



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 4, 2023 – 12:11 PM EDT

PDB ID : 6OQ5  
Title : Structure of the full-length Clostridium difficile toxin B in complex with 3 VHHs  
Authors : Chen, P.; Lam, K.; Jin, R.  
Deposited on : 2019-04-25  
Resolution : 3.87 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Xtriage (Phenix) : 1.13  
EDS : 2.35.1  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35.1

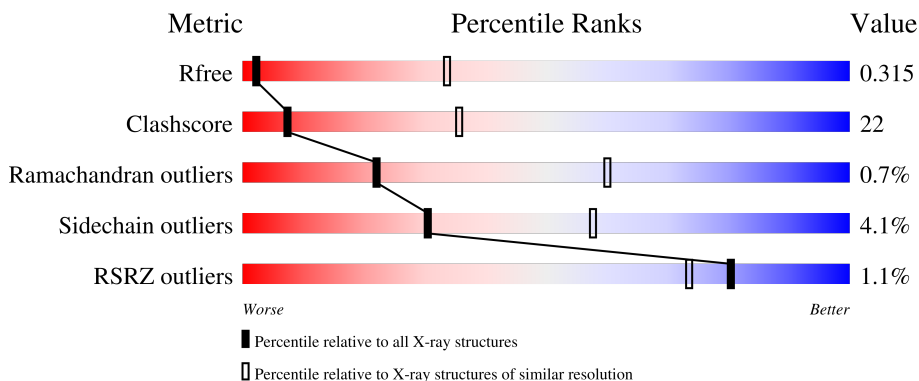
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.87 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1026 (4.12-3.64)
Clashscore	141614	1045 (4.10-3.66)
Ramachandran outliers	138981	1008 (4.10-3.66)
Sidechain outliers	138945	1001 (4.10-3.66)
RSRZ outliers	127900	1213 (4.16-3.60)

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

Mol	Chain	Length	Quality of chain
1	A	2373	 9% 62% 35%
2	D	153	 53% 25% 18%
3	E	137	 9% 56% 21% 22%
4	F	142	 54% 26% 18%

## 2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 21503 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Toxin B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	2346	18837	12009	2961	3820	47	0	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2368	HIS	-	expression tag	UNP M4NKV9
A	2369	HIS	-	expression tag	UNP M4NKV9
A	2370	HIS	-	expression tag	UNP M4NKV9
A	2371	HIS	-	expression tag	UNP M4NKV9
A	2372	HIS	-	expression tag	UNP M4NKV9
A	2373	HIS	-	expression tag	UNP M4NKV9

- Molecule 2 is a protein called 5D.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	D	126	986	617	179	187	3	0	0	0

- Molecule 3 is a protein called E3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	E	107	802	498	141	159	4	0	0	0

- Molecule 4 is a protein called 7F.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	F	116	876	544	154	172	6	0	0	0

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Inter-

est" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total 1	Zn 1	0	0

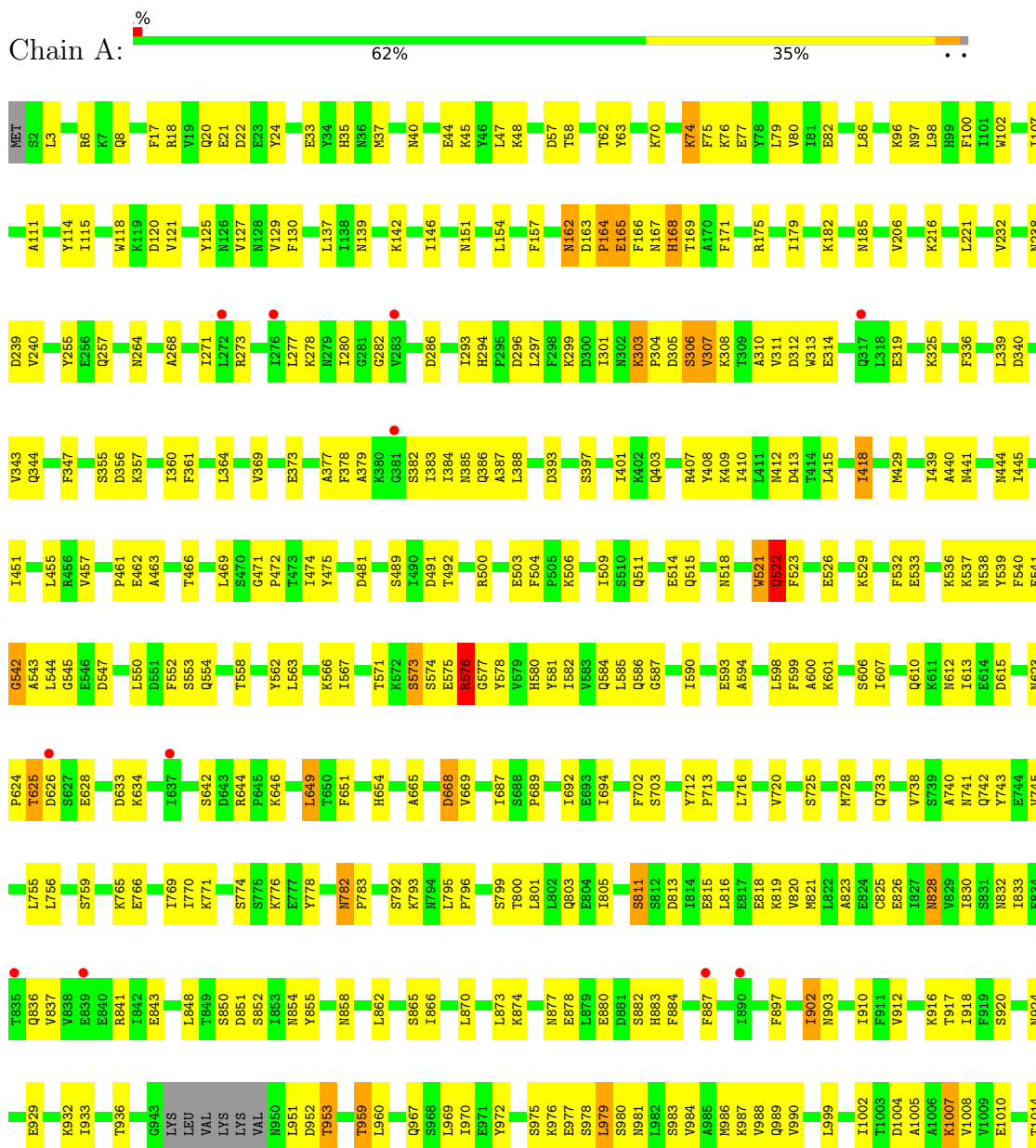
- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	1	Total 1	Mg 1	0	0

### 3 Residue-property plots

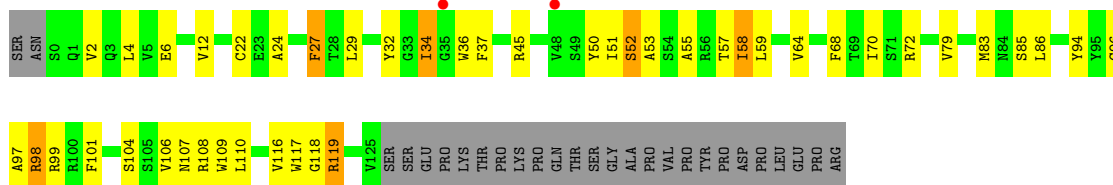
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

- Molecule 1: Toxin B

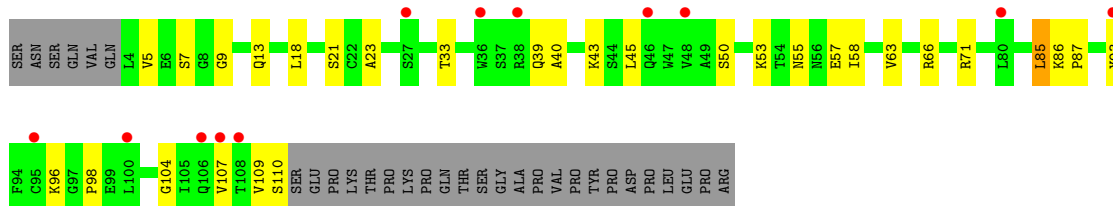


L1026	L1027	L1028	L1031	ILE	ILE	ALA	THR	ILE	ILE	ASP	GLY	VAL	SER	LEU	GLY	ALA	ALA	ILE	ILE	L1048	L1049	S1050	E1051	T1052	S1053	D1054	P1055	L1056	E1060	I1061	K1064	I1067	V1070	T1073	T1074	I1080	L1084	S1091	I1092	L1093	V1095	I1100	T1104	L1107	V1108							
N1109	N1110	L1111	L1112	R1115	K1120	L1130	V1131	E1134	L1140	D1141	D1142	K1143	V1144	Q1148	D1149	D1150	L1151	V1152	E1155	F1158	F1164	L1165	G1166	I1170	W1171	R1172	M1173	E1174	S1177	G1178	H1179	T1180	I1185	D1186	F1187	F1188	F1189	P1192	S1193	I1194	T1195	Y1196	R1197	E1198	I1203							
Y1204	D1205	V1206	V1209	Q1210	K1211	L1216	L1220	L1223	P1227	N1228	R1229	A1232	W1233	W1237	T1238	P1239	G1240	L1241	R1242	E1245	T1249	K1250	L1251	R1254	I1255	R1172	M1173	E1262	W1265	L1275	I1276	K1280	Y1283	N1287	I1416	I1417	S1298	P1302	E1307	Y1308												
I1309	R1310	E1311	K1312	L1313	S1314	Y1315	S1320	G1321	Y1331	D1343	V1344	W1345	I1346	V1349	D1350	M1351	V1352	T1357	I1358	K1362	I1363	K1364	K1365	I1372	L1373	S1374	T1375	I1378	E1379	K1382	V1403	T1406	K1409	A1415	I1416	I1417	F1418	V1419	L1422	N1440												
S1441	M1442	H1443	I1444	Q1445	I1448	T1451	G1452	F1453	T1461	Y1463	Y1464	Y1465	E1472	F1475	I1476	N1477	T1480	L1484	F1485	I1486	E1487	E1488	L1489	P1490	D1491	V1492	V1493	L1494	I1495	S1496	K1497	Y1499	K1504	P1505	Y1510	N1512	M1513	L1514	K1515	D1516	T1521	K1522	V1525	M1526	T1529							
G1530	Y1531	L1532	L1533	L1545	V1563	I1566	M1571	M1577	T1578	S1579	K1592	F1605	M1610	F1611	I1612	I1613	T1616	I1619	G1620	Q1621	F1622	E1623	F1624	G1625	G1626	D1627	L1494	I1495	S1496	K1497	Y1499	Q1633	P1634	Y1635	F1639	E1643	Y1646	T1647	L1648	Y1649	I1650	G1651	M1652	K1653	Q1654	M1655	M1656					
I1657	N1661	Y1662	D1663	L1664	D1665	D1666	S1667	G1668	D1669	I1670	S1671	S1672	S1678	Q1679	K1680	Y1681	I1694	S1695	P1696	H1697	I1698	D1701	E1702	S1703	E1704	I1705	T1706	P1707	V1708	Y1715	I1719	V1720	N1724	Y1725	I1726	N1727	V1732	N1733	I1734	N1735	S1738	I1739	R1740	Y1741	G1742	W1743	I1751	L1752				
M1753	S1754	T1755	S1756	E1757	K1760	Q1763	V1764	R1767	F1768	N1769	F1785	K1788	Q1789	D1790	V1793	I1796	L1797	L1798	S1799	F1800	T1801	P1802	S1803	Y1804	Y1805	E1806	P1807	V1808	I1810	G1811	Y1812	D1813	L1814	G1815	L1816	V1817	S1818	L1819	K1823	F1824	Y1825	L1826	N1827	N1828	F1829	G1830	M1831	M1832	M1833	S1834	A1923	I1924
L1836	L1837	I1838	I1839	M1840	D1841	S1842	L1843	Y1844	F1845	F1846	K1847	P1848	F1849	V1850	M1851	N1852	L1853	I1854	T1855	G1856	F1857	V1858	T1859	V1860	D1863	K1864	Y1865	E1866	F1867	M1868	P1869	I1870	S1876	L1881	L1882	N1886	F1889	V1894	L1895	Q1896	S1901	F1906	K1907	Y1908	L1915	M1918	A1923	I1924				
L1930	D1933	Y1938	F1939	E1940	D1941	N1942	Y1943	Y1944	V1947	E1948	M1949	K1950	E1951	G1954	E1955	N1956	H1957	Y1958	F1959	S1960	G1964	F1967	L1970	N1971	Q1972	I1973	G1974	D1975	D1976	K1977	Y1978	Y1979	F1980	N1981	V1985	M1986	Q1987	I1993	N1994	D1995	N1996	K1997	H1998	Y1999	F2000	V2005	M2006					
Y2010	F2018	Y2019	F2020	A2021	E2022	M2023	G2024	E2025	M2026	Q2027	I2028	F2031	N2032	T2033	E2034	D2035	G2036	F2037	K2038	H2042	D2046	L2047	E2051	G2052	E2053	A2076	W2080	S2087	K2088	Y2089	Y2090	A2098	Y2099	I2100	G2101	L2102	S2103	L2104	I2105	N2106	D2107	Q2108	Q2109	Y2110	Y2111	K2222	S2220	D2221	Y2224	F2225	D2226	G2116
I2117	M2118	Q2119	G2120	F2121	G2122	I2125	V2129	F2130	Y2131	F2132	G2136	I2137	I2138	I2145	D2153	I2157	Y2171	M2181	I2182	Y2183	V2187	L2192	V2193	R2194	V2199	Y2200	Y2201	F2202	I2208	E2209	G2211	I2212	I2213	Y2214	D2215	M2216	E2219	S2220	Y2221	K2222	Y2223	Y2224	F2225	D2226	P2227							
E2228	T2229	K2230	K2231	A2232	C2233	K2234	G2235	I2236	N2237	L2238	F2239	D2240	S2241	I2242	K2243	Y2244	Y2245	F2246	M2252	R2253	T2254	G2255	L2256	M2262	I2263	Y2264	Y2265	F2266	M2267	M2272	Y2285	F2286	Y2291	M2292	G2295	N2298	F2303	K2304	Y2305	F2306	Q2309	M2310	T2311	N2315	Y2316	E2317	I2321					
L2329	D2330	F2336	A2342	V2347	G2355	F2356	L2358	A2361	Q2362	L2363	V2364	I2365	H2369	HIS	HIS	HIS	HIS																																			

