



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 11, 2024 – 07:17 PM EDT

PDB ID : 1DFC  
Title : CRYSTAL STRUCTURE OF HUMAN FASCIN, AN ACTIN-CROSSLINKING PROTEIN  
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Deposited on : 1999-11-18  
Resolution : 2.90 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) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36.2

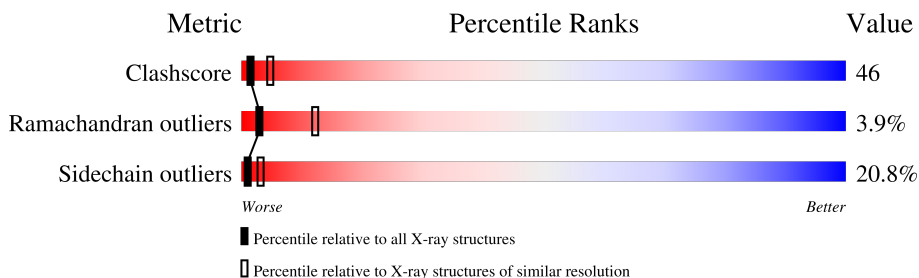
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.90 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	493	 35% 46% 14% . .
1	B	493	 35% 47% 13% . .

## 2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 7427 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 FASCIN.

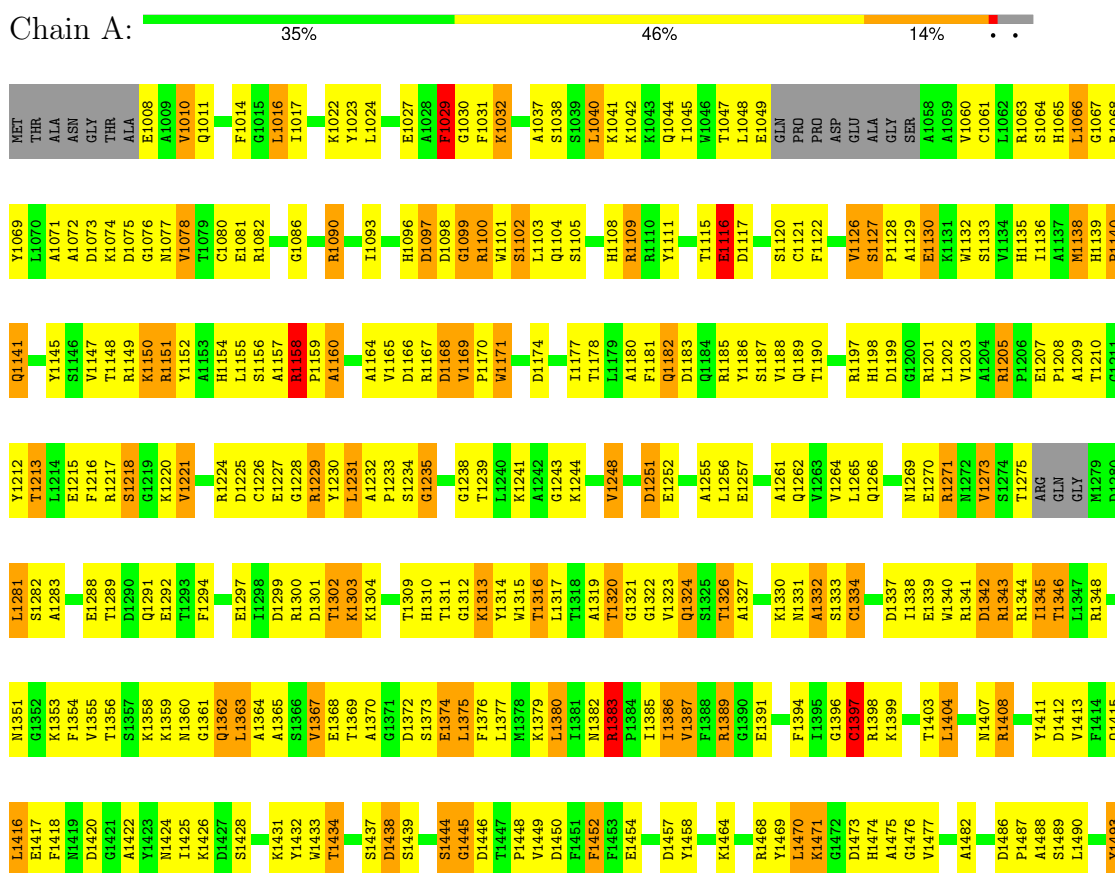
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	475	Total 3716	C 2326	N 663	O 714	S 13	0	0	0
1	B	474	Total 3711	C 2323	N 662	O 713	S 13	0	0	0

### 3 Residue-property plots

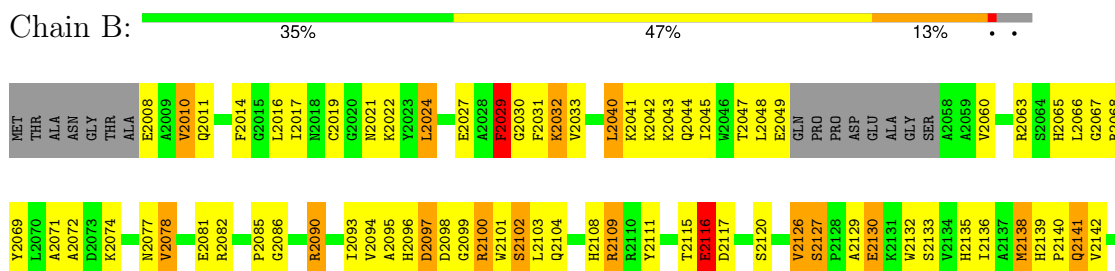
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

Note EDS was not executed.

- Molecule 1: FASCIN



- Molecule 1: FASCIN



S2489	Q2415	R2348	A2283	E2215	Y2145
Y2493	L2416	N2351	N2284	F2216	S2146
	E2417		Q2285	R2217	V2147
	F2418			S2218	T2148
	N2419	F2354	E2288	G2219	R2149
	D2420	V2355	T2289	K2220	K2150
	G2421	T3356	D2280	V2221	R2151
	A2422	S2357	Q2291		Y2152
	L2425	K2358	E2292	R2224	
	K2426	K2359	T2293	D2225	S2156
	D2427	N2360	F2294	C2226	A2157
	S2428	Q2361	Q2295	E2227	R2158
	T2429	Q2362	L2296	G2228	R2159
	G2430	L2363		R2229	A2160
	K2431	A2364	D2299	Y2230	D2161
	Y2432	A2365	R2300	L2231	
	Y2433	S2366	T2301	A2232	A2164
	T2434	V2367	D2302	P2233	V2165
		E2368	K2303	S2234	D2166
		T2369	K2304	G2285	R2167
	D2438	A2370	C2305		D2168
	S2439	G2371		G2238	V2169
		D2372	R2308	T2239	P2170
	T2442		T2309	G2243	N2171
	S2443	L2375	H2310	G2244	G2172
	S2444	F2376	T2311		V2173
	G2445	L2377	G2312	V2248	D2174
	D2446	M2378	K2313		S2175
	T2447	K2379	Y2314	D2251	T2178
	P2448	L2380	N2315	E2252	
	V2449	I2381	T2316	L2253	F2181
	D2450	N2382	L2317	F2254	Q2182
	F2451	R2383	T2318	A2255	D2183
	F2452	P2384	A2319	L2256	Q2184
	F2453	I2385	T2320	E2257	R2185
	E2454	I2386	G2321	Q2258	Y2186
	F2455		G2322	S2259	S2187
	C2456	R2389	V2323	C2260	V2188
	D2457	G2390	Q2324	A2261	Q2189
	Y2458	E2391	S2325	Q2262	
			T2326	V2263	H2193
	K2464	F2394	A2327	V2264	R2194
	V2465	I2395		L2265	
	R2468	G2396	K2330	Q2266	
	Y2469	C2397	N2331		R2197
	L2470	R2398	A2332	N2269	H2198
	K2471	K2399	S2333	D2199	D2199
	G2472	V2400	C2334	E2270	
	D2473	T2401		R2271	V2203
	H2474		D2337	N2272	A2204
	A2475	L2403	I2338	V2273	R2205
	G2476	D2405	E2339	S2274	F2206
	V2477	A2406	W2340	T2275	E2207
		N2407	R2341	ARC	P2208
		R2408	D2342	GLN	A2209
	A2482		R2343	GLY	T2210
		Y2411	R2344	MET	G2211
	D2486	D2412	I2345	D2280	Y2212
	P2487	V2413	T2346	L2281	T2213
	A2488	F2414	L2347	S2282	L2214

## 4 Data and refinement statistics

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

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	165.43Å 71.69Å 116.92Å 90.00° 132.17° 90.00°	Depositor
Resolution (Å)	8.00 – 2.90	Depositor
% Data completeness (in resolution range)	83.6 (8.00-2.90)	Depositor
$R_{merge}$	0.06	Depositor
$R_{sym}$	(Not available)	Depositor
Refinement program	CNS	Depositor
R, $R_{free}$	0.184 , 0.268	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	7427	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	36.0	wwPDB-VP

## 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	0.96	2/3793 (0.1%)	0.98	3/5126 (0.1%)
1	B	0.95	3/3788 (0.1%)	0.98	2/5119 (0.0%)
All	All	0.96	5/7581 (0.1%)	0.98	5/10245 (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
1	A	0	2
1	B	0	1
All	All	0	3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	2456	CYS	CB-SG	-6.68	1.70	1.82
1	A	1397	CYS	CB-SG	-6.12	1.71	1.82
1	B	2260	CYS	CB-SG	-5.68	1.72	1.81
1	A	1061	CYS	CB-SG	-5.42	1.73	1.81
1	B	2305	CYS	CB-SG	-5.34	1.73	1.81

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1383	ARG	NE-CZ-NH1	-6.77	116.91	120.30
1	B	2194	ARG	NE-CZ-NH1	-6.15	117.22	120.30
1	A	1387	VAL	N-CA-C	-5.67	95.70	111.00
1	A	1363	LEU	CA-CB-CG	5.30	127.50	115.30
1	B	2404	LEU	CA-CB-CG	5.27	127.42	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1452	PHE	Sidechain
1	A	1493	TYR	Sidechain
1	B	2493	TYR	Sidechain

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3716	0	3599	343	1
1	B	3711	0	3597	336	1
All	All	7427	0	7196	679	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 46.

