



Full wwPDB EM Validation Report ⓘ

Jan 20, 2026 – 01:35 pm GMT

PDB ID : 9Q9F / pdb_00009q9f
EMDB ID : EMD-52958
Title : DNA-PK bound to a 153 bp H2AX nucleosome model 1
Authors : Hall, C.; Chaplin, A.K.
Deposited on : 2025-02-26
Resolution : 4.54 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

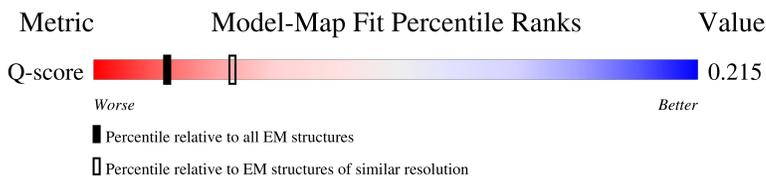
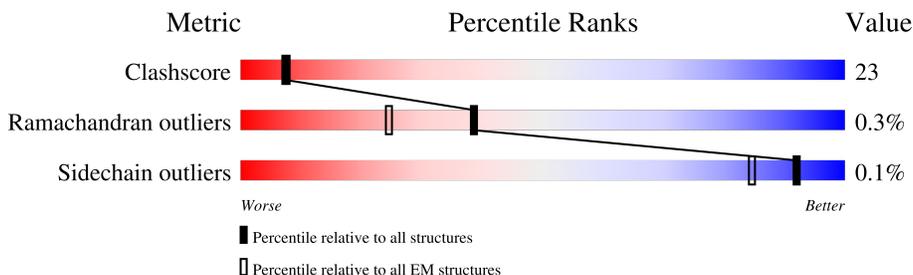
EMDB validation analysis : 0.0.1.dev129
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 4.54 Å.

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



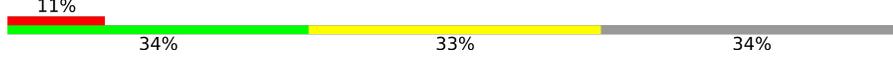
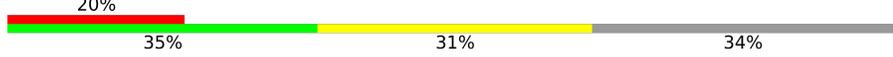
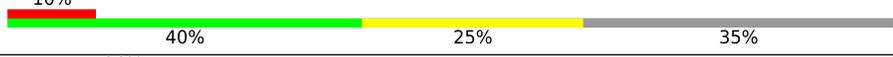
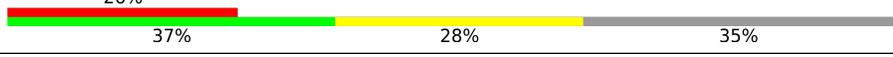
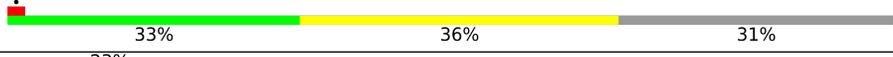
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	2475 (4.04 - 5.04)

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

Mol	Chain	Length	Quality of chain
1	K	609	<p>42% 38% 19%</p>
2	L	732	<p>37% 35% 28%</p>
3	I	153	<p>22% 26% 58% 16%</p>
4	J	153	<p>17% 26% 59% 14%</p>

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Mol	Chain	Length	Quality of chain
5	O	4128	
6	C	143	
6	G	143	
7	D	126	
7	H	126	
8	A	136	
8	E	136	
9	B	103	
9	F	103	

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 46624 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called X-ray repair cross-complementing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	K	495	3926	2511	662	736	17	0	0

- Molecule 2 is a protein called X-ray repair cross-complementing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	L	527	4165	2667	697	779	22	0	0

- Molecule 3 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	I	129	2630	1247	481	773	129	0	0

- Molecule 4 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	J	131	2697	1275	504	787	131	0	0

- Molecule 5 is a protein called DNA-dependent protein kinase catalytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	O	3527	27830	17852	4683	5123	172	0	0

- Molecule 6 is a protein called Histone H2AX.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	C	95	690	432	133	125	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
6	G	94	Total	C	N	O	0	0
			692	438	132	122		

- Molecule 7 is a protein called Histone H2B type 1-J.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	93	Total	C	N	O	S	0	0
			719	450	130	137	2		
7	H	92	Total	C	N	O	S	0	0
			718	453	127	136	2		

- Molecule 8 is a protein called Histone H3.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	88	Total	C	N	O	S	0	0
			697	442	128	123	4		
8	E	88	Total	C	N	O	S	0	0
			711	450	131	126	4		

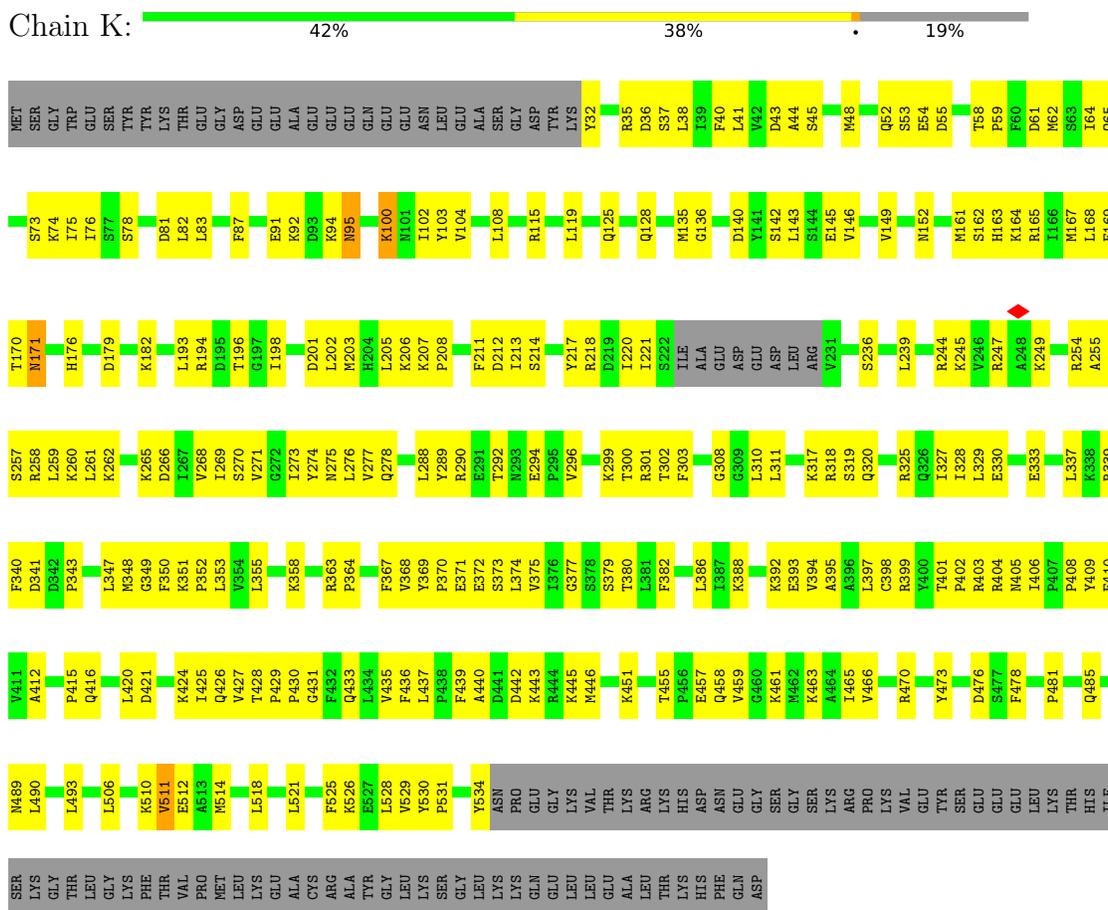
- Molecule 9 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	71	Total	C	N	O	S	0	0
			568	357	113	97	1		
9	F	72	Total	C	N	O	S	0	0
			581	370	112	98	1		

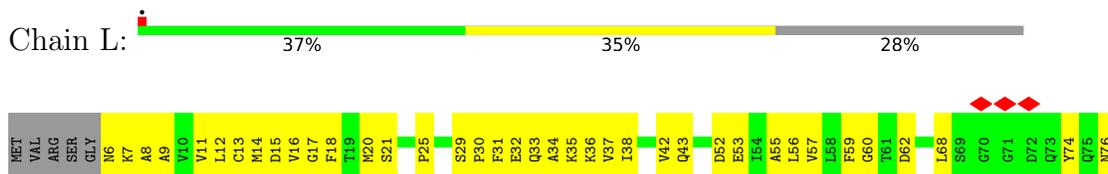
3 Residue-property plots

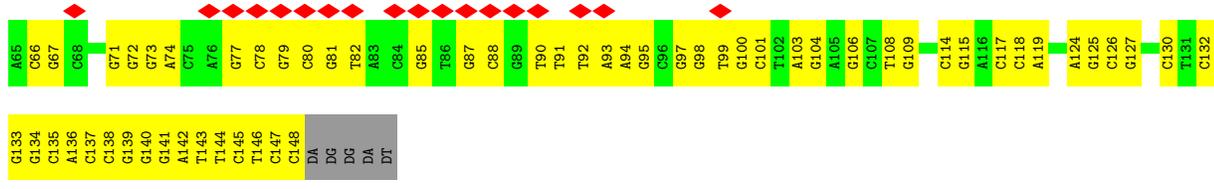
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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: X-ray repair cross-complementing protein 6

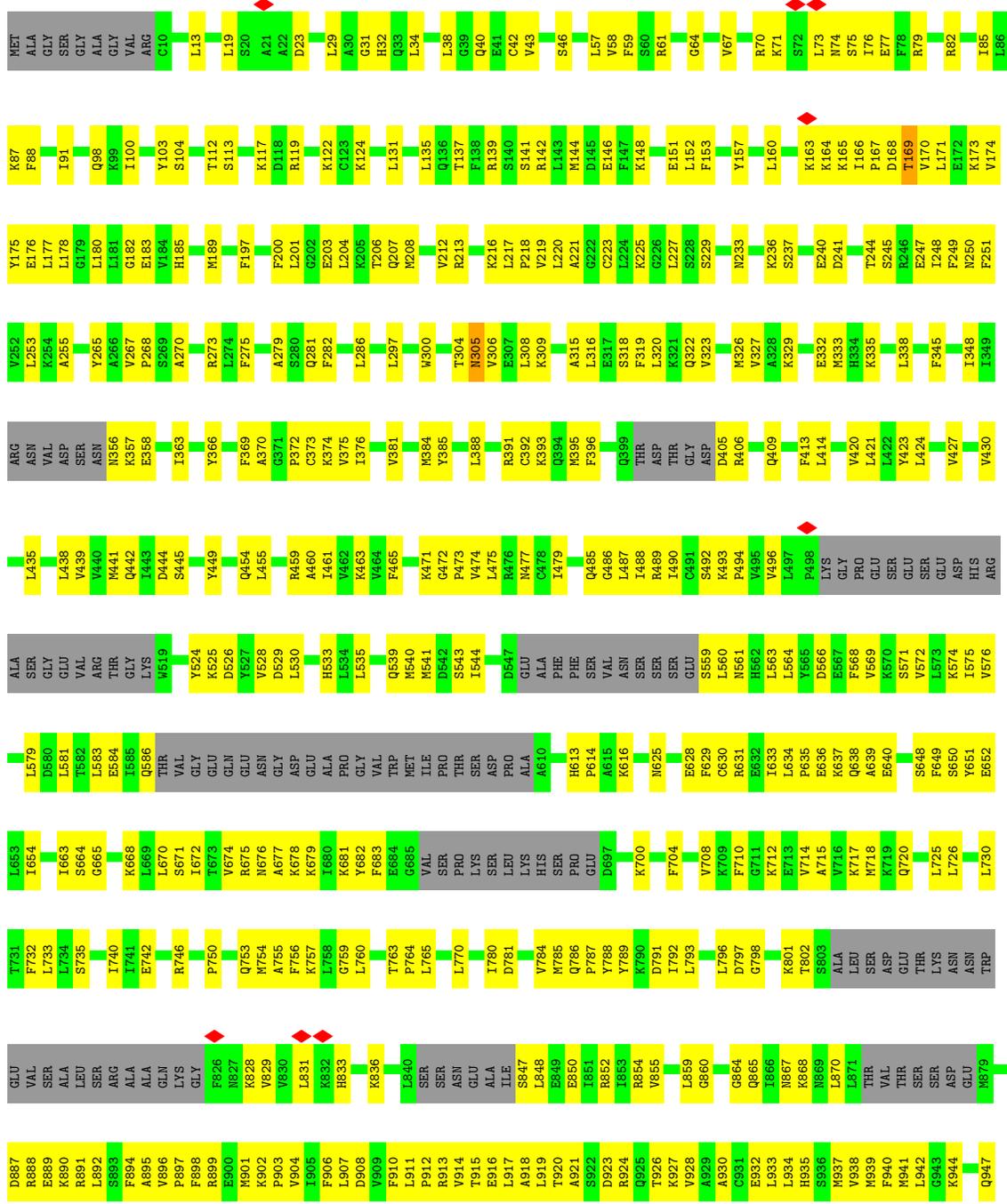


• Molecule 2: X-ray repair cross-complementing protein 5

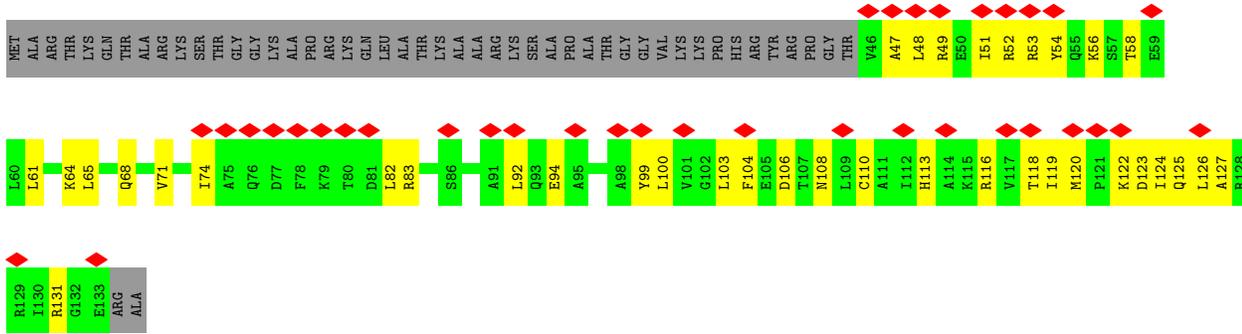




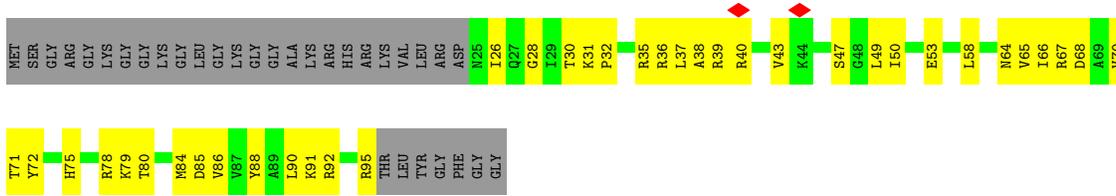
• Molecule 5: DNA-dependent protein kinase catalytic subunit