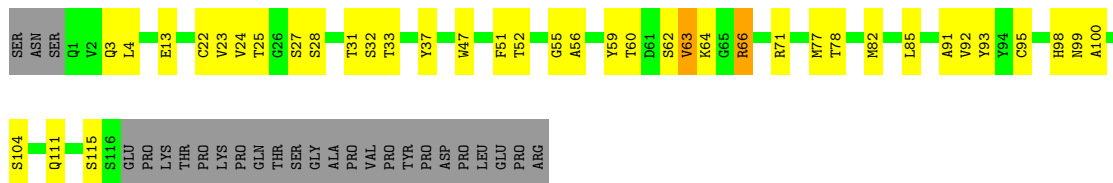
• Molecule 2: 5D



- Molecule 3: E3



- Molecule 4: 7F



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	149.62Å 168.56Å 179.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.91 – 3.87 48.87 – 3.87	Depositor EDS
% Data completeness (in resolution range)	99.2 (48.91-3.87) 99.3 (48.87-3.87)	Depositor EDS
$R_{merge}$	0.14	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.37 (at 3.88Å)	Xtrriage
Refinement program	REFMAC 5.8.0232	Depositor
R, $R_{free}$	0.263 , 0.315 0.263 , 0.315	Depositor DCC
$R_{free}$ test set	2203 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	135.9	Xtrriage
Anisotropy	0.169	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.24 , 78.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.44$ , $\langle L^2 \rangle = 0.26$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	21503	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	169.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.86% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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



## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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	0.26	0/19208	0.64	0/26012
2	D	0.29	0/1006	0.65	0/1360
3	E	0.29	0/814	0.61	0/1098
4	F	0.32	0/893	0.65	0/1206
All	All	0.27	0/21921	0.64	0/29676

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	18837	0	18156	803	0
2	D	986	0	959	87	0
3	E	802	0	797	30	0
4	F	876	0	856	40	0
5	A	1	0	0	0	0
6	A	1	0	0	0	0
All	All	21503	0	20768	944	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 22.