All (679) 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:1139:HIS:CE1	1:A:1141:GLN:HG3	1.61	1.36
1:A:1416:LEU:HD12	1:A:1416:LEU:H	1.15	1.12
1:A:1158:ARG:HB2	1:A:1159:PRO:HD3	1.14	1.10
1:B:2158:ARG:HB2	1:B:2159:PRO:HD3	1.11	1.10
1:B:2158:ARG:HB2	1:B:2159:PRO:CD	1.86	1.05
1:A:1269:ASN:OD1	1:A:1271:ARG:HB2	1.58	1.01
1:B:2100:ARG:HB2	1:B:2132:TRP:O	1.59	1.01
1:A:1100:ARG:HB2	1:A:1132:TRP:O	1.61	1.00
1:B:2282:SER:HB3	1:B:2362:GLN:HA	1.43	0.98
1:A:1158:ARG:HB2	1:A:1159:PRO:CD	1.93	0.98
1:B:2043:LYS:HA	1:B:2065:HIS:CD2	1.99	0.97
1:A:1282:SER:HB3	1:A:1362:GLN:HA	1.46	0.96
1:B:2416:LEU:HD12	1:B:2416:LEU:H	1.30	0.96
1:A:1205:ARG:NH1	1:A:1207:GLU:HB3	1.81	0.95
1:A:1127:SER:H	1:A:1130:GLU:HG2	1.29	0.94
1:B:2139:HIS:CE1	1:B:2141:GLN:HG3	2.05	0.91
1:A:1157:ALA:HB3	1:A:1158:ARG:NH1	1.85	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1139:HIS:HE1	1:A:1141:GLN:CG	1.85	0.89
1:A:1139:HIS:CE1	1:A:1141:GLN:CG	2.53	0.89
1:A:1416:LEU:HD12	1:A:1416:LEU:N	1.81	0.89
1:B:2205:ARG:NH1	1:B:2207:GLU:HB3	1.88	0.88
1:B:2150:LYS:HG3	1:B:2151:ARG:HE	1.36	0.88
1:B:2269:ASN:OD1	1:B:2271:ARG:HB2	1.74	0.88
1:B:2383:ARG:O	1:B:2416:LEU:HD11	1.74	0.87
1:A:1139:HIS:HE1	1:A:1141:GLN:HG3	1.04	0.87
1:B:2127:SER:H	1:B:2130:GLU:HG2	1.38	0.87
1:B:2136:ILE:HG23	1:B:2138:MET:SD	2.16	0.86
1:B:2097:ASP:HA	1:B:2224:ARG:NH1	1.92	0.85
1:B:2095:ALA:HB2	1:B:2215:GLU:HG3	1.57	0.84
1:B:2139:HIS:HE1	1:B:2141:GLN:HG3	1.38	0.84
1:A:1299:ASP:OD1	1:A:1302:THR:HG23	1.78	0.83
1:A:1010:VAL:HG12	1:A:1256:LEU:O	1.78	0.82
1:B:2043:LYS:HA	1:B:2065:HIS:HD2	1.43	0.82
1:A:1343:ARG:O	1:A:1344:ARG:HD2	1.79	0.82
1:A:1398:ARG:HH11	1:A:1403:THR:HG21	1.43	0.81
1:A:1150:LYS:HG3	1:A:1151:ARG:HE	1.43	0.81
1:A:1343:ARG:HG3	1:A:1343:ARG:HH11	1.43	0.80
1:B:2266:GLN:HG3	1:B:2271:ARG:O	1.80	0.80
1:B:2031:PHE:CD1	1:B:2081:GLU:HG3	2.16	0.80
1:A:1203:VAL:CG2	1:A:1205:ARG:HE	1.95	0.80
1:B:2158:ARG:CB	1:B:2159:PRO:HD3	2.04	0.79
1:A:1205:ARG:HH12	1:A:1207:GLU:HB3	1.46	0.79
1:B:2416:LEU:HD12	1:B:2416:LEU:N	1.97	0.78
1:B:2291:GLN:HB2	1:B:2292:GLU:OE1	1.84	0.78
1:B:2299:ASP:OD1	1:B:2302:THR:HG23	1.84	0.77
1:B:2205:ARG:HH22	1:B:2207:GLU:CD	1.88	0.77
1:A:1398:ARG:NH1	1:A:1403:THR:HG21	1.99	0.77
1:A:1354:PHE:HE2	1:A:1370:ALA:HB2	1.49	0.76
1:A:1207:GLU:HB2	1:A:1208:PRO:HD2	1.65	0.76
1:B:2207:GLU:HB2	1:B:2208:PRO:HD2	1.66	0.76
1:A:1203:VAL:HG21	1:A:1205:ARG:HH21	1.50	0.76
1:B:2400:VAL:HG13	1:B:2401:THR:H	1.51	0.75
1:A:1205:ARG:HH22	1:A:1207:GLU:CD	1.89	0.75
1:B:2205:ARG:NH2	1:B:2207:GLU:OE1	2.19	0.75
1:A:1031:PHE:CD1	1:A:1081:GLU:HG3	2.22	0.75
1:B:2111:TYR:CE2	1:B:2126:VAL:HG22	2.21	0.74
1:A:1474:HIS:O	1:A:1475:ALA:HB3	1.86	0.74
1:B:2438:ASP:OD1	1:B:2438:ASP:N	2.15	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1355:VAL:CG1	1:A:1363:LEU:HD13	2.18	0.74
1:B:2324:GLN:HG3	1:B:2326:THR:HB	1.69	0.73
1:A:1063:ARG:HE	1:A:1067:GLY:HA2	1.54	0.73
1:A:1165:VAL:HG12	1:A:1238:GLY:O	1.87	0.73
1:A:1011:GLN:HG3	1:A:1011:GLN:O	1.88	0.72
1:A:1205:ARG:HH22	1:A:1207:GLU:CG	2.01	0.72
1:B:2299:ASP:CG	1:B:2302:THR:HG23	2.09	0.72
1:A:1063:ARG:NE	1:A:1067:GLY:HA2	2.04	0.72
1:A:1205:ARG:NH2	1:A:1207:GLU:OE1	2.22	0.72
1:B:2097:ASP:HA	1:B:2224:ARG:HH12	1.53	0.72
1:B:2203:VAL:CG2	1:B:2205:ARG:HE	2.02	0.71
1:A:1339:GLU:O	1:A:1345:ILE:HD12	1.90	0.71
1:A:1299:ASP:OD1	1:A:1302:THR:N	2.23	0.70
1:A:1269:ASN:O	1:A:1270:GLU:HB2	1.91	0.70
1:B:2040:LEU:HD12	1:B:2041:LYS:N	2.06	0.70
1:A:1341:ARG:HH11	1:A:1375:LEU:HD11	1.55	0.70
1:B:2150:LYS:O	1:B:2151:ARG:HD3	1.90	0.70
1:B:2343:ARG:HG3	1:B:2343:ARG:HH11	1.56	0.70
1:A:1027:GLU:HB3	1:A:1029:PHE:HB2	1.72	0.70
1:A:1391:GLU:OE2	1:A:1487:PRO:HB2	1.91	0.70
1:B:2339:GLU:HB3	1:B:2346:THR:CG2	2.22	0.69
1:A:1386:ILE:HD11	1:A:1416:LEU:HG	1.73	0.69
1:B:2010:VAL:HG12	1:B:2256:LEU:O	1.91	0.69
1:B:2342:ASP:O	1:B:2343:ARG:HB2	1.89	0.69
1:A:1040:LEU:HD12	1:A:1041:LYS:N	2.08	0.69
1:A:1354:PHE:CE2	1:A:1370:ALA:HB2	2.27	0.69
1:B:2104:GLN:NE2	1:B:2111:TYR:HE1	1.90	0.69
1:A:1111:TYR:CE2	1:A:1126:VAL:HG22	2.28	0.69
1:A:1203:VAL:HG21	1:A:1205:ARG:HE	1.57	0.69
1:B:2150:LYS:HG3	1:B:2151:ARG:NE	2.08	0.69
1:A:1343:ARG:HD3	1:A:1420:ASP:O	1.93	0.69
1:B:2165:VAL:HG11	1:B:2233:PRO:HB3	1.75	0.69
1:B:2011:GLN:HG3	1:B:2011:GLN:O	1.92	0.68
1:B:2205:ARG:HH12	1:B:2207:GLU:HB3	1.56	0.68
1:A:1342:ASP:O	1:A:1343:ARG:HB2	1.93	0.68
1:A:1343:ARG:HG3	1:A:1343:ARG:NH1	2.08	0.68
1:B:2090:ARG:HH11	1:B:2090:ARG:HB3	1.58	0.68
1:A:1473:ASP:OD1	1:A:1477:VAL:HG22	1.93	0.68
1:A:1362:GLN:HG2	1:A:1363:LEU:N	2.08	0.68
1:A:1313:LYS:HG3	1:A:1327:ALA:O	1.93	0.67
1:B:2454:GLU:OE1	1:B:2464:LYS:HE3	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2094:VAL:HB	1:B:2102:SER:HB3	1.77	0.67
1:B:2355:VAL:CG1	1:B:2363:LEU:HD13	2.25	0.67
1:B:2165:VAL:O	1:B:2165:VAL:HG13	1.95	0.67
1:B:2391:GLU:OE2	1:B:2487:PRO:HB2	1.93	0.67
1:A:1029:PHE:HB3	1:A:1032:LYS:HG3	1.76	0.67
1:A:1339:GLU:HB3	1:A:1346:THR:HB	1.75	0.67
1:B:2474:HIS:O	1:B:2475:ALA:HB3	1.95	0.67
1:B:2345:ILE:HG22	1:B:2376:PHE:HB2	1.78	0.66
1:A:1299:ASP:CG	1:A:1302:THR:HG23	2.16	0.66
1:B:2203:VAL:HG21	1:B:2205:ARG:HE	1.60	0.66
1:A:1266:GLN:HG3	1:A:1271:ARG:O	1.96	0.66
1:B:2027:GLU:HB3	1:B:2029:PHE:HB2	1.78	0.66
1:B:2299:ASP:OD1	1:B:2302:THR:N	2.29	0.66
1:A:1416:LEU:N	1:A:1416:LEU:CD1	2.58	0.66
1:A:1104:GLN:NE2	1:A:1111:TYR:HE1	1.92	0.65
1:B:2029:PHE:HB3	1:B:2032:LYS:HG3	1.79	0.65
1:A:1316:THR:HG22	1:A:1333:SER:HB3	1.79	0.65
1:B:2150:LYS:C	1:B:2151:ARG:HD3	2.16	0.65
1:A:1218:SER:C	1:A:1220:LYS:H	1.99	0.65
1:B:2398:ARG:HA	1:B:2408:ARG:HH12	1.61	0.65
1:B:2426:LYS:HA	1:B:2431:LYS:O	1.97	0.65
1:B:2457:ASP:OD1	1:B:2458:TYR:N	2.27	0.65
1:A:1203:VAL:HG21	1:A:1205:ARG:NH2	2.11	0.65
1:A:1136:ILE:HG23	1:A:1138:MET:SD	2.36	0.65
1:A:1339:GLU:HB3	1:A:1346:THR:CG2	2.27	0.65
1:B:2385:ILE:HG23	1:B:2413:VAL:CG1	2.27	0.65
1:A:1031:PHE:CZ	1:A:1068:ARG:CZ	2.80	0.64
1:B:2111:TYR:HE2	1:B:2126:VAL:HG22	1.62	0.64
1:B:2040:LEU:HD12	1:B:2040:LEU:C	2.17	0.64
1:B:2354:PHE:HE2	1:B:2370:ALA:HB2	1.63	0.64
1:B:2127:SER:N	1:B:2130:GLU:HG2	2.12	0.64
1:A:1216:PHE:CD1	1:A:1221:VAL:HG23	2.33	0.64
1:A:1338:ILE:CG2	1:A:1345:ILE:HD11	2.28	0.63
1:A:1182:GLN:NE2	1:A:1210:THR:OG1	2.31	0.63
1:B:2339:GLU:HB3	1:B:2346:THR:HB	1.79	0.63
