0.42
5:J:789:MET:HB3	5:J:790:PRO:HD3	2.01	0.42
5:M:148:LEU:O	5:M:152:LEU:HG	2.19	0.42
5:M:989:SER:N	5:M:990:PRO:HD2	2.33	0.42
5:M:1202:VAL:HG21	5:M:1210:ALA:HA	2.01	0.42
8:V:271:LEU:HD23	8:V:275:LEU:HD23	2.01	0.42
8:Y:22:GLY:O	8:Y:25:THR:HG22	2.19	0.42
1:A:1778:HIS:CD2	1:A:1781:VAL:H	2.36	0.42
1:A:2221:LEU:HD22	3:F:79:LEU:HD22	2.01	0.42
2:D:394:ALA:O	2:D:398:GLN:HG2	2.19	0.42
3:E:53:MET:HA	3:E:56:VAL:HG12	2.01	0.42
4:G:168:LEU:HA	4:G:317:VAL:HG21	2.01	0.42
7:T:82:ILE:HG23	7:T:86:LEU:HB3	2.00	0.42
8:V:143:ALA:O	8:V:146:ILE:HG22	2.18	0.42
1:A:1448:LEU:HG	1:A:1489:LEU:HD11	2.01	0.42
1:A:1755:PRO:HD3	1:A:1802:LYS:HG3	2.01	0.42
1:A:1878:SER:O	1:A:1882:GLN:HG3	2.19	0.42
2:B:257:PHE:HZ	2:B:294:LEU:HA	1.84	0.42
2:B:346:ARG:HA	2:B:346:ARG:HD2	1.89	0.42
1:C:1577:PHE:O	1:C:1579:ARG:NH2	2.52	0.42
1:C:1845:TRP:O	1:C:1849:MET:HG2	2.19	0.42
2:D:177:LEU:HD23	2:D:180:ARG:HH21	1.85	0.42
5:H:588:PRO:HB2	5:H:590:TYR:CE2	2.54	0.42
5:H:1350:HIS:N	5:H:1353:ASN:O	2.44	0.42
5:K:892:VAL:HG11	5:K:979:PHE:CE1	2.54	0.42
5:L:1087:GLY:HA3	5:L:1091:THR:HG21	2.02	0.42
6:O:15:ASP:O	6:O:19:ARG:HG2	2.18	0.42
8:X:96:ASN:HB3	8:X:102:TRP:CZ2	2.54	0.42
1:C:1460:LEU:HD21	1:C:1591:PHE:HA	2.00	0.42
2:D:375:ASP:O	2:D:379:MET:HG2	2.17	0.42
5:I:386:GLU:OE1	5:I:386:GLU:N	2.53	0.42
5:J:62:GLU:OE1	5:J:62:GLU:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:K:262:THR:HG22	5:K:268:LYS:HG2	2.01	0.42
5:K:462:GLN:O	5:K:466:GLU:HG2	2.19	0.42
5:K:1285:TYR:HA	5:K:1289:ALA:HB3	2.01	0.42
5:L:64:VAL:HG21	5:L:375:VAL:HG12	2.00	0.42
5:L:684:VAL:O	5:L:687:ILE:HG22	2.19	0.42
5:L:985:ASN:OD1	5:L:986:TRP:N	2.53	0.42
5:M:775:ASP:O	5:M:779:THR:HG23	2.19	0.42
1:C:1448:LEU:N	2:D:35:ILE:HD13	2.34	0.42
2:D:135:ILE:HG22	2:D:185:LEU:HD22	2.01	0.42
3:E:315:LEU:O	3:E:319:VAL:HG23	2.19	0.42
3:E:443:LEU:HD23	3:E:443:LEU:HA	1.82	0.42
3:E:498:PHE:O	3:E:502:VAL:HG23	2.19	0.42
5:H:1087:GLY:HA3	5:H:1091:THR:HG21	2.01	0.42
5:H:1166:HIS:CD2	5:I:1223:GLN:HA	2.55	0.42
5:I:645:LEU:HD13	5:I:674:TYR:HE1	1.84	0.42
5:I:661:LEU:O	5:I:661:LEU:HD23	2.20	0.42
5:L:127:ILE:HD12	5:L:171:MET:SD	2.60	0.42
5:L:260:THR:HG22	5:L:261:TYR:CD2	2.55	0.42
5:L:1315:CYS:HA	5:L:1318:THR:HG22	2.02	0.42
5:M:43:PRO:HG2	8:X:28:VAL:HG11	2.01	0.42
5:M:1245:ASN:HB2	5:M:1248:HIS:HB3	2.02	0.42
8:X:146:ILE:O	8:X:150:LEU:HD23	2.19	0.42
2:B:123:THR:O	2:B:126:GLN:HG3	2.19	0.42
2:B:126:GLN:O	2:B:130:GLN:HG2	2.20	0.42
2:B:464:GLU:HG2	2:B:465:LEU:HD12	2.01	0.42
1:C:1768:MET:N	1:C:1768:MET:SD	2.93	0.42
2:D:134:GLU:O	2:D:138:VAL:HG23	2.20	0.42
2:D:505:TYR:OH	2:D:515:HIS:ND1	2.45	0.42
3:E:615:GLY:O	3:E:620:ASN:N	2.52	0.42
3:F:200:ARG:HG3	3:F:201:GLY:H	1.84	0.42
4:G:514:TRP:NE1	4:G:522:VAL:HG11	2.34	0.42
5:H:227:LEU:O	5:H:1096:VAL:HG13	2.19	0.42
5:I:723:LEU:HD23	5:I:768:VAL:HG23	2.01	0.42
5:I:1195:ARG:HD2	5:I:1221:ASP:CG	2.40	0.42
5:J:558:ILE:HA	5:J:1015:ILE:HD11	2.02	0.42
5:K:454:LEU:CD2	5:K:1243:LEU:HD11	2.48	0.42
5:K:601:VAL:HG13	5:K:924:VAL:HG11	2.01	0.42
5:M:630:PHE:HB2	5:M:878:GLU:OE2	2.20	0.42
5:M:661:LEU:HD23	5:M:666:LEU:HD11	2.02	0.42
1:A:2194:SER:OG	1:A:2195:PHE:N	2.52	0.42
1:C:1816:LEU:HG	1:C:2052:VAL:HG11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:438:ALA:O	3:E:441:LEU:HG	2.20	0.42
3:F:267:TYR:HE2	3:F:270:TYR:HB3	1.85	0.42
5:H:375:VAL:HG13	5:H:376:TYR:CD2	2.54	0.42
5:I:56:THR:HG22	5:J:92:LEU:HB3	2.01	0.42
5:K:83:LEU:HD23	5:K:83:LEU:HA	1.89	0.42
5:K:788:LEU:HA	5:K:1005:VAL:HG13	2.00	0.42
5:L:216:LEU:HD23	5:M:1165:VAL:HG13	2.01	0.42
8:V:272:PHE:HA	8:V:275:LEU:HG	2.01	0.42
1:A:1743:LEU:O	1:A:1747:CYS:HB2	2.19	0.42
2:B:257:PHE:CZ	2:B:294:LEU:HA	2.54	0.42
2:B:447:ARG:HA	2:B:450:ILE:HB	2.01	0.42
3:E:233:PRO:HA	3:E:236:LYS:HG2	2.02	0.42
3:E:601:LEU:O	3:E:607:PRO:HG2	2.19	0.42
3:F:410:ARG:HH11	4:G:332:VAL:HG11	1.82	0.42
3:F:619:PHE:HB2	3:F:621:VAL:HG23	2.02	0.42
5:H:675:ARG:HA	5:H:678:VAL:HG22	2.01	0.42
5:H:1180:THR:HG22	5:H:1180:THR:O	2.20	0.42
5:I:288:SER:HA	5:I:291:ILE:HD12	2.02	0.42
5:J:682:ARG:HA	5:J:685:THR:HG22	2.02	0.42
5:L:936:PRO:HB3	5:L:952:LEU:HD23	2.00	0.42
5:M:808:LEU:HD12	5:M:808:LEU:HA	1.89	0.42
8:U:153:MET:SD	8:U:169:VAL:HG12	2.60	0.42
8:Y:110:VAL:HG23	8:Y:287:VAL:HG21	2.01	0.42
8:Y:262:ASP:O	8:Y:265:ILE:HG22	2.20	0.42
2:B:454:HIS:O	2:B:458:LEU:CB	2.68	0.42
1:C:1498:SER:HB3	1:C:1516:GLY:HA3	2.02	0.42
1:C:1878:SER:O	1:C:1882:GLN:OE1	2.38	0.42
1:C:1884:LEU:HD22	1:C:1935:LEU:HD13	2.02	0.42
1:C:1979:LEU:HD23	1:C:1979:LEU:HA	1.92	0.42
2:D:328:MET:CG	2:D:334:LEU:HD23	2.50	0.42
3:E:466:LEU:HB3	3:E:470:ALA:HB3	2.02	0.42
3:E:496:ARG:HD2	3:E:498:PHE:HB3	2.02	0.42
5:I:263:THR:HG1	5:I:267:ALA:H	1.62	0.42
5:L:488:MET:HE3	5:L:894:GLU:HB2	2.01	0.42
5:L:855:GLU:OE1	5:L:855:GLU:N	2.46	0.42
5:M:147:ILE:O	5:M:151:ILE:HG12	2.20	0.42
5:M:819:LEU:HD21	6:S:32:ILE:HG21	2.02	0.42
6:P:37:HIS:CE1	6:P:39:VAL:HG22	2.54	0.42
8:X:119:LEU:HD23	8:X:119:LEU:O	2.20	0.42
1:A:1589:ASP:HB3	1:A:1595:GLN:NE2	2.35	0.42
1:A:1672:ARG:O	1:A:1676:THR:OG1	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1979:LEU:HD21	1:A:1981:TYR:CZ	2.55	0.42
1:A:2210:ALA:O	1:A:2214:LEU:HG	2.20	0.42
2:B:40:ALA:HB3	2:B:88:ALA:HB1	2.02	0.42
2:B:507:ASP:OD1	2:B:511:LYS:NZ	2.33	0.42
2:D:200:ALA:O	2:D:203:GLU:HG3	2.20	0.42
5:H:989:SER:N	5:H:990:PRO:HD2	2.35	0.42
5:I:717:PRO:HD2	5:I:778:TRP:CH2	2.55	0.42
5:J:542:CYS:SG	5:J:543:GLN:N	2.92	0.42
5:L:645:LEU:HD12	5:L:674:TYR:CZ	2.55	0.42
1:A:1621:ARG:HH11	1:A:1627:LEU:HD11	1.84	0.41
1:C:2034:LEU:HD13	1:C:2054:ARG:NH2	2.35	0.41
3:F:4:LEU:HD23	3:F:4:LEU:H	1.85	0.41
3:F:450:ASP:OD1	3:F:450:ASP:N	2.47	0.41
3:F:498:PHE:O	3:F:502:VAL:HG23	2.20	0.41
3:F:635:PHE:HD2	3:F:637:PRO:HD3	1.85	0.41
5:H:243:LEU:HD11	5:H:273:MET:HE1	2.01	0.41
5:I:669:GLN:OE1	5:I:669:GLN:N	2.48	0.41
5:I:1254:TYR:CZ	5:I:1256:SER:HA	2.55	0.41
5:K:428:ALA:O	5:K:440:ILE:HG22	2.20	0.41
5:L:600:THR:OG1	5:L:644:LEU:HB2	2.20	0.41
5:M:892:VAL:HG11	5:M:979:PHE:CZ	2.55	0.41
5:M:939:PHE:HA	5:M:979:PHE:CD2	2.55	0.41
7:T:173:LEU:HD23	7:T:203:TYR:CD1	2.55	0.41
8:U:57:GLY:HA2	8:U:188:VAL:CG1	2.50	0.41
8:U:270:ALA:O	8:U:273:VAL:HG12	2.20	0.41
1:A:1563:ASP:O	1:A:1567:ILE:HG12	2.20	0.41
1:A:1960:LEU:O	1:A:1978:HIS:HB3	2.20	0.41
2:B:62:PHE:O	2:B:66:ARG:HG2	2.20	0.41
2:B:100:LEU:HD22	2:B:122:LEU:HD12	2.02	0.41