All (944) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2107:ASP:CB	1:A:2137:ILE:HG22	1.73	1.19
1:A:1847:LYS:HG3	1:A:1848:PRO:HD2	1.27	1.16
1:A:2025:GLU:O	1:A:2026:MET:HG2	1.44	1.14
1:A:120:ASP:HB3	1:A:357:LYS:HD2	1.18	1.14
1:A:625:THR:HB	1:A:628:GLU:HG2	1.25	1.14
3:E:86:LYS:HB2	3:E:87:PRO:HD2	1.30	1.13
2:D:37:PHE:CD2	2:D:117:TRP:HH2	1.68	1.10
2:D:4:LEU:HD13	2:D:116:VAL:HG22	1.32	1.07
1:A:1442:ASN:HA	1:A:1445:GLN:HE22	1.12	1.07
2:D:53:ALA:HA	2:D:72:ARG:NH1	1.70	1.05
1:A:743:TYR:HB3	1:A:755:LEU:HD11	1.38	1.05
1:A:2315:ASN:HD22	1:A:2321:ILE:HG21	1.22	1.01
1:A:2109:GLN:HG2	1:A:2132:PHE:CZ	1.95	1.01
1:A:2107:ASP:HB2	1:A:2137:ILE:CG2	1.92	0.99
2:D:37:PHE:HD2	2:D:117:TRP:CH2	1.82	0.97
2:D:4:LEU:HD23	2:D:96:CYS:O	1.64	0.96
2:D:4:LEU:HD22	2:D:117:TRP:CA	1.95	0.96
1:A:1171:TRP:CZ2	1:A:1195:THR:HG21	2.01	0.96
1:A:2107:ASP:HB2	1:A:2137:ILE:HG22	0.97	0.96
2:D:64:VAL:HG11	2:D:68:PHE:CG	1.99	0.96
1:A:165:GLU:O	1:A:165:GLU:HG3	1.63	0.96
1:A:1074:THR:HG23	1:A:1416:ILE:HD11	1.46	0.96
1:A:625:THR:HB	1:A:628:GLU:CG	1.94	0.95
1:A:2193:VAL:HG23	1:A:2200:TYR:H	1.30	0.95
3:E:85:LEU:HB2	3:E:86:LYS:HB3	1.45	0.95
1:A:743:TYR:HB3	1:A:755:LEU:CD1	1.96	0.94
1:A:1444:ILE:O	1:A:1448:ILE:HG13	1.69	0.93
1:A:1026:LEU:HD22	1:A:1623:GLU:OE2	1.68	0.93
1:A:1174:GLU:O	1:A:1192:PRO:HD2	1.68	0.93
2:D:37:PHE:CD2	2:D:117:TRP:CH2	2.57	0.93
1:A:2112:PHE:HB2	1:A:2116:GLY:HA3	1.50	0.92
1:A:1178:GLY:O	1:A:1188:PHE:HB3	1.68	0.92
2:D:64:VAL:HG11	2:D:68:PHE:CD2	2.04	0.91
1:A:578:TYR:HD1	1:A:644:ARG:HE	1.13	0.91
2:D:37:PHE:HD2	2:D:117:TRP:HH2	0.99	0.91
1:A:2199:VAL:HG23	1:A:2232:ALA:HB3	1.52	0.90
1:A:1848:PRO:CD	1:A:1849:PRO:HD3	2.01	0.90
2:D:53:ALA:HA	2:D:72:ARG:HH12	1.35	0.89
3:E:86:LYS:HB2	3:E:87:PRO:CD	2.01	0.89
1:A:979:LEU:HD13	1:A:980:SER:H	1.37	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:576:ARG:HG3	1:A:577:GLY:H	1.38	0.88
1:A:1739:ILE:HG22	1:A:1844:TYR:OH	1.72	0.88
1:A:1842:SER:HB2	1:A:1844:TYR:HE1	1.38	0.88
1:A:1238:THR:HG22	1:A:1239:PRO:HD2	1.55	0.86
1:A:1848:PRO:CG	1:A:1849:PRO:HD3	2.05	0.86
1:A:2104:LEU:HA	1:A:2108:GLY:HA2	1.58	0.85
1:A:2100:ILE:HG13	1:A:2114:ASP:HA	1.58	0.85
1:A:1639:PHE:HB2	1:A:1646:TYR:HB2	1.59	0.85
1:A:2099:TYR:O	1:A:2112:PHE:CE2	2.30	0.84
2:D:37:PHE:HE1	2:D:109:TRP:CD1	1.95	0.84
1:A:2087:SER:H	1:A:2117:ILE:HG23	1.43	0.84
2:D:24:ALA:HB3	2:D:29:LEU:CD2	2.07	0.84
1:A:125:TYR:HE2	1:A:364:LEU:HD12	1.39	0.84
1:A:1494:LEU:HB3	1:A:1511:SER:HB3	1.59	0.83
2:D:4:LEU:CD2	2:D:96:CYS:O	2.26	0.83
1:A:268:ALA:HA	1:A:271:ILE:HD12	1.61	0.82
1:A:2107:ASP:CB	1:A:2137:ILE:CG2	2.53	0.82
1:A:1442:ASN:HA	1:A:1445:GLN:NE2	1.93	0.82
1:A:1489:LEU:H	1:A:1493:VAL:HG12	1.45	0.81
1:A:1848:PRO:HG2	1:A:1849:PRO:HD3	1.63	0.81
2:D:4:LEU:HD22	2:D:117:TRP:C	2.00	0.81
1:A:1107:LEU:HB3	1:A:1112:LEU:HD23	1.61	0.81
2:D:4:LEU:HB3	2:D:118:GLY:CA	2.12	0.80
1:A:2107:ASP:OD1	1:A:2109:GLN:HG3	1.81	0.80
1:A:1510:TYR:HE2	1:A:1545:LEU:HD11	1.45	0.80
1:A:2105:ILE:HD13	1:A:2105:ILE:O	1.81	0.80
2:D:4:LEU:HB3	2:D:118:GLY:HA2	1.63	0.80
4:F:82:MET:HB3	4:F:85:LEU:HD21	1.63	0.80
1:A:538:ASN:HB3	4:F:100:ALA:O	1.80	0.80
1:A:2303:PHE:HD2	1:A:2361:ALA:HB2	1.47	0.80
2:D:4:LEU:HD21	2:D:97:ALA:HA	1.62	0.80
1:A:74:LYS:NZ	1:A:74:LYS:HA	1.97	0.79
1:A:538:ASN:CB	4:F:100:ALA:O	2.30	0.79
2:D:4:LEU:HD13	2:D:116:VAL:CG2	2.12	0.79
1:A:2033:THR:HG21	1:A:2038:LYS:HE2	1.64	0.79
1:A:977:GLU:HG3	1:A:1663:ASP:OD1	1.81	0.79
1:A:1056:LEU:HD12	1:A:1056:LEU:O	1.83	0.79
1:A:2120:VAL:HG12	1:A:2132:PHE:O	1.82	0.79
1:A:576:ARG:HG2	1:A:1807:ASP:OD2	1.83	0.79
1:A:770:ILE:HD12	1:A:805:ILE:HD11	1.64	0.79
1:A:1174:GLU:O	1:A:1192:PRO:CD	2.32	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:23:VAL:HG12	4:F:77:MET:HG3	1.65	0.78
1:A:1859:THR:HA	1:A:1863:ASP:O	1.84	0.78
1:A:2199:VAL:HG23	1:A:2232:ALA:CB	2.14	0.78
1:A:120:ASP:HB3	1:A:357:LYS:CD	2.07	0.78
1:A:2025:GLU:O	1:A:2026:MET:CG	2.31	0.78
1:A:792:SER:HB3	1:A:843:GLU:HB3	1.66	0.78
2:D:34:ILE:HG21	2:D:79:VAL:HG11	1.65	0.78
1:A:255:TYR:HA	1:A:271:ILE:HD13	1.64	0.77
4:F:32:SER:HB3	4:F:99:ASN:HB3	1.64	0.77
1:A:2101:GLY:HA2	1:A:2111:TYR:CD1	2.18	0.77
1:A:2102:LEU:H	1:A:2102:LEU:HD23	1.49	0.77
1:A:571:THR:HG22	1:A:573:SER:OG	1.84	0.77
1:A:1842:SER:HB2	1:A:1844:TYR:CE1	2.20	0.76
1:A:1178:GLY:O	1:A:1188:PHE:CB	2.33	0.76
4:F:63:VAL:HG12	4:F:66:ARG:HH21	1.48	0.76
2:D:6:GLU:OE2	2:D:118:GLY:HA3	1.86	0.76
1:A:668:ASP:CG	1:A:669:VAL:N	2.39	0.76
1:A:2109:GLN:HG2	1:A:2132:PHE:HZ	1.51	0.76
1:A:1232:ALA:HB3	1:A:1280:LYS:HB2	1.67	0.76
1:A:2245:TYR:HB3	1:A:2266:PHE:HE2	1.51	0.76
1:A:792:SER:HB2	1:A:841:ARG:O	1.86	0.75
1:A:2026:MET:C	1:A:2027:GLN:HE21	1.90	0.75
3:E:85:LEU:HD23	3:E:85:LEU:H	1.52	0.75
1:A:2201:TYR:CD2	1:A:2201:TYR:O	2.40	0.74
1:A:2303:PHE:CD2	1:A:2361:ALA:HB2	2.22	0.74
1:A:1196:TYR:HD1	1:A:1197:ARG:H	1.34	0.74
3:E:9:GLY:HA3	3:E:18:LEU:HD22	1.70	0.74
2:D:24:ALA:HB3	2:D:29:LEU:HD22	1.70	0.74
1:A:403:GLN:O	1:A:407:ARG:HG3	1.87	0.74
1:A:694:ILE:HB	1:A:738:VAL:HG23	1.70	0.74
1:A:1678:SER:HB2	1:A:1706:THR:HG23	1.68	0.74
1:A:1092:ILE:HG22	1:A:1093:LEU:N	2.01	0.73
1:A:1092:ILE:CG2	1:A:1093:LEU:H	2.01	0.73
1:A:1739:ILE:HG21	1:A:1844:TYR:HE2	1.53	0.73
2:D:50:TYR:HE2	2:D:99:ARG:HD2	1.53	0.73
1:A:1487:SER:HB3	1:A:1494:LEU:HD12	1.71	0.73
3:E:7:SER:N	3:E:21:SER:O	2.22	0.73
1:A:1171:TRP:CE2	1:A:1195:THR:HG21	2.24	0.72
1:A:462:GLU:HG3	1:A:771:LYS:HE3	1.70	0.72
1:A:1310:ARG:NH1	1:A:1331:TYR:HB3	2.04	0.72
1:A:415:LEU:O	1:A:418:ILE:HG22	1.88	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1670:ILE:HD12	1:A:1671:SER:H	1.55	0.72
3:E:9:GLY:O	3:E:107:VAL:HG22	1.88	0.72
1:A:8:GLN:HG3	1:A:878:GLU:HB3	1.70	0.72
2:D:37:PHE:CE1	2:D:109:TRP:CD1	2.78	0.72
1:A:2298:ASN:HA	1:A:2303:PHE:CD1	2.24	0.72
2:D:53:ALA:CA	2:D:72:ARG:HH12	2.03	0.72
1:A:1209:VAL:HB	1:A:1211:LYS:HG3	1.71	0.72
2:D:4:LEU:HD22	2:D:117:TRP:HA	1.70	0.72
1:A:356:ASP:CG	1:A:357:LYS:H	1.92	0.72
1:A:1178:GLY:C	1:A:1188:PHE:HB3	2.10	0.72
2:D:4:LEU:HD23	2:D:118:GLY:N	2.05	0.72
1:A:216:LYS:HE2	1:A:221:LEU:HD21	1.72	0.72
3:E:85:LEU:H	3:E:85:LEU:CD2	2.02	0.72
1:A:578:TYR:HB2	1:A:646:LYS:HB3	1.70	0.71
1:A:587:GLY:HA3	1:A:612:ASN:HD22	1.53	0.71
1:A:114:TYR:OH	1:A:514:GLU:HB3	1.89	0.71
1:A:2193:VAL:HG22	1:A:2201:TYR:H	1.55	0.71
1:A:969:LEU:HD21	1:A:983:SER:HA	1.72	0.71
2:D:50:TYR:CE2	2:D:99:ARG:HD2	2.25	0.71
1:A:1706:THR:HB	1:A:1735:ASN:HD22	1.54	0.71
2:D:4:LEU:CD2	2:D:118:GLY:N	2.54	0.71
2:D:53:ALA:CA	2:D:72:ARG:NH1	2.50	0.71
1:A:1070:VAL:HB	1:A:1416:ILE:HD13	1.73	0.71
1:A:765:LYS:O	1:A:769:ILE:HG13	1.90	0.71
1:A:1816:LEU:HD21	1:A:1823:LYS:HB3	1.71	0.71
1:A:2109:GLN:HG2	1:A:2132:PHE:CE1	2.25	0.71
1:A:294:HIS:HB3	1:A:297:LEU:HB2	1.73	0.70
1:A:1950:LYS:HG3	1:A:1951:GLU:H	1.54	0.70
1:A:2200:TYR:HD1	1:A:2230:LYS:O	1.73	0.70
1:A:2245:TYR:CB	1:A:2266:PHE:HE2	2.05	0.70
1:A:74:LYS:HA	1:A:74:LYS:HZ3	1.54	0.70
1:A:1858:VAL:CG2	1:A:1867:PHE:HE2	2.04	0.70
4:F:33:THR:HG22	4:F:52:THR:HA	1.73	0.70
1:A:793:LYS:H	1:A:836:GLN:HE22	1.40	0.70
3:E:40:ALA:HB3	3:E:43:LYS:HD2	1.73	0.69
1:A:1092:ILE:CG2	1:A:1093:LEU:N	2.56	0.69
1:A:1650:VAL:HG23	1:A:1654:GLN:HE21	1.57	0.69
1:A:1739:ILE:CD1	1:A:1740:ARG:HG3	2.23	0.69
1:A:2295:GLY:HA2	1:A:2329:LEU:HD21	1.72	0.69
1:A:803:GLN:NE2	1:A:1798:LEU:O	2.25	0.69
1:A:2298:ASN:HA	1:A:2303:PHE:HD1	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:668:ASP:CG	1:A:669:VAL:H	1.95	0.69
1:A:1793:VAL:HA	1:A:1796:ILE:HD12	1.73	0.69
1:A:1848:PRO:HD2	1:A:1849:PRO:HD3	1.73	0.69
4:F:22:CYS:SG	4:F:78:THR:HG22	2.32	0.69
1:A:2101:GLY:HA2	1:A:2111:TYR:CE1	2.28	0.68
1:A:1486:VAL:HA	1:A:1495:ILE:HD12	1.75	0.68
1:A:2102:LEU:HD23	1:A:2102:LEU:N	2.08	0.68
1:A:576:ARG:NE	1:A:576:ARG:HA	2.09	0.68
1:A:2309:GLN:HG3	1:A:2317:GLU:HB2	1.74	0.68
1:A:578:TYR:H	1:A:646:LYS:HD3	1.57	0.68
1:A:409:LYS:O	1:A:413:ASP:HB2	1.94	0.68
1:A:1094:LEU:HD12	1:A:1094:LEU:O	1.93	0.67
1:A:1150:ASP:OD1	1:A:1229:ARG:NH1	2.26	0.67
1:A:1856:GLY:HA2	1:A:1866:TYR:CE1	2.29	0.67
1:A:1942:ASN:O	1:A:1944:ARG:NE	2.25	0.67
1:A:2033:THR:HG22	1:A:2034:GLU:N	2.09	0.67
1:A:120:ASP:CB	1:A:357:LYS:HD2	2.12	0.67
1:A:2199:VAL:CG2	1:A:2232:ALA:HB3	2.22	0.67
1:A:1706:THR:HB	1:A:1735:ASN:ND2	2.09	0.67
1:A:2193:VAL:CG2	1:A:2201:TYR:H	2.08	0.67
1:A:1918:ASN:HD22	1:A:1924:ILE:HG21	1.60	0.67
1:A:264:ASN:ND2	1:A:466:THR:HG21	2.10	0.66
1:A:848:LEU:HD11	1:A:1805:TYR:CD1	2.31	0.66
1:A:2090:TYR:HD2	1:A:2099:TYR:HD2	1.42	0.66
1:A:2104:LEU:HG	1:A:2108:GLY:HA3	1.78	0.66
1:A:1152:VAL:HG12	1:A:1166:GLY:HA3	1.76	0.66
1:A:1846:PHE:HB3	1:A:1851:ASN:HB2	1.77	0.65
1:A:2109:GLN:CG	1:A:2132:PHE:CZ	2.78	0.65
1:A:1489:LEU:HB2	1:A:1490:PRO:CD	2.27	0.65
1:A:162:ASN:OD1	1:A:162:ASN:N	2.26	0.65
1:A:532:PHE:CZ	1:A:536:LYS:HD2	2.32	0.65
1:A:1107:LEU:HB2	1:A:1111:GLU:O	1.97	0.65
1:A:1406:THR:HG22	1:A:1416:ILE:HG12	1.78	0.65
1:A:2122:PHE:HB3	1:A:2131:TYR:CE1	2.32	0.65
1:A:800:THR:OG1	1:A:1828:ASN:ND2	2.29	0.65
1:A:1510:TYR:CE2	1:A:1545:LEU:HD11	2.30	0.64
1:A:1310:ARG:HH12	1:A:1331:TYR:CB	2.10	0.64
1:A:1358:ILE:HD11	2:D:104:SER:O	1.97	0.64
1:A:1845:TYR:CE1	1:A:1860:VAL:CG2	2.80	0.64
2:D:2:VAL:HG12	2:D:116:VAL:HG21	1.78	0.64
1:A:1489:LEU:HB2	1:A:1490:PRO:HD2	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:64:VAL:CG1	2:D:68:PHE:CG	2.81	0.63
1:A:1310:ARG:NH1	1:A:1331:TYR:CG	2.56	0.63
1:A:2110:TYR:CD2	1:A:2132:PHE:CE2	2.87	0.63
1:A:2226:ASP:OD1	1:A:2232:ALA:HB2	1.99	0.63
1:A:1358:ILE:HG22	1:A:1362:LYS:O	1.99	0.63
1:A:2193:VAL:HG21	1:A:2200:TYR:HB2	1.79	0.63
1:A:576:ARG:HG3	1:A:577:GLY:N	2.09	0.63
1:A:1131:VAL:HG22	1:A:1148:GLN:HG3	1.80	0.63
1:A:2109:GLN:HA	1:A:2132:PHE:CE1	2.34	0.63
1:A:2137:ILE:HD12	1:A:2138:ILE:O	1.98	0.63
2:D:36:TRP:HD1	2:D:70:ILE:HD11	1.64	0.63
2:D:37:PHE:CE1	2:D:109:TRP:HD1	2.17	0.63
1:A:296:ASP:HA	1:A:299:LYS:HB2	1.80	0.63
1:A:1094:LEU:O	1:A:1095:VAL:HG23	1.98	0.63
1:A:2033:THR:HB	1:A:2036:GLY:O	1.99	0.63
1:A:2110:TYR:HD1	1:A:2112:PHE:CD1	2.16	0.63
4:F:3:GLN:HB2	4:F:25:THR:HB	1.80	0.63
4:F:63:VAL:HG12	4:F:66:ARG:HD3	1.81	0.63
1:A:451:ILE:HD12	1:A:451:ILE:O	1.98	0.62
2:D:29:LEU:HD12	2:D:72:ARG:HH21	1.64	0.62
4:F:37:TYR:OH	4:F:98:HIS:NE2	2.25	0.62
1:A:2018:PHE:HE1	1:A:2053:GLU:HA	1.64	0.62
1:A:1743:TRP:CH2	1:A:1797:ILE:HG23	2.34	0.62
2:D:24:ALA:CB	2:D:29:LEU:HD22	2.29	0.62
1:A:310:ALA:C	1:A:312:ASP:H	2.03	0.62
1:A:1516:ASP:OD1	1:A:1531:TYR:HE1	1.83	0.62
4:F:63:VAL:HG12	4:F:66:ARG:HG3	1.80	0.62
1:A:578:TYR:CD1	1:A:644:ARG:NE	2.64	0.62
1:A:1846:PHE:CE2	1:A:1853:LEU:HB3	2.35	0.62
1:A:1070:VAL:HB	1:A:1416:ILE:CD1	2.28	0.62
1:A:1842:SER:CB	1:A:1844:TYR:HE1	2.10	0.62
1:A:2033:THR:HG21	1:A:2038:LYS:CE	2.29	0.62
1:A:2042:HIS:CD2	1:A:2051:GLU:OE2	2.52	0.62