1:B:2394:PHE:CG	1:B:2411:TYR:HB3	2.34	0.63
1:B:2147:VAL:HG23	1:B:2253:LEU:O	1.99	0.63
1:A:1341:ARG:NH1	1:A:1375:LEU:HD11	2.13	0.63
1:B:2338:ILE:HG21	1:B:2340:TRP:CZ2	2.34	0.63
1:B:2205:ARG:HH22	1:B:2207:GLU:CG	2.12	0.63
1:B:2362:GLN:HG2	1:B:2363:LEU:N	2.13	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1382:ASN:O	1:A:1383:ARG:HD3	1.98	0.62
1:A:1008:GLU:HG2	1:A:1257:GLU:HB3	1.80	0.62
1:A:1127:SER:N	1:A:1130:GLU:HG2	2.10	0.62
1:A:1139:HIS:ND1	1:A:1141:GLN:HG3	2.10	0.62
1:A:1425:ILE:HG21	1:A:1433:TRP:CE2	2.33	0.62
1:B:2316:THR:O	1:B:2323:VAL:HA	2.00	0.62
1:B:2382:ASN:O	1:B:2383:ARG:HD3	2.00	0.62
1:B:2426:LYS:HD3	1:B:2432:TYR:CZ	2.34	0.62
1:B:2203:VAL:HG21	1:B:2205:ARG:HH21	1.62	0.62
1:A:1396:GLY:HA3	1:A:1408:ARG:HD2	1.82	0.62
1:A:1042:LYS:O	1:A:1045:ILE:HG12	2.00	0.62
1:A:1122:PHE:CD1	1:A:1122:PHE:O	2.52	0.61
1:A:1426:LYS:HA	1:A:1431:LYS:O	1.99	0.61
1:B:2269:ASN:OD1	1:B:2269:ASN:C	2.38	0.61
1:B:2294:PHE:CE2	1:B:2309:THR:HG22	2.35	0.61
1:A:1198:HIS:CE1	1:A:1209:ALA:HB1	2.36	0.61
1:B:2343:ARG:O	1:B:2344:ARG:HD2	2.01	0.61
1:B:2252:GLU:N	1:B:2252:GLU:OE2	2.33	0.61
1:B:2294:PHE:HE2	1:B:2309:THR:HG22	1.65	0.61
1:B:2486:ASP:OD1	1:B:2488:ALA:HB3	2.00	0.61
1:A:1229:ARG:HG2	1:A:1243:GLY:O	2.01	0.61
1:A:1394:PHE:CG	1:A:1411:TYR:HB3	2.36	0.61
1:B:2400:VAL:HG22	1:B:2401:THR:N	2.16	0.61
1:B:2473:ASP:OD1	1:B:2474:HIS:O	2.19	0.61
1:A:1324:GLN:HG3	1:A:1326:THR:HB	1.83	0.60
1:A:1353:LYS:HB2	1:A:1365:ALA:O	2.00	0.60
1:B:2136:ILE:HD12	1:B:2138:MET:SD	2.41	0.60
1:A:1150:LYS:O	1:A:1151:ARG:HD3	2.01	0.60
1:B:2386:ILE:CG1	1:B:2416:LEU:HG	2.29	0.60
1:A:1183:ASP:C	1:A:1185:ARG:H	2.05	0.60
1:A:1383:ARG:O	1:A:1416:LEU:HD11	2.01	0.60
1:A:1438:ASP:OD1	1:A:1438:ASP:N	2.21	0.60
1:A:1474:HIS:O	1:A:1475:ALA:CB	2.48	0.60
1:A:1048:LEU:O	1:A:1049:GLU:HG3	2.01	0.60
1:B:2145:TYR:HB3	1:B:2255:ALA:HB3	1.84	0.60
1:B:2311:THR:O	1:B:2311:THR:HG22	2.02	0.60
1:A:1215:GLU:OE2	1:A:1230:TYR:OH	2.20	0.59
1:A:1385:ILE:HG23	1:A:1413:VAL:CG1	2.32	0.59
1:B:2152:TYR:CD2	1:B:2170:PRO:HG3	2.36	0.59
1:A:1416:LEU:HD13	1:A:1416:LEU:O	2.02	0.59
1:A:1040:LEU:HD12	1:A:1040:LEU:C	2.23	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1165:VAL:HG11	1:A:1233:PRO:HB3	1.83	0.59
1:A:1314:TYR:CZ	1:A:1330:LYS:HE2	2.38	0.59
1:B:2157:ALA:HB3	1:B:2158:ARG:NH1	2.17	0.59
1:B:2351:ASN:C	1:B:2351:ASN:OD1	2.40	0.59
1:B:2048:LEU:HD11	1:B:2060:VAL:HB	1.82	0.59
1:A:1111:TYR:HE2	1:A:1126:VAL:HG22	1.67	0.59
1:A:1217:ARG:CZ	1:A:1248:VAL:HG13	2.32	0.59
1:A:1048:LEU:HD11	1:A:1060:VAL:HB	1.85	0.59
1:A:1225:ASP:OD2	1:A:1229:ARG:NH2	2.36	0.59
1:B:2299:ASP:O	1:B:2303:LYS:HA	2.03	0.59
1:B:2321:GLY:O	1:B:2364:ALA:HB1	2.03	0.59
1:B:2434:THR:HG23	1:B:2449:VAL:CG1	2.32	0.59
1:B:2465:VAL:HG13	1:B:2465:VAL:O	2.01	0.59
1:A:1145:TYR:HB3	1:A:1255:ALA:HB3	1.85	0.59
1:A:1150:LYS:C	1:A:1151:ARG:HD3	2.23	0.58
1:A:1404:LEU:HD21	1:A:1433:TRP:CE2	2.38	0.58
1:B:2354:PHE:CE2	1:B:2370:ALA:HB2	2.37	0.58
1:A:1354:PHE:HD2	1:A:1370:ALA:HA	1.67	0.58
1:B:2275:THR:HG22	1:B:2281:LEU:HD23	1.85	0.58
1:B:2343:ARG:HD3	1:B:2420:ASP:O	2.03	0.58
1:A:1291:GLN:HB2	1:A:1292:GLU:OE1	2.03	0.58
1:B:2165:VAL:HG12	1:B:2238:GLY:O	2.03	0.58
1:A:1198:HIS:ND1	1:A:1209:ALA:HB1	2.18	0.58
1:A:1314:TYR:OH	1:A:1330:LYS:HE2	2.04	0.58
1:A:1389:ARG:CG	1:A:1394:PHE:CE2	2.86	0.58
1:A:1203:VAL:HG21	1:A:1205:ARG:NE	2.19	0.58
1:B:2386:ILE:HD11	1:B:2416:LEU:HG	1.86	0.58
1:A:1348:ARG:HB2	1:A:1354:PHE:CE1	2.38	0.58
1:A:1386:ILE:CG1	1:A:1416:LEU:HG	2.33	0.58
1:A:1358:LYS:HB3	1:A:1360:ASN:HD21	1.68	0.57
1:B:2266:GLN:HB3	1:B:2377:LEU:HB3	1.85	0.57
1:B:2148:THR:HG21	1:B:2251:ASP:CG	2.24	0.57
1:B:2269:ASN:O	1:B:2270:GLU:HB2	2.04	0.57
1:A:1379:LYS:HD3	1:A:1418:PHE:CD2	2.39	0.57
1:B:2229:ARG:HG2	1:B:2243:GLY:O	2.04	0.57
1:B:2425:ILE:HG21	1:B:2433:TRP:CE2	2.39	0.57
1:A:1234:SER:OG	1:A:1241:LYS:HD3	2.04	0.57
1:B:2348:ARG:HB2	1:B:2354:PHE:CE1	2.39	0.57
1:A:1203:VAL:CB	1:A:1205:ARG:HE	2.17	0.57
1:A:1040:LEU:HD23	1:A:1135:HIS:CE1	2.39	0.57
1:A:1345:ILE:HG22	1:A:1376:PHE:HB2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2198:HIS:ND1	1:B:2209:ALA:HB1	2.19	0.57
1:B:2167:ARG:NH1	1:B:2174:ASP:HB2	2.20	0.57
1:B:2218:SER:C	1:B:2220:LYS:H	2.08	0.57
1:A:1205:ARG:HH22	1:A:1207:GLU:HG2	1.67	0.57
1:A:1031:PHE:CE2	1:A:1068:ARG:NE	2.73	0.57
1:A:1316:THR:O	1:A:1323:VAL:HA	2.06	0.56
1:B:2148:THR:HG21	1:B:2251:ASP:OD2	2.05	0.56
1:B:2217:ARG:CZ	1:B:2248:VAL:HG13	2.34	0.56
1:B:2324:GLN:CG	1:B:2326:THR:HB	2.35	0.56
1:A:1486:ASP:HB2	1:A:1487:PRO:HD2	1.88	0.56
1:B:2316:THR:N	1:B:2324:GLN:O	2.39	0.56
1:B:2398:ARG:NH1	1:B:2405:ASP:OD1	2.37	0.56
1:A:1049:GLU:OE2	1:A:1063:ARG:HG3	2.05	0.56
1:A:1205:ARG:NH2	1:A:1207:GLU:HG2	2.21	0.56
1:A:1269:ASN:HD21	1:A:1283:ALA:CB	2.19	0.56
1:A:1386:ILE:CD1	1:A:1416:LEU:HG	2.35	0.56
1:A:1090:ARG:HH11	1:A:1090:ARG:HB3	1.70	0.56
1:A:1183:ASP:C	1:A:1185:ARG:N	2.57	0.56
1:B:2358:LYS:HB3	1:B:2360:ASN:HD21	1.69	0.56
1:B:2422:ALA:HB1	1:B:2450:ASP:HB3	1.88	0.56
1:B:2097:ASP:HA	1:B:2224:ARG:CZ	2.35	0.56
1:A:1207:GLU:CB	1:A:1208:PRO:HD2	2.36	0.56
1:A:1313:LYS:CG	1:A:1327:ALA:O	2.53	0.56
1:A:1294:PHE:CE2	1:A:1309:THR:HG22	2.41	0.56
1:B:2203:VAL:HG21	1:B:2205:ARG:NH2	2.20	0.56
1:A:1159:PRO:O	1:A:1160:ALA:O	2.23	0.56
1:A:1165:VAL:HG13	1:A:1165:VAL:O	2.06	0.56
1:B:2197:ARG:HD2	1:B:2199:ASP:CG	2.27	0.55
1:B:2203:VAL:HG21	1:B:2205:ARG:NE	2.21	0.55
1:A:1096:HIS:NE2	1:A:1102:SER:HB2	2.22	0.55
1:B:2271:ARG:HG2	1:B:2271:ARG:HH11	1.71	0.55
1:B:2316:THR:HG22	1:B:2333:SER:HB3	1.89	0.55
1:A:1294:PHE:HE2	1:A:1309:THR:HG22	1.72	0.55
1:A:1398:ARG:HD2	1:A:1403:THR:HB	1.88	0.55
1:B:2048:LEU:O	1:B:2049:GLU:HG3	2.07	0.55
1:B:2188:VAL:HG12	1:B:2188:VAL:O	2.05	0.55
1:B:2041:LYS:O	1:B:2045:ILE:HG23	2.06	0.55
1:A:1271:ARG:HG2	1:A:1271:ARG:HH11	1.71	0.55
1:B:2063:ARG:NE	1:B:2067:GLY:HA2	2.22	0.55
1:B:2159:PRO:O	1:B:2160:ALA:O	2.25	0.55
1:B:2398:ARG:HA	1:B:2408:ARG:NH1	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2398:ARG:O	1:B:2400:VAL:N	2.39	0.55
1:A:1041:LYS:O	1:A:1045:ILE:HG23	2.07	0.55
1:A:1158:ARG:CB	1:A:1159:PRO:HD3	2.10	0.55
1:B:2093:ILE:HD13	1:B:2101:TRP:CH2	2.42	0.55
1:B:2198:HIS:CE1	1:B:2209:ALA:HB1	2.42	0.55
1:B:2358:LYS:O	1:B:2359:LYS:C	2.44	0.55