2:B:287:MET:HG2	2:B:291:SER:HG	1.84	0.41
2:B:484:TYR:CE1	2:B:516:LEU:HD22	2.56	0.41
3:E:628:LEU:O	3:E:632:VAL:HG22	2.20	0.41
4:G:490:GLU:OE2	4:G:492:ARG:NH1	2.54	0.41
5:H:75:ALA:HB2	5:H:179:PHE:CZ	2.54	0.41
5:J:251:THR:HG21	5:J:1089:GLY:H	1.84	0.41
5:J:536:PHE:HE1	5:J:1032:PHE:CE2	2.37	0.41
5:K:77:ALA:HB1	5:K:302:TYR:CD1	2.56	0.41
5:K:1116:VAL:HG12	5:K:1258:PHE:CG	2.56	0.41
5:K:1138:GLU:HG3	5:K:1139:ARG:H	1.85	0.41
5:K:1332:LEU:O	5:K:1336:LYS:HG2	2.20	0.41
5:L:307:LEU:HD22	5:L:321:ILE:CD1	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L:322:LEU:HD21	5:L:328:TYR:CD2	2.55	0.41
5:M:651:TYR:OH	5:M:780:LEU:HD23	2.20	0.41
5:M:1120:ASN:O	5:M:1132:ARG:NH1	2.53	0.41
6:R:17:LYS:HA	6:R:17:LYS:HD3	1.75	0.41
8:V:175:ILE:HG22	8:V:182:PHE:HB2	2.01	0.41
8:Y:228:SER:O	8:Y:229:MET:HG3	2.19	0.41
1:C:2021:ILE:HA	1:C:2024:LEU:HG	2.02	0.41
5:H:1101:ARG:NH2	5:I:202:LEU:HG	2.31	0.41
5:I:255:LEU:HD21	5:I:345:SER:HB3	2.02	0.41
5:J:811:LEU:HG	5:J:857:LEU:HD21	2.00	0.41
5:K:1233:ALA:HB1	5:K:1240:SER:HB3	2.02	0.41
5:L:287:LEU:O	5:L:291:ILE:HG23	2.20	0.41
5:M:211:GLN:O	5:M:215:ILE:HG12	2.20	0.41
5:M:798:CYS:O	5:M:923:VAL:HG12	2.21	0.41
5:M:934:SER:OG	5:M:952:LEU:HD11	2.20	0.41
5:M:1349:THR:HA	5:M:1354:TYR:HA	2.01	0.41
8:U:198:LYS:HG2	8:V:222:LEU:HD21	2.02	0.41
8:X:151:LEU:HD22	8:Y:272:PHE:CZ	2.55	0.41
1:A:1596:ILE:HB	1:A:1604:ILE:CD1	2.48	0.41
2:D:397:ALA:HB2	2:D:424:ILE:HB	2.02	0.41
3:E:199:PHE:O	3:E:203:VAL:HG12	2.20	0.41
5:H:230:LEU:HD23	5:H:1097:ALA:HB1	2.03	0.41
5:H:288:SER:HA	5:H:291:ILE:HG12	2.02	0.41
5:H:1165:VAL:HG11	5:I:1223:GLN:HB2	2.03	0.41
5:I:259:THR:O	5:I:259:THR:HG22	2.20	0.41
5:I:695:ASN:HD21	5:J:507:ARG:NE	2.19	0.41
5:J:128:PRO:HB3	5:J:1076:HIS:ND1	2.35	0.41
5:M:888:GLU:O	5:M:919:ASN:ND2	2.53	0.41
5:M:1095:CYS:SG	5:M:1096:VAL:N	2.94	0.41
8:U:24:LEU:HD13	8:U:125:LEU:HD11	2.01	0.41
8:V:49:HIS:O	8:V:52:VAL:HG12	2.20	0.41
2:B:319:VAL:HG13	2:B:323:LEU:HD21	2.03	0.41
3:E:506:ILE:HG23	3:E:510:TYR:HE2	1.85	0.41
4:G:124:MET:HE3	4:G:127:ALA:HB2	2.02	0.41
5:H:433:ARG:HH22	5:I:217:GLN:CB	2.33	0.41
5:H:600:THR:HG21	5:H:645:LEU:HD11	2.01	0.41
5:I:472:GLU:O	5:I:475:MET:HB3	2.20	0.41
5:I:534:HIS:ND1	5:I:535:PRO:HD2	2.36	0.41
5:I:537:PHE:HD1	5:I:554:PRO:HA	1.85	0.41
5:J:1041:THR:OG1	5:J:1104:THR:HG23	2.20	0.41
5:K:87:THR:HG23	5:K:88:THR:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:K:535:PRO:HB3	5:K:1232:TRP:CE2	2.56	0.41
5:L:498:PHE:CE2	5:L:976:PRO:HA	2.56	0.41
5:L:635:ILE:HD11	5:L:674:TYR:CE1	2.54	0.41
5:M:1116:VAL:HG13	5:M:1117:PHE:CD2	2.56	0.41
5:M:1195:ARG:NE	5:M:1213:ALA:O	2.40	0.41
7:T:212:TRP:O	7:T:216:VAL:HG23	2.20	0.41
8:V:48:LEU:HB2	8:V:133:VAL:HG13	2.02	0.41
7:W:188:ILE:HB	7:W:203:TYR:HB2	2.03	0.41
8:Y:51:PHE:CD1	8:Y:64:LEU:HD13	2.55	0.41
9:Z:70:ASN:O	9:Z:72:ASP:N	2.54	0.41
1:A:1640:ASN:HA	1:A:1864:LEU:HG	2.03	0.41
1:A:1699:LEU:HA	1:A:1702:THR:HG22	2.02	0.41
2:B:86:LEU:HD12	2:B:86:LEU:H	1.86	0.41
1:C:1841:LEU:HD23	1:C:1841:LEU:H	1.86	0.41
3:E:301:VAL:O	3:E:305:LEU:HB2	2.20	0.41
3:F:330:VAL:HB	3:F:364:ARG:HG2	2.03	0.41
5:H:697:GLN:HB3	5:I:965:HIS:CE1	2.55	0.41
5:I:779:THR:O	5:I:783:VAL:HG23	2.20	0.41
5:I:884:GLN:HA	6:O:66:ARG:HB2	2.02	0.41
5:J:388:ASN:HB2	5:J:1311:ILE:CD1	2.51	0.41
5:L:558:ILE:HD12	5:L:558:ILE:HA	1.94	0.41
5:L:575:THR:OG1	5:L:1007:THR:HA	2.20	0.41
5:M:681:LEU:CB	5:M:780:LEU:HD11	2.51	0.41
5:M:1350:HIS:CG	5:M:1351:PHE:N	2.88	0.41
6:R:19:ARG:HA	6:R:22:VAL:HG12	2.03	0.41
1:A:1492:ARG:HH12	1:A:1493:ARG:HB3	1.86	0.41
2:B:370:VAL:HG22	2:B:481:ALA:HB3	2.03	0.41
2:B:425:TYR:CD2	2:B:458:LEU:HG	2.56	0.41
5:I:131:LEU:HD21	5:I:160:VAL:HG23	2.02	0.41
5:J:495:ILE:HB	5:J:496:PRO:HD3	2.03	0.41
5:J:651:TYR:HB2	5:J:784:PHE:CD1	2.56	0.41
5:K:1042:PHE:CE2	5:K:1362:LEU:HD11	2.55	0.41
5:L:78:ILE:O	5:L:1058:ILE:HA	2.21	0.41
5:M:19:PHE:HE1	5:M:32:PHE:HZ	1.69	0.41
5:M:86:LEU:HG	5:M:87:THR:O	2.20	0.41
7:W:126:HIS:CE1	7:W:286:PHE:HB3	2.55	0.41
1:A:1709:ASP:OD1	1:A:1710:THR:N	2.54	0.41
1:A:1745:GLU:HB3	1:A:1967:LEU:HD13	2.01	0.41
1:A:1863:TRP:O	1:A:1867:LYS:HB3	2.20	0.41
2:B:477:ASN:O	2:B:481:ALA:HB2	2.20	0.41
1:C:1625:ARG:HE	1:C:1628:ALA:HA	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:70:VAL:HG22	2:D:96:LEU:HD22	2.03	0.41
3:E:240:HIS:O	3:E:240:HIS:ND1	2.51	0.41
5:H:236:ARG:HA	5:H:286:LEU:HD21	2.02	0.41
5:H:431:LEU:HD12	5:H:435:ARG:HA	2.03	0.41
5:I:174:GLY:HA3	5:J:101:ALA:H	1.85	0.41
5:I:808:LEU:HD12	5:I:808:LEU:HA	1.95	0.41
5:I:1175:ILE:HG22	5:I:1244:TYR:CE2	2.56	0.41
5:L:1099:VAL:O	5:L:1369:ASN:ND2	2.54	0.41
5:M:1195:ARG:HA	5:M:1221:ASP:OD2	2.20	0.41
8:V:31:VAL:HG21	8:V:137:ILE:HD11	2.02	0.41
7:W:195:GLY:O	7:W:233:ARG:NH1	2.54	0.41
1:A:1492:ARG:NH1	1:A:1493:ARG:HB3	2.35	0.41
1:A:1956:ILE:HD12	1:A:1957:PRO:HD2	2.02	0.41
1:A:2159:VAL:HG12	1:A:2161:THR:H	1.86	0.41
2:B:28:ASN:O	2:B:31:SER:OG	2.26	0.41
2:B:342:GLU:OE2	2:B:407:GLN:NE2	2.52	0.41
1:C:1995:ARG:NH2	1:C:1997:LEU:HD21	2.36	0.41
1:C:2219:LEU:HD23	1:C:2219:LEU:HA	1.89	0.41
2:D:143:SER:OG	2:D:215:TRP:NE1	2.53	0.41
2:D:195:TYR:O	2:D:201:VAL:HG21	2.20	0.41
2:D:268:MET:HA	2:D:271:PHE:CE2	2.56	0.41
3:E:43:ARG:NE	3:E:43:ARG:HA	2.35	0.41
3:E:337:TYR:HE2	3:E:367:LEU:HD23	1.85	0.41
3:F:600:ARG:HH12	3:F:610:ARG:HH22	1.67	0.41
4:G:28:ASP:HB3	4:G:124:MET:SD	2.60	0.41
5:H:850:ARG:HG3	5:H:858:THR:HG21	2.03	0.41
5:I:229:LEU:HD22	5:I:242:PHE:CE2	2.56	0.41
5:I:273:MET:HA	5:I:1048:LEU:O	2.21	0.41
5:I:435:ARG:HG3	5:I:1367:LEU:HD22	2.03	0.41
5:I:686:ARG:NH1	5:J:996:ALA:O	2.54	0.41
5:I:763:ASP:OD1	5:I:764:GLU:N	2.51	0.41
5:I:952:LEU:HD12	5:I:952:LEU:HA	1.87	0.41
5:I:1145:THR:O	5:I:1148:ILE:HG22	2.21	0.41
5:J:77:ALA:HB1	5:J:302:TYR:HD1	1.85	0.41
5:J:808:LEU:HD23	6:P:62:LEU:HD11	2.03	0.41
5:J:873:LEU:HD21	5:J:877:ARG:HH11	1.85	0.41
5:K:321:ILE:HB	5:L:52:ALA:HA	2.03	0.41
5:K:627:ILE:HG22	5:K:631:VAL:HG23	2.03	0.41
5:L:485:GLN:OE1	5:L:913:ARG:NH1	2.51	0.41
5:L:1050:SER:OG	5:L:1054:CYS:SG	2.63	0.41
5:L:1098:TYR:OH	5:L:1369:ASN:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:62:GLU:HG2	5:M:62:GLU:O	2.21	0.41
8:U:235:GLN:O	8:U:239:MET:N	2.54	0.41
8:U:287:VAL:HG23	8:U:288:PHE:HD2	1.85	0.41
8:V:74:ARG:HG2	8:V:74:ARG:O	2.21	0.41
8:V:121:ARG:HE	8:V:124:LEU:HD11	1.85	0.41
8:X:49:HIS:O	8:X:52:VAL:HG12	2.21	0.41