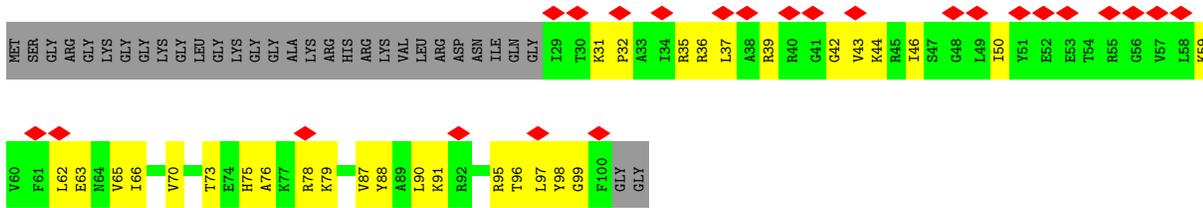
T3268	K3192	L3092	D3020	PRO	L2808	GLU	SER	THR	T2535	C2435	R2284	D2208	P2136
K3269	K3193	A3099	S3021	P2918	P2815	LYS	ASP	LEU	L2636	N2365	R2285	D2208	L2137
D3270	D3271	K3100	GLU	D2919	G2815	LEU	SER	THR	D2637	K2366	L2285	L2211	V2138
W3272	W3273	Y3101	ASN	W2923	E2819	SER	LEU	ARG	R2638	V2367	C2292	R2214	P2139
L3273	L3103	Y3102	PRO	V2924	E2834	MET	PHE	THR	L2542	S2370	Q2295	R2215	L2140
V3274	Q3104	Y3103	ASP	E2925	Q2834	TWR	ALA	GLN	N2543	F3371	L2446	L2216	N2141
W3275	LEU	K2928	LEU	K2928	K2835	ALA	HIS	GLY	S2644	P2372	E2289	N2217	L2142
W3277	PRO	L2929	K3029	L2929	L2836	ARG	LYS	GLY	L2545	P2373	Y2298	F2218	R2143
Q3278	GLU	L3030	I3030	L2837	Q2838	GLY	ARG	SER	L2374	L2374	F2300	L2219	L2146
S3279	ASN	F3110	W3031	D2937	D2839	VAL	GLU	SER	P2548	D2376	A2375	V2223	L2149
R3282	SER	Y3114	E3033	V2938	N2841	ALA	ARG	ALA	E2551	R2377	L2303	F2224	F2250
L3283	MET	D3118	F3035	L2939	R2842	GLN	LEU	TRP	H2553	M2379	N2305	H2225	L2151
S3284	ASN	V3119	P3036	L2939	R2842	LYS	ARG	PRO	H2553	M2379	N2305	K2227	W2152
H3285	VAL	V3119	Q3037	I2942	T2847	GLU	ALA	VAL	S2556	A2381	R2228	R2228	E2154
C3286	ASP	Q3037	Q3037	F2848	F2848	ALA	ALA	ALA	S2466	A2381	A2229	A2229	E2155
R3287	GLN	R3125	E3038	K2950	F2848	LYS	LEU	GLY	T2467	V2382	V2330	V2330	V2156
S3288	ASP	K3128	T3039	K2950	F2851	GLU	LYS	GLN	R2470	L2385	R2311	F2231	V2157
R3289	GLY	K3128	M3044	L2957	P2852	ILE	SER	ILE	E2471	K2388	R2332	R2332	R2158
S3290	ASP	L3129	I3045	L2957	P2853	LYS	VAL	VAL	Q2472	K2388	Y2316	H2233	P2159
Q3291	PRO	L3129	I3045	A2961	F2854	LYS	GLY	ALA	N2473	A2317	A2317	L2234	V2160
S3294	SER	Q3133	R3046	F2961	V2855	GLU	PRO	THR	M2565	G2391	A2318	L2235	L2235
E3295	ASP	A3134	S3047	D2973	V2855	LYS	ASP	GLN	T2476	V2392	A2319	E2236	K2162
Q3296	ARG	L3135	K3048	D2973	I2858	LYS	PHE	GLN	L2477	L2393	L2323	L2237	H2163
V3297	MET	T3136	K3048	K2978	C2863	MET	GLY	GLN	I2480	K2394	L2323	L2238	W2164
L3298	GLU	E3137	K3050	Q2979	Q2864	LYS	LYS	HIS	Y2572	L2395	G2324	K2239	L2165
T3299	VAL	I3138	L3051	D2980	Q2864	GLN	GLY	ASP	Y2484	L2396	R2328	V2242	S2166
T3299	GLN	Q3139	L3052	F2980	L2868	ASP	ARG	PHE	R2485	C2397	R2329	V2242	P2167
V3300	GLU	F3140	L3053	G2984	L2868	LEU	LEU	THR	R2486	V2330	V2330	L2249	L2168
L3301	GLN	F3141	Q3054	E2985	L2869	GLY	GLY	LEU	D2486	V2400	M2351	S2250	L2169
T3302	GLU	I3142	Q3054	P2986	L2869	LEU	LEU	THR	PRO	V2400	M2351	S2250	Q2170
V3303	GLU	S3143	Q3059	P2987	P2873	PRO	PRO	GLN	F2586	C2403	E2332	P2252	L2171
L3306	GLU	F3144	S3060	E2988	L2871	GLY	GLY	THR	R2587	K2334	R2333	P2252	A2172
S3309	GLU	K3147	L3061	E2989	R2891	ASP	ASP	ALA	E2588	G2407	N2335	R2254	W2176
E3312	GLU	V3155	T3063	K2991	E2894	VAL	VAL	GLY	Y2589	G2407	N2335	R2254	ASN
V3312	GLU	F3156	F3064	D2992	E2895	ASP	ASP	ARG	L2690	E2497	L2337	L2256	GLY
L3321	K3241	L3157	Q3067	F2993	A2896	ASN	ASN	ARG	L2411	E2411	E2338	K2259	GLY
A3322	M3242	R3158	K3067	W2994	L2897	LYS	LYS	SER	Y2412	E2338	E2338	K2259	L2182
F3323	I3243	L3160	E3072	E2995	L2898	VAL	VAL	PHE	F2413	S2340	S2340	F2260	L2182
R3324	D3244	L3161	E3072	L2996	L2899	LYS	GLY	TRP	F2413	S2340	S2340	F2260	L2182
S3325	S3245	N3162	Q3074	L2999	L2901	ALA	ALA	LEU	L2415	C2342	C2342	S2261	H2183
D3325	A3246	T3163	Q3075	D3000	PRO	ALA	ALA	THR	D2419	E2343	E2343	D2264	V2186
Q3326	R3247	W3164	A3076	C3001	ALA	R2722	R2722	GLY	F2420	L2344	L2344	P2265	V2187
K3248	K3248	T3165	L3077	Y3002	GLU	T2723	T2723	SER	F2421	V2345	V2345	N2266	E2188
Q3249	Q3249	T3165	L3078	H3004	LEU	L2724	L2724	THR	V2421	A2346	A2346	S2267	L2189
F3252	F3252	P3169	H3081	H3004	PRO	D2724	D2724	THR	Q2423	L2349	L2349	N2270	V2190
G3331	G3331	M3175	Y3082	W3008	LYS	P2782	P2782	ASP	H2423	K2350	K2350	T2270	T2192
L3254	L3254	Q3176	S3083	L3011	ARG	L2726	L2726	PRO	R2425	Q2351	Q2351	T2274	L2193
L3259	L3259	M3179	Q3084	L3011	VAL	R2727	R2727	VAL	H2426	H2352	H2352	Q2275	L2194
F3259	F3259	W3179	E3085	C3014	ARG	L2728	L2728	VAL	R2427	Q2353	Q2353	L2276	S2195
H3263	H3263	I3183	L3088	S3015	GLY	P2802	P2802	ASP	D2428	T2529	T2529	T2279	V2196
K3267	K3267	R3186	L3089	S3018	LYS	L2804	L2804	THR	D2429	R2530	R2530	V2280	A2200
			L3091	S3018	ARG	A2805	A2805	PRO	E2430	K2588	K2588	V2280	A2200
			L3091	S3018	ARG	A2805	A2805	PRO	F2360	F2360	F2360	M2281	A2281
			L3091	S3018	ARG	A2805	A2805	PRO	L2361	L2361	L2361	A2281	A2281
			L3091	S3018	ARG	A2805	A2805	PRO	Q2432	Q2432	Q2432	N2283	V2205
			L3091	S3018	ARG	A2805	A2805	PRO	GLY	GLY	GLY	N2283	V2205



● Molecule 9: Histone H4



● Molecule 9: Histone H4



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	14174	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	48.59	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.839	Depositor
Minimum map value	-0.247	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.022	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	692.16, 692.16, 692.16	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.6479999, 1.6479999, 1.6479999	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	K	0.10	0/4004	0.32	0/5409
2	L	0.12	0/4249	0.34	0/5742
3	I	0.18	0/2947	0.37	0/4542
4	J	0.17	0/3027	0.36	0/4673
5	O	0.14	0/28381	0.37	0/38396
6	C	0.12	0/700	0.33	0/951
6	G	0.14	0/702	0.42	0/951
7	D	0.11	0/729	0.31	0/980
7	H	0.13	0/729	0.38	0/979
8	A	0.10	0/705	0.31	0/948
8	E	0.18	0/719	0.41	0/966
9	B	0.11	0/573	0.28	0/767
9	F	0.14	0/588	0.38	0/788
All	All	0.14	0/48053	0.36	0/66092

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	K	3926	0	3920	239	0
2	L	4165	0	4165	229	0
3	I	2630	0	1446	111	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	J	2697	0	1469	118	0
5	O	27830	0	27756	1243	0
6	C	690	0	676	42	0
6	G	692	0	704	57	0
7	D	719	0	735	23	0
7	H	718	0	740	42	0
8	A	697	0	710	46	0
8	E	711	0	737	44	0
9	B	568	0	614	39	0
9	F	581	0	625	40	0
All	All	46624	0	44297	2033	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 23.