1:A:969:LEU:HD13	1:A:969:LEU:O	2.00	0.62
1:A:1739:ILE:HD13	1:A:1740:ARG:HG3	1.82	0.61
1:A:1187:HIS:CD2	1:A:1268:PHE:HB2	2.35	0.61
1:A:2266:PHE:CD1	1:A:2272:MET:HA	2.35	0.61
1:A:1187:HIS:C	1:A:1188:PHE:CD1	2.74	0.61
1:A:1494:LEU:HB3	1:A:1511:SER:CB	2.29	0.61
1:A:1178:GLY:C	1:A:1188:PHE:CB	2.68	0.61
1:A:1739:ILE:HG21	1:A:1844:TYR:CE2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1834:SER:HB2	1:A:1851:ASN:HD22	1.65	0.61
1:A:1838:TYR:HE1	1:A:1843:LEU:HD12	1.66	0.61
1:A:1409:ILE:HD11	1:A:1415:ALA:HB2	1.83	0.61
1:A:2010:TYR:CG	1:A:2033:THR:HG23	2.36	0.61
1:A:306:SER:O	1:A:308:LYS:N	2.33	0.61
1:A:307:VAL:HG12	1:A:307:VAL:O	2.00	0.61
1:A:855:TYR:HA	1:A:858:ASN:HD22	1.65	0.61
1:A:1719:ILE:HA	1:A:1767:ARG:HB3	1.82	0.61
1:A:1845:TYR:HB2	1:A:1867:PHE:CZ	2.36	0.61
1:A:533:GLU:OE2	1:A:545:GLY:HA3	2.00	0.61
1:A:951:LEU:HB3	1:A:1610:ASN:HD22	1.66	0.60
1:A:1948:GLU:HA	1:A:1958:TYR:CE1	2.36	0.60
1:A:2193:VAL:HG23	1:A:2200:TYR:N	2.10	0.60
3:E:85:LEU:HB2	3:E:86:LYS:CB	2.25	0.60
1:A:2266:PHE:HD1	1:A:2272:MET:HA	1.66	0.60
1:A:532:PHE:CE2	1:A:536:LYS:HD2	2.36	0.60
1:A:1187:HIS:C	1:A:1188:PHE:HD1	2.05	0.60
1:A:1373:LEU:HD11	1:A:1451:ILE:HD12	1.84	0.60
1:A:2112:PHE:HB2	1:A:2116:GLY:CA	2.27	0.60
1:A:2112:PHE:CB	1:A:2116:GLY:HA3	2.28	0.60
2:D:99:ARG:NH1	2:D:108:ARG:HG3	2.16	0.60
1:A:601:LYS:NZ	1:A:745:VAL:O	2.27	0.60
1:A:1092:ILE:HG22	1:A:1093:LEU:H	1.64	0.60
1:A:1487:SER:HB3	1:A:1494:LEU:CD1	2.32	0.60
1:A:2104:LEU:HG	1:A:2108:GLY:CA	2.32	0.60
2:D:29:LEU:HD12	2:D:29:LEU:O	2.01	0.60
1:A:586:GLN:HE21	1:A:665:ALA:HA	1.66	0.60
1:A:137:LEU:HB3	1:A:206:VAL:HG11	1.83	0.59
1:A:1956:MET:HB2	1:A:1986:MET:HB3	1.82	0.59
1:A:2315:ASN:ND2	1:A:2321:ILE:HG21	2.05	0.59
3:E:87:PRO:HA	3:E:109:VAL:HB	1.84	0.59
1:A:1453:PHE:CZ	1:A:1461:ILE:HD11	2.37	0.59
1:A:820:VAL:HA	1:A:823:ALA:HB3	1.83	0.59
1:A:17:PHE:HB2	1:A:1668:GLY:HA3	1.84	0.59
1:A:874:LYS:HA	1:A:877:ASN:HB3	1.85	0.59
1:A:325:LYS:HE3	1:A:360:ILE:HD11	1.84	0.59
1:A:1238:THR:HG22	1:A:1239:PRO:CD	2.30	0.59
1:A:100:PHE:HB2	1:A:129:VAL:HG22	1.84	0.59
1:A:1678:SER:CB	1:A:1706:THR:HG23	2.33	0.59
1:A:457:VAL:HA	1:A:463:ALA:HB1	1.84	0.58
1:A:471:GLY:O	1:A:474:ILE:HG12	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2211:GLY:CA	1:A:2225:PHE:O	2.51	0.58
2:D:45:ARG:NH1	2:D:117:TRP:CZ3	2.71	0.58
1:A:310:ALA:O	1:A:313:TRP:HD1	1.86	0.58
4:F:22:CYS:SG	4:F:78:THR:CG2	2.91	0.58
1:A:571:THR:CG2	1:A:573:SER:OG	2.51	0.58
1:A:2099:TYR:O	1:A:2112:PHE:HE2	1.86	0.58
1:A:1512:ASN:O	1:A:1514:LEU:HD22	2.02	0.58
1:A:1515:LYS:HE3	1:A:1531:TYR:CE2	2.39	0.58
3:E:63:VAL:HA	3:E:66:ARG:HD2	1.85	0.58
1:A:2026:MET:O	1:A:2027:GLN:NE2	2.34	0.58
3:E:66:ARG:HE	3:E:85:LEU:HD21	1.69	0.58
1:A:57:ASP:CG	1:A:76:LYS:NZ	2.57	0.58
1:A:1245:GLU:HB2	1:A:1249:THR:OG1	2.03	0.58
1:A:1251:LEU:HA	1:A:1254:ARG:HD3	1.84	0.58
1:A:2100:ILE:CG1	1:A:2114:ASP:HA	2.33	0.58
1:A:278:LYS:HG3	1:A:393:ASP:HA	1.85	0.58
1:A:21:GLU:HB3	1:A:63:TYR:HE2	1.69	0.58
1:A:1155:GLU:HB3	1:A:1164:VAL:HG22	1.86	0.58
1:A:1158:PHE:HD1	1:A:1216:LEU:HD13	1.69	0.58
1:A:1742:VAL:HG23	1:A:1801:THR:HG22	1.85	0.58
1:A:2311:THR:HB	1:A:2315:ASN:HD21	1.68	0.58
2:D:50:TYR:CE1	2:D:51:ILE:O	2.56	0.57
1:A:1858:VAL:HG21	1:A:1867:PHE:HE2	1.69	0.57
1:A:2122:PHE:HB3	1:A:2131:TYR:HE1	1.69	0.57
1:A:439:ILE:O	1:A:444:ASN:ND2	2.35	0.57
1:A:1472:GLU:HG2	1:A:1487:SER:HA	1.85	0.57
1:A:1908:TYR:HB2	1:A:1939:PHE:CZ	2.39	0.57
1:A:2202:PHE:HD1	1:A:2208:ILE:HA	1.69	0.57
1:A:1109:ASN:OD1	1:A:1110:ASN:N	2.37	0.57
1:A:1462:PRO:HA	1:A:1475:PHE:HD1	1.69	0.57
1:A:1813:ASP:C	1:A:1826:ILE:HD11	2.24	0.57
1:A:1918:ASN:ND2	1:A:1924:ILE:HG21	2.18	0.57
1:A:2107:ASP:HB3	1:A:2137:ILE:CG2	2.32	0.57
1:A:356:ASP:CG	1:A:357:LYS:N	2.58	0.57
1:A:1563:VAL:O	1:A:1566:ILE:HG22	2.05	0.57
1:A:2028:ILE:HD13	1:A:2042:HIS:CD2	2.39	0.57
1:A:2090:TYR:HD2	1:A:2099:TYR:CD2	2.20	0.57
1:A:325:LYS:HE3	1:A:360:ILE:CD1	2.35	0.57
1:A:472:PRO:HA	1:A:475:TYR:HD2	1.70	0.57
1:A:743:TYR:CB	1:A:755:LEU:HD11	2.25	0.57
1:A:1907:LYS:HE3	1:A:1943:TYR:O	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:7:SER:OG	3:E:21:SER:HB3	2.04	0.57
1:A:1170:ILE:HB	1:A:1203:ILE:HD11	1.85	0.57
1:A:883:HIS:HB2	1:A:981:ASN:HB3	1.87	0.57
1:A:1152:VAL:HB	1:A:1204:TYR:HE2	1.70	0.57
1:A:1180:THR:HG22	1:A:1187:HIS:O	2.05	0.57
1:A:403:GLN:HE21	1:A:407:ARG:HE	1.52	0.57
1:A:541:GLU:O	1:A:542:GLY:C	2.44	0.57
1:A:1203:ILE:O	1:A:1206:VAL:HG22	2.05	0.57
2:D:36:TRP:CD1	2:D:70:ILE:HD11	2.40	0.57
2:D:99:ARG:NH1	2:D:108:ARG:CG	2.68	0.57
1:A:576:ARG:CG	1:A:1807:ASP:OD2	2.52	0.56
1:A:2202:PHE:HE1	1:A:2208:ILE:HD12	1.70	0.56
1:A:582:ILE:HG12	1:A:598:LEU:HD23	1.87	0.56
1:A:1981:ASN:HB2	1:A:1987:GLN:HE21	1.70	0.56
1:A:303:LYS:HB2	1:A:303:LYS:NZ	2.20	0.56
1:A:848:LEU:CD1	1:A:1805:TYR:CD1	2.87	0.56
1:A:1788:LYS:HD2	1:A:1842:SER:OG	2.05	0.56
1:A:1796:ILE:O	1:A:1800:PHE:HB2	2.04	0.56
1:A:1698:ILE:O	1:A:1726:ILE:HG12	2.05	0.56
1:A:378:PHE:HB2	1:A:503:GLU:HB2	1.88	0.56
1:A:986:MET:O	1:A:990:VAL:HG23	2.05	0.56
1:A:1091:SER:O	1:A:1092:ILE:HG12	2.05	0.56
1:A:1977:LYS:HE3	1:A:2023:ASN:OD1	2.05	0.56
2:D:4:LEU:CD2	2:D:117:TRP:HA	2.35	0.56
1:A:625:THR:CB	1:A:628:GLU:CG	2.76	0.56
1:A:799:SER:HB3	1:A:1802:PRO:HG3	1.88	0.56
1:A:1563:VAL:HG11	1:A:1622:PHE:CD2	2.41	0.56
1:A:1698:ILE:HD12	1:A:1726:ILE:CG2	2.36	0.56
1:A:1751:ILE:HG22	1:A:1753:MET:HE2	1.87	0.56
1:A:1223:LEU:HB2	1:A:1302:PRO:HD3	1.87	0.56
2:D:55:ALA:C	2:D:57:THR:H	2.09	0.56
1:A:18:ARG:HD2	1:A:1669:ASP:HB3	1.88	0.56
1:A:2032:ASN:HA	1:A:2037:PHE:HD1	1.71	0.56
1:A:310:ALA:O	1:A:313:TRP:CD1	2.59	0.55
4:F:32:SER:CB	4:F:99:ASN:HB3	2.36	0.55
1:A:1453:PHE:CE1	1:A:1461:ILE:HD11	2.41	0.55
1:A:2194:ARG:HG2	1:A:2199:VAL:HG12	1.88	0.55
1:A:1876:SER:HB2	1:A:1889:PHE:CD2	2.41	0.55
1:A:1080:ILE:HG12	1:A:1220:LEU:HD21	1.86	0.55
1:A:2193:VAL:O	1:A:2199:VAL:HA	2.06	0.55
1:A:111:ALA:O	1:A:115:ILE:HG13	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1064:LYS:HA	1:A:1067:ILE:HD12	1.88	0.55
2:D:50:TYR:CD1	2:D:51:ILE:N	2.74	0.55
1:A:1510:TYR:HE2	1:A:1545:LEU:CD1	2.17	0.55
1:A:2233:CYS:SG	1:A:2237:ASN:ND2	2.79	0.55
2:D:37:PHE:CE2	2:D:117:TRP:HH2	2.23	0.55
4:F:51:PHE:HD1	4:F:71:ARG:HD3	1.72	0.55
1:A:2098:ALA:O	1:A:2099:TYR:C	2.45	0.55
1:A:96:LYS:HA	1:A:125:TYR:CD1	2.42	0.55
1:A:1671:SER:OG	1:A:1672:SER:N	2.40	0.55
1:A:2213:ILE:N	1:A:2224:TYR:O	2.39	0.55
2:D:52:SER:HB3	2:D:57:THR:HB	1.88	0.55
1:A:522:GLN:OE1	1:A:523:PHE:N	2.33	0.55
1:A:1612:ILE:HG12	1:A:1625:ILE:HG22	1.89	0.55
1:A:1998:HIS:CD2	1:A:2025:GLU:HA	2.42	0.55
1:A:2356:PHE:HE1	1:A:2363:LEU:HD13	1.70	0.55
1:A:378:PHE:CD1	1:A:382:SER:O	2.59	0.55
1:A:1056:LEU:HD12	1:A:1056:LEU:C	2.27	0.55
1:A:1739:ILE:HD11	1:A:1740:ARG:HG3	1.88	0.55
1:A:1743:TRP:CZ2	1:A:1797:ILE:HG23	2.42	0.55
1:A:766:GLU:O	1:A:770:ILE:HG12	2.07	0.54
1:A:379:ALA:HB2	1:A:384:ILE:HG22	1.90	0.54
2:D:107:ASN:HB3	2:D:110:LEU:HG	1.88	0.54
1:A:818:GLU:HA	1:A:821:MET:HB3	1.88	0.54
1:A:1739:ILE:CG2	1:A:1844:TYR:CE2	2.91	0.54
4:F:37:TYR:HD1	4:F:47:TRP:HA	1.73	0.54
1:A:1951:GLU:OE2	1:A:1954:GLY:HA2	2.08	0.54
1:A:2032:ASN:HB2	1:A:2037:PHE:HE1	1.72	0.54
1:A:538:ASN:HB2	4:F:100:ALA:O	2.08	0.54
1:A:1345:TRP:HB2	1:A:1403:VAL:HG12	1.90	0.54
1:A:1515:LYS:HB3	1:A:1531:TYR:CE1	2.43	0.54
4:F:63:VAL:HG12	4:F:66:ARG:CD	2.37	0.54
1:A:884:PHE:CD2	1:A:902:ILE:HG22	2.43	0.54
1:A:1901:SER:HB2	1:A:1906:PHE:CE1	2.42	0.54
4:F:13:GLU:HA	4:F:115:SER:HB3	1.90	0.54
1:A:17:PHE:HB2	1:A:1668:GLY:CA	2.38	0.54
1:A:1373:LEU:HD21	1:A:1417:ILE:HD11	1.89	0.54
1:A:58:THR:HG23	3:E:33:THR:HG21	1.90	0.54
1:A:1158:PHE:CD1	1:A:1216:LEU:HD13	2.43	0.54
1:A:1320:SER:O	1:A:1320:SER:OG	2.26	0.54
1:A:2102:LEU:H	1:A:2111:TYR:HD1	1.56	0.54
1:A:537:LYS:HE3	1:A:542:GLY:HA2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1308:TYR:HB2	2:D:101:PHE:CE2	2.43	0.53
1:A:1358:ILE:HD11	2:D:104:SER:HB2	1.90	0.53
1:A:1521:THR:HG22	1:A:1526:ASN:OD1	2.08	0.53
1:A:1579:SER:HA	1:A:1631:ASN:HD21	1.72	0.53
1:A:1740:ARG:NH2	1:A:1757:GLU:OE2	2.41	0.53
1:A:2153:ASP:OD1	1:A:2157:ILE:N	2.41	0.53
1:A:2211:GLY:HA2	1:A:2225:PHE:O	2.08	0.53
1:A:506:LYS:HE2	1:A:511:GLN:HE22	1.73	0.53
1:A:1048:GLU:HG3	1:A:1049:LEU:HD12	1.90	0.53
1:A:1155:GLU:HB3	1:A:1164:VAL:CG2	2.39	0.53
1:A:1188:PHE:CD1	1:A:1188:PHE:N	2.76	0.53
1:A:1843:LEU:C	1:A:1844:TYR:CD1	2.81	0.53
1:A:2212:TRP:HA	1:A:2212:TRP:CE3	2.44	0.53
1:A:74:LYS:HA	1:A:74:LYS:CE	2.37	0.53
1:A:277:LEU:HD11	1:A:388:LEU:HB3	1.90	0.53
1:A:409:LYS:O	1:A:413:ASP:CB	2.56	0.53
1:A:2033:THR:CG2	1:A:2034:GLU:N	2.71	0.53
1:A:2202:PHE:CD1	1:A:2208:ILE:HA	2.43	0.53
1:A:2112:PHE:CD1	1:A:2112:PHE:N	2.77	0.53
1:A:2181:ASN:HD22	1:A:2187:VAL:HG11	1.74	0.53
1:A:1187:HIS:HD2	1:A:1268:PHE:HB2	1.72	0.53
1:A:310:ALA:HB3	1:A:312:ASP:CG	2.29	0.53
1:A:429:MET:HE2	1:A:455:LEU:HB2	1.90	0.53
1:A:1310:ARG:HG3	1:A:1311:GLU:HG2	1.90	0.53
1:A:1701:ASP:HB3	1:A:1727:ASN:ND2	2.24	0.53
4:F:63:VAL:CG1	4:F:66:ARG:HH21	2.18	0.53
1:A:1515:LYS:HE2	1:A:1533:LEU:HG	1.91	0.53
1:A:1522:LYS:O	1:A:1525:VAL:HG12	2.09	0.53
4:F:63:VAL:HA	4:F:66:ARG:HD3	1.91	0.53
1:A:70:LYS:NZ	1:A:979:LEU:H	2.07	0.52
1:A:1379:GLU:HB2	1:A:1382:LYS:HB2	1.90	0.52
1:A:1835:GLY:O	1:A:1846:PHE:HB2	2.09	0.52
4:F:59:TYR:HB2	4:F:64:LYS:HD2	1.90	0.52
1:A:303:LYS:HB2	1:A:303:LYS:HZ1	1.73	0.52
1:A:541:GLU:O	1:A:543:ALA:N	2.42	0.52
1:A:586:GLN:NE2	1:A:665:ALA:HA	2.23	0.52
1:A:1194:ILE:HG12	1:A:1195:THR:H	1.73	0.52
1:A:1310:ARG:NH1	1:A:1331:TYR:CB	2.69	0.52
1:A:1994:ASN:O	1:A:1995:ASP:HB2	2.09	0.52
3:E:85:LEU:HD23	3:E:85:LEU:N	2.23	0.52
1:A:770:ILE:HG21	1:A:825:CYS:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1796:ILE:HG23	1:A:1800:PHE:CD2	2.44	0.52
1:A:2102:LEU:H	1:A:2102:LEU:CD2	2.20	0.52
1:A:154:LEU:O	1:A:157:PHE:HB2	2.09	0.52
1:A:1950:LYS:CG	1:A:1951:GLU:H	2.21	0.52
1:A:703:SER:HB2	1:A:740:ALA:HB3	1.90	0.52
1:A:852:SER:O	1:A:855:TYR:N	2.43	0.52
1:A:2336:PHE:CE1	1:A:2342:ALA:HB2	2.44	0.52
2:D:4:LEU:HD23	2:D:118:GLY:H	1.74	0.52
1:A:1049:LEU:O	1:A:1051:GLU:N	2.42	0.52
1:A:1827:ASN:OD1	1:A:1831:MET:N	2.40	0.52
1:A:1251:LEU:O	1:A:1255:ILE:HG13	2.10	0.52
1:A:576:ARG:CD	1:A:1807:ASP:OD2	2.58	0.52
3:E:7:SER:OG	3:E:21:SER:CB	2.58	0.52
4:F:82:MET:CB	4:F:85:LEU:HD21	2.38	0.52
1:A:1196:TYR:C	1:A:1198:GLU:N	2.62	0.51
1:A:2100:ILE:HD13	1:A:2100:ILE:C	2.31	0.51
1:A:952:ASP:O	1:A:953:THR:HG23	2.11	0.51
1:A:1130:LEU:O	1:A:1134:GLU:HB3	2.09	0.51
1:A:1827:ASN:OD1	1:A:1830:GLY:N	2.41	0.51
2:D:36:TRP:HD1	2:D:70:ILE:CD1	2.23	0.51
1:A:1814:LEU:HA	1:A:1826:ILE:HD11	1.91	0.51
1:A:1876:SER:HB2	1:A:1889:PHE:HD2	1.76	0.51
2:D:107:ASN:O	2:D:108:ARG:HB2	2.10	0.51
1:A:1441:SER:O	1:A:1445:GLN:OE1	2.29	0.51