1:B:2207:GLU:CB	1:B:2208:PRO:HD2	2.35	0.54
1:A:1150:LYS:HG3	1:A:1151:ARG:NE	2.17	0.54
1:A:1315:TRP:O	1:A:1334:CYS:HB3	2.06	0.54
1:B:2339:GLU:HB3	1:B:2346:THR:HG22	1.89	0.54
1:A:1180:ALA:HA	1:A:1411:TYR:OH	2.07	0.54
1:B:2416:LEU:N	1:B:2416:LEU:CD1	2.70	0.54
1:B:2469:TYR:HB2	1:B:2482:ALA:HB3	1.89	0.54
1:A:1205:ARG:CZ	1:A:1207:GLU:HB3	2.38	0.54
1:A:1319:ALA:C	1:A:1321:GLY:H	2.10	0.54
1:B:2259:SER:HB3	1:B:2383:ARG:HH12	1.72	0.54
1:A:1203:VAL:HB	1:A:1205:ARG:HE	1.73	0.54
1:A:1322:GLY:HA2	1:A:1364:ALA:HB2	1.89	0.54
1:A:1331:ASN:O	1:A:1333:SER:N	2.42	0.54
1:A:1422:ALA:HB1	1:A:1450:ASP:HB3	1.90	0.54
1:A:1338:ILE:HG23	1:A:1345:ILE:HD11	1.89	0.53
1:A:1339:GLU:HB3	1:A:1346:THR:CB	2.38	0.53
1:B:2063:ARG:HG2	1:B:2069:TYR:CE1	2.43	0.53
1:B:2339:GLU:HB3	1:B:2346:THR:CB	2.37	0.53
1:A:1398:ARG:HG3	1:A:1408:ARG:HH12	1.73	0.53
1:B:2030:GLY:O	1:B:2032:LYS:HG2	2.07	0.53
1:A:1151:ARG:HD3	1:A:1151:ARG:N	2.18	0.53
1:A:1269:ASN:ND2	1:A:1283:ALA:HB3	2.23	0.53
1:B:2314:TYR:OH	1:B:2330:LYS:HE2	2.09	0.53
1:A:1341:ARG:O	1:A:1342:ASP:C	2.46	0.53
1:B:2049:GLU:OE2	1:B:2063:ARG:HG3	2.09	0.53
1:A:1304:LYS:HG2	1:A:1337:ASP:OD2	2.09	0.53
1:A:1477:VAL:HG23	1:A:1477:VAL:O	2.08	0.53
1:B:2338:ILE:CG2	1:B:2345:ILE:HD11	2.39	0.53
1:B:2434:THR:CG2	1:B:2449:VAL:HG11	2.38	0.53
1:B:2213:THR:OG1	1:B:2224:ARG:HB3	2.09	0.53
1:B:2355:VAL:HG13	1:B:2363:LEU:HD13	1.91	0.53
1:B:2474:HIS:O	1:B:2475:ALA:CB	2.57	0.53
1:A:1072:ALA:HA	1:A:1077:ASN:O	2.08	0.53
1:A:1185:ARG:NH2	1:A:1226:CYS:HA	2.23	0.53
1:B:2065:HIS:HE1	1:B:2066:LEU:HD21	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2238:GLY:O	1:B:2239:THR:C	2.46	0.52
1:A:1136:ILE:HD12	1:A:1138:MET:SD	2.50	0.52
1:A:1229:ARG:CZ	1:A:1229:ARG:HB2	2.39	0.52
1:A:1275:THR:HG22	1:A:1281:LEU:HD23	1.92	0.52
1:A:1281:LEU:HD13	1:A:1315:TRP:CE2	2.45	0.52
1:B:2282:SER:HB3	1:B:2362:GLN:CA	2.29	0.52
1:B:2152:TYR:CG	1:B:2170:PRO:HG3	2.44	0.52
1:A:1377:LEU:HD23	1:A:1377:LEU:O	2.09	0.52
1:A:1474:HIS:C	1:A:1476:GLY:H	2.13	0.52
1:B:2346:THR:HG22	1:B:2346:THR:O	2.09	0.52
1:A:1348:ARG:NE	1:A:1354:PHE:HE1	2.08	0.52
1:B:2063:ARG:HD3	1:B:2069:TYR:CE2	2.45	0.52
1:B:2081:GLU:O	1:B:2081:GLU:HG2	2.10	0.52
1:B:2216:PHE:CD1	1:B:2221:VAL:HG23	2.45	0.52
1:A:1331:ASN:O	1:A:1332:ALA:C	2.47	0.52
1:A:1385:ILE:HG23	1:A:1413:VAL:HG13	1.90	0.52
1:B:2072:ALA:HA	1:B:2077:ASN:O	2.10	0.52
1:B:2149:ARG:HD2	1:B:2233:PRO:HB2	1.92	0.52
1:A:1167:ARG:NH2	1:A:1171:TRP:HB3	2.25	0.51
1:A:1205:ARG:NH2	1:A:1207:GLU:CG	2.71	0.51
1:A:1358:LYS:HB3	1:A:1360:ASN:ND2	2.25	0.51
1:B:2010:VAL:CG1	1:B:2256:LEU:O	2.59	0.51
1:A:1457:ASP:OD1	1:A:1458:TYR:N	2.35	0.51
1:A:1127:SER:H	1:A:1130:GLU:CG	2.11	0.51
1:B:2342:ASP:O	1:B:2343:ARG:CB	2.57	0.51
1:A:1201:ARG:HG2	1:A:1202:LEU:H	1.74	0.51
1:A:1266:GLN:HB3	1:A:1377:LEU:HB3	1.92	0.51
1:A:1299:ASP:O	1:A:1303:LYS:HA	2.10	0.51
1:A:1358:LYS:O	1:A:1359:LYS:C	2.48	0.51
1:B:2205:ARG:NH2	1:B:2207:GLU:HG2	2.26	0.51
1:A:1389:ARG:HG2	1:A:1394:PHE:CE2	2.45	0.51
1:B:2183:ASP:C	1:B:2185:ARG:N	2.63	0.51
1:B:2473:ASP:OD1	1:B:2477:VAL:HG22	2.10	0.51
1:B:2136:ILE:CG2	1:B:2138:MET:SD	2.95	0.51
1:A:1319:ALA:C	1:A:1321:GLY:N	2.64	0.51
1:B:2031:PHE:CZ	1:B:2068:ARG:CZ	2.93	0.51
1:B:2203:VAL:CB	1:B:2205:ARG:HE	2.23	0.51
1:B:2474:HIS:C	1:B:2476:GLY:H	2.14	0.51
1:A:1339:GLU:CB	1:A:1346:THR:HG22	2.41	0.50
1:B:2281:LEU:HD13	1:B:2315:TRP:CE2	2.46	0.50
1:B:2379:LYS:HB2	1:B:2418:PHE:CZ	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1185:ARG:HH22	1:A:1226:CYS:HA	1.75	0.50
1:A:1317:LEU:HD12	1:A:1322:GLY:O	2.10	0.50
1:A:1469:TYR:HB2	1:A:1482:ALA:HB3	1.93	0.50
1:B:2065:HIS:CE1	1:B:2066:LEU:HD21	2.47	0.50
1:B:2182:GLN:NE2	1:B:2210:THR:OG1	2.44	0.50
1:B:2269:ASN:OD1	1:B:2271:ARG:N	2.45	0.50
1:B:2343:ARG:HH11	1:B:2343:ARG:CG	2.22	0.50
1:A:1154:HIS:CE1	1:A:1164:ALA:HB3	2.47	0.50
1:A:1238:GLY:O	1:A:1239:THR:C	2.49	0.50
1:A:1342:ASP:HB2	1:A:1452:PHE:CG	2.46	0.50
1:B:2339:GLU:O	1:B:2345:ILE:HD12	2.10	0.50
1:B:2358:LYS:HB3	1:B:2360:ASN:ND2	2.27	0.50
1:A:1069:TYR:N	1:A:1069:TYR:CD2	2.78	0.50
1:A:1082:ARG:HH21	1:A:1086:GLY:HA3	1.77	0.50
1:A:1183:ASP:O	1:A:1185:ARG:N	2.45	0.50
1:A:1269:ASN:OD1	1:A:1271:ARG:CB	2.45	0.50
1:B:2205:ARG:O	1:B:2205:ARG:HG2	2.11	0.50
1:A:1218:SER:C	1:A:1220:LYS:N	2.64	0.50
1:A:1397:CYS:HB2	1:A:1412:ASP:OD1	2.12	0.50
1:A:1045:ILE:HD11	1:A:1065:HIS:CD2	2.46	0.50
1:A:1197:ARG:HD2	1:A:1199:ASP:CG	2.32	0.50
1:A:1471:LYS:HB2	1:A:1489:SER:HB3	1.93	0.50
1:B:2274:SER:HB3	1:B:2292:GLU:HG3	1.94	0.50
1:B:2432:TYR:CD1	1:B:2448:PRO:HB3	2.47	0.50
1:A:1387:VAL:CG2	1:A:1413:VAL:HG22	2.42	0.49
1:B:2314:TYR:CZ	1:B:2330:LYS:HE2	2.47	0.49
1:A:1010:VAL:CG1	1:A:1256:LEU:HB2	2.42	0.49
1:A:1339:GLU:CB	1:A:1346:THR:CG2	2.90	0.49
1:B:2093:ILE:HG21	1:B:2101:TRP:CE2	2.48	0.49
1:A:1149:ARG:HD2	1:A:1233:PRO:HB2	1.93	0.49
1:A:1181:PHE:HE1	1:A:1186:TYR:HH	1.58	0.49
1:B:2205:ARG:HH22	1:B:2207:GLU:HG2	1.76	0.49
1:A:1367:VAL:CG1	1:A:1368:GLU:N	2.76	0.49
1:B:2205:ARG:NH1	1:B:2207:GLU:OE1	2.45	0.49
1:B:2308:ARG:HB2	1:B:2314:TYR:CE2	2.48	0.49
1:A:1148:THR:HG21	1:A:1251:ASP:OD2	2.12	0.49
1:A:1149:ARG:HD2	1:A:1233:PRO:CB	2.43	0.49
1:A:1224:ARG:HG3	1:A:1230:TYR:CE2	2.48	0.49
1:B:2096:HIS:O	1:B:2097:ASP:C	2.50	0.49
1:B:2416:LEU:HD13	1:B:2416:LEU:O	2.13	0.49
1:B:2486:ASP:HB2	1:B:2487:PRO:HD2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1486:ASP:OD1	1:A:1488:ALA:HB3	2.12	0.49
1:B:2150:LYS:O	1:B:2150:LYS:CG	2.61	0.49
1:B:2151:ARG:HD3	1:B:2151:ARG:N	2.19	0.49
1:B:2170:PRO:HA	1:B:2175:SER:OG	2.13	0.49
1:A:1205:ARG:HH12	1:A:1207:GLU:CB	2.19	0.49
1:A:1387:VAL:HG22	1:A:1413:VAL:HG22	1.95	0.49
1:A:1030:GLY:O	1:A:1031:PHE:C	2.51	0.48
1:A:1252:GLU:N	1:A:1252:GLU:OE2	2.47	0.48
1:A:1417:GLU:OE1	1:A:1432:TYR:OH	2.28	0.48
1:B:2008:GLU:O	1:B:2258:GLN:HG2	2.13	0.48
1:B:2100:ARG:CB	1:B:2132:TRP:O	2.48	0.48
1:B:2186:TYR:O	1:B:2212:TYR:N	2.44	0.48
1:B:2274:SER:CB	1:B:2292:GLU:HG3	2.43	0.48
1:B:2275:THR:HG22	1:B:2281:LEU:CD2	2.43	0.48
1:A:1339:GLU:HB3	1:A:1346:THR:HG22	1.95	0.48
1:A:1149:ARG:NH2	1:A:1235:GLY:O	2.47	0.48
1:A:1321:GLY:O	1:A:1364:ALA:HB1	2.14	0.48
1:B:2342:ASP:HB2	1:B:2452:PHE:CD2	2.49	0.48
1:B:2042:LYS:O	1:B:2045:ILE:HG12	2.13	0.48
1:B:2090:ARG:HH11	1:B:2090:ARG:CB	2.24	0.48