All (2033) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:965:THR:HG22	5:O:969:LEU:CD1	1.97	0.94
5:O:1633:TRP:HB2	5:O:1678:LEU:HD21	1.51	0.93
5:O:965:THR:HG22	5:O:969:LEU:HG	1.52	0.91
6:G:26:PRO:HB2	6:G:29:ARG:HB3	1.53	0.91
5:O:965:THR:HG22	5:O:969:LEU:CG	2.01	0.90
5:O:1452:VAL:HG22	5:O:1517:LEU:HD11	1.56	0.87
5:O:1840:PHE:HB2	5:O:1880:MET:HE1	1.55	0.87
2:L:118:ILE:HD11	2:L:132:ILE:HD11	1.59	0.84
1:K:421:ASP:HB3	1:K:427:VAL:HB	1.60	0.84
5:O:2256:ILE:HA	5:O:2259:LYS:HB2	1.59	0.82
5:O:1775:GLU:HA	5:O:1778:PHE:HD2	1.45	0.82
5:O:897:PRO:HB3	5:O:2571:ASP:HB3	1.62	0.81
5:O:1574:ASN:HD21	5:O:1577:LEU:HB2	1.47	0.80
5:O:965:THR:HG22	5:O:969:LEU:HD11	1.64	0.80
1:K:442:ASP:H	2:L:270:GLU:HG2	1.45	0.80
5:O:2165:LEU:HD11	5:O:2200:ALA:HB1	1.64	0.80
5:O:3811:THR:HG22	5:O:3929:MET:HE1	1.65	0.78
2:L:62:ASP:HA	2:L:103:GLN:HB2	1.67	0.77
3:I:94:DA:H4'	8:A:63:ARG:HH11	1.49	0.77
2:L:134:ILE:HG13	2:L:161:LEU:HD11	1.66	0.76
2:L:13:CYS:HB3	2:L:134:ILE:HA	1.67	0.76
9:B:38:ALA:HB1	9:B:43:VAL:HB	1.66	0.75
2:L:308:GLU:HG3	2:L:309:ASP:H	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1716:GLN:HA	5:O:1719:VAL:HB	1.70	0.74
6:G:102:ILE:HD12	7:H:58:ILE:HD13	1.69	0.74
1:K:299:LYS:HB2	2:L:297:LEU:HD21	1.68	0.73
5:O:2317:ALA:HA	5:O:2366:LYS:HE3	1.70	0.73
5:O:3737:ARG:HH11	5:O:3751:LEU:HB3	1.51	0.73
1:K:59:PRO:HB3	1:K:205:LEU:HD23	1.70	0.73
2:L:115:MET:HA	2:L:118:ILE:HD12	1.71	0.73
1:K:256:LEU:O	1:K:258:ARG:NH1	2.21	0.72
8:E:49:ARG:HB2	8:E:53:ARG:HH12	1.53	0.72
5:O:2254:ARG:NH1	5:O:2292:CYS:SG	2.63	0.72
5:O:3450:MET:HG2	5:O:3468:LEU:HD22	1.71	0.72
5:O:3483:MET:O	5:O:3486:GLU:HB3	1.89	0.72
5:O:3725:ARG:HB2	5:O:3739:ILE:HB	1.71	0.72
1:K:352:PRO:HA	1:K:394:VAL:HA	1.71	0.71
5:O:3263:HIS:O	5:O:3267:LYS:NZ	2.23	0.71
6:G:89:ASN:HA	6:G:108:LEU:HD22	1.71	0.71
5:O:726:LEU:HG	5:O:730:LEU:HD23	1.71	0.71
3:I:94:DA:H5'	3:I:94:DA:C8	2.26	0.71
5:O:965:THR:CG2	5:O:969:LEU:HD11	2.20	0.71
5:O:1326:GLU:HG3	5:O:1329:ARG:HG2	1.74	0.70
5:O:2372:PRO:HB3	5:O:2403:CYS:HB3	1.73	0.70
5:O:2461:PHE:HB2	5:O:2473:MET:HE3	1.73	0.70
6:G:43:VAL:HG13	7:H:86:ILE:HB	1.73	0.70
5:O:535:LEU:HB3	5:O:637:LYS:HE2	1.73	0.70
2:L:381:ILE:HG23	2:L:410:PRO:HB2	1.73	0.70
5:O:912:PRO:O	5:O:915:THR:HB	1.91	0.70
5:O:420:VAL:O	5:O:424:LEU:N	2.23	0.70
1:K:300:THR:HA	2:L:293:THR:HA	1.73	0.70
1:K:476:ASP:HA	2:L:427:MET:HG2	1.72	0.70
5:O:3716:HIS:CE1	5:O:3717:VAL:HG12	2.27	0.70
4:J:52:DC:H2'	4:J:53:DT:C6	2.26	0.70
5:O:1926:ASN:HD21	5:O:1967:PHE:HZ	1.39	0.70
6:G:81:ARG:HH22	6:G:109:PRO:HD3	1.57	0.70
2:L:165:LEU:HD21	2:L:224:ILE:HG23	1.73	0.70
2:L:364:VAL:HB	2:L:419:LEU:HB3	1.74	0.70
2:L:154:LEU:HD23	2:L:159:ILE:HG23	1.74	0.69
4:J:90:DT:H2''	4:J:91:DT:H2'	1.73	0.69
5:O:2591:ILE:HD11	5:O:2775:TYR:HB2	1.73	0.69
3:I:65:DC:N4	4:J:90:DT:O2	2.26	0.69
2:L:74:TYR:HB3	2:L:77:ILE:HD12	1.74	0.69
2:L:184:ARG:HH22	2:L:521:GLU:HG2	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:497:ARG:NH2	2:L:503:GLU:O	2.26	0.69
5:O:3107:ILE:HD13	5:O:3135:LEU:HD13	1.75	0.69
1:K:294:GLU:OE2	2:L:298:ASN:ND2	2.26	0.69
1:K:529:VAL:HG13	1:K:530:TYR:H	1.58	0.69
5:O:663:ILE:HG22	5:O:665:GLY:H	1.57	0.69
5:O:2151:ILE:HG12	5:O:2192:THR:HG21	1.75	0.68
3:I:112:DC:H5'	4:J:43:DA:H2	1.57	0.68
5:O:306:VAL:HG23	5:O:309:LYS:HD2	1.74	0.68
5:O:793:LEU:HB3	5:O:870:LEU:HA	1.74	0.68
5:O:3961:PHE:HE1	5:O:4107:LEU:HD22	1.57	0.68
5:O:3142:ILE:O	5:O:3147:LYS:NZ	2.26	0.68
3:I:103:DG:H21	8:A:83:ARG:HH22	1.38	0.68
2:L:342:VAL:HA	2:L:393:VAL:HG12	1.74	0.68
1:K:277:VAL:HG21	2:L:425:PRO:HB3	1.76	0.68
5:O:216:LYS:HG2	5:O:218:PRO:HD3	1.75	0.67
5:O:1685:ASP:HB3	5:O:1688:LEU:HG	1.75	0.67
5:O:3015:SER:HA	5:O:3044:MET:HE1	1.75	0.67
5:O:1149:LYS:O	5:O:1163:LEU:N	2.27	0.67
3:I:14:DC:N3	4:J:140:DG:N2	2.41	0.67
5:O:1933:LEU:HG	5:O:1934:LEU:H	1.59	0.67
5:O:2791:ILE:HA	5:O:2794:LEU:HD12	1.77	0.67
8:A:61:LEU:HA	8:A:63:ARG:HH21	1.57	0.67
1:K:164:LYS:NZ	1:K:196:THR:O	2.28	0.67
1:K:439:PHE:O	1:K:443:LYS:NZ	2.27	0.67
1:K:534:TYR:HB3	2:L:260:ARG:HH12	1.58	0.67
1:K:455:THR:HG22	1:K:457:GLU:H	1.59	0.67
5:O:1820:VAL:HG23	5:O:1824:LEU:HB2	1.76	0.67
5:O:802:THR:OG1	5:O:852:ARG:NH2	2.28	0.67
5:O:1003:SER:OG	5:O:1004:GLN:OE1	2.12	0.67
5:O:1180:GLN:HB3	5:O:1183:CYS:HB3	1.75	0.67
1:K:48:MET:HE1	1:K:171:ASN:H	1.59	0.67
5:O:1373:VAL:HG21	5:O:1422:LYS:HE2	1.77	0.67
6:C:26:PRO:HD2	7:D:34:TYR:HE1	1.59	0.66
9:F:39:ARG:NH1	9:F:43:VAL:O	2.27	0.66
4:J:64:DA:H3'	9:B:30:THR:HG21	1.77	0.66
5:O:207:GLN:HG3	5:O:217:LEU:HD13	1.76	0.66
5:O:2330:VAL:HG13	5:O:2338:GLU:HB2	1.76	0.66
5:O:471:LYS:HD2	5:O:474:VAL:H	1.59	0.66
5:O:664:SER:HB2	5:O:725:LEU:HG	1.78	0.66
5:O:899:ARG:O	5:O:902:LYS:NZ	2.25	0.66
5:O:1180:GLN:O	5:O:1184:ARG:N	2.22	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3269:ARG:HB2	5:O:3272:TRP:CD1	2.29	0.66
5:O:3492:CYS:SG	5:O:3708:ARG:NH1	2.69	0.66
5:O:3670:MET:SD	5:O:3671:ASN:N	2.68	0.66
5:O:3680:LEU:HD13	5:O:3722:PHE:HB3	1.78	0.66
5:O:1141:LYS:NZ	5:O:1144:SER:OG	2.27	0.66
2:L:497:ARG:HG2	2:L:505:LEU:HD21	1.78	0.66
3:I:117:DG:H1	4:J:38:DT:H3	1.43	0.66
5:O:1550:VAL:HG23	5:O:1551:ILE:HG22	1.78	0.66
5:O:4014:LYS:HG2	5:O:4015:ASN:H	1.61	0.66
5:O:789:TYR:HA	5:O:792:ILE:HG22	1.78	0.66
1:K:353:LEU:HD21	1:K:415:PRO:HD2	1.77	0.65
3:I:57:DC:O2	4:J:98:DG:N1	2.22	0.65
5:O:487:LEU:HD13	5:O:575:ILE:HD13	1.77	0.65
5:O:892:LEU:HB3	5:O:908:ASP:HB3	1.78	0.65
5:O:3840:LYS:HG2	5:O:3842:TRP:HE1	1.61	0.65
5:O:374:LYS:NZ	5:O:423:TYR:O	2.30	0.65
6:C:78:ILE:HB	7:D:51:ILE:HA	1.77	0.65
1:K:91:GLU:HG2	1:K:136:GLY:HA3	1.79	0.65
5:O:1400:VAL:HG21	5:O:1460:ARG:HE	1.61	0.65
5:O:3768:PHE:HA	5:O:3771:MET:SD	2.37	0.65
1:K:44:ALA:HB2	1:K:87:PHE:HE2	1.61	0.65
5:O:225:LYS:HD2	5:O:270:ALA:HB1	1.79	0.65
5:O:3717:VAL:HG23	5:O:3743:HIS:HB3	1.79	0.65
1:K:404:ARG:HD2	5:O:213:ARG:HG3	1.79	0.65
5:O:635:PRO:HG3	5:O:672:ILE:HG23	1.77	0.65
5:O:1837:ARG:NH2	5:O:1884:LEU:O	2.29	0.65
5:O:2837:LEU:HD21	5:O:2868:LEU:HA	1.78	0.65
2:L:81:ARG:NH2	2:L:85:LEU:O	2.28	0.65
2:L:431:ARG:NH2	3:I:15:DC:OP2	2.29	0.65
5:O:229:SER:O	5:O:233:ASN:ND2	2.30	0.65
6:G:25:PHE:CD2	6:G:56:GLU:HG2	2.31	0.65
2:L:343:LEU:HD21	2:L:394:ARG:HB2	1.79	0.65
5:O:2303:LEU:HB3	5:O:2323:LEU:HD21	1.77	0.65
7:D:78:ALA:HB2	7:D:90:GLU:HG2	1.79	0.65
1:K:254:ARG:HG2	1:K:255:ALA:H	1.62	0.64
5:O:356:ASN:OD1	5:O:357:LYS:N	2.28	0.64
5:O:2589:TYR:HB2	5:O:2777:HIS:HB2	1.77	0.64
5:O:3737:ARG:HD2	5:O:3751:LEU:HD13	1.79	0.64
5:O:3353:GLU:HA	5:O:3357:ARG:HH21	1.62	0.64
2:L:14:MET:HA	2:L:135:PHE:HB2	1.79	0.64
2:L:249:CYS:SG	2:L:250:ARG:N	2.69	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:46:DA:N6	4:J:109:DG:H1	1.96	0.64
5:O:3859:TYR:O	5:O:4119:ARG:NH2	2.30	0.64
6:G:55:LEU:HD23	6:G:58:LEU:HD21	1.80	0.64
5:O:357:LYS:NZ	5:O:1731:PRO:O	2.31	0.64
5:O:2159:PRO:O	5:O:2162:LYS:NZ	2.31	0.64
2:L:20:MET:HB2	2:L:30:PRO:HB2	1.80	0.64
5:O:1768:ARG:O	5:O:1822:ARG:NH1	2.31	0.64
2:L:265:LYS:HD3	2:L:268:LEU:HD22	1.79	0.64
5:O:1519:PHE:HE2	5:O:1566:THR:HG22	1.63	0.64
5:O:1646:LEU:HD12	5:O:1678:LEU:HD12	1.80	0.64
5:O:3289:ARG:NH2	5:O:3295:GLU:OE2	2.31	0.64
5:O:3481:SER:O	5:O:3484:THR:HB	1.97	0.64
5:O:1693:VAL:HG22	5:O:1696:LEU:HD23	1.79	0.63
1:K:289:TYR:HD2	1:K:292:THR:H	1.44	0.63
5:O:848:LEU:HD12	5:O:852:ARG:HH22	1.62	0.63
5:O:1075:ARG:NH2	5:O:1117:ASP:OD2	2.31	0.63
5:O:3348:LEU:O	5:O:3352:GLU:N	2.29	0.63
6:G:83:LEU:HB2	6:G:102:ILE:HD13	1.81	0.63
5:O:924:ARG:HH21	5:O:2769:VAL:HG22	1.63	0.63
5:O:1488:TYR:HA	5:O:1559:PHE:HZ	1.64	0.63
5:O:112:THR:HG21	5:O:152:LEU:HD22	1.81	0.63
5:O:1754:GLN:HB3	5:O:1785:ILE:HD11	1.79	0.63
5:O:3720:ALA:HB3	5:O:3743:HIS:HA	1.81	0.63
5:O:3762:GLN:HG2	5:O:3795:PRO:HB3	1.80	0.63
3:I:53:DG:H21	8:E:83:ARG:HH22	1.45	0.63
4:J:44:DG:H4'	4:J:45:DT:H5'	1.80	0.63
5:O:887:ASP:OD1	5:O:891:ARG:NH1	2.32	0.63
5:O:1169:VAL:HG21	5:O:1198:LEU:HD21	1.80	0.63
5:O:1808:ASP:O	5:O:1816:ARG:NH1	2.32	0.63
5:O:3514:VAL:O	5:O:3518:VAL:N	2.27	0.63
1:K:364:PRO:HG3	2:L:357:MET:HB2	1.80	0.63
5:O:3923:ARG:O	5:O:3962:ARG:NH1	2.32	0.63
2:L:198:THR:H	2:L:201:GLN:HB2	1.64	0.63
5:O:3161:LEU:HD21	5:O:3186:ARG:HD2	1.81	0.63
6:G:29:ARG:NH2	7:H:32:GLU:OE1	2.32	0.63
1:K:260:LYS:HA	1:K:270:SER:HA	1.81	0.62
5:O:1233:SER:OG	5:O:1292:LYS:NZ	2.32	0.62
5:O:1686:LEU:HD22	5:O:1738:ASN:HB3	1.81	0.62
5:O:1751:GLU:O	5:O:1788:ARG:NH1	2.32	0.62
5:O:2586:PHE:HB3	5:O:2776:ARG:HH12	1.64	0.62
8:E:49:ARG:HB2	8:E:53:ARG:NH1	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:421:LEU:HA	5:O:424:LEU:HB3	1.80	0.62
6:C:42:ARG:HB2	7:D:85:THR:HA	1.81	0.62
5:O:2332:GLU:O	5:O:2334:LYS:NZ	2.27	0.62
5:O:4045:CYS:SG	5:O:4049:ARG:NH1	2.72	0.62
1:K:301:ARG:NH2	1:K:308:GLY:O	2.32	0.62
1:K:325:ARG:NH2	2:L:89:ASP:OD1	2.26	0.62
1:K:402:PRO:HD2	1:K:406:ILE:HG21	1.80	0.62