1:A:2212:TRP:H	1:A:2225:PHE:HD1	1.58	0.51
1:A:2286:PHE:HD1	1:A:2292:MET:HA	1.74	0.51
2:D:52:SER:O	2:D:72:ARG:NH1	2.42	0.51
1:A:2111:TYR:O	1:A:2119:GLN:HB2	2.11	0.51
3:E:39:GLN:HB2	3:E:45:LEU:HD23	1.93	0.51
1:A:795:LEU:N	1:A:796:PRO:CD	2.74	0.51
1:A:1172:ARG:HD3	1:A:1198:GLU:HB3	1.90	0.51
2:D:34:ILE:O	2:D:51:ILE:HG22	2.10	0.51
1:A:547:ASP:OD1	1:A:547:ASP:N	2.44	0.51
1:A:378:PHE:CD2	1:A:503:GLU:OE1	2.64	0.51
1:A:1382:LYS:HG2	1:A:1391:ASN:OD1	2.11	0.51
1:A:1627:ASP:HB3	1:A:1633:GLN:HB2	1.93	0.51
1:A:2000:PHE:HE1	1:A:2006:MET:HB2	1.76	0.51
1:A:2110:TYR:CD1	1:A:2112:PHE:CD1	2.98	0.51
1:A:642:SER:O	1:A:687:ILE:HG22	2.11	0.50
1:A:1177:SER:OG	1:A:1189:PHE:HB2	2.10	0.50
2:D:4:LEU:CD1	2:D:116:VAL:HG13	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:4:LEU:HD11	2:D:116:VAL:HG13	1.93	0.50
1:A:1112:LEU:O	1:A:1280:LYS:HA	2.11	0.50
1:A:1886:ASN:HB2	1:A:1923:ALA:HB3	1.93	0.50
1:A:1901:SER:HB2	1:A:1906:PHE:HE1	1.75	0.50
1:A:1901:SER:CB	1:A:1906:PHE:CE1	2.94	0.50
1:A:1007:LYS:O	1:A:1010:GLU:HB2	2.12	0.50
1:A:1220:LEU:HA	1:A:1298:SER:O	2.12	0.50
1:A:1855:THR:HG21	1:A:1869:PRO:CA	2.41	0.50
1:A:1947:VAL:HA	1:A:1959:PHE:HB2	1.92	0.50
4:F:63:VAL:HG12	4:F:66:ARG:CG	2.41	0.50
1:A:725:SER:HB3	1:A:733:GLN:HB3	1.93	0.50
1:A:933:ILE:HD11	1:A:959:THR:O	2.12	0.50
1:A:1307:GLU:OE1	2:D:52:SER:HB2	2.11	0.50
1:A:1698:ILE:HD12	1:A:1726:ILE:HG21	1.93	0.50
1:A:1847:LYS:HG3	1:A:1848:PRO:CD	2.18	0.50
1:A:1856:GLY:HA2	1:A:1866:TYR:CD1	2.47	0.50
4:F:91:ALA:HB3	4:F:93:TYR:HE1	1.76	0.50
1:A:801:LEU:O	1:A:805:ILE:HG12	2.11	0.50
1:A:1196:TYR:O	1:A:1198:GLU:HB2	2.11	0.50
1:A:1492:VAL:HG12	1:A:1492:VAL:O	2.11	0.50
1:A:1739:ILE:HG22	1:A:1844:TYR:CZ	2.45	0.50
1:A:125:TYR:CE2	1:A:364:LEU:HD12	2.31	0.50
1:A:164:PRO:HG3	1:A:759:SER:HB3	1.94	0.50
1:A:795:LEU:N	1:A:796:PRO:HD2	2.27	0.50
1:A:1308:TYR:O	1:A:1312:LYS:HG2	2.12	0.50
1:A:1499:TYR:CE2	1:A:1504:LYS:HG3	2.46	0.50
1:A:1665:ASP:OD1	1:A:1670:ILE:O	2.30	0.50
1:A:2106:ASN:N	1:A:2106:ASN:ND2	2.60	0.50
1:A:466:THR:HA	1:A:469:LEU:HB3	1.94	0.49
1:A:970:ILE:HD11	1:A:987:LYS:HE3	1.94	0.49
1:A:1751:ILE:HG21	1:A:1753:MET:HE1	1.94	0.49
1:A:339:LEU:HB2	1:A:344:GLN:HE21	1.77	0.49
1:A:576:ARG:CG	1:A:577:GLY:H	2.19	0.49
1:A:1005:ALA:O	1:A:1008:VAL:HG22	2.12	0.49
1:A:1107:LEU:HD23	1:A:1107:LEU:H	1.77	0.49
1:A:2022:GLU:O	1:A:2023:ASN:ND2	2.43	0.49
1:A:2211:GLY:HA2	1:A:2225:PHE:CD1	2.47	0.49
1:A:1845:TYR:HE1	1:A:1860:VAL:CG2	2.23	0.49
1:A:2110:TYR:HD1	1:A:2112:PHE:CE1	2.30	0.49
1:A:2129:VAL:HG22	1:A:2183:TYR:CE1	2.47	0.49
1:A:2130:PHE:CD2	1:A:2157:ILE:HD13	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:8:GLN:CG	1:A:878:GLU:HB3	2.41	0.49
1:A:77:GLU:O	1:A:80:VAL:N	2.45	0.49
1:A:97:ASN:HB2	1:A:282:GLY:HA3	1.94	0.49
1:A:1152:VAL:O	1:A:1166:GLY:N	2.45	0.49
1:A:1738:SER:HA	1:A:1785:PHE:CD2	2.47	0.49
2:D:51:ILE:HG13	2:D:58:ILE:HG13	1.93	0.49
1:A:98:LEU:HB2	1:A:127:VAL:HG22	1.93	0.49
1:A:623:ASN:CG	1:A:624:PRO:HD2	2.33	0.49
1:A:969:LEU:HD13	1:A:969:LEU:C	2.32	0.49
1:A:1948:GLU:HA	1:A:1958:TYR:CD1	2.48	0.49
1:A:216:LYS:HG2	1:A:221:LEU:HD11	1.94	0.49
1:A:811:SER:O	1:A:813:ASP:N	2.44	0.49
1:A:1955:GLU:HB3	1:A:1985:VAL:HG13	1.93	0.49
1:A:33:GLU:HB3	1:A:48:LYS:NZ	2.28	0.49
1:A:567:ILE:HG22	1:A:600:ALA:HB2	1.95	0.49
1:A:518:ASN:O	1:A:521:TRP:HD1	1.96	0.49
1:A:2088:LYS:CD	1:A:2110:TYR:OH	2.60	0.49
1:A:2193:VAL:CG2	1:A:2200:TYR:H	2.16	0.49
1:A:57:ASP:CG	1:A:76:LYS:HZ1	2.16	0.49
1:A:1845:TYR:CE1	1:A:1860:VAL:HG21	2.47	0.49
1:A:2236:ILE:HA	1:A:2244:TYR:O	2.13	0.49
1:A:293:ILE:HG23	1:A:297:LEU:HD23	1.95	0.49
1:A:310:ALA:C	1:A:312:ASP:N	2.66	0.49
1:A:613:ILE:HG22	1:A:615:ASP:OD1	2.13	0.49
1:A:815:GLU:O	1:A:819:LYS:HB2	2.12	0.49
1:A:1844:TYR:CD1	1:A:1844:TYR:N	2.81	0.48
1:A:2090:TYR:CD2	1:A:2099:TYR:HD2	2.27	0.48
1:A:2223:TYR:HD1	1:A:2252:MET:HB3	1.78	0.48
1:A:1625:ILE:HG23	1:A:1635:TYR:HB2	1.95	0.48
1:A:1670:ILE:HD12	1:A:1671:SER:O	2.13	0.48
1:A:70:LYS:HZ2	1:A:979:LEU:H	1.61	0.48
1:A:848:LEU:HD11	1:A:1805:TYR:CG	2.48	0.48
1:A:1643:GLU:HA	1:A:1661:ASN:ND2	2.28	0.48
1:A:1970:LEU:HA	1:A:1979:TYR:HA	1.94	0.48
1:A:2208:ILE:CD1	1:A:2230:LYS:HG2	2.43	0.48
1:A:2285:TYR:HB2	1:A:2306:PHE:CE2	2.48	0.48
1:A:1028:GLU:O	1:A:1028:GLU:HG2	2.14	0.48
1:A:1179:HIS:HA	1:A:1188:PHE:HB3	1.95	0.48
1:A:1397:ASN:HA	1:A:1422:LEU:HD11	1.96	0.48
1:A:1484:LEU:HB3	1:A:1497:LYS:HD2	1.94	0.48
2:D:4:LEU:CD2	2:D:117:TRP:C	2.73	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1814:LEU:HA	1:A:1826:ILE:CD1	2.43	0.48
1:A:2090:TYR:CD2	1:A:2099:TYR:CD2	3.02	0.48
1:A:1373:LEU:CD1	1:A:1451:ILE:HD12	2.42	0.48
1:A:2032:ASN:HA	1:A:2037:PHE:CD1	2.48	0.48
1:A:2033:THR:CB	1:A:2036:GLY:O	2.60	0.48
1:A:547:ASP:HA	1:A:550:LEU:HD12	1.96	0.48
1:A:933:ILE:HD12	1:A:960:LEU:HD23	1.96	0.48
1:A:311:VAL:CG1	1:A:314:GLU:OE1	2.61	0.48
1:A:799:SER:O	1:A:803:GLN:HG2	2.14	0.48
1:A:1803:SER:OG	1:A:1804:TYR:N	2.46	0.48
2:D:22:CYS:HB3	2:D:79:VAL:HG12	1.96	0.48
1:A:369:VAL:HB	1:A:373:GLU:OE2	2.14	0.48
1:A:2212:TRP:CZ2	1:A:2239:ILE:HG21	2.48	0.48
2:D:32:TYR:CD2	2:D:98:ARG:HD2	2.49	0.48
1:A:771:LYS:O	1:A:774:SER:OG	2.26	0.47
1:A:830:ILE:HA	1:A:833:ILE:HG22	1.96	0.47
1:A:866:ILE:O	1:A:870:LEU:N	2.42	0.47
1:A:1440:ASN:O	1:A:1444:ILE:HG12	2.14	0.47
1:A:2256:LEU:HA	1:A:2264:TYR:O	2.14	0.47
1:A:118:TRP:HH2	1:A:509:ILE:HG22	1.79	0.47
1:A:130:PHE:HE1	1:A:238:ASN:ND2	2.12	0.47
1:A:308:LYS:O	1:A:308:LYS:HG3	2.13	0.47
1:A:897:PHE:CE2	1:A:917:THR:HA	2.49	0.47
1:A:1824:PHE:HE1	1:A:1852:ASN:HA	1.79	0.47
1:A:2088:LYS:CB	1:A:2118:MET:HG3	2.44	0.47
1:A:1814:LEU:CA	1:A:1826:ILE:HD11	2.44	0.47
4:F:52:THR:OG1	4:F:56:ALA:N	2.47	0.47
1:A:580:HIS:O	1:A:606:SER:HA	2.14	0.47
1:A:975:SER:O	1:A:976:LYS:HB2	2.14	0.47
1:A:1996:ASN:HB3	1:A:2025:GLU:HB2	1.97	0.47
2:D:4:LEU:O	2:D:6:GLU:CD	2.53	0.47
4:F:51:PHE:CD1	4:F:71:ARG:HD3	2.49	0.47
1:A:1174:GLU:HB3	1:A:1192:PRO:HG2	1.95	0.47
1:A:22:ASP:OD2	3:E:96:LYS:HG2	2.14	0.47
1:A:121:VAL:HG21	1:A:361:PHE:HB2	1.95	0.47
1:A:562:TYR:HD1	1:A:566:LYS:HD2	1.79	0.47
1:A:1652:ASN:O	1:A:1655:ASN:ND2	2.48	0.47
1:A:1838:TYR:CE1	1:A:1843:LEU:HD12	2.47	0.47
1:A:1857:PHE:CE1	1:A:1882:ILE:HD13	2.49	0.47
1:A:2209:GLU:HB3	1:A:2213:ILE:HD11	1.96	0.47
2:D:32:TYR:CG	2:D:98:ARG:HD2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:MET:HG2	1:A:45:LYS:HZ3	1.80	0.47
1:A:1858:VAL:HG22	1:A:1867:PHE:HE2	1.79	0.47
1:A:62:THR:HB	3:E:98:PRO:HB3	1.97	0.47
1:A:355:SER:OG	1:A:356:ASP:N	2.48	0.47
1:A:979:LEU:CD1	1:A:980:SER:H	2.19	0.47
1:A:1174:GLU:O	1:A:1192:PRO:CG	2.63	0.47
1:A:1670:ILE:CD1	1:A:1671:SER:H	2.26	0.47
1:A:2214:TYR:HB2	1:A:2222:LYS:HB2	1.97	0.47
2:D:4:LEU:HD22	2:D:117:TRP:N	2.29	0.47
1:A:167:ASN:O	1:A:169:THR:N	2.48	0.47
1:A:378:PHE:HD1	1:A:382:SER:O	1.98	0.47
1:A:286:ASP:OD2	1:A:386:GLN:HG2	2.14	0.46
1:A:575:GLU:O	1:A:576:ARG:O	2.33	0.46
1:A:1060:GLU:CD	1:A:1061:ILE:H	2.19	0.46
1:A:2110:TYR:HD2	1:A:2132:PHE:CE2	2.32	0.46
1:A:2213:ILE:HB	1:A:2224:TYR:HB2	1.97	0.46
3:E:55:ASN:OD1	3:E:71:ARG:NH2	2.46	0.46
1:A:311:VAL:HG12	1:A:314:GLU:HB3	1.96	0.46
1:A:576:ARG:HD2	1:A:1807:ASP:CG	2.36	0.46
1:A:1010:GLU:O	1:A:1014:THR:HB	2.16	0.46
1:A:1516:ASP:OD1	1:A:1531:TYR:CE1	2.67	0.46
1:A:558:THR:OG1	1:A:610:GLN:NE2	2.48	0.46
1:A:820:VAL:HA	1:A:823:ALA:CB	2.45	0.46
1:A:887:PHE:HB2	1:A:989:GLN:HG2	1.97	0.46
1:A:1185:ILE:HD13	1:A:1242:ARG:HD2	1.98	0.46
1:A:1238:THR:CG2	1:A:1239:PRO:HD2	2.36	0.46
1:A:1703:ILE:HB	1:A:1732:VAL:HG22	1.97	0.46
1:A:340:ASP:OD1	1:A:343:VAL:HG23	2.15	0.46
1:A:1180:THR:CG2	1:A:1187:HIS:HB2	2.45	0.46
1:A:1810:ILE:HG13	1:A:1810:ILE:O	2.15	0.46
1:A:2208:ILE:HD11	1:A:2230:LYS:HG2	1.96	0.46
4:F:59:TYR:HD2	4:F:64:LYS:HG3	1.80	0.46
1:A:76:LYS:O	1:A:79:LEU:HB2	2.15	0.46
1:A:712:TYR:CD1	1:A:713:PRO:HA	2.51	0.46
1:A:932:LYS:HB3	1:A:959:THR:HG21	1.96	0.46
1:A:969:LEU:HD11	1:A:983:SER:O	2.15	0.46
1:A:2046:ASP:O	1:A:2047:LEU:HB2	2.15	0.46
3:E:93:TYR:O	3:E:104:GLY:HA2	2.14	0.46
1:A:850:SER:HB2	1:A:854:ASN:HB2	1.96	0.46
1:A:1067:ILE:O	1:A:1070:VAL:HG22	2.16	0.46
1:A:2246:PHE:HD1	1:A:2252:MET:HA	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:13:GLN:HA	3:E:110:SER:HB3	1.98	0.46
1:A:594:ALA:HB2	1:A:756:LEU:HD23	1.98	0.46
1:A:1977:LYS:HD2	1:A:2023:ASN:HB2	1.98	0.46
1:A:1663:ASP:OD1	1:A:1663:ASP:O	2.34	0.46
1:A:2101:GLY:O	1:A:2102:LEU:C	2.53	0.46
1:A:1563:VAL:HG11	1:A:1622:PHE:CE2	2.51	0.46
1:A:1647:THR:HB	1:A:1657:ILE:HB	1.97	0.46
1:A:1679:GLN:HG3	1:A:1715:TYR:HD1	1.80	0.46
1:A:1734:ILE:HG21	1:A:1741:TYR:HE2	1.81	0.46
1:A:1814:LEU:N	1:A:1826:ILE:HD11	2.31	0.46
1:A:2107:ASP:OD1	1:A:2107:ASP:O	2.33	0.46
4:F:4:LEU:HG	4:F:24:VAL:HG22	1.98	0.46
1:A:1646:TYR:HE2	1:A:1681:TYR:HB2	1.81	0.45
1:A:1784:ASN:OD1	1:A:1790:ASP:N	2.48	0.45
1:A:1832:MET:HB3	1:A:1851:ASN:HD21	1.81	0.45
1:A:2303:PHE:HB2	1:A:2342:ALA:HB3	1.97	0.45
2:D:83:MET:HE2	2:D:94:TYR:CE2	2.51	0.45
1:A:175:ARG:O	1:A:179:ILE:HG13	2.16	0.45
1:A:590:ILE:HG21	1:A:654:HIS:CE1	2.51	0.45
1:A:1619:ILE:HG21	1:A:1639:PHE:HD1	1.82	0.45
1:A:2245:TYR:HB3	1:A:2266:PHE:CE2	2.42	0.45
1:A:2315:ASN:HD22	1:A:2321:ILE:CG2	2.11	0.45
3:E:7:SER:O	3:E:21:SER:N	2.45	0.45
4:F:27:SER:OG	4:F:28:SER:N	2.49	0.45
1:A:1993:ILE:HG13	1:A:1998:HIS:CE1	2.52	0.45
1:A:2221:ASP:HB3	1:A:2223:TYR:HE2	1.80	0.45
1:A:2235:GLY:O	1:A:2246:PHE:N	2.40	0.45
1:A:377:ALA:HB2	1:A:387:ALA:HB3	1.97	0.45
1:A:880:GLU:O	1:A:883:HIS:HD2	1.98	0.45
1:A:967:GLN:NE2	1:A:970:ILE:HG21	2.31	0.45
1:A:1140:LEU:HB3	1:A:1144:VAL:HG13	1.98	0.45
1:A:1240:GLY:O	1:A:1241:LEU:HB2	2.15	0.45
1:A:1835:GLY:H	1:A:1846:PHE:HB2	1.81	0.45
1:A:1999:TYR:HB3	1:A:2020:PHE:CZ	2.52	0.45
1:A:305:ASP:O	1:A:306:SER:CB	2.65	0.45
1:A:1195:THR:HA	1:A:1196:TYR:HA	1.52	0.45
1:A:97:ASN:ND2	1:A:280:ILE:HG12	2.32	0.45
1:A:526:GLU:OE1	1:A:702:PHE:HB2	2.17	0.45
1:A:1205:ASP:OD1	1:A:1205:ASP:N	2.41	0.45
1:A:2033:THR:HG22	1:A:2035:ASP:H	1.81	0.45
1:A:44:GLU:HA	1:A:47:LEU:HD12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:175:ARG:HE	1:A:179:ILE:HD11	1.82	0.45
1:A:382:SER:OG	1:A:383:ILE:N	2.49	0.45
1:A:1855:THR:HG21	1:A:1869:PRO:HA	1.98	0.45
1:A:301:ILE:HG21	1:A:347:PHE:HE1	1.82	0.45
1:A:929:GLU:O	1:A:933:ILE:HG12	2.17	0.45
1:A:936:THR:HG21	1:A:960:LEU:HD21	1.99	0.45
1:A:1067:ILE:HG23	1:A:1464:SER:HB2	1.98	0.45
1:A:1378:ILE:HG12	1:A:1419:VAL:HG21	1.98	0.45
1:A:1967:PHE:HB3	1:A:1971:ASN:HD22	1.82	0.45
1:A:2080:TRP:HZ3	1:A:2110:TYR:HH	1.59	0.45
1:A:2088:LYS:HB3	1:A:2118:MET:CG	2.47	0.45
2:D:119:ARG:HG2	2:D:119:ARG:HH11	1.82	0.45
1:A:182:LYS:HA	1:A:185:ASN:HD22	1.82	0.45
1:A:866:ILE:O	1:A:870:LEU:HB2	2.17	0.45
1:A:590:ILE:HG21	1:A:654:HIS:HE1	1.82	0.44
1:A:2240:ASP:O	1:A:2242:ILE:HD12	2.17	0.44