1:B:2384:PRO:O	1:B:2385:ILE:HD13	2.14	0.48
1:A:1022:LYS:HA	1:A:1037:ALA:O	2.13	0.48
1:A:1269:ASN:HD21	1:A:1283:ALA:HB3	1.77	0.48
1:B:2063:ARG:HG2	1:B:2069:TYR:CZ	2.49	0.48
1:B:2203:VAL:HB	1:B:2205:ARG:HE	1.78	0.48
1:B:2434:THR:HG23	1:B:2449:VAL:HG11	1.95	0.48
1:A:1261:ALA:HB2	1:A:1493:TYR:CE2	2.49	0.48
1:B:2115:THR:HG23	1:B:2116:GLU:N	2.28	0.48
1:B:2407:ASN:ND2	1:B:2476:GLY:HA3	2.29	0.48
1:A:1156:SER:HB2	1:A:1164:ALA:HB2	1.95	0.48
1:A:1269:ASN:CG	1:A:1271:ARG:HB2	2.32	0.48
1:B:2212:TYR:CZ	1:B:2231:LEU:HD21	2.49	0.48
1:B:2389:ARG:CG	1:B:2394:PHE:CE2	2.97	0.48
1:A:1215:GLU:OE2	1:A:1230:TYR:CZ	2.67	0.47
1:A:1343:ARG:NH1	1:A:1343:ARG:CG	2.75	0.47
1:B:2095:ALA:HB2	1:B:2215:GLU:CG	2.36	0.47
1:A:1355:VAL:HG13	1:A:1363:LEU:HD13	1.93	0.47
1:A:1351:ASN:C	1:A:1351:ASN:OD1	2.52	0.47
1:A:1373:SER:OG	1:A:1374:GLU:OE2	2.27	0.47
1:B:2197:ARG:HB3	1:B:2199:ASP:OD1	2.15	0.47
1:A:1158:ARG:HH11	1:A:1158:ARG:H	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2017:ILE:HA	1:B:2022:LYS:O	2.14	0.47
1:B:2313:LYS:HG3	1:B:2327:ALA:O	2.14	0.47
1:A:1078:VAL:HG12	1:A:1120:SER:HA	1.96	0.47
1:A:1048:LEU:HA	1:A:1048:LEU:HD12	1.48	0.47
1:B:2259:SER:CB	1:B:2383:ARG:HH12	2.28	0.47
1:A:1197:ARG:HA	1:A:1210:THR:HG22	1.95	0.47
1:B:2156:SER:HB2	1:B:2164:ALA:HB2	1.95	0.47
1:B:2252:GLU:N	1:B:2252:GLU:CD	2.68	0.47
1:B:2385:ILE:CD1	1:B:2415:GLN:HB3	2.44	0.47
1:A:1115:THR:O	1:A:1116:GLU:C	2.53	0.47
1:A:1339:GLU:OE2	1:A:1346:THR:HG21	2.15	0.47
1:B:2197:ARG:HA	1:B:2210:THR:HG22	1.96	0.47
1:B:2205:ARG:NH2	1:B:2207:GLU:CG	2.78	0.47
1:A:1132:TRP:CD1	1:A:1132:TRP:N	2.82	0.47
1:A:1269:ASN:O	1:A:1270:GLU:CB	2.57	0.47
1:B:2100:ARG:N	1:B:2100:ARG:CD	2.77	0.47
1:B:2386:ILE:CD1	1:B:2416:LEU:HG	2.44	0.47
1:A:1426:LYS:HG3	1:A:1431:LYS:O	2.15	0.47
1:B:2264:VAL:HG11	1:B:2288:GLU:HG2	1.97	0.47
1:A:1127:SER:O	1:A:1128:PRO:C	2.53	0.46
1:B:2063:ARG:HE	1:B:2067:GLY:HA2	1.79	0.46
1:B:2109:ARG:HH11	1:B:2109:ARG:CG	2.28	0.46
1:A:1127:SER:O	1:A:1129:ALA:N	2.47	0.46
1:A:1316:THR:N	1:A:1324:GLN:O	2.48	0.46
1:A:1150:LYS:O	1:A:1150:LYS:CG	2.62	0.46
1:B:2093:ILE:HG23	1:B:2101:TRP:CD2	2.51	0.46
1:B:2300:ARG:NH2	1:B:2458:TYR:CZ	2.84	0.46
1:B:2367:VAL:CG1	1:B:2369:THR:O	2.62	0.46
1:A:1063:ARG:HG2	1:A:1069:TYR:CE1	2.50	0.46
1:A:1167:ARG:NH1	1:A:1174:ASP:HB2	2.31	0.46
1:A:1207:GLU:HB2	1:A:1208:PRO:CD	2.42	0.46
1:B:2069:TYR:N	1:B:2069:TYR:CD2	2.83	0.46
1:B:2446:ASP:OD1	1:B:2446:ASP:N	2.45	0.46
1:A:1017:ILE:HA	1:A:1022:LYS:O	2.16	0.46
1:A:1076:GLY:HA2	1:A:1121:CYS:O	2.16	0.46
1:A:1008:GLU:CG	1:A:1257:GLU:HB3	2.45	0.46
1:A:1010:VAL:HG12	1:A:1256:LEU:C	2.35	0.46
1:A:1030:GLY:O	1:A:1032:LYS:HG2	2.16	0.46
1:A:1317:LEU:HD12	1:A:1317:LEU:HA	1.59	0.46
1:B:2205:ARG:HH12	1:B:2207:GLU:CB	2.25	0.46
1:A:1016:LEU:O	1:A:1023:TYR:HA	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1201:ARG:HG2	1:A:1202:LEU:N	2.31	0.46
1:A:1289:THR:C	1:A:1291:GLN:N	2.68	0.46
1:B:2045:ILE:O	1:B:2045:ILE:HG13	2.16	0.46
1:B:2471:LYS:HB2	1:B:2489:SER:HB3	1.98	0.46
1:A:1473:ASP:OD1	1:A:1474:HIS:O	2.34	0.46
1:B:2142:VAL:HG21	1:B:2256:LEU:HD22	1.98	0.46
1:B:2465:VAL:O	1:B:2465:VAL:CG1	2.63	0.46
1:A:1264:VAL:HG21	1:A:1288:GLU:HG2	1.96	0.46
1:B:2048:LEU:HD11	1:B:2060:VAL:CB	2.46	0.46
1:A:1269:ASN:OD1	1:A:1271:ARG:N	2.49	0.46
1:A:1041:LYS:H	1:A:1044:GLN:HB2	1.81	0.45
1:A:1105:SER:O	1:A:1109:ARG:N	2.45	0.45
1:A:1340:TRP:HA	1:A:1345:ILE:CD1	2.46	0.45
1:B:2379:LYS:HB2	1:B:2418:PHE:CE2	2.51	0.45
1:B:2389:ARG:HG3	1:B:2394:PHE:CE2	2.50	0.45
1:A:1322:GLY:HA2	1:A:1364:ALA:CB	2.46	0.45
1:A:1426:LYS:HD3	1:A:1432:TYR:CZ	2.52	0.45
1:B:2063:ARG:CG	1:B:2069:TYR:CZ	3.00	0.45
1:B:2071:ALA:O	1:B:2078:VAL:HA	2.17	0.45
1:A:1148:THR:HG21	1:A:1251:ASP:CG	2.36	0.45
1:A:1187:SER:HB3	1:A:1210:THR:O	2.16	0.45
1:A:1282:SER:CB	1:A:1362:GLN:HA	2.33	0.45
1:B:2284:ASN:ND2	1:B:2285:GLN:HG2	2.31	0.45
1:A:1093:ILE:HD13	1:A:1101:TRP:CH2	2.52	0.45
1:A:1111:TYR:N	1:A:1111:TYR:CD1	2.83	0.45
1:B:2031:PHE:CE2	1:B:2068:ARG:NE	2.83	0.45
1:B:2183:ASP:C	1:B:2185:ARG:H	2.18	0.45
1:B:2343:ARG:NH2	1:B:2450:ASP:OD2	2.50	0.45
1:B:2381:ILE:HG13	1:B:2382:ASN:N	2.32	0.45
1:A:1150:LYS:NZ	1:A:1168:ASP:OD1	2.48	0.45
1:A:1398:ARG:CG	1:A:1408:ARG:HH12	2.28	0.45
1:B:2339:GLU:CB	1:B:2346:THR:HG22	2.47	0.45
1:B:2379:LYS:HD3	1:B:2418:PHE:CD2	2.52	0.45
1:B:2224:ARG:HG3	1:B:2230:TYR:CE2	2.52	0.45
1:B:2275:THR:CG2	1:B:2281:LEU:CD2	2.94	0.45
1:A:1297:GLU:OE1	1:A:1330:LYS:NZ	2.32	0.45
1:A:1444:SER:HB2	1:A:1445:GLY:H	1.47	0.45
1:B:2149:ARG:HD2	1:B:2233:PRO:CB	2.46	0.45
1:B:2082:ARG:HH21	1:B:2086:GLY:HA3	1.83	0.44
1:B:2205:ARG:CZ	1:B:2207:GLU:OE1	2.65	0.44
1:B:2422:ALA:CB	1:B:2450:ASP:HB3	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1041:LYS:NZ	1:A:1407:ASN:HB2	2.32	0.44
1:B:2069:TYR:CE1	1:B:2085:PRO:HG3	2.52	0.44
1:B:2271:ARG:HH11	1:B:2271:ARG:CG	2.30	0.44
1:B:2227:GLU:HB2	1:B:2229:ARG:HE	1.83	0.44
1:A:1126:VAL:HA	1:A:1130:GLU:HG3	1.99	0.44
1:A:1354:PHE:CD2	1:A:1370:ALA:HA	2.50	0.44
1:B:2065:HIS:CE1	1:B:2066:LEU:CD2	3.01	0.44
1:B:2095:ALA:HB1	1:B:2224:ARG:HD2	2.00	0.44
1:B:2338:ILE:HG23	1:B:2345:ILE:HD11	1.98	0.44
1:A:1203:VAL:HG21	1:A:1205:ARG:CZ	2.46	0.44
1:A:1437:SER:C	1:A:1439:SER:H	2.20	0.44
1:B:2017:ILE:CG2	1:B:2021:ASN:HA	2.48	0.44
1:B:2169:VAL:HA	1:B:2170:PRO:HD3	1.82	0.44
1:B:2263:VAL:HG21	1:B:2378:MET:HE2	1.99	0.44
1:A:1213:THR:OG1	1:A:1224:ARG:HB3	2.17	0.44
1:B:2260:CYS:O	1:B:2261:ALA:C	2.54	0.44
1:A:1111:TYR:N	1:A:1111:TYR:HD1	2.16	0.44
1:A:1139:HIS:ND1	1:A:1140:PRO:HD2	2.33	0.44
1:A:1265:LEU:HB2	1:A:1273:VAL:HG13	1.99	0.44
1:B:2331:ASN:O	1:B:2332:ALA:C	2.54	0.44
1:B:2338:ILE:HG21	1:B:2340:TRP:CE2	2.52	0.44
1:A:1385:ILE:HD13	1:A:1385:ILE:HA	1.66	0.44
1:B:2331:ASN:O	1:B:2333:SER:N	2.51	0.44
1:B:2427:ASP:C	1:B:2427:ASP:OD1	2.55	0.44
1:A:1159:PRO:O	1:A:1160:ALA:C	2.56	0.44
1:A:1319:ALA:O	1:A:1321:GLY:N	2.51	0.44
1:A:1470:LEU:HA	1:A:1470:LEU:HD12	1.75	0.44
1:B:2043:LYS:HD2	1:B:2065:HIS:NE2	2.33	0.44
1:B:2074:LYS:HG2	1:B:2108:HIS:ND1	2.33	0.44
1:B:2361:GLY:C	1:B:2362:GLN:O	2.54	0.44
1:B:2426:LYS:HG3	1:B:2431:LYS:O	2.17	0.44
1:A:1269:ASN:OD1	1:A:1269:ASN:C	2.56	0.43
1:A:1017:ILE:HG23	1:A:1022:LYS:O	2.17	0.43
1:A:1063:ARG:HG2	1:A:1069:TYR:CZ	2.52	0.43
1:A:1155:LEU:HD23	1:A:1156:SER:N	2.33	0.43