2:B:91:GLN:HA	2:B:94:GLU:OE1	2.20	0.41
1:C:1589:ASP:HB3	1:C:1595:GLN:HB3	2.02	0.41
1:C:1603:PRO:HG2	1:C:1606:LEU:HD12	2.01	0.41
1:C:1850:ALA:HB1	1:C:1949:LEU:HD22	2.02	0.41
2:D:352:TYR:OH	2:D:420:LEU:HD13	2.21	0.41
3:E:610:ARG:CZ	3:E:614:LEU:HG	2.51	0.41
5:H:199:ASN:HD21	5:H:215:ILE:HD11	1.85	0.41
5:H:1184:ASN:O	5:H:1184:ASN:ND2	2.51	0.41
5:J:126:THR:HG22	5:J:1078:THR:HG23	2.02	0.41
5:J:129:PHE:CE1	5:J:1075:TYR:HB2	2.56	0.41
5:J:680:VAL:O	5:J:684:VAL:HG13	2.21	0.41
5:M:127:ILE:HD12	5:M:128:PRO:HD2	2.03	0.41
5:M:609:LEU:HD22	5:M:861:VAL:HG12	2.03	0.41
5:M:1217:HIS:HE1	5:M:1235:GLN:HA	1.86	0.41
5:M:1241:ASP:CG	5:M:1245:ASN:HD21	2.24	0.41
5:M:1274:ALA:O	5:M:1276:LYS:N	2.54	0.41
6:Q:19:ARG:NE	6:Q:19:ARG:HA	2.36	0.41
6:Q:49:ARG:HA	6:Q:49:ARG:NE	2.36	0.41
9:Z:20:LEU:HD23	9:Z:20:LEU:HA	1.91	0.41
1:A:1792:MET:HE1	1:A:2038:PRO:C	2.40	0.40
2:B:455:ARG:HB2	2:B:469:TRP:CZ2	2.56	0.40
1:C:1459:LEU:HD21	1:C:1479:ILE:HG22	2.03	0.40
1:C:1960:LEU:HD23	1:C:1960:LEU:H	1.85	0.40
1:C:2037:ILE:HB	1:C:2055:PRO:HG2	2.03	0.40
5:H:441:ASP:OD1	5:H:442:PHE:N	2.54	0.40
5:I:194:GLN:O	5:I:197:VAL:HG12	2.21	0.40
5:I:509:VAL:HG21	5:I:540:THR:HG23	2.03	0.40
5:I:624:PHE:CD2	5:I:656:LEU:HB3	2.55	0.40
5:I:753:ASP:C	5:I:755:PRO:HD2	2.41	0.40
5:I:757:LEU:HD12	6:O:62:LEU:HD23	2.02	0.40
5:I:806:THR:HA	5:I:809:VAL:HG12	2.03	0.40
5:I:1150:MET:HG2	7:W:76:SER:HB2	2.03	0.40
5:I:1297:THR:HG21	5:I:1301:TYR:CE2	2.56	0.40
5:J:684:VAL:CG2	5:J:783:VAL:HG11	2.51	0.40
5:J:789:MET:O	5:J:793:THR:HG22	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:1129:ARG:HE	5:J:1139:ARG:NH2	2.19	0.40
5:J:1182:ASP:OD2	5:J:1184:ASN:ND2	2.53	0.40
5:K:936:PRO:HB3	5:K:952:LEU:HD22	2.02	0.40
5:L:535:PRO:HG3	5:L:1232:TRP:CE3	2.56	0.40
5:L:600:THR:OG1	5:L:645:LEU:HD23	2.20	0.40
5:L:866:THR:OG1	5:L:870:THR:O	2.22	0.40
6:P:37:HIS:HA	6:P:38:PRO:HD3	1.92	0.40
8:X:219:VAL:HG23	8:Y:205:SER:OG	2.20	0.40
1:A:1570:ASP:OD2	1:A:2008:THR:HG21	2.21	0.40
1:A:1627:LEU:CD2	1:A:1630:ARG:HG3	2.48	0.40
1:A:1951:SER:HA	1:A:1956:ILE:HG22	2.03	0.40
1:A:1979:LEU:HD21	1:A:1981:TYR:OH	2.21	0.40
2:B:189:ALA:O	2:B:193:ARG:N	2.54	0.40
2:B:443:PHE:O	2:B:447:ARG:HB3	2.20	0.40
2:D:277:ASP:O	2:D:280:GLN:HG2	2.22	0.40
3:E:273:VAL:N	3:E:429:TYR:OH	2.43	0.40
3:F:336:TYR:CG	3:F:337:TYR:N	2.88	0.40
5:H:777:GLU:HA	5:H:780:LEU:HB2	2.03	0.40
5:I:478:LEU:HD21	5:I:509:VAL:HG13	2.03	0.40
5:L:192:VAL:HG11	5:L:1282:ILE:CD1	2.51	0.40
5:L:397:VAL:HG23	5:L:428:ALA:HB2	2.03	0.40
6:R:17:LYS:O	6:R:21:VAL:HG22	2.20	0.40
7:T:62:GLN:HG3	7:T:264:LEU:HD11	2.02	0.40
8:Y:127:LEU:HB2	8:Y:130:TRP:HB3	2.02	0.40
9:Z:114:PHE:CD1	9:Z:124:ILE:HD11	2.57	0.40
2:B:48:VAL:HA	2:B:51:PHE:HB3	2.04	0.40
1:C:1553:PRO:HG3	2:D:402:ILE:HG12	2.03	0.40
3:E:501:LEU:HG	3:E:505:TYR:HD2	1.87	0.40
5:H:392:THR:HG21	5:H:1264:GLN:NE2	2.35	0.40
5:H:451:HIS:CE1	5:H:1117:PHE:HB2	2.56	0.40
5:H:535:PRO:HD3	5:H:1232:TRP:CG	2.57	0.40
5:I:10:LEU:HD21	5:J:316:ILE:HG21	2.04	0.40
5:I:1336:LYS:NZ	5:I:1346:THR:O	2.53	0.40
5:J:80:PHE:HD1	5:J:82:ASP:H	1.69	0.40
5:J:687:ILE:HG13	5:J:1006:MET:SD	2.61	0.40
5:J:958:ARG:HA	5:J:961:THR:HG22	2.04	0.40
5:J:1043:GLU:O	5:J:1099:VAL:HG23	2.21	0.40
5:L:363:GLY:O	5:L:364:GLU:HG2	2.21	0.40
5:M:498:PHE:CE1	5:M:977:THR:HG23	2.57	0.40
1:A:1859:LEU:HB3	1:A:1877:VAL:HG21	2.03	0.40
1:C:1669:TYR:HB3	1:C:1694:LYS:HG2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:79:VAL:HB	2:D:203:GLU:OE2	2.21	0.40
2:D:113:LEU:HG	2:D:116:TYR:H	1.87	0.40
2:D:210:GLN:NE2	2:D:436:VAL:HA	2.37	0.40
3:E:362:PHE:HE1	3:E:383:TYR:HD1	1.70	0.40
3:E:428:GLN:HG2	3:E:429:TYR:N	2.37	0.40
5:H:958:ARG:HA	5:H:961:THR:HG22	2.02	0.40
5:H:1325:LEU:HA	5:H:1356:VAL:O	2.21	0.40
5:I:363:GLY:C	5:I:365:LYS:H	2.24	0.40
5:I:372:LEU:O	5:I:375:VAL:HG12	2.21	0.40
5:J:490:GLY:O	5:J:494:ARG:HG3	2.22	0.40
5:J:698:LEU:HD12	5:J:1127:VAL:HA	2.03	0.40
5:J:1025:LYS:HE2	5:J:1025:LYS:HB2	1.94	0.40
5:K:396:PRO:HB3	5:K:1186:PHE:CZ	2.57	0.40
5:K:698:LEU:HD22	5:K:706:TYR:CE2	2.57	0.40
5:K:725:ARG:NH1	5:K:772:ARG:HB2	2.36	0.40
5:L:367:VAL:HG11	5:L:1049:TYR:HE2	1.86	0.40
5:L:934:SER:OG	5:L:952:LEU:HD11	2.22	0.40
5:M:263:THR:HG22	5:M:267:ALA:H	1.87	0.40
5:M:1059:ILE:HG22	5:M:1081:ILE:HG22	2.04	0.40
6:R:40:LEU:HD12	6:R:44:LEU:HD21	2.03	0.40
8:X:140:MET:HG3	8:X:144:LEU:HD12	2.02	0.40
2:B:37:ALA:HB1	2:B:78:THR:HB	2.03	0.40
2:B:125:PHE:O	2:B:129:LEU:HG	2.20	0.40
2:B:275:ASP:N	2:B:275:ASP:OD1	2.51	0.40
1:C:1958:VAL:H	1:C:1981:TYR:HB2	1.86	0.40
1:C:2213:ILE:HD12	1:C:2213:ILE:HA	1.99	0.40
2:D:441:PHE:HB3	2:D:512:TRP:CD2	2.57	0.40
5:H:952:LEU:HA	5:H:952:LEU:HD12	1.88	0.40
5:I:624:PHE:CZ	5:I:657:ILE:HD13	2.51	0.40
5:I:1350:HIS:N	5:I:1353:ASN:O	2.43	0.40
5:J:534:HIS:CD2	5:J:536:PHE:HB2	2.56	0.40
5:L:451:HIS:ND1	5:L:453:VAL:HG22	2.37	0.40
5:L:648:ALA:HA	5:L:654:VAL:HG12	2.03	0.40
5:M:555:ARG:HB3	5:M:560:ASN:HB3	2.03	0.40
5:M:570:PHE:CE1	5:M:1179:VAL:HG11	2.56	0.40
5:M:763:ASP:OD1	5:M:764:GLU:N	2.53	0.40
8:V:49:HIS:ND1	8:V:131:GLU:HG2	2.37	0.40
8:V:282:ILE:HG13	8:V:283:ARG:N	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	711/2241 (32%)	685 (96%)	26 (4%)	0	100	100
1	C	681/2241 (30%)	657 (96%)	24 (4%)	0	100	100
2	B	488/983 (50%)	476 (98%)	12 (2%)	0	100	100
2	D	445/983 (45%)	436 (98%)	9 (2%)	0	100	100
3	E	468/642 (73%)	461 (98%)	7 (2%)	0	100	100
3	F	478/642 (74%)	467 (98%)	11 (2%)	0	100	100
4	G	468/594 (79%)	446 (95%)	22 (5%)	0	100	100
5	H	1305/1370 (95%)	1255 (96%)	47 (4%)	3 (0%)	47	81
5	I	1346/1370 (98%)	1291 (96%)	55 (4%)	0	100	100
5	J	1313/1370 (96%)	1245 (95%)	66 (5%)	2 (0%)	47	81
5	K	1292/1370 (94%)	1238 (96%)	53 (4%)	1 (0%)	51	84
5	L	1346/1370 (98%)	1280 (95%)	65 (5%)	1 (0%)	51	84
5	M	1346/1370 (98%)	1284 (95%)	61 (4%)	1 (0%)	51	84
6	N	61/75 (81%)	59 (97%)	2 (3%)	0	100	100
6	O	61/75 (81%)	58 (95%)	3 (5%)	0	100	100
6	P	61/75 (81%)	60 (98%)	1 (2%)	0	100	100
6	Q	61/75 (81%)	59 (97%)	2 (3%)	0	100	100
6	R	61/75 (81%)	61 (100%)	0	0	100	100
6	S	61/75 (81%)	57 (93%)	4 (7%)	0	100	100
7	T	236/290 (81%)	228 (97%)	8 (3%)	0	100	100
7	W	288/290 (99%)	274 (95%)	14 (5%)	0	100	100
8	U	288/306 (94%)	281 (98%)	7 (2%)	0	100	100
8	V	282/306 (92%)	262 (93%)	18 (6%)	2 (1%)	22	61
8	X	291/306 (95%)	281 (97%)	10 (3%)	0	100	100
8	Y	279/306 (91%)	266 (95%)	11 (4%)	2 (1%)	22	61