1:A:539:TYR:HD1	1:A:540:PHE:CD2	2.34	0.44
1:A:1052:THR:C	1:A:1055:PRO:HD2	2.37	0.44
1:A:1708:VAL:HA	1:A:1715:TYR:CE1	2.51	0.44
1:A:1760:LYS:O	1:A:1763:GLN:NE2	2.49	0.44
1:A:741:ASN:OD1	1:A:776:LYS:HD3	2.16	0.44
1:A:1837:ILE:HG12	1:A:1838:TYR:N	2.32	0.44
1:A:1967:PHE:HB3	1:A:1971:ASN:ND2	2.32	0.44
1:A:2010:TYR:CD1	1:A:2033:THR:HG23	2.51	0.44
1:A:2171:TYR:HB2	1:A:2202:PHE:CE2	2.52	0.44
4:F:23:VAL:CG1	4:F:77:MET:HG3	2.43	0.44
1:A:257:GLN:NE2	1:A:412:ASN:HD21	2.15	0.44
1:A:984:VAL:O	1:A:988:VAL:HG23	2.16	0.44
1:A:1094:LEU:HD12	1:A:1094:LEU:C	2.37	0.44
1:A:1868:ASN:O	1:A:1870:ILE:N	2.51	0.44
1:A:2110:TYR:HD2	1:A:2132:PHE:CD2	2.36	0.44
1:A:2132:PHE:CE1	1:A:2136:GLY:O	2.71	0.44
1:A:2171:TYR:HB2	1:A:2202:PHE:HE2	1.82	0.44
1:A:37:MET:HG3	1:A:40:ASN:HD22	1.82	0.44
1:A:57:ASP:CG	1:A:76:LYS:HZ3	2.21	0.44
1:A:168:HIS:O	1:A:171:PHE:HB3	2.18	0.44
1:A:239:ASP:OD1	1:A:240:VAL:N	2.49	0.44
1:A:576:ARG:HA	1:A:576:ARG:HE	1.79	0.44
1:A:1357:THR:CG2	1:A:1364:LYS:HD3	2.48	0.44
1:A:1999:TYR:HB3	1:A:2020:PHE:HZ	1.82	0.44
1:A:2026:MET:CE	1:A:2052:GLY:HA3	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2112:PHE:C	1:A:2113:ASN:O	2.54	0.44
1:A:689:PRO:HD2	1:A:728:MET:SD	2.58	0.44
1:A:1054:ASP:N	1:A:1055:PRO:HD2	2.33	0.44
1:A:1670:ILE:HD12	1:A:1671:SER:N	2.29	0.44
1:A:529:LYS:CD	1:A:742:GLN:HE22	2.31	0.44
1:A:1351:ASN:OD1	1:A:1365:LYS:NZ	2.51	0.44
1:A:2216:MET:HB3	1:A:2219:GLU:O	2.17	0.44
2:D:68:PHE:CD1	2:D:83:MET:HA	2.53	0.44
1:A:576:ARG:NE	1:A:576:ARG:CA	2.79	0.44
1:A:776:LYS:HE3	1:A:778:TYR:OH	2.18	0.44
1:A:1665:ASP:CG	1:A:1670:ILE:O	2.56	0.44
1:A:2214:TYR:O	1:A:2222:LYS:CB	2.66	0.44
2:D:50:TYR:CE1	2:D:51:ILE:C	2.91	0.44
1:A:880:GLU:O	1:A:883:HIS:CD2	2.71	0.44
1:A:1627:ASP:OD1	1:A:1631:ASN:N	2.33	0.44
1:A:1633:GLN:HG2	1:A:1654:GLN:HE22	1.82	0.44
1:A:1860:VAL:N	1:A:1863:ASP:O	2.47	0.44
3:E:66:ARG:HE	3:E:85:LEU:CD2	2.29	0.44
1:A:999:LEU:HA	1:A:1002:ILE:HD12	1.99	0.43
1:A:1857:PHE:HE1	1:A:1882:ILE:HD13	1.82	0.43
1:A:2130:PHE:HB3	1:A:2157:ILE:HA	2.00	0.43
1:A:2200:TYR:CD1	1:A:2230:LYS:O	2.63	0.43
1:A:264:ASN:HD21	1:A:466:THR:HG21	1.81	0.43
1:A:1484:LEU:HD21	1:A:1526:ASN:HB3	2.01	0.43
1:A:1646:TYR:HE2	1:A:1681:TYR:CB	2.31	0.43
1:A:2265:TYR:HB3	1:A:2286:PHE:CE2	2.52	0.43
1:A:151:ASN:OD1	4:F:100:ALA:HB2	2.18	0.43
1:A:377:ALA:HA	1:A:504:PHE:HB3	2.00	0.43
1:A:1141:ASP:O	1:A:1143:LYS:HG2	2.18	0.43
1:A:1960:SER:HB3	1:A:1964:GLY:H	1.82	0.43
1:A:1740:ARG:HH21	1:A:1756:SER:HB3	1.84	0.43
1:A:1843:LEU:C	1:A:1844:TYR:HD1	2.22	0.43
1:A:1848:PRO:HG2	1:A:1849:PRO:CD	2.43	0.43
1:A:2212:TRP:HA	1:A:2212:TRP:HE3	1.83	0.43
3:E:66:ARG:NE	3:E:85:LEU:HD21	2.33	0.43
1:A:378:PHE:HD2	1:A:503:GLU:OE1	2.00	0.43
1:A:929:GLU:HA	1:A:932:LYS:HB2	2.00	0.43
1:A:1287:ASN:HA	1:A:1314:SER:HB3	2.00	0.43
1:A:2031:PHE:O	1:A:2037:PHE:HA	2.18	0.43
1:A:2305:TYR:HB2	1:A:2336:PHE:CZ	2.53	0.43
3:E:9:GLY:HA3	3:E:18:LEU:CD2	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:584:GLN:OE1	1:A:610:GLN:HG2	2.19	0.43
1:A:1004:ASP:O	1:A:1008:VAL:HG13	2.18	0.43
4:F:98:HIS:HA	4:F:104:SER:HB2	2.01	0.43
1:A:716:LEU:O	1:A:720:VAL:HG22	2.18	0.43
1:A:1648:LEU:HB2	1:A:1656:MET:SD	2.59	0.43
1:A:2264:TYR:HE1	1:A:2291:VAL:HG22	1.84	0.43
2:D:4:LEU:HD21	2:D:96:CYS:O	2.13	0.43
1:A:1092:ILE:HG23	1:A:1093:LEU:H	1.78	0.43
1:A:585:LEU:HD22	1:A:651:PHE:HB3	2.01	0.43
1:A:884:PHE:HD2	1:A:902:ILE:HG22	1.83	0.43
1:A:897:PHE:HE2	1:A:917:THR:HA	1.84	0.43
3:E:5:VAL:O	3:E:23:ALA:N	2.51	0.43
1:A:17:PHE:CB	1:A:1668:GLY:HA3	2.48	0.43
1:A:539:TYR:CE2	4:F:98:HIS:O	2.71	0.43
1:A:1108:VAL:HG23	1:A:1109:ASN:H	1.84	0.43
1:A:1755:THR:O	1:A:1755:THR:HG22	2.17	0.43
1:A:1858:VAL:HG22	1:A:1867:PHE:CE2	2.54	0.43
1:A:1112:LEU:HD12	1:A:1283:TYR:HE2	1.84	0.42
1:A:1800:PHE:HA	1:A:1840:ASN:HA	2.00	0.42
1:A:1976:ASP:OD2	1:A:2005:VAL:HB	2.19	0.42
2:D:24:ALA:HB1	2:D:27:PHE:CZ	2.53	0.42
2:D:27:PHE:N	2:D:27:PHE:CD1	2.86	0.42
1:A:77:GLU:O	1:A:80:VAL:HB	2.19	0.42
1:A:1104:ILE:HD12	1:A:1104:ILE:H	1.84	0.42
1:A:1237:TRP:HZ3	1:A:1272:ALA:O	2.02	0.42
1:A:1372:ILE:O	1:A:1375:THR:OG1	2.29	0.42
1:A:1514:LEU:HD22	1:A:1514:LEU:N	2.35	0.42
1:A:1674:VAL:HG12	1:A:1702:GLU:HB3	2.01	0.42
1:A:2088:LYS:HB3	1:A:2118:MET:HG3	2.01	0.42
1:A:2106:ASN:N	1:A:2106:ASN:HD22	2.16	0.42
2:D:24:ALA:CB	2:D:29:LEU:CD2	2.86	0.42
4:F:52:THR:HG1	4:F:56:ALA:H	1.63	0.42
1:A:142:LYS:O	1:A:146:ILE:HG13	2.20	0.42
1:A:581:TYR:CE1	1:A:607:ILE:HB	2.54	0.42
1:A:978:SER:HB3	1:A:1662:TYR:HE2	1.83	0.42
1:A:1409:ILE:CD1	1:A:1415:ALA:HB2	2.46	0.42
1:A:1592:LYS:HG2	1:A:1605:PHE:CE2	2.55	0.42
1:A:1613:ILE:HG23	1:A:1624:PHE:HB2	2.00	0.42
1:A:2110:TYR:CD1	1:A:2112:PHE:CE1	3.07	0.42
2:D:64:VAL:HG11	2:D:68:PHE:CD1	2.51	0.42
1:A:3:LEU:HD11	1:A:35:HIS:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1757:GLU:HG3	1:A:1764:VAL:HG23	2.01	0.42
1:A:1817:VAL:HB	1:A:1819:LEU:HD23	2.00	0.42
1:A:1825:TYR:HB3	1:A:1833:VAL:HG11	2.00	0.42
1:A:2102:LEU:N	1:A:2102:LEU:CD2	2.78	0.42
1:A:2229:THR:O	1:A:2230:LYS:HB2	2.18	0.42
1:A:20:GLN:HG3	1:A:24:TYR:CE2	2.54	0.42
1:A:461:PRO:HA	1:A:523:PHE:CD2	2.55	0.42
1:A:1233:TRP:CE3	1:A:1276:ILE:HG12	2.54	0.42
1:A:1308:TYR:HB2	2:D:101:PHE:HE2	1.83	0.42
1:A:441:ASN:O	1:A:445:ILE:HB	2.19	0.42
1:A:1349:VAL:HB	1:A:1352:VAL:HG22	2.00	0.42
1:A:1358:ILE:CD1	2:D:104:SER:HB2	2.49	0.42
1:A:1563:VAL:HG11	1:A:1622:PHE:HD2	1.84	0.42
1:A:1616:THR:HG22	1:A:1621:GLN:HB3	2.01	0.42
1:A:1694:ILE:HG22	1:A:1696:PRO:HD3	2.02	0.42
1:A:1881:ILE:O	1:A:1882:ILE:HG13	2.19	0.42
2:D:29:LEU:CD1	2:D:72:ARG:HH21	2.31	0.42
1:A:522:GLN:OE1	1:A:522:GLN:HA	2.09	0.42
1:A:552:PHE:HB2	1:A:554:GLN:HG2	2.02	0.42
1:A:593:GLU:OE1	1:A:593:GLU:HA	2.20	0.42
1:A:2221:ASP:HB3	1:A:2223:TYR:CE2	2.54	0.42
2:D:6:GLU:CD	2:D:118:GLY:HA3	2.38	0.42
1:A:407:ARG:HA	1:A:410:ILE:HD12	2.01	0.42
1:A:481:ASP:OD1	1:A:489:SER:HB3	2.19	0.42
1:A:539:TYR:HD1	1:A:540:PHE:CE2	2.37	0.42
1:A:916:LYS:HG3	1:A:918:ILE:HB	2.02	0.42
1:A:2021:ALA:O	1:A:2024:GLY:N	2.53	0.42
1:A:2233:CYS:SG	1:A:2237:ASN:HB2	2.59	0.42
1:A:1204:TYR:HD1	1:A:1204:TYR:HA	1.72	0.42
1:A:1357:THR:HG23	1:A:1364:LYS:HD3	2.01	0.42
1:A:1825:TYR:O	1:A:1833:VAL:HG12	2.18	0.42
1:A:1848:PRO:N	1:A:1849:PRO:HD3	2.35	0.42
1:A:2211:GLY:N	1:A:2225:PHE:O	2.52	0.42
2:D:4:LEU:CB	2:D:118:GLY:HA2	2.43	0.42
1:A:920:SER:O	1:A:924:ASN:ND2	2.53	0.42
1:A:1373:LEU:CD2	1:A:1417:ILE:HD11	2.50	0.42
1:A:1866:TYR:CG	1:A:1882:ILE:HD11	2.55	0.42
1:A:1894:VAL:CG2	1:A:1896:GLN:HE21	2.33	0.42
1:A:1938:TYR:HB3	1:A:1959:PHE:HE2	1.85	0.42
2:D:12:VAL:HG21	2:D:86:LEU:CD1	2.50	0.42
4:F:60:THR:HG23	4:F:62:SER:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:151:ASN:ND2	4:F:31:THR:O	2.53	0.41
1:A:743:TYR:HB3	1:A:755:LEU:HD13	1.92	0.41
1:A:862:LEU:O	1:A:865:SER:HB2	2.20	0.41
1:A:1173:MET:HB2	1:A:1262:GLU:O	2.20	0.41
1:A:1178:GLY:O	1:A:1188:PHE:CA	2.68	0.41
1:A:1847:LYS:CG	1:A:1848:PRO:HD2	2.20	0.41
1:A:408:TYR:HE1	1:A:469:LEU:HD21	1.85	0.41
1:A:440:ALA:HB1	1:A:445:ILE:HD13	2.01	0.41
1:A:515:GLN:HA	1:A:518:ASN:HB2	2.01	0.41
1:A:1358:ILE:H	1:A:1358:ILE:HG12	1.70	0.41
1:A:2033:THR:CG2	1:A:2034:GLU:H	2.33	0.41
1:A:62:THR:CG2	3:E:98:PRO:HB3	2.51	0.41
1:A:273:ARG:NH1	1:A:385:ASN:O	2.49	0.41
1:A:1223:LEU:HB3	1:A:1315:TYR:CE1	2.54	0.41
1:A:1950:LYS:HG3	1:A:1951:GLU:N	2.28	0.41
2:D:22:CYS:HB3	2:D:79:VAL:CG1	2.50	0.41
1:A:539:TYR:CD1	1:A:540:PHE:CE2	3.08	0.41
1:A:563:LEU:HD21	1:A:599:PHE:CD2	2.56	0.41
1:A:976:LYS:HD3	1:A:976:LYS:HA	1.89	0.41
1:A:1373:LEU:HD11	1:A:1451:ILE:CD1	2.49	0.41
3:E:50:SER:O	3:E:58:ILE:CG2	2.68	0.41
4:F:52:THR:HG1	4:F:55:GLY:H	1.63	0.41
1:A:581:TYR:HB3	1:A:649:LEU:HG	2.02	0.41
1:A:2080:TRP:CH2	1:A:2109:GLN:OE1	2.74	0.41
4:F:92:VAL:HG22	4:F:111:GLN:HA	2.02	0.41
1:A:107:ILE:CD1	1:A:232:VAL:HB	2.50	0.41
1:A:668:ASP:OD2	1:A:669:VAL:HG23	2.20	0.41
1:A:910:ILE:HG22	1:A:912:VAL:HG23	2.02	0.41
1:A:1061:ILE:HD12	1:A:1061:ILE:O	2.21	0.41
1:A:1115:ARG:HH11	1:A:1120:LYS:HB3	1.86	0.41
1:A:1265:TRP:O	1:A:1275:LEU:HG	2.21	0.41
1:A:1513:ASN:OD1	1:A:1514:LEU:N	2.54	0.41
1:A:1757:GLU:HB2	1:A:1763:GLN:HG2	2.02	0.41
1:A:1850:VAL:O	1:A:1851:ASN:CG	2.59	0.41
1:A:823:ALA:O	1:A:826:GLU:HB3	2.21	0.41
1:A:1836:LEU:HD21	1:A:1843:LEU:HD21	2.02	0.41
1:A:1886:ASN:HB2	1:A:1923:ALA:CB	2.50	0.41
1:A:2037:PHE:HB2	1:A:2076:ALA:HB3	2.03	0.41
1:A:102:TRP:CD1	1:A:107:ILE:HG12	2.55	0.41
1:A:882:SER:HA	1:A:903:ASN:HA	2.02	0.41
1:A:1073:THR:CG2	1:A:1346:ILE:HD12	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1720:VAL:HB	1:A:1768:PHE:HD1	1.85	0.41
1:A:2118:MET:O	1:A:2120:VAL:HG22	2.21	0.41
2:D:27:PHE:N	2:D:27:PHE:HD1	2.19	0.41
1:A:378:PHE:CZ	1:A:500:ARG:HG2	2.56	0.41
1:A:397:SER:O	1:A:401:ILE:HG13	2.21	0.41
1:A:818:GLU:OE1	1:A:818:GLU:N	2.35	0.41
1:A:1310:ARG:HG3	1:A:1311:GLU:N	2.35	0.41
1:A:1698:ILE:HD12	1:A:1726:ILE:HG23	2.03	0.41
1:A:1751:ILE:CG2	1:A:1753:MET:CE	2.99	0.41
1:A:1973:ILE:O	1:A:1976:ASP:O	2.38	0.41
1:A:82:GLU:O	1:A:86:LEU:HB2	2.21	0.41
1:A:633:ASP:O	1:A:634:LYS:HB2	2.21	0.41
1:A:1227:PRO:HD2	1:A:1229:ARG:HH21	1.86	0.41
1:A:1930:LEU:HD22	1:A:1939:PHE:HE2	1.86	0.41
1:A:2025:GLU:H	1:A:2025:GLU:HG2	1.67	0.41
2:D:51:ILE:HD12	2:D:70:ILE:HG23	2.02	0.41
4:F:66:ARG:CZ	4:F:66:ARG:HB3	2.51	0.41
1:A:1477:ASN:HB3	1:A:1480:THR:OG1	2.21	0.40
1:A:1662:TYR:C	1:A:1664:LEU:H	2.25	0.40
1:A:2033:THR:HG22	1:A:2034:GLU:H	1.84	0.40
1:A:2223:TYR:CD1	1:A:2252:MET:HB3	2.56	0.40
2:D:4:LEU:CD2	2:D:117:TRP:CA	2.82	0.40
1:A:319:GLU:OE1	1:A:336:PHE:N	2.54	0.40
1:A:407:ARG:O	1:A:410:ILE:HB	2.20	0.40
1:A:491:ASP:OD1	1:A:492:THR:N	2.54	0.40
1:A:1979:TYR:HB3	1:A:2000:PHE:CE2	2.57	0.40
1:A:2131:TYR:CE2	1:A:2145:ILE:HD13	2.57	0.40
1:A:2201:TYR:O	1:A:2201:TYR:CG	2.74	0.40
1:A:2254:THR:OG1	1:A:2267:ASN:O	2.38	0.40
1:A:793:LYS:H	1:A:836:GLN:NE2	2.13	0.40
1:A:828:ASN:O	1:A:832:ASN:HB2	2.20	0.40
1:A:1484:LEU:HD22	1:A:1497:LYS:NZ	2.36	0.40
1:A:2225:PHE:CD1	1:A:2225:PHE:C	2.92	0.40
1:A:782:ASN:HD22	1:A:783:PRO:HD2	1.86	0.40
1:A:816:LEU:HA	1:A:819:LYS:NZ	2.36	0.40
1:A:2130:PHE:HD2	1:A:2157:ILE:HD13	1.84	0.40
1:A:2194:ARG:HG2	1:A:2199:VAL:CG1	2.51	0.40
2:D:12:VAL:HG21	2:D:86:LEU:HD13	2.04	0.40
2:D:55:ALA:O	2:D:57:THR:N	2.49	0.40
1:A:972:TYR:O	1:A:977:GLU:OE1	2.39	0.40
1:A:1321:GLY:HA2	1:A:1343:ASP:HB3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1850:VAL:O	1:A:1851:ASN:OD1	2.38	0.40
1:A:1915:LEU:H	1:A:1918:ASN:ND2	2.20	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2340/2373 (99%)	2001 (86%)	319 (14%)	20 (1%)	17	54
2	D	124/153 (81%)	112 (90%)	12 (10%)	0	100	100
3	E	105/137 (77%)	94 (90%)	11 (10%)	0	100	100
4	F	114/142 (80%)	98 (86%)	16 (14%)	0	100	100
All	All	2683/2805 (96%)	2305 (86%)	358 (13%)	20 (1%)	22	60