1:A:1271:ARG:HH11	1:A:1271:ARG:CG	2.29	0.43
1:B:2096:HIS:NE2	1:B:2102:SER:HB2	2.33	0.43
1:B:2100:ARG:HB2	1:B:2101:TRP:H	1.45	0.43
1:A:1369:THR:O	1:A:1370:ALA:C	2.57	0.43
1:B:2048:LEU:HD12	1:B:2048:LEU:HA	1.77	0.43
1:B:2269:ASN:CG	1:B:2271:ARG:HB2	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2339:GLU:CB	1:B:2346:THR:CG2	2.94	0.43
1:B:2395:ILE:HA	1:B:2405:ASP:O	2.17	0.43
1:A:1186:TYR:O	1:A:1212:TYR:N	2.51	0.43
1:A:1361:GLY:C	1:A:1362:GLN:O	2.55	0.43
1:B:2094:VAL:HB	1:B:2102:SER:CB	2.47	0.43
1:B:2343:ARG:HG2	1:B:2452:PHE:HE2	1.82	0.43
1:B:2367:VAL:CG1	1:B:2368:GLU:N	2.81	0.43
1:A:1045:ILE:HG13	1:A:1045:ILE:O	2.18	0.43
1:A:1232:ALA:HB1	1:A:1233:PRO:HD2	2.00	0.43
1:A:1324:GLN:CG	1:A:1326:THR:HB	2.49	0.43
1:B:2151:ARG:HD3	1:B:2151:ARG:HA	1.57	0.43
1:A:1169:VAL:HA	1:A:1170:PRO:HD3	1.76	0.43
1:A:1190:THR:HG21	1:A:1202:LEU:HD21	2.00	0.43
1:B:2386:ILE:HG12	1:B:2416:LEU:HG	2.00	0.43
1:A:1151:ARG:HH11	1:A:1151:ARG:CG	2.32	0.43
1:A:1380:LEU:HD23	1:A:1380:LEU:HA	1.72	0.43
1:B:2043:LYS:CA	1:B:2065:HIS:CD2	2.87	0.43
1:B:2166:ASP:OD1	1:B:2166:ASP:N	2.52	0.43
1:B:2282:SER:CB	1:B:2362:GLN:HA	2.31	0.43
1:B:2366:SER:O	1:B:2367:VAL:C	2.58	0.43
1:A:1152:TYR:CE2	1:A:1170:PRO:HG3	2.54	0.42
1:A:1269:ASN:ND2	1:A:1283:ALA:CB	2.81	0.42
1:B:2074:LYS:HG2	1:B:2108:HIS:CE1	2.54	0.42
1:B:2161:ASP:OD1	1:B:2161:ASP:N	2.52	0.42
1:B:2319:ALA:C	1:B:2321:GLY:H	2.22	0.42
1:B:2383:ARG:N	1:B:2384:PRO:CD	2.81	0.42
1:B:2193:HIS:NE2	1:B:2385:ILE:HD11	2.34	0.42
1:B:2289:THR:O	1:B:2291:GLN:N	2.52	0.42
1:A:1438:ASP:O	1:A:1439:SER:HB2	2.19	0.42
1:B:2275:THR:CG2	1:B:2281:LEU:HD22	2.49	0.42
1:A:1098:ASP:O	1:A:1099:GLY:O	2.38	0.42
1:B:2296:LEU:HD13	1:B:2378:MET:HE2	2.01	0.42
1:B:2382:ASN:O	1:B:2382:ASN:CG	2.57	0.42
1:B:2400:VAL:HG13	1:B:2401:THR:N	2.26	0.42
1:B:2432:TYR:CG	1:B:2448:PRO:HB3	2.54	0.42
1:B:2438:ASP:O	1:B:2439:SER:HB2	2.20	0.42
1:A:1071:ALA:O	1:A:1078:VAL:HA	2.19	0.42
1:A:1289:THR:C	1:A:1291:GLN:H	2.21	0.42
1:A:1407:ASN:ND2	1:A:1476:GLY:HA3	2.35	0.42
1:A:1150:LYS:CG	1:A:1151:ARG:HE	2.21	0.42
1:A:1289:THR:O	1:A:1291:GLN:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1311:THR:O	1:A:1311:THR:HG22	2.19	0.42
1:B:2135:HIS:CD2	1:B:2135:HIS:C	2.93	0.42
1:B:2225:ASP:OD1	1:B:2225:ASP:C	2.57	0.42
1:B:2400:VAL:HG13	1:B:2401:THR:HG23	2.01	0.42
1:A:1064:SER:C	1:A:1066:LEU:H	2.23	0.42
1:A:1282:SER:HB3	1:A:1362:GLN:CA	2.32	0.42
1:B:2181:PHE:CD1	1:B:2186:TYR:CE1	3.08	0.42
1:B:2341:ARG:NH1	1:B:2375:LEU:HD11	2.34	0.42
1:A:1073:ASP:C	1:A:1073:ASP:OD1	2.58	0.42
1:A:1266:GLN:HA	1:A:1271:ARG:O	2.20	0.42
1:B:2041:LYS:H	1:B:2044:GLN:HB2	1.84	0.42
1:B:2078:VAL:HG12	1:B:2120:SER:HA	2.02	0.42
1:A:1434:THR:HG23	1:A:1449:VAL:CG1	2.48	0.42
1:B:2096:HIS:O	1:B:2098:ASP:N	2.53	0.42
1:B:2158:ARG:HH11	1:B:2158:ARG:H	1.68	0.42
1:B:2289:THR:C	1:B:2291:GLN:N	2.73	0.42
1:B:2343:ARG:C	1:B:2344:ARG:HD2	2.39	0.42
1:A:1096:HIS:O	1:A:1097:ASP:C	2.58	0.42
1:A:1102:SER:OG	1:A:1126:VAL:CG1	2.68	0.42
1:A:1342:ASP:HB2	1:A:1452:PHE:CD2	2.55	0.42
1:A:1361:GLY:O	1:A:1362:GLN:O	2.38	0.42
1:A:1432:TYR:CE1	1:A:1448:PRO:HB3	2.55	0.42
1:A:1063:ARG:HG3	1:A:1063:ARG:HH11	1.83	0.41
1:A:1218:SER:O	1:A:1220:LYS:N	2.48	0.41
1:A:1343:ARG:NH2	1:A:1450:ASP:OD2	2.49	0.41
1:A:1454:GLU:OE1	1:A:1464:LYS:HE3	2.20	0.41
1:B:2127:SER:O	1:B:2129:ALA:N	2.52	0.41
1:B:2417:GLU:OE1	1:B:2432:TYR:OH	2.26	0.41
1:A:1040:LEU:HD11	1:A:1045:ILE:HG22	2.02	0.41
1:A:1100:ARG:HB3	1:A:1133:SER:HA	2.00	0.41
1:A:1490:LEU:HA	1:A:1490:LEU:HD23	1.76	0.41
1:B:2040:LEU:HD11	1:B:2045:ILE:HG22	2.02	0.41
1:B:2167:ARG:NH2	1:B:2171:TRP:HB3	2.35	0.41
1:A:1166:ASP:OD1	1:A:1166:ASP:N	2.52	0.41
1:A:1416:LEU:HA	1:A:1424:ASN:O	2.20	0.41
1:A:1432:TYR:CD1	1:A:1448:PRO:HB3	2.55	0.41
1:B:2160:ALA:O	1:B:2161:ASP:HB2	2.20	0.41
1:B:2359:LYS:HG3	1:B:2360:ASN:H	1.85	0.41
1:A:1029:PHE:HD2	1:A:1029:PHE:HA	1.77	0.41
1:A:1299:ASP:O	1:A:1300:ARG:C	2.59	0.41
1:A:1386:ILE:HG12	1:A:1416:LEU:HG	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1150:LYS:HG3	1:A:1150:LYS:O	2.18	0.41
1:B:2208:PRO:HG2	1:B:2209:ALA:N	2.35	0.41
1:A:1010:VAL:CG1	1:A:1256:LEU:CB	2.98	0.41
1:A:1177:ILE:CG2	1:A:1188:VAL:HG13	2.51	0.41
1:B:2048:LEU:CD1	1:B:2060:VAL:HB	2.49	0.41
1:B:2317:LEU:HD12	1:B:2317:LEU:HA	1.68	0.41
1:A:1074:LYS:HG2	1:A:1108:HIS:ND1	2.36	0.41
1:A:1150:LYS:O	1:A:1150:LYS:HE3	2.20	0.41
1:B:2322:GLY:HA2	1:B:2364:ALA:HB2	2.02	0.41
1:B:2367:VAL:HG12	1:B:2368:GLU:N	2.35	0.41
1:B:2470:LEU:HD12	1:B:2470:LEU:HA	1.92	0.41
1:A:1109:ARG:HH11	1:A:1109:ARG:CG	2.33	0.41
1:A:1127:SER:C	1:A:1129:ALA:N	2.74	0.41
1:A:1205:ARG:NE	1:A:1205:ARG:O	2.54	0.41
1:B:2093:ILE:CG2	1:B:2101:TRP:CE2	3.04	0.41
1:B:2100:ARG:HB3	1:B:2133:SER:HA	2.01	0.41
1:B:2141:GLN:NE2	1:B:2178:THR:HG23	2.36	0.41
1:B:2183:ASP:O	1:B:2185:ARG:N	2.54	0.41
1:B:2444:SER:HB2	1:B:2445:GLY:H	1.67	0.41
1:A:1338:ILE:HG23	1:A:1345:ILE:CD1	2.50	0.41
1:B:2024:LEU:C	1:B:2024:LEU:CD2	2.89	0.41
1:B:2205:ARG:O	1:B:2205:ARG:CG	2.69	0.41
1:B:2319:ALA:C	1:B:2321:GLY:N	2.74	0.41
1:B:2361:GLY:O	1:B:2362:GLN:O	2.38	0.41
1:A:1048:LEU:HD11	1:A:1060:VAL:CB	2.51	0.40
1:A:1154:HIS:HE1	1:A:1164:ALA:HB3	1.85	0.40
1:A:1343:ARG:C	1:A:1344:ARG:HD2	2.38	0.40
1:B:2203:VAL:HG21	1:B:2205:ARG:CZ	2.51	0.40
1:B:2284:ASN:C	1:B:2284:ASN:HD22	2.24	0.40
1:A:1152:TYR:CD2	1:A:1170:PRO:HG3	2.56	0.40
1:B:2141:GLN:C	1:B:2142:VAL:CG1	2.89	0.40
1:B:2173:VAL:O	1:B:2174:ASP:C	2.60	0.40
1:B:2197:ARG:HD2	1:B:2199:ASP:OD2	2.21	0.40
1:B:2218:SER:C	1:B:2220:LYS:N	2.74	0.40
1:A:1063:ARG:HD3	1:A:1069:TYR:CE2	2.56	0.40
1:A:1197:ARG:HB3	1:A:1199:ASP:OD1	2.21	0.40
1:A:1346:THR:HG22	1:A:1346:THR:O	2.21	0.40
1:B:2304:LYS:HG2	1:B:2337:ASP:OD2	2.20	0.40
1:B:2385:ILE:HG23	1:B:2413:VAL:HG13	2.02	0.40
1:A:1212:TYR:CZ	1:A:1231:LEU:HD21	2.56	0.40
1:A:1262:GLN:HB2	1:A:1382:ASN:CG	2.42	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1311:THR:O	1:A:1312:GLY:C	2.58	0.40
1:A:1314:TYR:HH	1:A:1330:LYS:HE2	1.86	0.40
1:B:2185:ARG:HH22	1:B:2226:CYS:HA	1.86	0.40
1:B:2234:SER:O	1:B:2235:GLY:O	2.39	0.40
1:B:2017:ILE:HG23	1:B:2022:LYS:O	2.22	0.40
1:B:2404:LEU:HD22	1:B:2442:THR:HA	2.03	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1075:ASP:OD1	1:B:2343:ARG:NH1[1_565]	2.15	0.05