3:I:34:DT:H2'	3:I:35:DT:H71	1.80	0.62
1:K:367:PHE:HA	1:K:433:GLN:HA	1.82	0.62
5:O:933:LEU:HD13	5:O:2793:PRO:HB2	1.81	0.62
5:O:3114:TYR:OH	5:O:3125:ARG:NH1	2.32	0.62
5:O:913:ARG:NH1	5:O:916:GLU:OE2	2.29	0.62
6:C:88:ARG:HA	6:C:94:ASN:HD21	1.64	0.62
9:B:84:MET:SD	9:B:85:ASP:N	2.72	0.62
5:O:3860:LYS:HE3	5:O:4073:ALA:HB3	1.82	0.62
5:O:270:ALA:HA	5:O:273:ARG:HE	1.64	0.62
5:O:439:VAL:O	5:O:442:GLN:HB3	2.00	0.62
5:O:1727:ARG:NH1	5:O:1772:HIS:O	2.32	0.62
6:G:108:LEU:HD12	6:G:109:PRO:HD2	1.81	0.62
5:O:2168:LEU:HA	5:O:2171:LEU:HD12	1.82	0.62
5:O:3352:GLU:O	5:O:3357:ARG:NE	2.32	0.62
1:K:245:LYS:O	1:K:247:ARG:NH1	2.33	0.62
5:O:899:ARG:HH12	5:O:2566:THR:HA	1.62	0.62
5:O:965:THR:CG2	5:O:969:LEU:HG	2.28	0.62
5:O:1096:VAL:O	5:O:1100:VAL:HG13	2.00	0.62
1:K:259:LEU:HD22	1:K:273:ILE:HD11	1.81	0.61
3:I:55:DA:N6	4:J:101:DC:O2	2.33	0.61
5:O:3572:ILE:HG21	5:O:3800:LEU:HA	1.82	0.61
8:A:66:PRO:HB3	9:B:28:GLY:HA3	1.81	0.61
1:K:301:ARG:HE	1:K:310:LEU:HG	1.64	0.61
5:O:953:GLN:O	5:O:956:PRO:HD3	2.00	0.61
5:O:2136:PRO:O	5:O:2143:ARG:NH2	2.33	0.61
5:O:3806:LEU:HD23	5:O:3809:THR:HB	1.83	0.61
6:G:77:ARG:HH21	7:H:52:SER:HA	1.65	0.61
5:O:275:PHE:HZ	5:O:319:PHE:HB2	1.65	0.61
5:O:1196:PRO:HG3	5:O:1203:SER:HB2	1.82	0.61
6:G:81:ARG:HD3	8:E:58:THR:HB	1.82	0.61
5:O:286:LEU:HD23	5:O:319:PHE:HD1	1.65	0.61
5:O:1881:TYR:HB2	5:O:1950:SER:HB2	1.81	0.61
1:K:351:LYS:O	1:K:395:ALA:N	2.33	0.61
2:L:423:GLN:NE2	2:L:424:LEU:O	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1538:LEU:N	5:O:1553:PHE:O	2.32	0.61
5:O:3818:ASN:O	5:O:3822:GLN:NE2	2.33	0.61
6:C:91:GLU:O	6:C:95:LYS:N	2.32	0.61
5:O:395:MET:HB2	5:O:406:ARG:HD3	1.82	0.61
5:O:3795:PRO:O	5:O:3796:MET:HE2	2.01	0.61
8:A:121:PRO:HB3	9:B:53:GLU:HG3	1.83	0.61
5:O:895:ALA:HA	5:O:904:VAL:HA	1.82	0.61
5:O:1099:PHE:HE1	5:O:1152:ARG:HE	1.48	0.61
5:O:1458:LEU:O	5:O:1463:LEU:N	2.32	0.61
5:O:1610:ASN:OD1	5:O:1611:GLN:N	2.34	0.61
5:O:3034:PRO:HD2	5:O:3037:GLN:HB2	1.83	0.61
5:O:3269:ARG:HB2	5:O:3272:TRP:HD1	1.66	0.61
5:O:3471:ILE:HD13	5:O:3474:ARG:HD3	1.83	0.61
3:I:87:DC:N3	4:J:67:DG:N2	2.49	0.61
5:O:3592:VAL:HG23	5:O:3606:ILE:HD12	1.82	0.61
5:O:2228:ARG:O	5:O:2230:VAL:N	2.33	0.61
5:O:3296:GLN:HE21	5:O:3301:LEU:N	1.99	0.61
5:O:898:PHE:CE2	5:O:2535:THR:HB	2.35	0.60
5:O:2957:LEU:HD21	5:O:2993:PHE:HZ	1.66	0.60
8:E:64:LYS:HG3	8:E:65:LEU:HD12	1.82	0.60
1:K:330:GLU:N	1:K:333:GLU:OE1	2.35	0.60
4:J:23:DC:H2"	4:J:24:DA:N7	2.15	0.60
5:O:864:GLY:HA2	5:O:867:ASN:HB2	1.84	0.60
9:B:72:TYR:HB3	9:B:85:ASP:HB2	1.83	0.60
1:K:290:ARG:HH21	2:L:310:ILE:H	1.47	0.60
6:G:17:ARG:HA	6:G:20:ARG:HB2	1.82	0.60
1:K:392:LYS:NZ	2:L:459:ASP:OD1	2.35	0.60
5:O:385:TYR:HB2	5:O:420:VAL:HG11	1.84	0.60
5:O:718:MET:HB2	5:O:726:LEU:HD11	1.84	0.60
5:O:3608:LYS:HB2	5:O:3612:ARG:HH21	1.67	0.60
5:O:3948:SER:HA	5:O:3951:GLN:HE22	1.65	0.60
1:K:164:LYS:HB3	1:K:198:ILE:HG23	1.84	0.60
5:O:2266:ASN:O	5:O:2311:ARG:NH1	2.34	0.60
5:O:3244:ASP:HB2	5:O:3247:ARG:HH21	1.66	0.60
2:L:60:GLY:N	2:L:76:ASN:O	2.24	0.60
3:I:19:DG:H22	4:J:136:DA:H2	1.50	0.60
8:E:108:ASN:HB2	9:F:43:VAL:HG22	1.82	0.60
1:K:37:SER:HB3	1:K:108:LEU:HD11	1.83	0.60
2:L:35:LYS:NZ	2:L:94:ILE:O	2.34	0.60
5:O:2837:LEU:O	5:O:2841:ASN:ND2	2.33	0.60
6:C:81:ARG:NH2	8:A:55:GLN:O	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:216:GLU:HG3	2:L:219:ASP:HB3	1.83	0.59
5:O:908:ASP:HA	5:O:911:LEU:HD23	1.83	0.59
5:O:1396:PRO:HB3	5:O:1457:GLN:HE21	1.67	0.59
5:O:2485:ARG:HH12	5:O:2530:ARG:HA	1.66	0.59
1:K:165:ARG:NH1	1:K:201:ASP:OD2	2.30	0.59
2:L:11:VAL:HG22	2:L:55:ALA:HB3	1.83	0.59
5:O:2988:GLU:HA	5:O:2991:LYS:HE2	1.84	0.59
6:G:61:GLU:HG2	7:H:103:LEU:HD11	1.83	0.59
1:K:45:SER:HB3	1:K:48:MET:HG2	1.85	0.59
1:K:265:LYS:HB2	2:L:530:LEU:HD13	1.85	0.59
2:L:408:ALA:HB1	2:L:419:LEU:HD21	1.84	0.59
3:I:41:DT:O3'	6:C:42:ARG:NH2	2.35	0.59
3:I:88:DG:H2''	3:I:89:DT:H5''	1.84	0.59
5:O:742:GLU:HB3	5:O:780:ILE:HD12	1.84	0.59
5:O:1046:PRO:HA	5:O:1049:GLN:HB2	1.83	0.59
5:O:1709:GLU:HB3	5:O:1712:ARG:HH21	1.68	0.59
5:O:2104:MET:HE1	5:O:2122:LEU:HD13	1.84	0.59
5:O:2223:VAL:HG11	5:O:2238:ILE:HD11	1.85	0.59
7:D:89:ARG:NH1	9:F:75:HIS:O	2.35	0.59
5:O:1066:LEU:HD23	5:O:1078:ALA:HB2	1.84	0.59
5:O:3446:VAL:HA	5:O:3449:LYS:HG2	1.85	0.59
5:O:2543:ASN:ND2	5:O:2839:ASP:OD2	2.36	0.59
1:K:143:LEU:H	1:K:176:HIS:HE1	1.50	0.59
2:L:25:PRO:HA	2:L:185:LEU:HD23	1.84	0.59
5:O:3737:ARG:NH1	5:O:3751:LEU:HB3	2.18	0.59
4:J:44:DG:OP1	7:H:83:ARG:NH1	2.36	0.59
5:O:3243:ILE:HD12	5:O:3254:LEU:HD21	1.85	0.59
6:C:91:GLU:HA	6:C:94:ASN:HB2	1.85	0.59
1:K:372:GLU:OE1	1:K:379:SER:N	2.36	0.59
2:L:146:GLN:HB3	2:L:149:ILE:HB	1.85	0.59
4:J:63:DA:H3'	9:B:36:ARG:HH22	1.68	0.59
5:O:1111:LEU:HD11	5:O:1186:LYS:HZ2	1.68	0.59
5:O:3965:ARG:HA	5:O:3968:ILE:HD12	1.84	0.59
5:O:170:VAL:HA	5:O:219:VAL:HG21	1.83	0.58
5:O:1369:MET:SD	5:O:1370:ARG:NH1	2.76	0.58
5:O:1369:MET:HA	5:O:1372:LEU:HG	1.85	0.58
5:O:1936:ARG:O	5:O:1940:TYR:N	2.30	0.58
5:O:2723:THR:HA	5:O:2726:LEU:HD13	1.85	0.58
8:E:116:ARG:NH2	8:E:123:ASP:OD1	2.27	0.58
5:O:1350:ASN:OD1	5:O:1351:THR:N	2.35	0.58
5:O:2407:GLY:HA3	5:O:2411:LEU:HD11	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:277:VAL:HA	2:L:430:LEU:HA	1.85	0.58
5:O:1445:ARG:HB3	5:O:1510:LEU:HD11	1.85	0.58
1:K:526:LYS:O	1:K:530:TYR:HB2	2.03	0.58
5:O:67:VAL:HA	5:O:70:ARG:HB2	1.85	0.58
1:K:40:PHE:HE1	1:K:83:LEU:HD13	1.69	0.58
2:L:267:ILE:HB	2:L:361:VAL:HB	1.84	0.58
5:O:449:TYR:O	5:O:454:GLN:NE2	2.35	0.58
5:O:833:HIS:O	5:O:833:HIS:ND1	2.36	0.58
5:O:914:VAL:HA	5:O:917:LEU:HB2	1.85	0.58
5:O:1181:THR:HA	5:O:1184:ARG:HE	1.69	0.58
5:O:1793:THR:O	5:O:1797:LEU:HG	2.03	0.58
5:O:3604:LYS:N	5:O:3607:GLU:OE2	2.37	0.58
5:O:3723:ASP:HB3	5:O:3741:ARG:HD2	1.85	0.58
6:G:103:ALA:HA	9:F:97:LEU:HD11	1.84	0.58
7:H:37:TYR:O	7:H:41:VAL:HG23	2.04	0.58
5:O:1184:ARG:O	5:O:1188:ILE:HD12	2.03	0.58
5:O:3617:LEU:HB3	5:O:3632:PHE:HZ	1.67	0.58
5:O:19:LEU:HD22	5:O:34:LEU:HA	1.84	0.58
5:O:487:LEU:HD11	5:O:575:ILE:HG21	1.86	0.58
5:O:914:VAL:O	5:O:918:ALA:N	2.31	0.58
5:O:1128:CYS:HA	5:O:1131:ILE:HG12	1.86	0.58
5:O:2480:ILE:O	5:O:2484:TYR:HB2	2.03	0.58
2:L:461:MET:HB2	2:L:522:VAL:HG13	1.84	0.58
5:O:3502:MET:O	5:O:3506:LEU:HG	2.03	0.58
5:O:3907:SER:HB2	5:O:3937:VAL:HG22	1.86	0.58
5:O:3951:GLN:HB2	5:O:4067:GLY:HA3	1.85	0.58
5:O:3969:ASN:HA	5:O:3972:LEU:HG	1.85	0.58
2:L:512:ILE:HA	2:L:515:MET:HE3	1.85	0.58
5:O:1082:PHE:HA	5:O:1085:ILE:HG12	1.86	0.58
6:C:40:ALA:HA	7:D:86:ILE:HG13	1.86	0.58
1:K:59:PRO:HA	1:K:62:MET:HG2	1.86	0.58
1:K:318:ARG:HA	2:L:278:VAL:HA	1.85	0.58
1:K:481:PRO:HG2	2:L:403:PRO:HG2	1.86	0.58
5:O:828:LYS:HG2	5:O:829:VAL:H	1.67	0.58
5:O:3615:ALA:O	5:O:3621:LYS:NZ	2.36	0.58
5:O:144:MET:N	5:O:144:MET:SD	2.77	0.57
5:O:164:LYS:HB2	5:O:166:ILE:HG12	1.86	0.57
5:O:1044:ILE:HG22	5:O:1049:GLN:HG3	1.86	0.57
5:O:3793:VAL:HA	5:O:3803:ILE:HG13	1.86	0.57
1:K:341:ASP:OD2	1:K:399:ARG:NH1	2.36	0.57
2:L:361:VAL:HG22	2:L:422:VAL:HG22	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:455:LEU:O	5:O:459:ARG:HG3	2.04	0.57
5:O:1477:HIS:HB3	5:O:1481:THR:HG23	1.87	0.57
5:O:2351:GLN:O	5:O:2352:HIS:ND1	2.37	0.57
5:O:3837:CYS:O	5:O:3840:LYS:NZ	2.34	0.57
5:O:4074:PHE:HA	5:O:4077:TYR:HD2	1.68	0.57
5:O:348:ILE:HB	5:O:391:ARG:HH22	1.70	0.57
5:O:1279:LEU:HD23	5:O:1359:LEU:HD11	1.85	0.57
5:O:1607:GLU:OE2	5:O:1614:GLN:NE2	2.37	0.57
5:O:2595:TRP:O	5:O:2596:ARG:NE	2.37	0.57
5:O:2776:ARG:NH2	5:O:2782:ASP:OD2	2.38	0.57
5:O:4010:SER:HA	5:O:4014:LYS:HE3	1.86	0.57
1:K:53:SER:OG	1:K:54:GLU:N	2.37	0.57
5:O:42:CYS:O	5:O:46:SER:N	2.38	0.57
5:O:208:MET:HE3	5:O:208:MET:O	2.04	0.57
5:O:3554:PHE:HA	5:O:3557:ARG:HE	1.69	0.57
5:O:3588:TRP:CG	5:O:3609:MET:HE2	2.39	0.57
8:E:61:LEU:O	9:F:36:ARG:NH2	2.36	0.57
1:K:38:LEU:HD11	1:K:167:MET:HB2	1.86	0.57
1:K:458:GLN:HG3	1:K:528:LEU:HD13	1.84	0.57
5:O:71:LYS:HZ1	5:O:82:ARG:HG3	1.67	0.57
5:O:3965:ARG:HD2	5:O:3969:ASN:HD21	1.70	0.57
5:O:2225:HIS:CD2	5:O:2226:PRO:HD2	2.40	0.57
6:C:32:ARG:HA	6:C:35:ARG:HD2	1.86	0.57
8:E:108:ASN:ND2	9:F:42:GLY:O	2.37	0.57
1:K:61:ASP:OD2	1:K:65:GLN:NE2	2.38	0.57
1:K:372:GLU:OE2	1:K:377:GLY:N	2.38	0.57
2:L:496:HIS:CG	2:L:506:PRO:HD3	2.40	0.57
4:J:133:DG:H2'	4:J:134:DG:C8	2.39	0.57
5:O:300:TRP:HE3	5:O:308:LEU:HD21	1.69	0.57
5:O:755:ALA:HB1	5:O:765:LEU:HD11	1.86	0.57
5:O:1769:GLU:O	5:O:1772:HIS:ND1	2.38	0.57
5:O:2586:PHE:HB3	5:O:2776:ARG:HH22	1.70	0.57
5:O:3490:VAL:HG23	5:O:3494:GLN:HB2	1.85	0.57
2:L:57:VAL:HG22	2:L:79:VAL:HG13	1.86	0.57
4:J:92:DT:H1'	4:J:93:DA:H5'	1.86	0.57
4:J:94:DA:H2''	4:J:95:DG:C8	2.39	0.57
5:O:2329:TYR:HB3	5:O:2332:GLU:HA	1.87	0.57
1:K:244:ARG:NH1	1:K:245:LYS:O	2.37	0.57
2:L:450:GLN:HB3	2:L:537:PHE:CZ	2.40	0.57
5:O:441:MET:O	5:O:445:SER:N	2.37	0.57