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	Z	282/1048 (27%)	270 (96%)	12 (4%)	0	100	100
All	All	13999/19848 (70%)	13437 (96%)	550 (4%)	12 (0%)	54	84

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	H	764	GLU
8	Y	297	ASN
5	J	377	LYS
5	L	377	LYS
8	V	297	ASN
5	J	980	ALA
8	V	129	GLN
5	M	650	SER
5	H	665	ALA
5	K	980	ALA
8	Y	179	ASP
5	H	378	ASN

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	647/1941 (33%)	646 (100%)	1 (0%)	93	98
1	C	626/1941 (32%)	626 (100%)	0	100	100
2	B	431/837 (52%)	430 (100%)	1 (0%)	93	98
2	D	400/837 (48%)	397 (99%)	3 (1%)	81	91
3	E	417/526 (79%)	416 (100%)	1 (0%)	93	98
3	F	423/526 (80%)	422 (100%)	1 (0%)	93	98
4	G	398/500 (80%)	397 (100%)	1 (0%)	92	97
5	H	1144/1192 (96%)	1138 (100%)	6 (0%)	88	94
5	I	1175/1192 (99%)	1173 (100%)	2 (0%)	93	98

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	J	1146/1192 (96%)	1144 (100%)	2 (0%)	93	98
5	K	1131/1192 (95%)	1128 (100%)	3 (0%)	92	97
5	L	1175/1192 (99%)	1174 (100%)	1 (0%)	93	98
5	M	1175/1192 (99%)	1174 (100%)	1 (0%)	93	98
6	N	59/68 (87%)	59 (100%)	0	100	100
6	O	59/68 (87%)	58 (98%)	1 (2%)	60	82
6	P	59/68 (87%)	59 (100%)	0	100	100
6	Q	59/68 (87%)	59 (100%)	0	100	100
6	R	59/68 (87%)	59 (100%)	0	100	100
6	S	59/68 (87%)	59 (100%)	0	100	100
7	T	209/252 (83%)	208 (100%)	1 (0%)	88	94
7	W	252/252 (100%)	250 (99%)	2 (1%)	81	91
8	U	262/273 (96%)	261 (100%)	1 (0%)	91	96
8	V	260/273 (95%)	259 (100%)	1 (0%)	91	96
8	X	263/273 (96%)	263 (100%)	0	100	100
8	Y	257/273 (94%)	256 (100%)	1 (0%)	91	96
9	Z	255/883 (29%)	254 (100%)	1 (0%)	91	96
All	All	12400/17147 (72%)	12369 (100%)	31 (0%)	92	97

All (31) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1969	LYS
2	B	17	ARG
2	D	226	ARG
2	D	273	SER
2	D	447	ARG
3	E	610	ARG
3	F	620	ASN
4	G	80	ARG
5	H	379	THR
5	H	1101	ARG
5	H	1184	ASN
5	H	1228	THR
5	H	1239	LEU
5	H	1285	TYR

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Mol	Chain	Res	Type
5	I	36	ARG
5	I	861	VAL
5	J	714	ARG
5	J	1247	ARG
5	K	153	ASN
5	K	1101	ARG
5	K	1228	THR
5	L	1069	ARG
5	M	1184	ASN
6	O	14	ARG
7	T	136	LYS
8	U	75	ARG
8	V	74	ARG
7	W	40	HIS
7	W	153	TYR
8	Y	75	ARG
9	Z	240	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1475	GLN
1	A	1778	HIS
1	A	1828	GLN
1	A	1831	GLN
1	A	2018	GLN
1	A	2020	GLN
2	B	331	HIS
2	B	492	HIS
2	D	258	GLN
2	D	403	GLN
3	E	365	HIS
3	E	448	ASN
4	G	455	GLN
5	H	199	ASN
5	H	919	ASN
5	H	1184	ASN
5	I	76	HIS
5	I	534	HIS
5	I	708	ASN
5	I	713	HIS
5	J	432	ASN

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Mol	Chain	Res	Type
5	J	534	HIS
5	J	849	GLN
5	J	1223	GLN
5	J	1230	ASN
5	K	194	GLN
5	K	694	ASN
5	K	905	GLN
5	K	965	HIS
5	L	649	HIS
5	L	697	GLN
5	L	915	HIS
5	M	278	ASN
5	M	514	GLN
5	M	560	ASN
5	M	919	ASN
5	M	965	HIS
5	M	1133	HIS
5	M	1184	ASN
7	T	211	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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

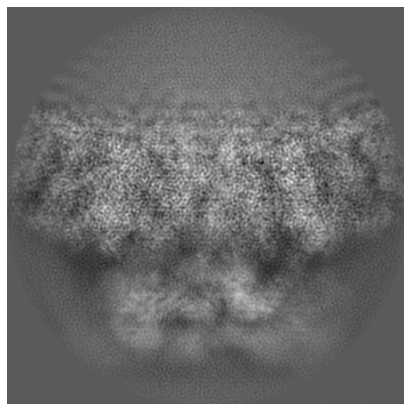
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-41194. These allow visual inspection of the internal detail of the map and identification of artifacts.