## 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	469/493 (95%)	390 (83%)	61 (13%)	18 (4%)	<b>3</b> <b>13</b>
1	B	468/493 (95%)	390 (83%)	59 (13%)	19 (4%)	<b>3</b> <b>11</b>
All	All	937/986 (95%)	780 (83%)	120 (13%)	37 (4%)	<b>3</b> <b>12</b>

All (37) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1029	PHE
1	A	1116	GLU
1	A	1158	ARG
1	A	1160	ALA
1	A	1227	GLU
1	A	1399	LYS
1	A	1445	GLY

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Mol	Chain	Res	Type
1	B	2029	PHE
1	B	2097	ASP
1	B	2116	GLU
1	B	2158	ARG
1	B	2160	ALA
1	B	2227	GLU
1	B	2281	LEU
1	B	2399	LYS
1	B	2445	GLY
1	A	1097	ASP
1	A	1099	GLY
1	A	1235	GLY
1	A	1332	ALA
1	A	1342	ASP
1	A	1362	GLN
1	B	2099	GLY
1	B	2235	GLY
1	B	2343	ARG
1	B	2362	GLN
1	A	1218	SER
1	B	2172	GLY
1	B	2332	ALA
1	B	2342	ASP
1	A	1080	CYS
1	A	1228	GLY
1	A	1367	VAL
1	B	2228	GLY
1	B	2367	VAL
1	B	2218	SER
1	A	1320	THR