5:O:1304:HIS:O	5:O:1334:LYS:NZ	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3445:LEU:O	5:O:3449:LYS:NZ	2.38	0.57
5:O:3796:MET:HG3	5:O:3802:LEU:H	1.68	0.57
5:O:4088:ASN:ND2	5:O:4109:ASP:OD1	2.33	0.57
2:L:184:ARG:HE	2:L:520:ALA:H	1.53	0.57
5:O:2167:PRO:O	5:O:2170:GLN:HB3	2.05	0.57
8:A:129:ARG:NH1	8:E:106:ASP:OD1	2.38	0.57
7:H:102:GLU:HG2	7:H:103:LEU:H	1.69	0.57
3:I:25:DG:N2	4:J:130:DC:N3	2.53	0.56
5:O:683:PHE:HD1	5:O:704:PHE:HE1	1.52	0.56
5:O:1491:ILE:HG13	5:O:1492:ALA:N	2.19	0.56
5:O:2391:GLY:O	5:O:2431:ARG:NH2	2.38	0.56
5:O:3370:SER:OG	5:O:3371:GLU:N	2.37	0.56
5:O:135:LEU:HD22	5:O:139:ARG:HH12	1.68	0.56
5:O:524:TYR:OH	5:O:625:ASN:O	2.20	0.56
5:O:1282:LEU:HD22	5:O:1359:LEU:HD22	1.86	0.56
5:O:1508:LYS:NZ	5:O:1562:LEU:O	2.38	0.56
5:O:3479:THR:O	5:O:3481:SER:N	2.38	0.56
5:O:911:LEU:O	5:O:915:THR:OG1	2.21	0.56
5:O:1369:MET:SD	5:O:1369:MET:N	2.78	0.56
5:O:3048:LYS:HB3	5:O:3061:LEU:HB2	1.86	0.56
5:O:3717:VAL:HG23	5:O:3743:HIS:H	1.71	0.56
5:O:3806:LEU:HG	5:O:3808:ASN:H	1.70	0.56
1:K:212:ASP:O	1:K:214:SER:N	2.38	0.56
2:L:395:TYR:HB3	2:L:404:GLN:HB3	1.87	0.56
5:O:1198:LEU:O	5:O:1202:ARG:NH2	2.38	0.56
5:O:1923:PHE:HD1	5:O:1941:HIS:HB3	1.70	0.56
5:O:2205:VAL:HG23	5:O:2208:ASP:H	1.71	0.56
5:O:3480:LEU:O	5:O:3484:THR:N	2.38	0.56
2:L:76:ASN:ND2	2:L:104:GLN:O	2.32	0.56
2:L:312:GLN:NE2	2:L:323:PHE:O	2.29	0.56
7:H:102:GLU:HG2	7:H:103:LEU:N	2.20	0.56
1:K:428:THR:HB	2:L:354:ARG:HH12	1.70	0.56
5:O:1009:LEU:HD11	5:O:1036:PHE:CE2	2.40	0.56
5:O:2275:GLN:O	5:O:2279:ILE:HG12	2.05	0.56
5:O:3064:PHE:HA	5:O:3067:LYS:HE3	1.87	0.56
5:O:3155:VAL:HG13	5:O:3157:LEU:HG	1.86	0.56
5:O:2533:SER:HA	5:O:2538:ARG:HB2	1.87	0.56
5:O:3516:HIS:O	5:O:3519:GLU:HB3	2.06	0.56
5:O:3634:GLN:HG2	5:O:3635:THR:HG23	1.86	0.56
5:O:3840:LYS:HG2	5:O:3842:TRP:NE1	2.20	0.56
6:G:71:ARG:HH21	6:G:76:THR:HA	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:303:PHE:HA	1:K:311:LEU:H	1.71	0.56
5:O:297:LEU:HD13	5:O:316:LEU:HB2	1.85	0.56
5:O:1583:MET:HE3	5:O:1628:LYS:HB2	1.86	0.56
5:O:3724:GLU:O	5:O:3725:ARG:NH1	2.34	0.56
5:O:3991:PHE:O	5:O:3992:ARG:NE	2.39	0.56
9:F:63:GLU:O	9:F:66:ILE:HG12	2.06	0.56
1:K:416:GLN:NE2	1:K:429:PRO:O	2.38	0.56
3:I:41:DT:H2 ^o	3:I:42:DA:C8	2.41	0.56
5:O:163:LYS:C	5:O:164:LYS:HD3	2.31	0.56
5:O:384:MET:O	5:O:388:LEU:HG	2.06	0.56
5:O:933:LEU:HG	5:O:937:MET:HE2	1.86	0.56
5:O:3784:ARG:HB2	5:O:3786:LEU:HD23	1.87	0.56
8:A:88:ALA:HB1	9:B:86:VAL:HG21	1.87	0.56
6:G:55:LEU:HD22	7:H:63:VAL:HG13	1.88	0.56
1:K:214:SER:HA	1:K:218:ARG:HB2	1.87	0.56
5:O:1768:ARG:HG2	5:O:1769:GLU:OE1	2.05	0.56
5:O:1917:LYS:NZ	5:O:1921:ASP:OD2	2.38	0.56
5:O:2138:VAL:O	5:O:2143:ARG:NH2	2.39	0.56
5:O:4006:VAL:HG23	5:O:4009:PRO:HD3	1.87	0.56
5:O:76:ILE:HA	5:O:79:ARG:HG2	1.88	0.55
5:O:332:GLU:O	5:O:335:LYS:NZ	2.39	0.55
5:O:990:GLN:HB3	5:O:2781:PRO:HD3	1.88	0.55
5:O:1249:SER:OG	5:O:1312:CYS:O	2.22	0.55
5:O:3356:ALA:HA	5:O:3359:ILE:HG12	1.87	0.55
1:K:455:THR:HB	1:K:458:GLN:NE2	2.21	0.55
2:L:448:GLU:HA	2:L:451:LEU:HD12	1.87	0.55
2:L:478:PRO:HB2	2:L:481:LYS:HB3	1.88	0.55
3:I:26:DC:N4	4:J:127:DG:O6	2.39	0.55
5:O:584:GLU:HB2	5:O:613:HIS:HB3	1.89	0.55
5:O:714:VAL:HB	5:O:733:LEU:HD21	1.87	0.55
5:O:2464:HIS:CE1	5:O:2466:SER:HB3	2.41	0.55
5:O:3546:SER:O	5:O:3549:HIS:NE2	2.39	0.55
9:B:68:ASP:OD2	9:B:92:ARG:NH2	2.38	0.55
2:L:20:MET:HG3	2:L:31:PHE:HB2	1.88	0.55
5:O:944:LYS:O	5:O:947:GLN:NE2	2.35	0.55
5:O:1091:GLU:OE1	5:O:1091:GLU:N	2.39	0.55
5:O:1098:GLN:OE1	5:O:1152:ARG:N	2.36	0.55
5:O:1418:HIS:O	5:O:1422:LYS:NZ	2.39	0.55
5:O:2346:ALA:HA	5:O:2349:LEU:HD12	1.86	0.55
5:O:3159:ARG:O	5:O:3163:THR:HG23	2.07	0.55
5:O:3506:LEU:HD21	5:O:3514:VAL:HB	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:J:71:DG:H2''	4:J:72:DG:C8	2.42	0.55
5:O:225:LYS:HE3	5:O:270:ALA:O	2.06	0.55
5:O:850:GLU:HG2	5:O:854:ARG:HH22	1.71	0.55
5:O:2380:ASN:OD1	5:O:2381:ALA:N	2.38	0.55
5:O:2587:GLN:O	5:O:2777:HIS:N	2.38	0.55
2:L:253:ILE:HD13	2:L:257:LEU:HG	1.87	0.55
4:J:78:DC:H1'	4:J:79:DG:C8	2.42	0.55
5:O:327:VAL:HG22	5:O:333:MET:HB3	1.88	0.55
5:O:2264:ASP:HB2	5:O:2267:SER:HB3	1.88	0.55
5:O:3033:GLU:HG3	5:O:3034:PRO:HD3	1.87	0.55
5:O:3048:LYS:HZ1	5:O:3060:SER:HG	1.53	0.55
5:O:3285:HIS:HE1	5:O:3329:LEU:HB2	1.70	0.55
5:O:3531:TYR:O	5:O:3535:ILE:HG12	2.06	0.55
3:I:14:DC:N3	4:J:141:DG:N2	2.53	0.55
4:J:42:DG:H2''	4:J:43:DA:C8	2.42	0.55
5:O:435:LEU:HA	5:O:438:LEU:HD12	1.87	0.55
5:O:896:VAL:HG13	5:O:898:PHE:HB2	1.89	0.55
5:O:1436:LEU:O	5:O:1445:ARG:NH2	2.39	0.55
5:O:1833:LEU:HG	5:O:1835:ALA:H	1.71	0.55
5:O:3083:SER:OG	5:O:3102:TYR:O	2.24	0.55
5:O:3299:THR:HG22	5:O:3302:LYS:H	1.71	0.55
6:C:61:GLU:O	6:C:64:GLU:HG3	2.06	0.55
3:I:103:DG:N2	4:J:52:DC:O2	2.40	0.55
5:O:471:LYS:HB3	5:O:474:VAL:HG12	1.87	0.55
5:O:1742:CYS:HA	5:O:1745:LYS:HD2	1.88	0.55
5:O:1766:LEU:HD23	5:O:1822:ARG:HD2	1.87	0.55
5:O:2936:TYR:HA	5:O:2939:LEU:HD12	1.89	0.55
5:O:3227:ILE:HA	5:O:3230:LEU:HD12	1.89	0.55
2:L:345:PHE:HB2	2:L:389:MET:SD	2.47	0.55
4:J:35:DG:H2''	4:J:36:DA:H5''	1.88	0.55
5:O:2261:SER:O	5:O:2270:ASN:ND2	2.40	0.55
5:O:3493:TRP:HB2	5:O:3709:GLY:HA3	1.88	0.55
5:O:3772:ASN:O	5:O:3787:GLN:NE2	2.39	0.55
1:K:288:LEU:HG	2:L:313:GLY:HA3	1.89	0.55
2:L:6:ASN:HA	2:L:128:GLU:HG3	1.87	0.55
5:O:167:PRO:HA	5:O:171:LEU:HD23	1.87	0.55
5:O:672:ILE:O	5:O:676:ASN:ND2	2.40	0.55
5:O:2367:VAL:HG22	5:O:2374:LEU:HD21	1.89	0.55
5:O:2464:HIS:O	5:O:2470:ARG:NH1	2.40	0.55
6:C:29:ARG:HG3	6:C:32:ARG:HH21	1.70	0.55
8:E:104:PHE:HE2	9:F:37:LEU:HB3	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:459:ARG:HG2	5:O:540:MET:SD	2.47	0.55
5:O:3471:ILE:HA	5:O:3474:ARG:HB2	1.89	0.55
1:K:290:ARG:HB2	2:L:309:ASP:HA	1.90	0.54
2:L:198:THR:O	2:L:202:LYS:N	2.39	0.54
2:L:286:LYS:O	2:L:286:LYS:NZ	2.31	0.54
3:I:39:DC:H2 ⁺	3:I:40:DG:C8	2.41	0.54
3:I:46:DA:H61	4:J:109:DG:H1	1.55	0.54
5:O:1444:ASP:HA	5:O:1447:ARG:HE	1.72	0.54
5:O:1684:LEU:O	5:O:1689:LYS:NZ	2.39	0.54
5:O:2335:ASN:OD1	5:O:2336:ILE:N	2.40	0.54
5:O:3588:TRP:NE1	5:O:3609:MET:HG3	2.22	0.54
5:O:3700:GLU:HA	5:O:3718:ARG:HD3	1.89	0.54
1:K:35:ARG:H	1:K:161:MET:HA	1.72	0.54
1:K:203:MET:HE3	1:K:239:LEU:HD13	1.89	0.54
5:O:888:ARG:O	5:O:3889:ARG:NE	2.40	0.54
5:O:965:THR:CG2	5:O:969:LEU:CG	2.82	0.54
5:O:1273:GLU:HB3	5:O:1275:THR:HG23	1.88	0.54
5:O:3390:GLN:HA	5:O:3393:GLU:HG2	1.88	0.54
5:O:3913:ILE:HB	5:O:3984:MET:SD	2.47	0.54
1:K:374:LEU:HD12	2:L:543:LYS:H	1.71	0.54
2:L:133:GLU:HG2	2:L:164:PHE:HE2	1.72	0.54
5:O:2169:LEU:HB3	5:O:2211:LEU:HD13	1.89	0.54
5:O:3545:THR:OG1	5:O:3546:SER:N	2.39	0.54
6:G:49:VAL:HG12	7:H:114:ALA:HB1	1.89	0.54
1:K:347:LEU:HD12	1:K:398:CYS:HB2	1.90	0.54
5:O:1420:ARG:NH2	5:O:1466:ASN:O	2.39	0.54
5:O:2950:LYS:NZ	5:O:2984:GLY:O	2.40	0.54
5:O:3103:ILE:O	5:O:3107:ILE:HG12	2.07	0.54
5:O:3798:SER:OG	5:O:3799:ARG:N	2.41	0.54
1:K:143:LEU:H	1:K:176:HIS:CE1	2.25	0.54
1:K:374:LEU:HB2	2:L:542:ALA:HB3	1.88	0.54
5:O:1959:LEU:C	5:O:1961:PHE:H	2.16	0.54
5:O:950:GLU:HG2	5:O:957:PRO:HD3	1.90	0.54
5:O:1696:LEU:HD11	5:O:1749:ALA:HB1	1.89	0.54
5:O:1825:LEU:O	5:O:1829:TRP:N	2.36	0.54
2:L:405:VAL:O	2:L:423:GLN:NE2	2.41	0.54
5:O:2869:LEU:HB2	5:O:2899:ARG:HH21	1.72	0.54
2:L:362:LEU:HB2	2:L:421:TYR:HB3	1.89	0.54
2:L:397:TYR:HB3	2:L:401:ALA:HB2	1.90	0.54
5:O:236:LYS:HG3	5:O:281:GLN:HE21	1.73	0.54
5:O:1751:GLU:HA	5:O:1785:ILE:HD13	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3531:TYR:HA	5:O:3534:ILE:HD12	1.90	0.54
6:G:53:ALA:O	6:G:56:GLU:HB2	2.07	0.54
1:K:164:LYS:HD2	1:K:198:ILE:HG12	1.90	0.54
5:O:169:THR:OG1	5:O:170:VAL:N	2.35	0.54
5:O:1601:LEU:HD21	5:O:1652:ILE:HG22	1.88	0.54
5:O:1696:LEU:O	5:O:1698:PHE:N	2.41	0.54
5:O:3819:THR:HG21	5:O:3886:ALA:HA	1.90	0.54
6:C:103:ALA:HA	8:A:94:GLU:HG2	1.90	0.54
8:A:127:ALA:O	8:A:131:ARG:HB2	2.08	0.54
2:L:229:GLU:HG3	2:L:233:LYS:NZ	2.24	0.54
5:O:414:LEU:HB2	5:O:460:ALA:HB1	1.90	0.54
5:O:1404:LYS:NZ	5:O:1460:ARG:O	2.41	0.54
5:O:1583:MET:HE1	5:O:1629:CYS:N	2.23	0.54
5:O:1722:PHE:CE1	5:O:1743:MET:HE3	2.42	0.54
5:O:2161:ALA:HA	5:O:2164:TRP:HB2	1.90	0.54
5:O:3428:GLU:OE2	5:O:3475:TYR:OH	2.26	0.54
1:K:140:ASP:OD1	1:K:182:LYS:NZ	2.40	0.53
5:O:860:GLY:HA3	5:O:3136:THR:HG21	1.90	0.53
5:O:2336:ILE:HG13	5:O:2339:GLU:HB3	1.90	0.53
5:O:3000:ASP:O	5:O:3004:HIS:ND1	2.41	0.53
5:O:3591:ASP:OD2	5:O:3605:ASN:ND2	2.41	0.53
6:C:80:PRO:HB2	6:C:105:GLY:HA2	1.90	0.53
1:K:168:LEU:HD21	1:K:202:LEU:HD12	1.90	0.53
5:O:71:LYS:HA	5:O:75:SER:HB2	1.90	0.53
5:O:1935:GLU:HB3	5:O:1939:LEU:HB2	1.90	0.53
5:O:2169:LEU:HA	5:O:2172:ALA:HB3	1.89	0.53
5:O:2211:LEU:HA	5:O:2214:ARG:HG2	1.90	0.53
9:B:71:THR:HG22	7:H:93:THR:HG23	1.91	0.53
6:G:78:ILE:HB	7:H:51:ILE:HD12	1.91	0.53
6:G:81:ARG:HH21	8:E:56:LYS:HD2	1.73	0.53
1:K:466:VAL:HG11	2:L:387:LEU:HD13	1.90	0.53
3:I:62:DA:H61	4:J:93:DA:H2	1.56	0.53