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	164	PRO
1	A	306	SER
1	A	307	VAL
1	A	574	SER
1	A	576	ARG
1	A	168	HIS
1	A	522	GLN
1	A	542	GLY
1	A	1510	TYR
1	A	1949	TRP
1	A	1512	ASN
1	A	1849	PRO
1	A	2222	LYS

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Mol	Chain	Res	Type
1	A	166	PHE
1	A	1670	ILE
1	A	1505	PRO
1	A	2228	GLU
1	A	1092	ILE
1	A	2125	ILE
1	A	304	PRO

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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	2113/2142 (99%)	2030 (96%)	83 (4%)	32	59
2	D	102/127 (80%)	93 (91%)	9 (9%)	10	37
3	E	89/117 (76%)	86 (97%)	3 (3%)	37	62
4	F	95/119 (80%)	92 (97%)	3 (3%)	39	63
All	All	2399/2505 (96%)	2301 (96%)	98 (4%)	30	58

All (98) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	6	ARG
1	A	74	LYS
1	A	75	PHE
1	A	139	ASN
1	A	162	ASN
1	A	163	ASP
1	A	165	GLU
1	A	303	LYS
1	A	418	ILE
1	A	521	TRP
1	A	522	GLN
1	A	544	LEU
1	A	553	SER
1	A	573	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	576	ARG
1	A	625	THR
1	A	626	ASP
1	A	649	LEU
1	A	668	ASP
1	A	692	ILE
1	A	782	ASN
1	A	811	SER
1	A	828	ASN
1	A	837	VAL
1	A	851	ASP
1	A	873	LEU
1	A	902	ILE
1	A	953	THR
1	A	959	THR
1	A	979	LEU
1	A	1007	LYS
1	A	1048	GLU
1	A	1084	LEU
1	A	1100	ILE
1	A	1107	LEU
1	A	1196	TYR
1	A	1205	ASP
1	A	1358	ILE
1	A	1529	THR
1	A	1571	ASN
1	A	1577	ASN
1	A	1628	GLU
1	A	1662	TYR
1	A	1667	SER
1	A	1680	LYS
1	A	1706	THR
1	A	1708	VAL
1	A	1724	ASN
1	A	1739	ILE
1	A	1816	LEU
1	A	1817	VAL
1	A	1839	ILE
1	A	1844	TYR
1	A	1853	LEU
1	A	1855	THR
1	A	1864	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1933	ASP
1	A	1940	GLU
1	A	1944	ARG
1	A	1973	ILE
1	A	1975	ASP
1	A	2023	ASN
1	A	2025	GLU
1	A	2027	GLN
1	A	2042	HIS
1	A	2100	ILE
1	A	2102	LEU
1	A	2104	LEU
1	A	2105	ILE
1	A	2106	ASN
1	A	2110	TYR
1	A	2112	PHE
1	A	2114	ASP
1	A	2115	ASP
1	A	2120	VAL
1	A	2192	LEU
1	A	2193	VAL
1	A	2228	GLU
1	A	2243	LYS
1	A	2262	ASN
1	A	2330	ASP
1	A	2347	VAL
1	A	2365	ILE
2	D	27	PHE
2	D	34	ILE
2	D	52	SER
2	D	58	ILE
2	D	59	LEU
2	D	85	SER
2	D	98	ARG
2	D	106	VAL
2	D	119	ARG
3	E	53	LYS
3	E	57	GLU
3	E	85	LEU
4	F	63	VAL
4	F	66	ARG
4	F	95	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (43) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	8	GLN
1	A	40	ASN
1	A	139	ASN
1	A	167	ASN
1	A	168	HIS
1	A	185	ASN
1	A	257	GLN
1	A	324	HIS
1	A	344	GLN
1	A	403	GLN
1	A	412	ASN
1	A	511	GLN
1	A	515	GLN
1	A	518	ASN
1	A	554	GLN
1	A	597	ASN
1	A	602	ASN
1	A	610	GLN
1	A	742	GLN
1	A	803	GLN
1	A	858	ASN
1	A	875	GLN
1	A	967	GLN
1	A	1442	ASN
1	A	1445	GLN
1	A	1571	ASN
1	A	1610	ASN
1	A	1654	GLN
1	A	1727	ASN
1	A	1735	ASN
1	A	1770	ASN
1	A	1828	ASN
1	A	1851	ASN
1	A	1886	ASN
1	A	1896	GLN
1	A	1935	ASN
1	A	1971	ASN
1	A	1987	GLN
1	A	1998	HIS
1	A	2027	GLN
1	A	2042	HIS