### 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	391/404 (97%)	312 (80%)	79 (20%)	<b>1</b> <b>4</b>

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	391/404 (97%)	307 (78%)	84 (22%)	1	3
All	All	782/808 (97%)	619 (79%)	163 (21%)	1	3

All (163) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1010	VAL
1	A	1014	PHE
1	A	1016	LEU
1	A	1024	LEU
1	A	1029	PHE
1	A	1032	LYS
1	A	1038	SER
1	A	1040	LEU
1	A	1047	THR
1	A	1066	LEU
1	A	1078	VAL
1	A	1090	ARG
1	A	1100	ARG
1	A	1102	SER
1	A	1103	LEU
1	A	1109	ARG
1	A	1116	GLU
1	A	1117	ASP
1	A	1126	VAL
1	A	1127	SER
1	A	1130	GLU
1	A	1138	MET
1	A	1140	PRO
1	A	1141	GLN
1	A	1147	VAL
1	A	1150	LYS
1	A	1151	ARG
1	A	1158	ARG
1	A	1168	ASP
1	A	1169	VAL
1	A	1171	TRP
1	A	1178	THR
1	A	1182	GLN
1	A	1189	GLN
1	A	1205	ARG
1	A	1213	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1221	VAL
1	A	1229	ARG
1	A	1231	LEU
1	A	1244	LYS
1	A	1248	VAL
1	A	1251	ASP
1	A	1271	ARG
1	A	1273	VAL
1	A	1281	LEU
1	A	1301	ASP
1	A	1302	THR
1	A	1303	LYS
1	A	1310	HIS
1	A	1313	LYS
1	A	1316	THR
1	A	1320	THR
1	A	1324	GLN
1	A	1326	THR
1	A	1334	CYS
1	A	1343	ARG
1	A	1345	ILE
1	A	1346	THR
1	A	1356	THR
1	A	1372	ASP
1	A	1374	GLU
1	A	1375	LEU
1	A	1380	LEU
1	A	1383	ARG
1	A	1386	ILE
1	A	1389	ARG
1	A	1397	CYS
1	A	1404	LEU
1	A	1408	ARG
1	A	1415	GLN
1	A	1416	LEU
1	A	1428	SER
1	A	1434	THR
1	A	1438	ASP
1	A	1444	SER
1	A	1446	ASP
1	A	1468	ARG
1	A	1470	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1471	LYS
1	B	2010	VAL
1	B	2014	PHE
1	B	2016	LEU
1	B	2019	CYS
1	B	2024	LEU
1	B	2029	PHE
1	B	2032	LYS
1	B	2033	VAL
1	B	2040	LEU
1	B	2047	THR
1	B	2078	VAL
1	B	2090	ARG
1	B	2100	ARG
1	B	2102	SER
1	B	2103	LEU
1	B	2109	ARG
1	B	2116	GLU
1	B	2117	ASP
1	B	2126	VAL
1	B	2127	SER
1	B	2130	GLU
1	B	2138	MET
1	B	2140	PRO
1	B	2141	GLN
1	B	2147	VAL
1	B	2150	LYS
1	B	2151	ARG
1	B	2158	ARG
1	B	2168	ASP
1	B	2169	VAL
1	B	2171	TRP
1	B	2173	VAL
1	B	2178	THR
1	B	2182	GLN
1	B	2189	GLN
1	B	2205	ARG
1	B	2213	THR
1	B	2221	VAL
1	B	2229	ARG
1	B	2231	LEU
1	B	2244	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	2248	VAL
1	B	2251	ASP
1	B	2269	ASN
1	B	2271	ARG
1	B	2273	VAL
1	B	2280	ASP
1	B	2281	LEU
1	B	2284	ASN
1	B	2301	ASP
1	B	2302	THR
1	B	2303	LYS
1	B	2310	HIS
1	B	2313	LYS
1	B	2316	THR
1	B	2320	THR
1	B	2324	GLN
1	B	2326	THR
1	B	2334	CYS
1	B	2343	ARG
1	B	2345	ILE
1	B	2346	THR
1	B	2356	THR
1	B	2372	ASP
1	B	2375	LEU
1	B	2377	LEU
1	B	2380	LEU
1	B	2383	ARG
1	B	2386	ILE
1	B	2389	ARG
1	B	2397	CYS
1	B	2404	LEU
1	B	2408	ARG
1	B	2415	GLN
1	B	2416	LEU
1	B	2428	SER
1	B	2429	THR
1	B	2434	THR
1	B	2438	ASP
1	B	2444	SER
1	B	2446	ASP
1	B	2468	ARG
1	B	2470	LEU

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Mol	Chain	Res	Type
1	B	2471	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1011	GLN
1	A	1021	ASN
1	A	1124	GLN
1	A	1182	GLN
1	A	1324	GLN
1	A	1415	GLN
1	B	2011	GLN
1	B	2013	GLN
1	B	2021	ASN
1	B	2124	GLN
1	B	2141	GLN
1	B	2143	ASN
1	B	2182	GLN
1	B	2324	GLN
1	B	2415	GLN
1	B	2424	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](#)

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 [i](#)

There are no chain breaks in this entry.



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

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

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

### 6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.