5:O:1145:LEU:O	5:O:1149:LYS:NZ	2.41	0.53
5:O:1178:ARG:NH2	5:O:1183:CYS:SG	2.72	0.53
5:O:1430:GLU:N	5:O:1430:GLU:OE1	2.40	0.53
5:O:3759:ARG:HH22	5:O:4005:PHE:HB2	1.74	0.53
7:H:87:THR:HB	7:H:89:ARG:HG2	1.90	0.53
1:K:41:LEU:HB2	1:K:168:LEU:HA	1.90	0.53
2:L:286:LYS:NZ	2:L:289:ILE:O	2.41	0.53
5:O:1125:GLN:NE2	5:O:1129:ASP:OD2	2.41	0.53
5:O:1407:LYS:HA	5:O:1412:LYS:HD2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1801:VAL:HB	5:O:1824:LEU:HD21	1.90	0.53
5:O:3467:ARG:HD2	5:O:3470:GLN:HE21	1.73	0.53
5:O:3979:LEU:HD22	5:O:3980:MET:HE3	1.90	0.53
9:F:87:VAL:O	9:F:91:LYS:HG3	2.09	0.53
4:J:114:DC:H2"	4:J:115:DG:C8	2.44	0.53
5:O:1297:PHE:HA	5:O:1300:SER:OG	2.08	0.53
5:O:2219:LEU:O	5:O:2223:VAL:HG13	2.08	0.53
5:O:4120:THR:HG23	5:O:4126:PRO:HG3	1.91	0.53
9:F:62:LEU:O	9:F:65:VAL:HG22	2.09	0.53
5:O:141:SER:OG	5:O:146:GLU:OE2	2.27	0.53
5:O:1349:LEU:HB3	5:O:1405:ALA:HB1	1.91	0.53
5:O:1665:HIS:H	5:O:1668:PHE:HB3	1.74	0.53
5:O:1935:GLU:O	5:O:1938:ARG:N	2.37	0.53
5:O:3572:ILE:HG21	5:O:3800:LEU:HG	1.91	0.53
5:O:3604:LYS:HG3	5:O:3606:ILE:HG12	1.91	0.53
6:C:88:ARG:NH2	6:C:94:ASN:OD1	2.42	0.53
2:L:163:PHE:CG	2:L:212:MET:HE1	2.43	0.53
3:I:114:DC:O2	6:G:42:ARG:NH2	2.42	0.53
5:O:1211:VAL:O	5:O:1215:GLU:N	2.41	0.53
5:O:2362:VAL:HG12	5:O:2366:LYS:NZ	2.23	0.53
5:O:3082:TYR:HB3	5:O:3085:GLU:HB2	1.91	0.53
5:O:3287:ARG:O	5:O:3289:ARG:NH1	2.42	0.53
5:O:3324:ARG:HD2	5:O:3392:ALA:HB2	1.91	0.53
1:K:317:LYS:HE3	1:K:328:ILE:HG12	1.90	0.53
3:I:59:DC:H2"	3:I:60:DT:C5	2.43	0.53
5:O:176:GLU:HG2	5:O:223:CYS:HA	1.91	0.53
5:O:649:PHE:HA	5:O:652:GLU:OE2	2.09	0.53
5:O:1452:VAL:HA	5:O:1517:LEU:HD21	1.90	0.53
5:O:2193:ILE:HA	5:O:2196:TRP:CD1	2.44	0.53
5:O:3157:LEU:HA	5:O:3160:LEU:HB2	1.90	0.53
5:O:3245:SER:HA	5:O:3248:LYS:HE2	1.90	0.53
5:O:3518:VAL:HA	5:O:3521:ILE:HG12	1.90	0.53
1:K:397:LEU:HD11	1:K:410:PHE:HD2	1.72	0.53
1:K:485:GLN:OE1	1:K:489:ASN:ND2	2.41	0.53
5:O:3179:TRP:CZ2	5:O:3245:SER:HB2	2.44	0.53
8:A:106:ASP:HB3	8:A:127:ALA:HB1	1.91	0.53
2:L:461:MET:HB3	2:L:526:SER:HB3	1.91	0.53
5:O:563:LEU:O	5:O:566:ASP:N	2.41	0.53
5:O:1224:PHE:HE1	5:O:1266:CYS:HB3	1.74	0.53
5:O:1714:LEU:HD23	5:O:1717:LEU:HD23	1.91	0.53
5:O:2274:ILE:HD13	5:O:2319:ALA:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3883:LEU:HD23	5:O:3970:LEU:HB2	1.91	0.53
2:L:280:ASP:HB2	2:L:289:ILE:HD11	1.91	0.52
3:I:89:DT:H2'	3:I:90:DT:C4	2.44	0.52
5:O:442:GLN:HG2	5:O:461:ILE:HD11	1.92	0.52
5:O:576:VAL:HA	5:O:579:LEU:HD12	1.91	0.52
5:O:1711:ARG:HA	5:O:1714:LEU:HD12	1.90	0.52
5:O:2556:SER:O	5:O:2559:THR:OG1	2.23	0.52
8:A:47:ALA:N	8:A:50:GLU:OE1	2.42	0.52
2:L:8:ALA:N	2:L:52:ASP:OD1	2.42	0.52
2:L:397:TYR:HE2	4:J:132:DC:H4'	1.73	0.52
5:O:1963:GLN:HA	5:O:2125:TRP:CZ2	2.44	0.52
5:O:1966:LEU:O	5:O:1967:PHE:C	2.52	0.52
5:O:2365:ASN:ND2	5:O:2399:GLU:OE2	2.34	0.52
9:B:67:ARG:NH1	9:B:68:ASP:OD1	2.42	0.52
2:L:346:CYS:SG	2:L:347:LYS:N	2.81	0.52
5:O:2140:LEU:HA	5:O:2143:ARG:HG2	1.91	0.52
8:E:82:LEU:HD11	9:F:73:THR:HG21	1.92	0.52
1:K:319:SER:O	2:L:277:THR:OG1	2.20	0.52
1:K:442:ASP:OD1	2:L:270:GLU:N	2.38	0.52
5:O:1583:MET:HE2	5:O:1625:HIS:O	2.09	0.52
3:I:48:DC:H2''	3:I:49:DT:C2	2.44	0.52
5:O:1420:ARG:HH11	5:O:1424:THR:HG23	1.74	0.52
5:O:3879:PRO:HG2	5:O:3882:LEU:HD21	1.92	0.52
8:A:74:ILE:HG22	9:B:66:ILE:HG21	1.91	0.52
9:B:35:ARG:O	9:B:39:ARG:HG2	2.10	0.52
3:I:40:DG:H1'	3:I:41:DT:H5'	1.92	0.52
3:I:133:DC:H2''	3:I:134:DA:C8	2.45	0.52
4:J:43:DA:H2''	4:J:44:DG:C8	2.45	0.52
5:O:1110:SER:HA	5:O:1113:LEU:HD12	1.91	0.52
5:O:2281:MET:HE2	5:O:2281:MET:HA	1.91	0.52
5:O:2531:LEU:O	5:O:2538:ARG:NH2	2.41	0.52
5:O:3971:MET:HE3	5:O:3974:MET:HB2	1.92	0.52
5:O:4125:GLU:HA	5:O:4127:TRP:CZ3	2.45	0.52
1:K:380:THR:HG23	2:L:444:TYR:HD1	1.75	0.52
5:O:13:LEU:HB2	5:O:59:PHE:CZ	2.45	0.52
5:O:859:LEU:O	5:O:867:ASN:ND2	2.42	0.52
5:O:939:MET:SD	5:O:2783:ILE:HG13	2.50	0.52
5:O:1034:ARG:NE	5:O:1088:GLU:OE2	2.37	0.52
5:O:1483:LEU:HD11	5:O:1514:LEU:HB3	1.92	0.52
5:O:2034:SER:O	5:O:2037:SER:N	2.43	0.52
5:O:2126:MET:HE1	5:O:2164:TRP:HE1	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3662:ILE:HA	5:O:3665:MET:HE2	1.92	0.52
5:O:3980:MET:O	5:O:3984:MET:HG2	2.10	0.52
1:K:278:GLN:HB3	2:L:431:ARG:HD2	1.90	0.52
5:O:23:ASP:HB3	5:O:34:LEU:HD21	1.90	0.52
5:O:345:PHE:CE2	5:O:369:PHE:HB2	2.45	0.52
5:O:636:GLU:OE1	5:O:636:GLU:N	2.41	0.52
5:O:1330:TYR:CZ	5:O:1334:LYS:HD2	2.44	0.52
5:O:2548:PRO:HB3	5:O:2847:THR:HA	1.91	0.52
5:O:3588:TRP:CD1	5:O:3609:MET:HE2	2.45	0.52
8:A:113:HIS:HB2	8:E:126:LEU:HD13	1.92	0.52
1:K:41:LEU:O	1:K:169:PHE:N	2.43	0.52
1:K:44:ALA:HB2	1:K:87:PHE:CE2	2.42	0.52
1:K:202:LEU:HB2	1:K:221:ILE:HG22	1.92	0.52
1:K:510:LYS:O	1:K:512:GLU:N	2.42	0.52
2:L:154:LEU:HD13	2:L:215:LEU:HD21	1.91	0.52
4:J:147:DC:H1'	4:J:148:DC:C2	2.45	0.52
5:O:2891:ARG:NH1	5:O:2894:GLU:OE2	2.38	0.52
5:O:3872:ARG:HH12	5:O:4117:LEU:HD22	1.75	0.52
6:C:18:SER:OG	6:C:27:VAL:N	2.42	0.52
1:K:349:GLY:HA3	2:L:463:LEU:HD11	1.92	0.51
5:O:370:ALA:HB1	5:O:423:TYR:HE2	1.75	0.51
5:O:1201:ASN:HB3	5:O:1207:TRP:HB2	1.92	0.51
5:O:2514:ASN:HB3	5:O:2517:LEU:HD13	1.92	0.51
5:O:3133:GLN:NE2	5:O:3137:GLU:OE2	2.36	0.51
5:O:3296:GLN:HA	5:O:3299:THR:HB	1.93	0.51
5:O:3515:GLN:O	5:O:3519:GLU:N	2.34	0.51
5:O:3818:ASN:OD1	5:O:3819:THR:N	2.44	0.51
2:L:18:PHE:O	2:L:21:SER:OG	2.28	0.51
5:O:3021:SER:HG	5:O:3031:TRP:CD1	2.28	0.51
5:O:3363:SER:HB2	5:O:3380:ARG:HD3	1.91	0.51
5:O:3748:HIS:HB3	5:O:3750:PHE:CZ	2.45	0.51
3:I:92:DT:H3	4:J:63:DA:H2	1.57	0.51
3:I:94:DA:H2''	3:I:95:DC:H5''	1.93	0.51
5:O:279:ALA:HB2	5:O:318:SER:HB2	1.92	0.51
5:O:395:MET:HE2	5:O:406:ARG:HD3	1.92	0.51
5:O:2142:ILE:O	5:O:2146:LEU:HG	2.11	0.51
5:O:2371:PHE:HB3	5:O:2374:LEU:HD23	1.92	0.51
8:A:92:LEU:HD11	9:B:65:VAL:HG11	1.91	0.51
1:K:74:LYS:O	1:K:78:SER:N	2.41	0.51
2:L:18:PHE:HB3	2:L:102:SER:HA	1.93	0.51
4:J:137:DC:H2'	4:J:138:DC:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:87:LYS:O	5:O:91:ILE:HG12	2.10	0.51
5:O:1267:TYR:CE2	5:O:1290:LEU:HD21	2.46	0.51
5:O:1284:THR:OG1	5:O:1285:GLU:OE1	2.24	0.51
5:O:1762:MET:HE2	5:O:1778:PHE:CE1	2.45	0.51
6:C:76:THR:O	7:D:50:GLY:N	2.40	0.51
2:L:259:ILE:HG23	2:L:373:ALA:HB1	1.93	0.51
2:L:363:LYS:HD2	2:L:418:CYS:SG	2.51	0.51
5:O:58:VAL:O	5:O:61:ARG:HG3	2.11	0.51
5:O:3515:GLN:OE1	5:O:3515:GLN:N	2.41	0.51
6:G:32:ARG:HA	6:G:35:ARG:HG2	1.91	0.51
9:F:59:LYS:O	9:F:62:LEU:HG	2.10	0.51
3:I:116:DA:H5'	3:I:116:DA:H8	1.76	0.51
5:O:2158:ARG:NH2	5:O:2722:ARG:HH21	2.08	0.51
1:K:318:ARG:HE	2:L:276:TRP:HB3	1.75	0.51
3:I:102:DG:H1	4:J:52:DC:H42	1.59	0.51
5:O:913:ARG:O	5:O:916:GLU:HG3	2.10	0.51
5:O:1482:GLU:OE1	5:O:1482:GLU:N	2.42	0.51
5:O:2093:CYS:O	5:O:2094:MET:HE2	2.11	0.51
5:O:2462:VAL:N	5:O:2473:MET:HE1	2.25	0.51
5:O:3263:HIS:HB2	5:O:3276:TRP:CZ2	2.46	0.51
5:O:4088:ASN:ND2	5:O:4109:ASP:O	2.44	0.51
1:K:370:PRO:HD3	1:K:382:PHE:CE2	2.46	0.51
3:I:52:DA:H2''	3:I:53:DG:C8	2.45	0.51
4:J:41:DG:H2''	4:J:42:DG:H8	1.75	0.51
4:J:126:DC:H2''	4:J:127:DG:C8	2.45	0.51
4:J:139:DG:OP2	5:O:165:LYS:NZ	2.30	0.51
5:O:200:PHE:HZ	5:O:227:LEU:HD13	1.76	0.51
5:O:924:ARG:HH22	5:O:2595:TRP:HB3	1.76	0.51
5:O:1014:LEU:HA	5:O:1018:VAL:HG22	1.93	0.51
5:O:1841:SER:HA	5:O:1844:VAL:HG23	1.91	0.51
5:O:2534:ASN:O	5:O:2536:LEU:N	2.44	0.51
7:D:89:ARG:HG2	9:F:75:HIS:CE1	2.46	0.51
1:K:289:TYR:N	1:K:294:GLU:O	2.44	0.51
4:J:49:DC:H2''	4:J:50:DC:O4'	2.11	0.51
5:O:61:ARG:HG2	5:O:103:TYR:HE2	1.76	0.51
5:O:1023:SER:HA	5:O:1026:ARG:HG3	1.92	0.51
5:O:1135:CYS:HA	5:O:1138:ILE:HG12	1.92	0.51
5:O:1518:ALA:HB1	5:O:1524:LEU:HD21	1.92	0.51
5:O:1696:LEU:HD13	5:O:1758:LEU:HD11	1.93	0.51
5:O:2430:GLU:N	5:O:2430:GLU:OE1	2.44	0.51
5:O:3980:MET:HA	5:O:3983:ILE:HD12	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:4083:GLY:O	5:O:4088:ASN:HB2	2.11	0.51
7:H:73:GLU:HB2	7:H:98:LEU:HD22	1.93	0.51
1:K:94:LYS:H	1:K:103:TYR:HA	1.76	0.51
1:K:478:PHE:HA	1:K:506:LEU:HD11	1.93	0.51
3:I:34:DT:O4	4:J:119:DA:N6	2.44	0.51
3:I:97:DG:N1	4:J:58:DG:O6	2.44	0.51
5:O:3242:MET:HE2	5:O:3242:MET:HA	1.93	0.51
5:O:3959:MET:HG2	5:O:4124:TRP:CE2	2.46	0.51
8:A:113:HIS:HD2	8:E:122:LYS:HB3	1.76	0.51
1:K:43:ASP:HB2	1:K:170:THR:HG22	1.92	0.50
1:K:355:LEU:HD11	2:L:473:LEU:HB3	1.93	0.50
5:O:792:ILE:HG23	5:O:793:LEU:HD12	1.94	0.50
5:O:3158:LYS:HG3	5:O:3159:ARG:H	1.76	0.50
3:I:97:DG:O6	4:J:57:DC:N4	2.44	0.50
4:J:141:DG:P	5:O:213:ARG:HH22	2.34	0.50
5:O:1514:LEU:HA	5:O:1517:LEU:HD12	1.93	0.50
5:O:2168:LEU:HD22	5:O:2193:ILE:HD11	1.93	0.50
5:O:3840:LYS:HG3	5:O:3841:ASP:H	1.76	0.50
5:O:4114:PRO:HA	5:O:4117:LEU:HG	1.94	0.50
6:G:23:LEU:HD23	6:G:56:GLU:OE2	2.11	0.50
4:J:74:DA:OP1	8:A:117:VAL:N	2.43	0.50
5:O:639:ALA:H	5:O:679:LYS:NZ	2.09	0.50
5:O:2898:LEU:HD13	5:O:3973:PRO:HA	1.93	0.50