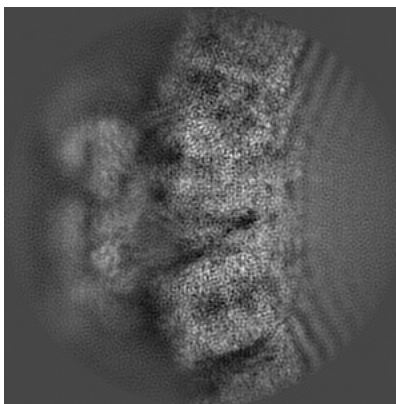
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

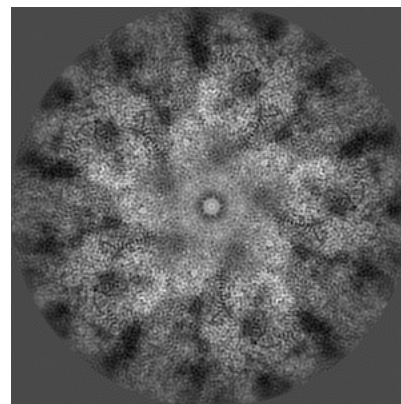
6.1.1 Primary map



X

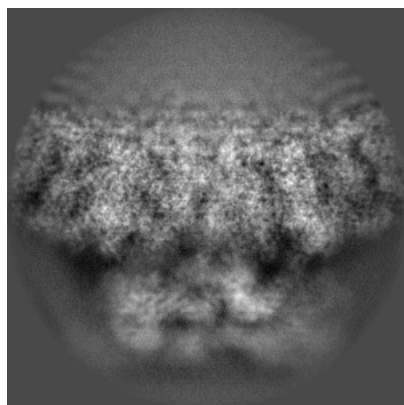


Y

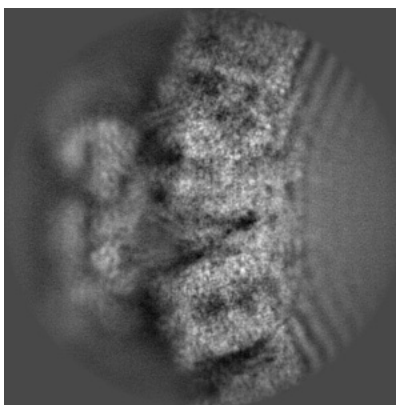


Z

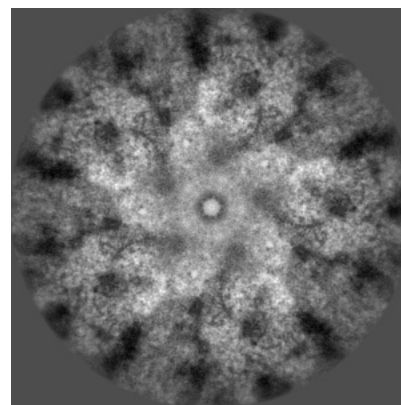
6.1.2 Raw map



X



Y

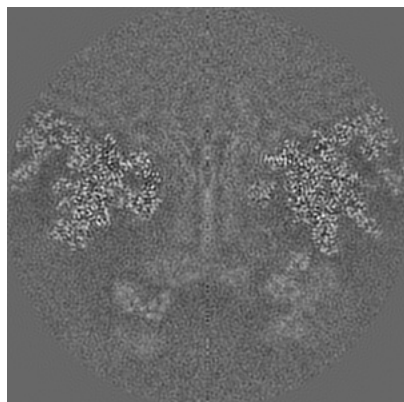


Z

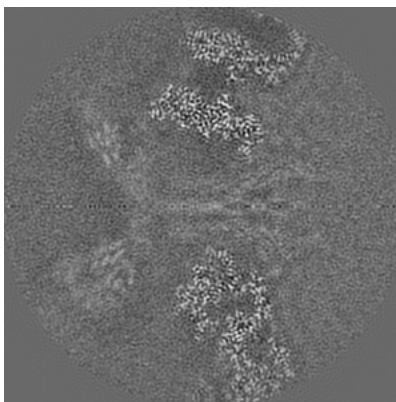
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

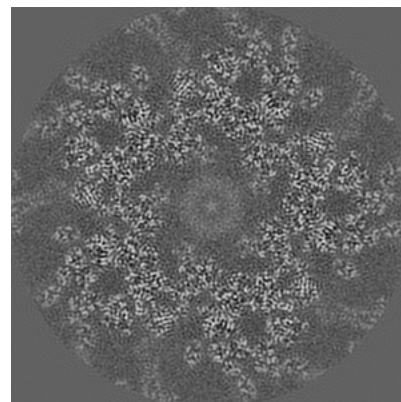
6.2.1 Primary map



X Index: 180

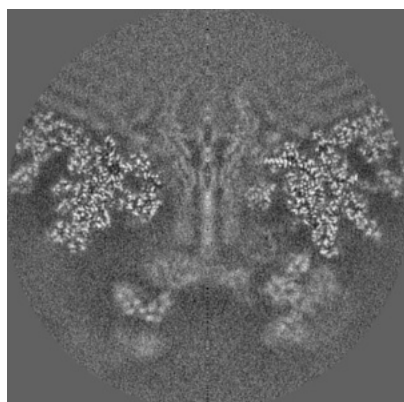


Y Index: 180

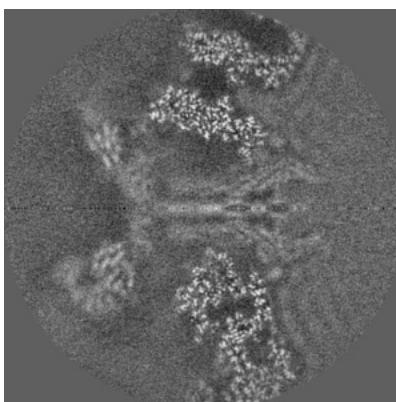


Z Index: 180

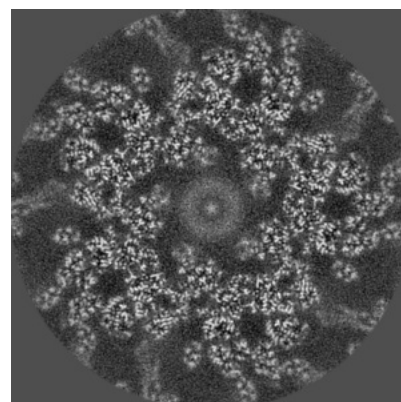
6.2.2 Raw map



X Index: 180



Y Index: 180



Z Index: 180

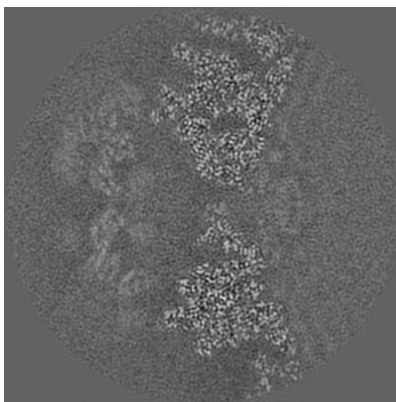
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

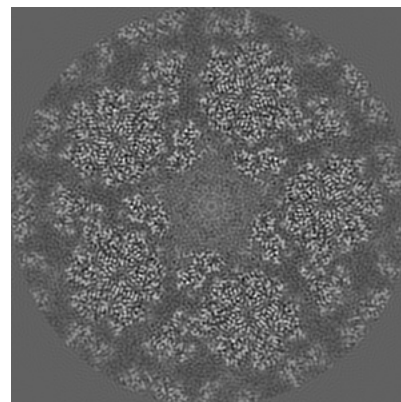
6.3.1 Primary map



X Index: 235

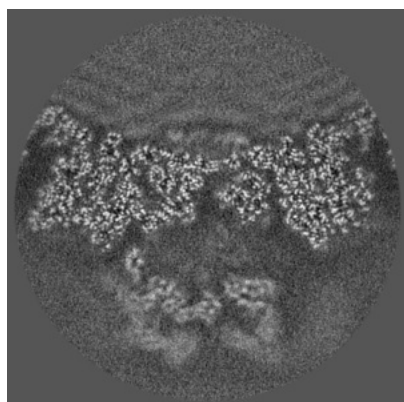


Y Index: 218

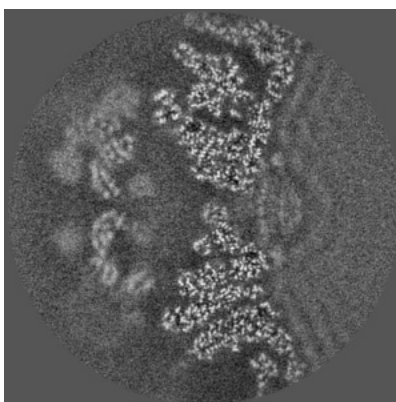


Z Index: 203

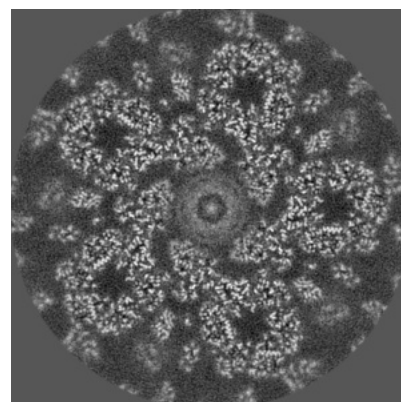
6.3.2 Raw map



X Index: 233



Y Index: 221

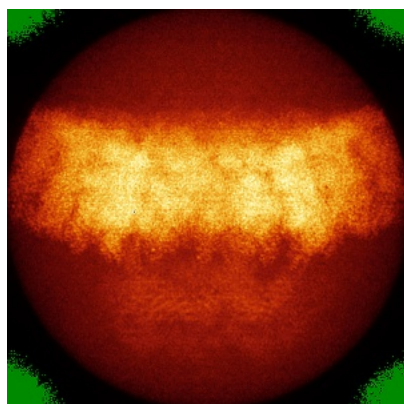


Z Index: 189

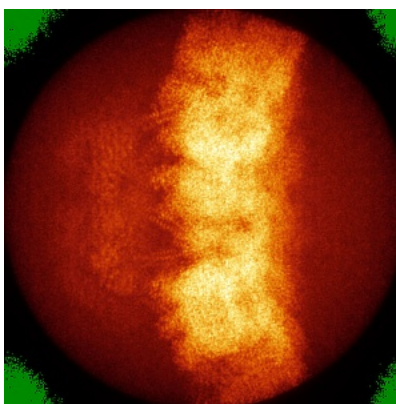
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