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Mol	Chain	Res	Type
1	A	2106	ASN
1	A	2237	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	2346/2373 (98%)	-0.33	16 (0%) <span style="border: 1px solid blue; padding: 2px;">87</span> <span style="border: 1px solid blue; padding: 2px;">82</span>	80, 160, 233, 324	0
2	D	126/153 (82%)	-0.19	2 (1%) <span style="border: 1px solid blue; padding: 2px;">72</span> <span style="border: 1px solid blue; padding: 2px;">63</span>	147, 200, 255, 290	0
3	E	107/137 (78%)	0.62	12 (11%) <span style="border: 1px solid red; padding: 2px;">5</span> <span style="border: 1px solid red; padding: 2px;">5</span>	213, 260, 307, 341	0
4	F	116/142 (81%)	-0.42	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	117, 166, 214, 240	0
All	All	2695/2805 (96%)	-0.29	30 (1%) <span style="border: 1px solid blue; padding: 2px;">80</span> <span style="border: 1px solid blue; padding: 2px;">73</span>	80, 165, 249, 341	0

All (30) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	E	108	THR	4.1
1	A	1810	ILE	3.7
3	E	107	VAL	3.6
1	A	317	GLN	3.5
3	E	93	TYR	3.4
1	A	276	ILE	3.1
1	A	381	GLY	2.9
3	E	106	GLN	2.8
2	D	35	GLY	2.8
3	E	48	VAL	2.8
3	E	80	LEU	2.7
1	A	1031	PRO	2.6
1	A	626	ASP	2.6
3	E	38	ARG	2.5
1	A	1811	GLY	2.5
1	A	887	PHE	2.5
3	E	95	CYS	2.5
3	E	100	LEU	2.4
1	A	283	VAL	2.4
2	D	48	VAL	2.3
3	E	27	SER	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	890	ILE	2.3
1	A	1028	GLU	2.3
1	A	637	ILE	2.3
1	A	835	THR	2.3
3	E	36	TRP	2.2
1	A	2117	ILE	2.2
1	A	272	LEU	2.1
1	A	839	GLU	2.1
3	E	46	GLN	2.0

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

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

## 6.3 Carbohydrates [\(i\)](#)

There are no monosaccharides in this entry.

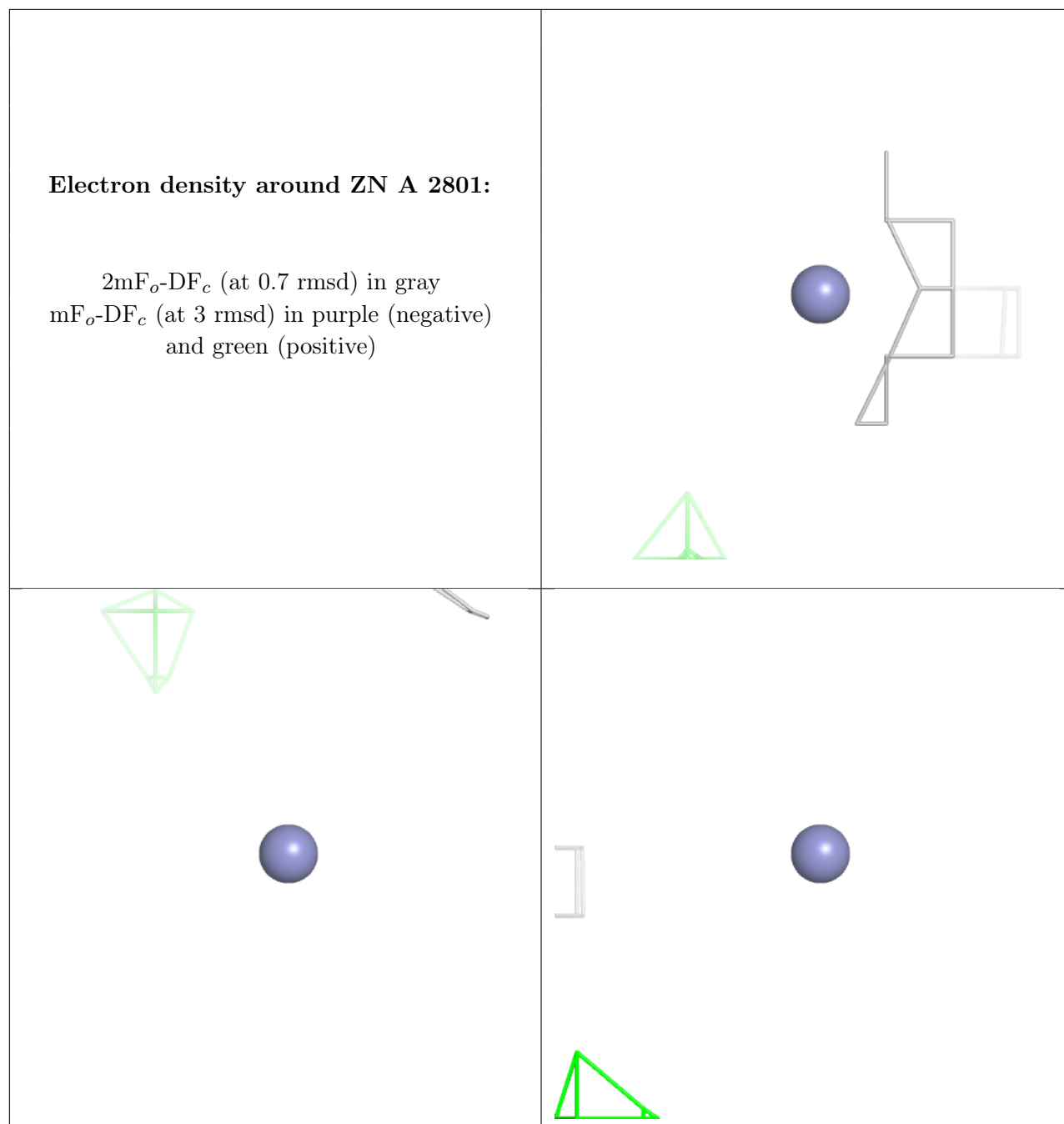
## 6.4 Ligands [\(i\)](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
6	MG	A	2802	1/1	0.80	0.47	119,119,119,119	0
5	ZN	A	2801	1/1	0.98	0.20	120,120,120,120	0

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





## 6.5 Other polymers [i](#)

There are no such residues in this entry.