5:O:3762:GLN:HG3	5:O:3793:VAL:HG11	1.93	0.50
1:K:211:PHE:HD1	1:K:213:ILE:HG13	1.77	0.50
1:K:445:LYS:NZ	1:K:446:MET:SD	2.74	0.50
3:I:95:DC:H2 [?]	3:I:96:DC:C6	2.46	0.50
5:O:708:VAL:HB	5:O:712:LYS:NZ	2.27	0.50
5:O:746:ARG:HB2	5:O:788:TYR:HE2	1.76	0.50
5:O:1294:VAL:HG11	5:O:1363:LEU:HG	1.94	0.50
5:O:1923:PHE:CD1	5:O:1941:HIS:HB3	2.46	0.50
5:O:2187:VAL:HG23	5:O:2728:LEU:HD21	1.93	0.50
5:O:2249:LEU:H	5:O:2249:LEU:HD12	1.77	0.50
5:O:3287:ARG:HE	5:O:3289:ARG:NH1	2.10	0.50
5:O:3368:GLU:HA	5:O:3372:LYS:HE2	1.92	0.50
6:G:84:GLN:HG2	6:G:102:ILE:HG12	1.93	0.50
1:K:534:TYR:O	2:L:260:ARG:NH2	2.43	0.50
2:L:450:GLN:NE2	2:L:536:LEU:O	2.34	0.50
3:I:79:DG:C8	3:I:79:DG:H5 [?]	2.46	0.50
5:O:496:VAL:HG21	5:O:525:LYS:HZ1	1.77	0.50
5:O:933:LEU:HD21	5:O:2794:LEU:HD23	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1815:THR:OG1	5:O:1816:ARG:N	2.44	0.50
5:O:3002:TYR:HB3	5:O:3011:LEU:HD23	1.94	0.50
1:K:386:LEU:HD23	2:L:439:LYS:HE3	1.94	0.50
4:J:91:DT:H2''	4:J:92:DT:C5	2.47	0.50
5:O:932:GLU:O	5:O:2773:ARG:NH2	2.43	0.50
5:O:3759:ARG:HA	5:O:3762:GLN:HE21	1.77	0.50
1:K:271:VAL:HB	1:K:368:VAL:HG13	1.93	0.50
2:L:496:HIS:CD2	2:L:497:ARG:HH21	2.29	0.50
3:I:9:DG:N2	4:J:147:DC:O2	2.44	0.50
5:O:894:PHE:HB3	5:O:907:LEU:HD23	1.93	0.50
5:O:1190:LEU:HA	5:O:1193:LYS:HE2	1.94	0.50
5:O:1249:SER:OG	5:O:1310:GLU:OE2	2.29	0.50
5:O:2379:MET:HA	5:O:2382:VAL:HG12	1.93	0.50
3:I:14:DC:H42	4:J:140:DG:H1	1.58	0.50
3:I:103:DG:H2''	3:I:104:DG:O5'	2.11	0.50
4:J:71:DG:H2''	4:J:72:DG:N7	2.26	0.50
5:O:142:ARG:N	5:O:144:MET:HE1	2.26	0.50
5:O:1624:GLN:O	5:O:1627:LYS:NZ	2.35	0.50
5:O:1772:HIS:CD2	5:O:1773:VAL:HG23	2.46	0.50
5:O:1817:GLN:HB3	5:O:1868:THR:HG22	1.93	0.50
2:L:37:VAL:HG21	2:L:227:PHE:HB3	1.92	0.50
5:O:780:ILE:HB	5:O:785:MET:HE1	1.94	0.50
5:O:1019:ASP:O	5:O:1026:ARG:NH2	2.43	0.50
5:O:1075:ARG:HD2	5:O:1110:SER:HB2	1.93	0.50
5:O:1179:PRO:HG3	5:O:1259:LEU:HD13	1.92	0.50
5:O:1601:LEU:HD22	5:O:1655:ILE:HD12	1.94	0.50
7:H:106:HIS:HA	7:H:109:SER:HB3	1.94	0.50
1:K:421:ASP:OD1	1:K:425:ILE:N	2.45	0.49
3:I:43:DG:OP1	7:D:84:SER:N	2.45	0.49
4:J:38:DT:H2''	4:J:39:DA:N7	2.27	0.49
5:O:369:PHE:CE2	5:O:373:CYS:HB3	2.47	0.49
5:O:889:GLU:HB2	5:O:891:ARG:HH11	1.77	0.49
5:O:1231:GLN:HA	5:O:1292:LYS:HE2	1.94	0.49
5:O:1445:ARG:NH2	5:O:1507:CYS:SG	2.71	0.49
5:O:2410:GLU:HB3	5:O:2413:PHE:HB3	1.93	0.49
5:O:2432:GLN:HE21	5:O:2461:PHE:HE1	1.60	0.49
5:O:3176:MET:HE1	5:O:3249:GLN:HG3	1.94	0.49
5:O:3750:PHE:HD1	5:O:3804:GLU:HA	1.77	0.49
5:O:3908:HIS:HA	5:O:3937:VAL:HG21	1.94	0.49
6:C:72:ASP:OD1	6:C:73:ASN:N	2.45	0.49
1:K:48:MET:SD	1:K:171:ASN:OD1	2.69	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:48:MET:HA	1:K:59:PRO:HB2	1.94	0.49
1:K:257:SER:HB3	1:K:273:ILE:HD12	1.94	0.49
3:I:16:DG:H2''	3:I:17:DG:N7	2.27	0.49
3:I:124:DG:N2	4:J:31:DT:O2	2.45	0.49
5:O:100:ILE:HG22	5:O:103:TYR:HB2	1.94	0.49
5:O:2385:LEU:HD13	5:O:2388:LYS:HG3	1.92	0.49
5:O:2980:ASP:N	5:O:2980:ASP:OD1	2.43	0.49
5:O:3091:LEU:O	5:O:3192:LYS:NZ	2.46	0.49
5:O:3179:TRP:HZ2	5:O:3245:SER:HB2	1.77	0.49
6:G:26:PRO:HD3	7:H:37:TYR:CD1	2.47	0.49
1:K:375:VAL:HA	2:L:541:GLU:HA	1.93	0.49
5:O:206:THR:HG22	5:O:212:VAL:HG21	1.94	0.49
5:O:1375:THR:HG22	5:O:1382:ILE:HD13	1.94	0.49
5:O:1763:THR:O	5:O:1767:CYS:N	2.46	0.49
2:L:151:ILE:HD11	2:L:211:VAL:HG13	1.93	0.49
2:L:197:ILE:HD12	2:L:201:GLN:HB3	1.94	0.49
3:I:27:DC:H2''	3:I:28:DG:H5''	1.95	0.49
3:I:105:DG:H22	4:J:49:DC:H1''	1.76	0.49
5:O:898:PHE:HB3	5:O:903:PRO:HD2	1.94	0.49
5:O:1373:VAL:O	5:O:1377:CYS:N	2.46	0.49
5:O:2533:SER:O	5:O:2538:ARG:N	2.45	0.49
5:O:3854:ALA:O	5:O:3856:MET:N	2.45	0.49
8:E:54:TYR:HD2	9:F:39:ARG:HB2	1.77	0.49
4:J:52:DC:O2	8:A:83:ARG:NH2	2.45	0.49
4:J:63:DA:H2''	4:J:64:DA:C8	2.47	0.49
5:O:708:VAL:HB	5:O:712:LYS:HZ1	1.76	0.49
5:O:910:PHE:HB3	5:O:2804:ILE:HD11	1.95	0.49
5:O:1413:ASP:OD1	5:O:1414:ILE:N	2.41	0.49
6:C:64:GLU:HA	7:D:46:HIS:CE1	2.47	0.49
8:A:100:LEU:HD11	9:B:58:LEU:HD12	1.93	0.49
5:O:98:GLN:O	5:O:100:ILE:HG12	2.12	0.49
5:O:489:ARG:O	5:O:492:SER:OG	2.28	0.49
5:O:1131:ILE:HD12	5:O:1190:LEU:HD11	1.95	0.49
5:O:1143:VAL:O	5:O:1147:LYS:N	2.44	0.49
5:O:1553:PHE:HB2	5:O:1558:TYR:OH	2.12	0.49
5:O:2394:LYS:HB2	5:O:2431:ARG:HH22	1.78	0.49
5:O:3259:LEU:HD11	5:O:3283:LEU:HD13	1.93	0.49
5:O:3531:TYR:CE1	5:O:3796:MET:HA	2.48	0.49
5:O:4056:PRO:HG2	5:O:4107:LEU:HG	1.94	0.49
1:K:142:SER:OG	1:K:145:GLU:OE1	2.24	0.49
2:L:59:PHE:HA	2:L:77:ILE:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:56:DC:H2''	3:I:57:DC:C2	2.48	0.49
4:J:103:DA:H2''	4:J:104:DG:C8	2.47	0.49
5:O:682:TYR:CZ	5:O:700:LYS:HD3	2.47	0.49
5:O:1645:VAL:HA	5:O:1648:LEU:HG	1.92	0.49
5:O:3588:TRP:HZ2	5:O:3610:TYR:HB2	1.77	0.49
1:K:318:ARG:NH2	2:L:276:TRP:O	2.46	0.49
3:I:67:DC:H2''	3:I:68:DA:C8	2.48	0.49
3:I:116:DA:H2''	3:I:117:DG:C8	2.47	0.49
5:O:170:VAL:HA	5:O:219:VAL:HG11	1.95	0.49
5:O:750:PRO:O	5:O:753:GLN:HB2	2.13	0.49
5:O:1585:SER:OG	5:O:1588:ASP:OD1	2.28	0.49
5:O:2264:ASP:OD1	5:O:2264:ASP:N	2.45	0.49
9:B:90:LEU:HB3	9:B:95:ARG:HB2	1.95	0.49
2:L:165:LEU:HB2	2:L:166:PRO:HD2	1.94	0.49
5:O:1206:LEU:HA	5:O:1209:LYS:HB2	1.94	0.49
5:O:1352:SER:HB3	5:O:1356:TRP:CG	2.48	0.49
5:O:1611:GLN:HB2	5:O:1613:HIS:ND1	2.28	0.49
5:O:1949:ILE:HG12	5:O:2100:LEU:HD13	1.94	0.49
5:O:2773:ARG:NH2	5:O:2775:TYR:OH	2.46	0.49
5:O:3515:GLN:HA	5:O:3518:VAL:HB	1.94	0.49
3:I:85:DC:OP1	9:B:39:ARG:NH2	2.46	0.49
5:O:1633:TRP:HB3	5:O:1645:VAL:HG21	1.95	0.49
5:O:1685:ASP:OD1	5:O:1686:LEU:N	2.46	0.49
5:O:2295:GLN:HE21	5:O:2299:TYR:N	2.10	0.49
5:O:2396:LEU:O	5:O:2400:VAL:HG23	2.12	0.49
5:O:2925:GLU:HA	5:O:2928:LYS:HD3	1.95	0.49
5:O:3332:THR:O	5:O:3335:ARG:HG3	2.13	0.49
5:O:3727:THR:HB	5:O:3737:ARG:HB3	1.94	0.49
6:C:59:THR:HA	6:C:62:ILE:HG22	1.95	0.49
9:B:64:ASN:O	9:B:67:ARG:HG3	2.13	0.49
1:K:525:PHE:HD1	1:K:528:LEU:HD12	1.78	0.48
2:L:190:PRO:HG2	2:L:192:PHE:HE1	1.78	0.48
5:O:576:VAL:HA	5:O:579:LEU:CD1	2.43	0.48
5:O:1836:LEU:HA	5:O:1839:PHE:HB3	1.95	0.48
5:O:2283:ASN:HB2	5:O:2285:LEU:HD23	1.95	0.48
5:O:2986:PRO:HG2	5:O:2991:LYS:HZ2	1.78	0.48
5:O:3330:LEU:HD23	5:O:3384:HIS:CE1	2.48	0.48
8:A:83:ARG:HD3	9:B:79:LYS:HZ1	1.78	0.48
1:K:320:GLN:HG3	2:L:276:TRP:HA	1.95	0.48
1:K:329:LEU:HD21	2:L:497:ARG:HD2	1.95	0.48
1:K:363:ARG:NH1	2:L:269:GLN:OE1	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:384:LEU:CB	2:L:410:PRO:HG3	2.44	0.48
3:I:64:DA:H1'	3:I:65:DC:H5	1.78	0.48
5:O:67:VAL:HG21	5:O:82:ARG:NH1	2.27	0.48
5:O:475:LEU:HD23	5:O:479:ILE:HD13	1.94	0.48
5:O:561:ASN:HA	5:O:564:LEU:HD12	1.95	0.48
5:O:1019:ASP:OD1	5:O:1026:ARG:NE	2.45	0.48
5:O:1098:GLN:HE22	5:O:1151:ARG:HA	1.78	0.48
7:D:92:GLN:OE1	7:D:96:ARG:NH1	2.46	0.48
6:G:31:HIS:HA	6:G:48:PRO:HB3	1.95	0.48
1:K:55:ASP:N	1:K:55:ASP:OD1	2.45	0.48
2:L:29:SER:O	2:L:32:GLU:N	2.46	0.48
2:L:360:GLN:OE1	2:L:360:GLN:N	2.45	0.48
3:I:105:DG:H2''	3:I:106:DA:C8	2.48	0.48
5:O:1254:LEU:HD11	5:O:1329:ARG:NH1	2.28	0.48
5:O:1491:ILE:HG13	5:O:1492:ALA:H	1.78	0.48
5:O:3589:SER:HA	5:O:3592:VAL:HG12	1.95	0.48
9:F:39:ARG:HH12	9:F:46:ILE:HG23	1.79	0.48
1:K:382:PHE:CZ	1:K:431:GLY:HA2	2.48	0.48
1:K:461:LYS:O	1:K:465:ILE:HG12	2.12	0.48
2:L:198:THR:O	2:L:202:LYS:HG2	2.13	0.48
2:L:323:PHE:CZ	2:L:328:GLU:HA	2.47	0.48
4:J:139:DG:H2''	4:J:140:DG:OP2	2.13	0.48
5:O:786:GLN:HB3	5:O:787:PRO:HD3	1.94	0.48
5:O:1220:LEU:HG	5:O:1287:GLN:HE21	1.78	0.48
5:O:2435:CYS:HA	5:O:2438:ILE:HD12	1.94	0.48
5:O:2535:THR:OG1	5:O:2536:LEU:N	2.46	0.48
5:O:3797:THR:HG23	5:O:3800:LEU:HD13	1.95	0.48
6:G:57:TYR:CE1	7:H:106:HIS:HB3	2.48	0.48
4:J:98:DG:H2''	4:J:99:DT:H71	1.96	0.48
4:J:140:DG:H3'	5:O:213:ARG:NH2	2.28	0.48
5:O:323:VAL:HA	5:O:326:MET:HG3	1.95	0.48
5:O:754:MET:O	5:O:757:LYS:HB2	2.13	0.48
5:O:1838:GLU:O	5:O:1841:SER:OG	2.22	0.48
5:O:1960:LYS:O	5:O:1961:PHE:C	2.55	0.48
5:O:2301:GLN:HA	5:O:2304:VAL:HG22	1.96	0.48
5:O:3745:GLU:H	5:O:3745:GLU:CD	2.20	0.48
5:O:3805:TRP:HD1	5:O:3807:GLU:HG2	1.78	0.48
1:K:193:LEU:HD22	1:K:198:ILE:HD12	1.94	0.48
1:K:451:LYS:HG2	2:L:417:GLU:H	1.78	0.48
5:O:29:LEU:HA	5:O:32:HIS:CE1	2.48	0.48
5:O:797:ASP:O	5:O:801:LYS:N	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:847:SER:OG	5:O:848:LEU:N	2.47	0.48
5:O:1380:ALA:HA	5:O:1384:PHE:HA	1.94	0.48
5:O:1468:LEU:HD21	5:O:1476:HIS:CG	2.49	0.48
5:O:3050:LYS:HG2	5:O:3054:GLN:HE22	1.78	0.48
5:O:3244:ASP:OD1	5:O:3245:SER:N	2.47	0.48
5:O:3665:MET:O	5:O:3669:LYS:NZ	2.42	0.48
5:O:3759:ARG:HA	5:O:3762:GLN:NE2	2.28	0.48
5:O:3909:ALA:HB1	5:O:3984:MET:HE3	1.95	0.48
6:C:104:GLN:H	8:A:94:GLU:HG2	1.77	0.48
2:L:384:LEU:HB2	2:L:410:PRO:HG3	1.96	0.48
5:O:322:GLN:O	5:O:322:GLN:NE2	2.47	0.48
5:O:529:ASP:OD1	5:O:530:LEU:N	2.47	0.48
5:O:760:LEU:HD21	5:O:798:GLY:HA3	1.95	0.48
5:O:965:THR:CG2	5:O:969:LEU:CD1	2.79	0.48
5:O:1762:MET:HE2	5:O:1778:PHE:HE1	1.78	0.48