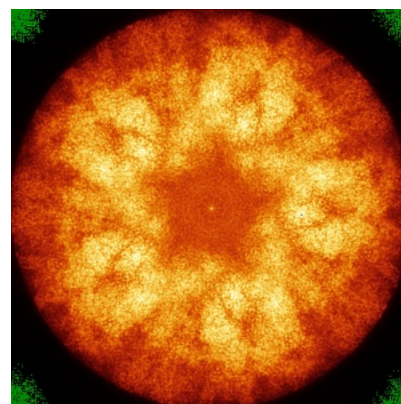
6.4.1 Primary map



X

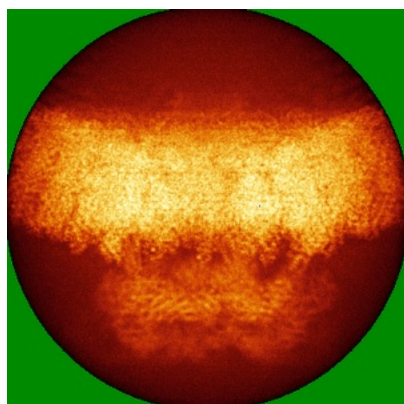


Y

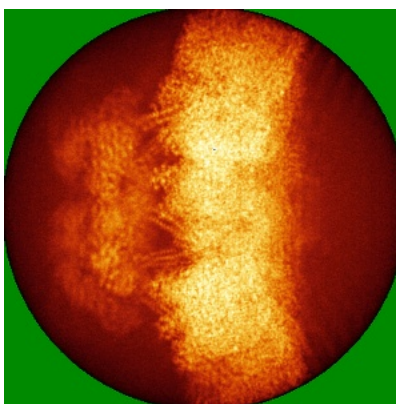


Z

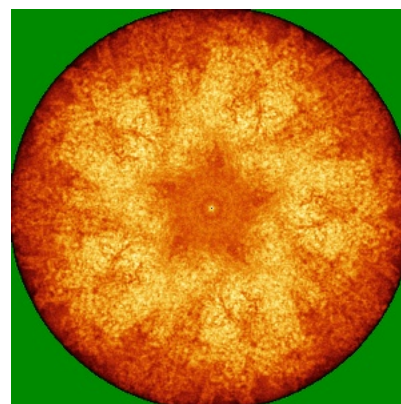
6.4.2 Raw map



X



Y

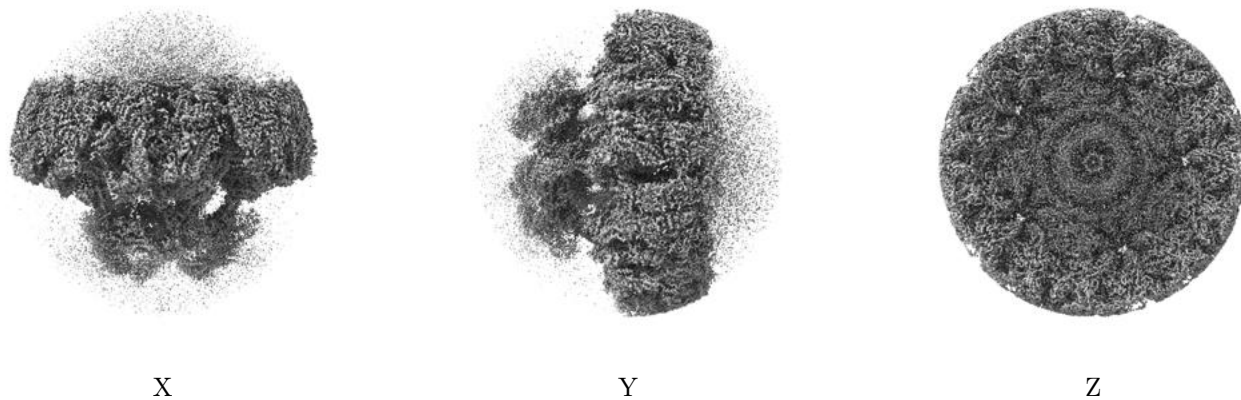


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

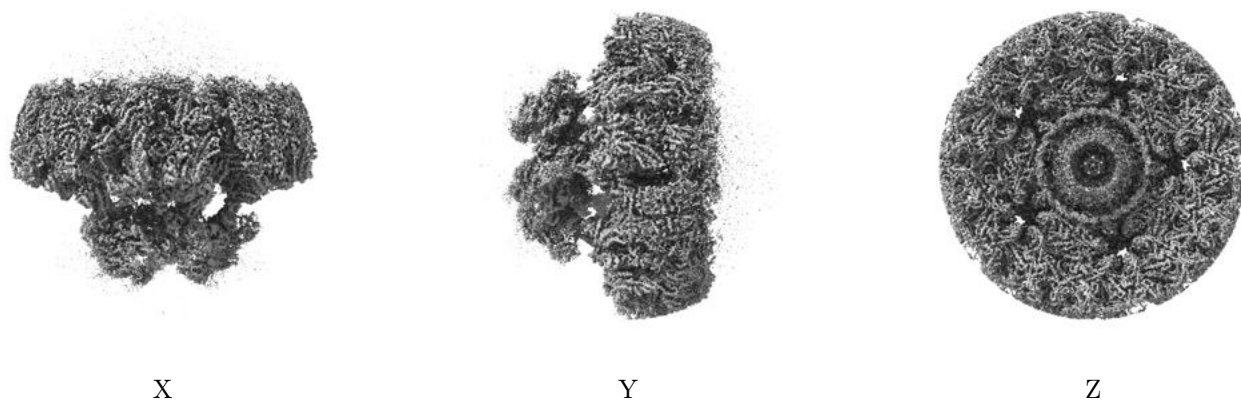
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.005. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

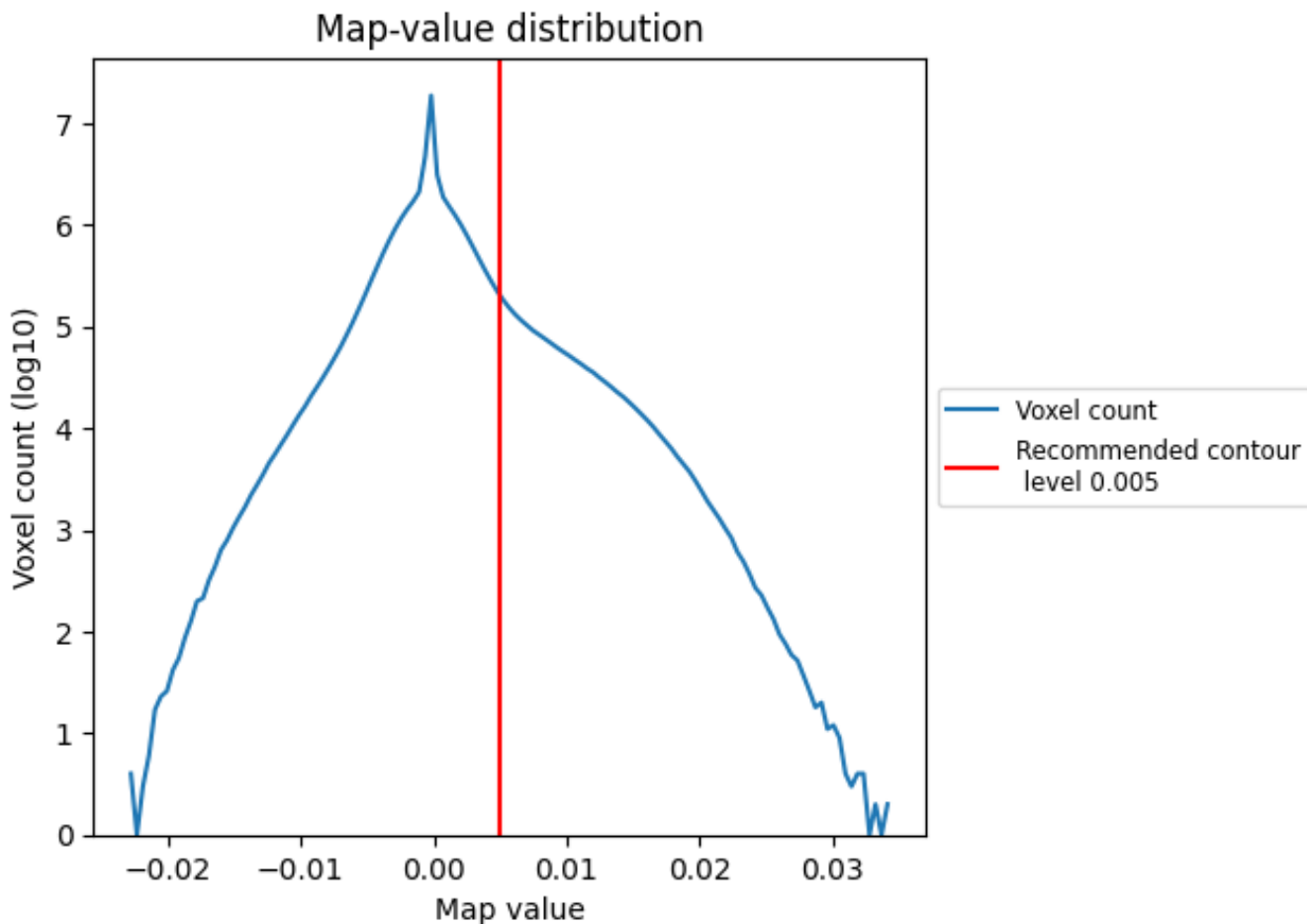
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

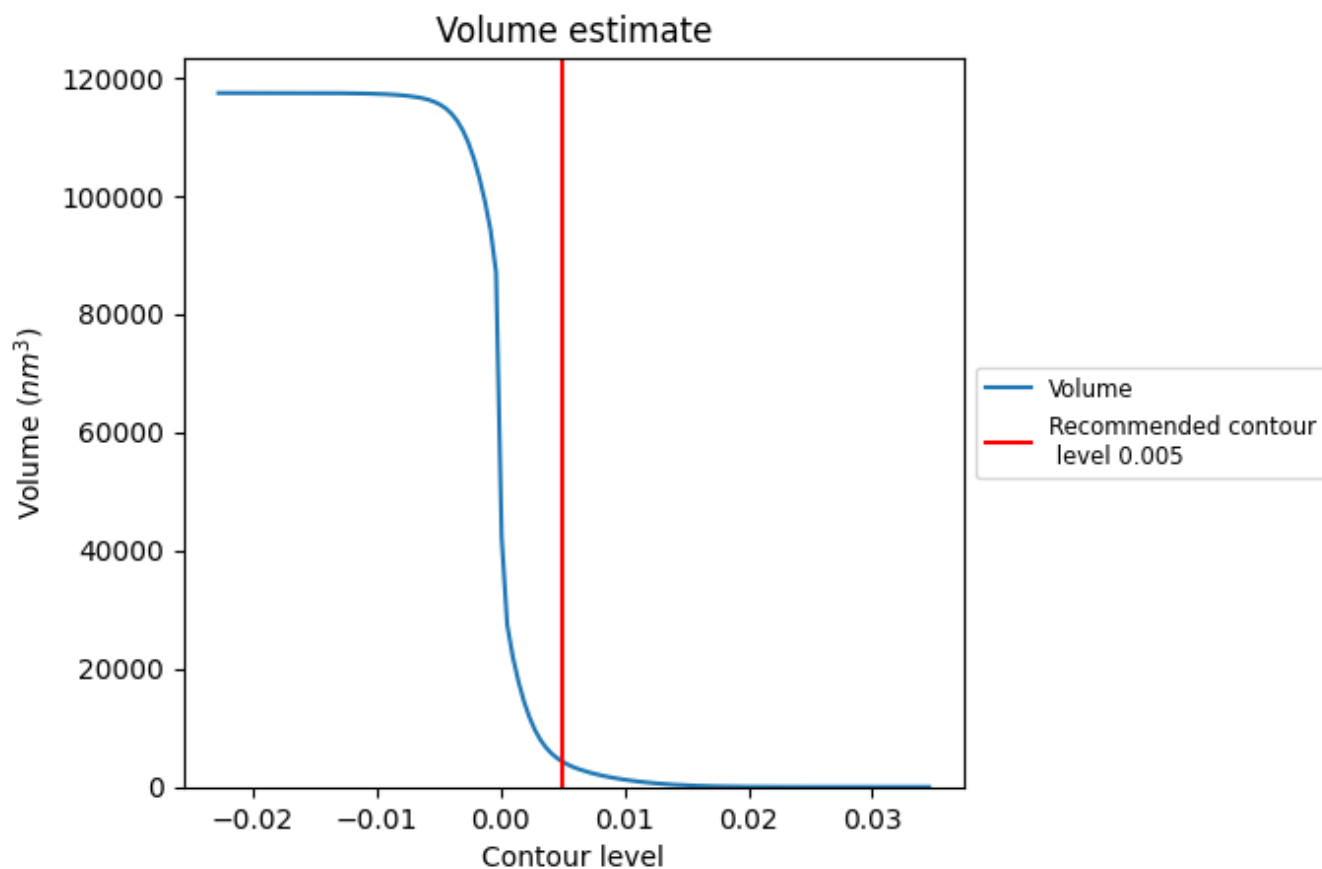
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

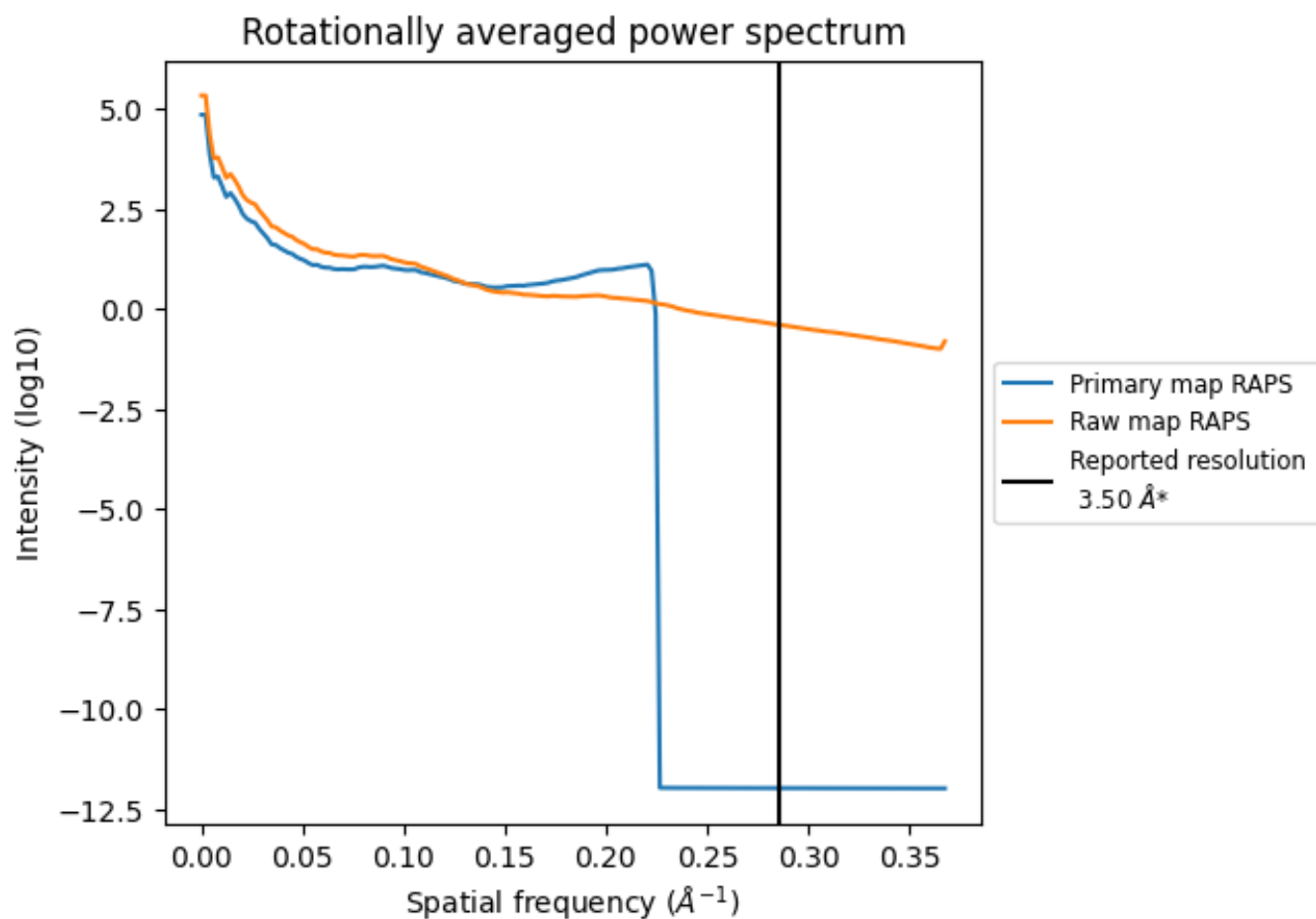
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4271 nm³; this corresponds to an approximate mass of 3858 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum i

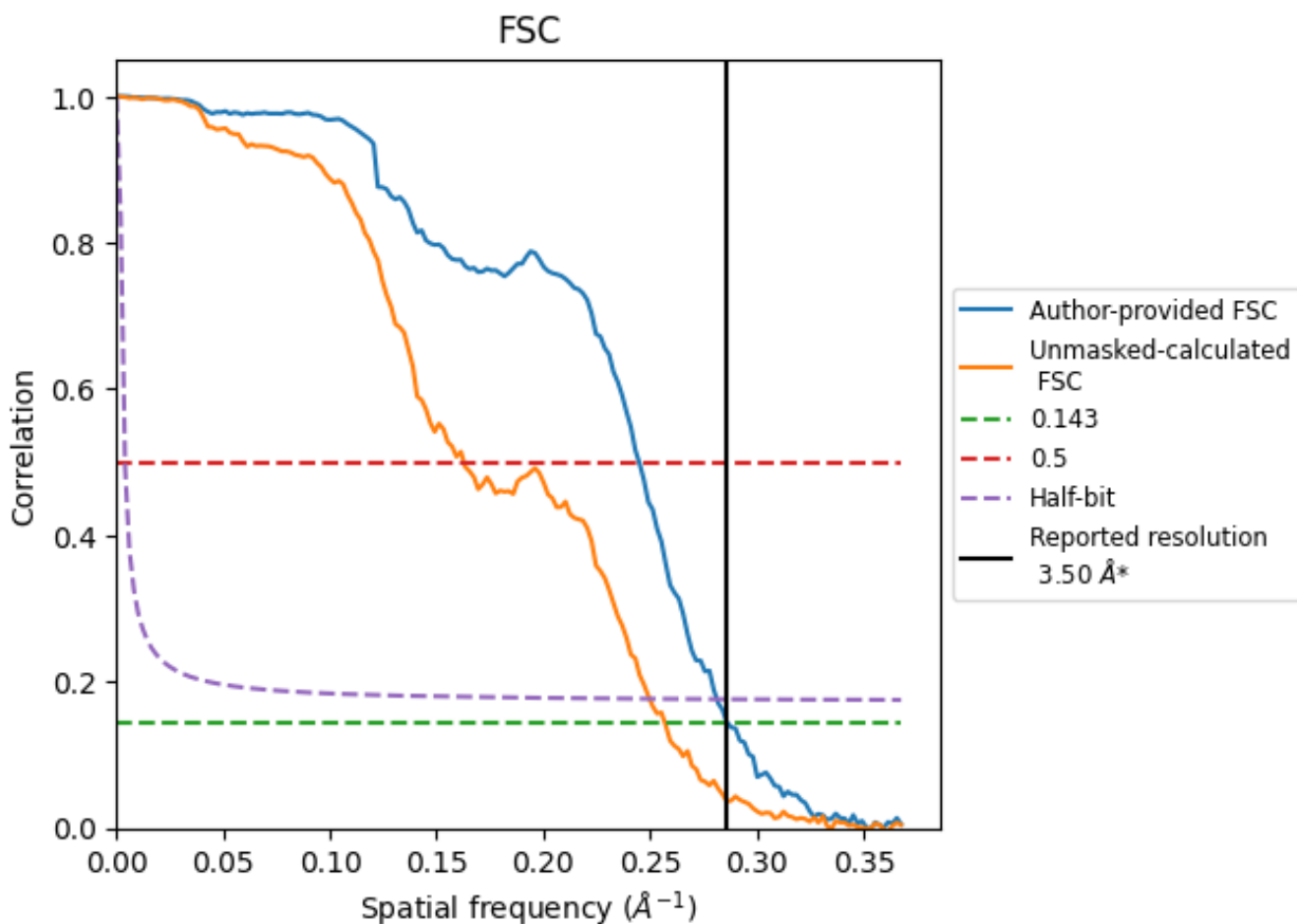


*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8.2 Resolution estimates [i](#)

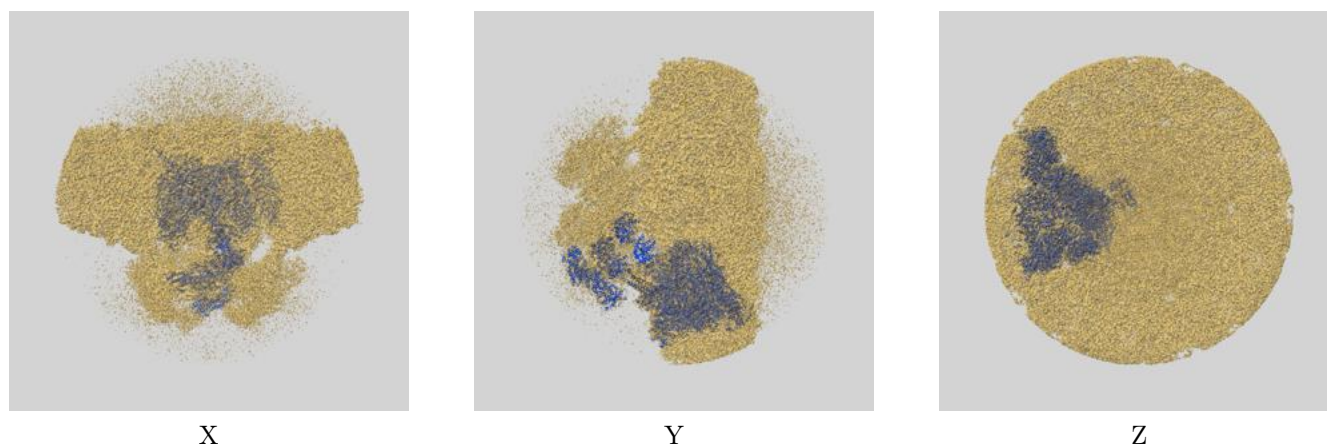
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	3.49	4.08	3.55
Unmasked-calculated*	3.89	6.15	4.00

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.89 differs from the reported value 3.5 by more than 10 %

9 Map-model fit [i](#)

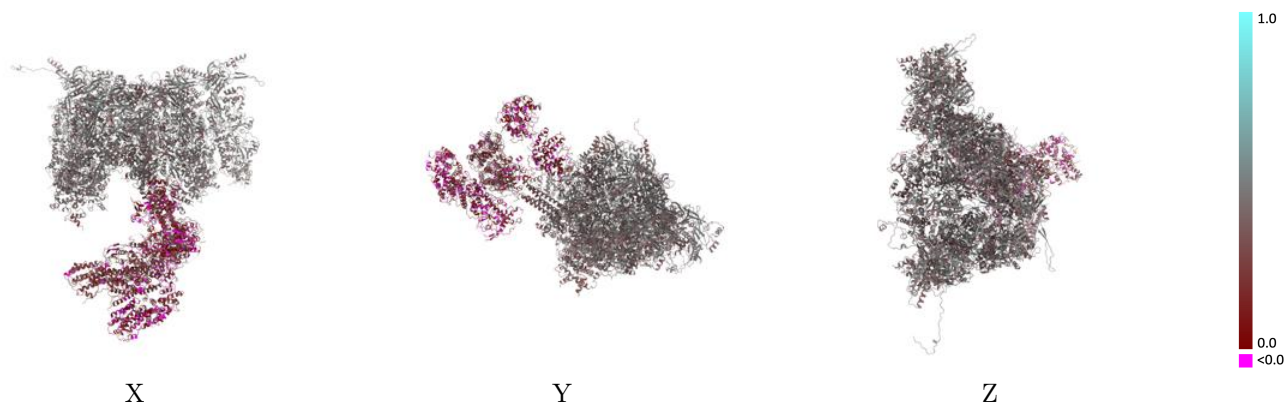
This section contains information regarding the fit between EMDB map EMD-41194 and PDB model 8STEP. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



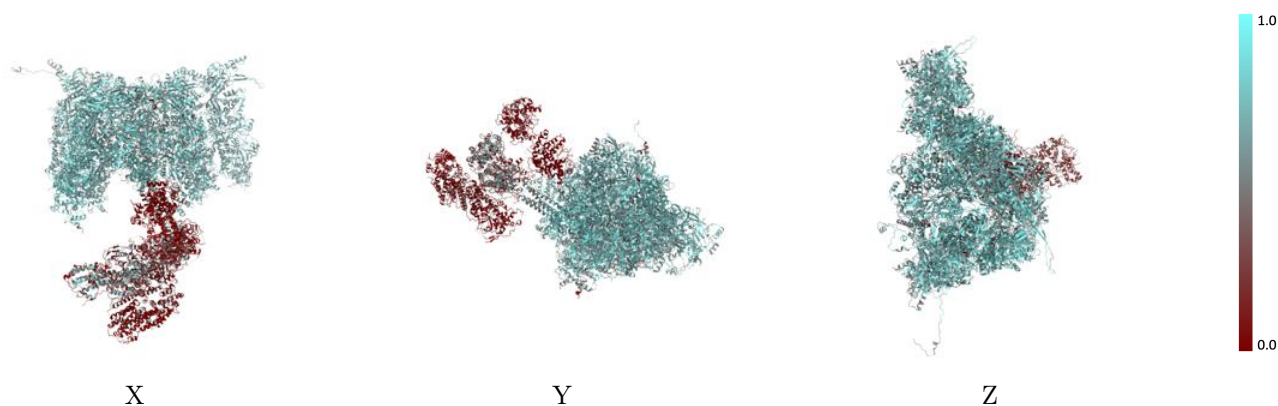
The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [\(i\)](#)



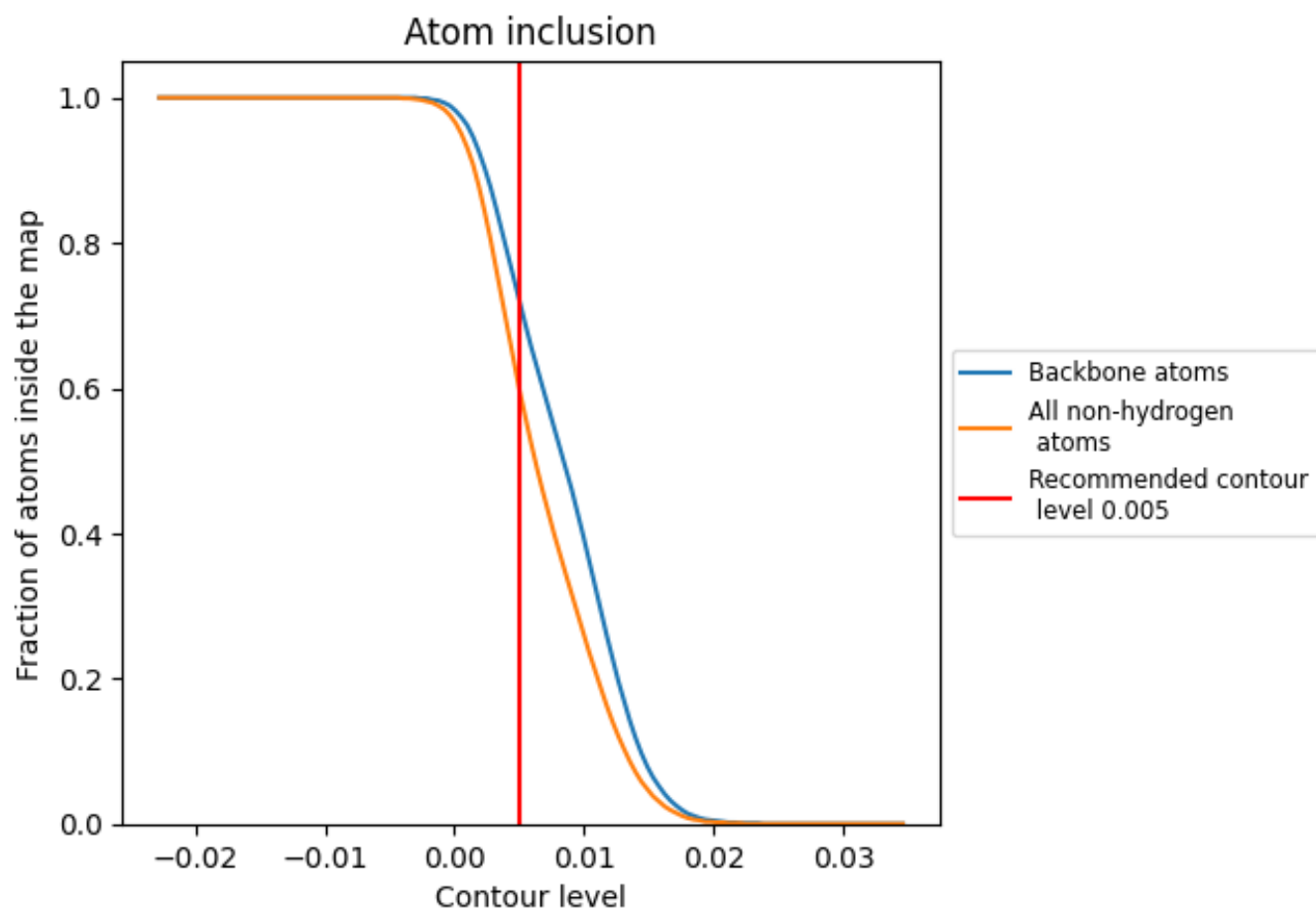
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).























































9.4 Atom inclusion [i](#)



At the recommended contour level, 72% of all backbone atoms, 60% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.005) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5980	 0.3740
A	 0.3660	 0.2590
B	 0.3970	 0.2380
C	 0.1390	 0.1570
D	 0.1140	 0.1200
E	 0.2180	 0.2180
F	 0.1150	 0.1960
G	 0.7370	 0.4310
H	 0.7570	 0.4380
I	 0.7440	 0.4340
J	 0.6960	 0.4280
K	 0.7470	 0.4340
L	 0.7190	 0.4320
M	 0.6800	 0.4260
N	 0.6930	 0.3750
O	 0.7210	 0.4110
P	 0.5840	 0.3640
Q	 0.6730	 0.3730
R	 0.5940	 0.3800
S	 0.5120	 0.3750
T	 0.6480	 0.4150
U	 0.7190	 0.4300
V	 0.7250	 0.4310
W	 0.7210	 0.4410
X	 0.6620	 0.4320
Y	 0.6510	 0.4240
Z	 0.6320	 0.4060