5:O:2168:LEU:O	5:O:2172:ALA:N	2.45	0.48
1:K:142:SER:HA	1:K:176:HIS:CE1	2.49	0.48
1:K:455:THR:HB	1:K:458:GLN:HE22	1.79	0.48
2:L:223:GLU:OE2	2:L:238:LYS:NZ	2.35	0.48
5:O:73:LEU:HG	5:O:74:ASN:H	1.78	0.48
8:A:122:LYS:NZ	8:E:113:HIS:O	2.47	0.48
6:G:54:VAL:HG11	7:H:95:VAL:HG21	1.95	0.48
2:L:96:SER:O	2:L:99:GLN:NE2	2.43	0.48
3:I:126:DC:H2'	3:I:127:DA:C5	2.48	0.48
5:O:1479:VAL:HG22	5:O:1521:PHE:CE2	2.49	0.48
5:O:1964:GLY:H	5:O:2125:TRP:NE1	2.12	0.48
5:O:2239:LYS:HG3	5:O:2279:ILE:HD12	1.96	0.48
5:O:2553:HIS:O	5:O:2556:SER:OG	2.23	0.48
3:I:103:DG:H4'	3:I:104:DG:OP1	2.13	0.48
5:O:237:SER:OG	5:O:240:GLU:OE1	2.32	0.48
5:O:345:PHE:HA	5:O:366:TYR:HE1	1.79	0.48
5:O:639:ALA:H	5:O:679:LYS:HZ3	1.62	0.48
5:O:1298:LEU:HB2	5:O:1367:HIS:CD2	2.48	0.48
5:O:2542:LEU:HA	5:O:2545:LEU:HD13	1.95	0.48
5:O:2873:PRO:HB2	5:O:2925:GLU:HG3	1.95	0.48
5:O:3074:GLN:O	5:O:3078:LEU:HG	2.14	0.48
5:O:3077:ILE:O	5:O:3081:HIS:ND1	2.43	0.48
5:O:3091:LEU:HD13	5:O:3141:PHE:CE2	2.49	0.48
8:E:92:LEU:HD11	9:F:65:VAL:HG21	1.95	0.48
1:K:36:ASP:H	1:K:81:ASP:CG	2.22	0.47
2:L:296:CYS:HB2	2:L:299:ASP:CG	2.39	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:304:THR:OG1	5:O:305:ASN:N	2.47	0.47
5:O:916:GLU:O	5:O:920:THR:N	2.35	0.47
5:O:1020:PRO:HA	5:O:1073:PHE:HE2	1.79	0.47
5:O:1102:GLU:H	5:O:1102:GLU:CD	2.22	0.47
5:O:1878:ASP:OD1	5:O:1879:VAL:N	2.46	0.47
5:O:2544:SER:HA	5:O:2842:ARG:HH22	1.79	0.47
5:O:3385:LEU:HB3	5:O:3416:LEU:CD1	2.44	0.47
7:D:77:LEU:HB3	9:F:75:HIS:CD2	2.49	0.47
7:D:92:GLN:HA	7:D:95:VAL:HG22	1.96	0.47
7:H:62:PHE:HD1	9:F:98:TYR:CE2	2.31	0.47
1:K:92:LYS:HD3	1:K:135:MET:HA	1.95	0.47
1:K:348:MET:HB2	1:K:397:LEU:HG	1.95	0.47
1:K:352:PRO:HG3	2:L:464:ALA:HB2	1.95	0.47
3:I:34:DT:P	6:C:17:ARG:HE	2.37	0.47
3:I:81:DC:H2''	3:I:82:DC:C5	2.48	0.47
4:J:59:DG:H1'	4:J:60:DT:C2	2.49	0.47
4:J:125:DG:H1'	4:J:126:DC:H5'	1.97	0.47
5:O:714:VAL:HG12	5:O:733:LEU:HD11	1.95	0.47
5:O:1279:LEU:HG	5:O:1356:TRP:NE1	2.29	0.47
5:O:1423:ILE:HD11	5:O:1426:GLN:O	2.14	0.47
5:O:2855:VAL:HA	5:O:2858:ILE:HD12	1.95	0.47
5:O:2897:LEU:HD21	5:O:2923:TRP:NE1	2.29	0.47
5:O:3580:ASN:HD21	5:O:3582:GLU:HB3	1.79	0.47
8:A:83:ARG:HD3	9:B:79:LYS:NZ	2.29	0.47
1:K:261:LEU:N	1:K:269:ILE:O	2.39	0.47
4:J:115:DG:H5''	6:C:42:ARG:HB3	1.95	0.47
5:O:137:THR:O	5:O:141:SER:OG	2.27	0.47
5:O:635:PRO:HG3	5:O:672:ILE:HD12	1.96	0.47
5:O:1872:GLY:HA2	5:O:1875:LYS:HG2	1.96	0.47
5:O:2254:ARG:C	5:O:2256:ILE:H	2.22	0.47
5:O:2806:LYS:HD2	5:O:2853:PRO:HB3	1.96	0.47
5:O:3573:ASN:OD1	5:O:3574:ALA:N	2.47	0.47
5:O:3579:SER:OG	5:O:3580:ASN:N	2.47	0.47
5:O:3951:GLN:HA	5:O:4068:HIS:CD2	2.49	0.47
6:C:78:ILE:HG23	6:C:82:HIS:HE1	1.78	0.47
1:K:36:ASP:OD1	1:K:162:SER:OG	2.26	0.47
1:K:339:ARG:HA	1:K:405:ASN:HA	1.95	0.47
1:K:426:GLN:OE1	2:L:435:PHE:O	2.32	0.47
1:K:473:TYR:O	2:L:350:GLN:NE2	2.45	0.47
5:O:320:LEU:HA	5:O:323:VAL:HG22	1.96	0.47
5:O:867:ASN:HB3	5:O:3129:LEU:HD11	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1111:LEU:HB2	5:O:1127:CYS:SG	2.54	0.47
5:O:1179:PRO:HB3	5:O:1258:ASP:OD1	2.14	0.47
5:O:1762:MET:HA	5:O:1765:VAL:HG12	1.95	0.47
5:O:3922:ASP:OD1	5:O:3927:ASN:ND2	2.47	0.47
7:H:76:ARG:HG3	7:H:80:TYR:CE2	2.50	0.47
1:K:257:SER:HB2	4:J:141:DG:H4'	1.96	0.47
5:O:672:ILE:HD13	5:O:675:ARG:HH12	1.79	0.47
5:O:717:LYS:NZ	5:O:1119:LYS:O	2.46	0.47
5:O:1389:VAL:HG13	5:O:1391:VAL:H	1.80	0.47
5:O:1538:LEU:HG	5:O:1555:HIS:CE1	2.49	0.47
5:O:3099:ALA:O	5:O:3103:ILE:HG13	2.14	0.47
5:O:3183:ILE:HG13	5:O:3242:MET:SD	2.54	0.47
5:O:3193:ILE:HA	5:O:3196:LYS:HG2	1.95	0.47
5:O:3824:GLU:HG2	5:O:3827:ALA:HB3	1.95	0.47
1:K:529:VAL:HG22	1:K:531:PRO:HD3	1.97	0.47
3:I:42:DA:H2''	3:I:43:DG:C8	2.49	0.47
5:O:526:ASP:OD1	5:O:526:ASP:N	2.47	0.47
5:O:1420:ARG:NH1	5:O:1424:THR:HG23	2.29	0.47
5:O:1477:HIS:HB3	5:O:1481:THR:H	1.79	0.47
5:O:4009:PRO:HA	5:O:4012:ASP:HB3	1.95	0.47
5:O:4094:PRO:HB2	5:O:4098:LEU:HD11	1.97	0.47
3:I:103:DG:N2	8:A:83:ARG:HH22	2.09	0.47
4:J:40:DG:H2''	4:J:41:DG:N7	2.30	0.47
5:O:251:PHE:O	5:O:255:ALA:N	2.42	0.47
5:O:326:MET:HA	5:O:329:LYS:HG2	1.97	0.47
5:O:373:CYS:HB2	5:O:381:VAL:HG22	1.96	0.47
5:O:486:GLY:O	5:O:490:ILE:HG12	2.15	0.47
5:O:901:MET:HG3	5:O:2819:GLU:HB3	1.95	0.47
5:O:1452:VAL:O	5:O:1456:LYS:HG2	2.14	0.47
5:O:1576:ASP:OD1	5:O:1576:ASP:N	2.46	0.47
5:O:2154:GLU:C	5:O:2156:VAL:H	2.23	0.47
5:O:2510:LEU:O	5:O:2518:GLN:NE2	2.36	0.47
5:O:3524:ASN:OD1	5:O:3525:TYR:N	2.48	0.47
5:O:4116:ILE:HG13	5:O:4126:PRO:HB2	1.97	0.47
9:B:75:HIS:HE1	7:H:90:GLU:HG2	1.79	0.47
2:L:165:LEU:H	2:L:165:LEU:HD23	1.79	0.47
3:I:122:DC:H2''	3:I:123:DA:C8	2.50	0.47
5:O:629:PHE:O	5:O:633:ILE:HG12	2.15	0.47
5:O:2324:GLY:HA3	5:O:2370:SER:OG	2.14	0.47
5:O:2361:ILE:HD11	5:O:2393:LEU:HB3	1.96	0.47
5:O:3052:LEU:HB3	5:O:3092:LEU:CD2	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:67:ARG:HH12	7:H:100:PRO:HG3	1.79	0.47
5:O:683:PHE:HD1	5:O:704:PHE:CE1	2.31	0.47
5:O:770:LEU:HD21	5:O:855:VAL:HG22	1.97	0.47
5:O:1346:THR:O	5:O:1350:ASN:ND2	2.48	0.47
5:O:1428:ILE:HG22	5:O:1448:LEU:HD22	1.97	0.47
5:O:3030:ILE:H	5:O:3067:LYS:NZ	2.12	0.47
1:K:369:TYR:OH	2:L:436:SER:O	2.30	0.47
2:L:17:GLY:O	2:L:20:MET:HE3	2.14	0.47
5:O:568:PHE:O	5:O:572:VAL:HG13	2.15	0.47
5:O:919:LEU:HA	5:O:972:LEU:HD11	1.96	0.47
5:O:1338:VAL:O	5:O:1341:ILE:HG12	2.15	0.47
5:O:1425:ALA:O	5:O:1429:GLU:HB2	2.15	0.47
5:O:1476:HIS:HE1	5:O:1522:GLY:H	1.63	0.47
5:O:3369:ASP:H	5:O:3372:LYS:HB2	1.79	0.47
1:K:412:ALA:HB3	1:K:435:VAL:HB	1.95	0.46
2:L:43:GLN:HE22	2:L:492:GLN:HA	1.79	0.46
4:J:60:DT:H2''	4:J:61:DT:C5	2.50	0.46
5:O:135:LEU:O	5:O:139:ARG:HG2	2.15	0.46
5:O:148:LYS:HG2	5:O:151:GLU:OE2	2.15	0.46
5:O:668:LYS:O	5:O:672:ILE:HG12	2.15	0.46
5:O:1267:TYR:CZ	5:O:1290:LEU:HD11	2.49	0.46
5:O:3738:ILE:O	5:O:3738:ILE:HG13	2.16	0.46
6:C:38:HIS:ND1	6:G:39:TYR:O	2.48	0.46
8:A:122:LYS:HG2	8:E:113:HIS:NE2	2.30	0.46
1:K:270:SER:OG	1:K:371:GLU:O	2.28	0.46
1:K:288:LEU:N	2:L:311:ILE:O	2.48	0.46
5:O:31:GLY:HA3	5:O:77:GLU:HB2	1.95	0.46
5:O:300:TRP:CE3	5:O:308:LEU:HD21	2.49	0.46
5:O:2589:TYR:H	5:O:2776:ARG:HA	1.80	0.46
5:O:4060:THR:O	5:O:4063:GLU:HG3	2.15	0.46
8:E:65:LEU:O	8:E:68:GLN:HG3	2.15	0.46
1:K:218:ARG:NE	1:K:218:ARG:O	2.47	0.46
2:L:16:VAL:HA	2:L:31:PHE:HE1	1.81	0.46
3:I:10:DA:H2	4:J:146:DT:H3	1.62	0.46
3:I:82:DC:O2	4:J:73:DG:N2	2.47	0.46
5:O:173:LYS:HA	5:O:173:LYS:HD2	1.78	0.46
5:O:335:LYS:HA	5:O:338:LEU:HG	1.98	0.46
5:O:934:LEU:HA	5:O:937:MET:HE3	1.97	0.46
5:O:1834:ASP:OD1	5:O:1834:ASP:N	2.46	0.46
5:O:1958:GLU:HB2	5:O:1961:PHE:CZ	2.51	0.46
5:O:2340:SER:O	5:O:2344:LEU:HG	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3512:VAL:O	5:O:3515:GLN:HB2	2.16	0.46
5:O:3751:LEU:HD22	5:O:3805:TRP:HB2	1.96	0.46
5:O:3886:ALA:O	5:O:3890:MET:HG3	2.16	0.46
5:O:3965:ARG:NH1	5:O:3969:ASN:OD1	2.49	0.46
8:A:70:LEU:HD22	9:B:26:ILE:HA	1.96	0.46
6:G:53:ALA:HB1	7:H:110:GLU:HG3	1.97	0.46
8:E:51:ILE:HD11	9:F:43:VAL:C	2.40	0.46
1:K:379:SER:HB2	2:L:444:TYR:CG	2.50	0.46
4:J:145:DC:H2''	4:J:146:DT:C5	2.49	0.46
5:O:174:VAL:O	5:O:177:LEU:HB2	2.15	0.46
5:O:1062:ARG:NH1	5:O:1065:SER:OG	2.48	0.46
5:O:1411:TYR:O	5:O:1414:ILE:HG22	2.16	0.46
5:O:1668:PHE:HA	5:O:1671:VAL:HG22	1.96	0.46
5:O:3529:ILE:O	5:O:3532:PRO:HD2	2.16	0.46
1:K:301:ARG:O	2:L:292:GLU:N	2.39	0.46
4:J:79:DG:H2''	4:J:80:DC:H5'	1.97	0.46
5:O:559:SER:O	5:O:561:ASN:N	2.48	0.46
5:O:901:MET:HG2	5:O:903:PRO:HD3	1.97	0.46
5:O:1072:ALA:HA	5:O:1075:ARG:HB2	1.98	0.46
5:O:2295:GLN:HG3	5:O:2298:GLU:HB3	1.97	0.46
5:O:3059:GLN:HG2	5:O:3062:LEU:HD13	1.97	0.46
5:O:3758:LEU:O	5:O:3762:GLN:NE2	2.49	0.46
6:G:57:TYR:CZ	7:H:103:LEU:HD13	2.51	0.46
2:L:188:HIS:N	2:L:515:MET:HA	2.31	0.46
4:J:58:DG:C8	4:J:58:DG:H5'	2.50	0.46
4:J:100:DG:H1'	4:J:101:DC:H5'	1.98	0.46
5:O:1178:ARG:HG3	5:O:1180:GLN:HB2	1.96	0.46
6:G:16:SER:O	6:G:20:ARG:N	2.49	0.46
6:G:53:ALA:HA	6:G:56:GLU:HG3	1.97	0.46
3:I:49:DT:H2''	3:I:50:DC:N3	2.30	0.46
5:O:1696:LEU:HD12	5:O:1697:PRO:N	2.30	0.46
5:O:1755:SER:HB3	5:O:1758:LEU:HD12	1.98	0.46
5:O:4061:CYS:SG	5:O:4078:VAL:HG13	2.55	0.46
8:E:124:ILE:HD11	9:F:50:ILE:HG23	1.98	0.46
1:K:303:PHE:CE1	2:L:292:GLU:HB2	2.50	0.46
1:K:461:LYS:HZ2	1:K:521:LEU:HA	1.81	0.46
2:L:269:GLN:NE2	2:L:270:GLU:O	2.31	0.46
2:L:390:VAL:HG12	2:L:409:PHE:HA	1.98	0.46
4:J:81:DG:H1'	4:J:82:DT:C6	2.51	0.46
5:O:393:LYS:HD2	5:O:1687:HIS:CE1	2.51	0.46
5:O:541:MET:SD	5:O:560:LEU:HD23	2.56	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:956:PRO:N	5:O:957:PRO:HD2	2.31	0.46
5:O:1253:THR:HG21	5:O:1310:GLU:HG3	1.97	0.46
5:O:1713:VAL:HA	5:O:1716:GLN:NE2	2.30	0.46
5:O:2353:GLN:HB3	5:O:2360:PHE:HB2	1.97	0.46
5:O:2512:ASP:N	5:O:2518:GLN:OE1	2.49	0.46
5:O:2854:PHE:CZ	5:O:2858:ILE:HD11	2.51	0.46
5:O:3469:LEU:HA	5:O:3472:ILE:HD12	1.98	0.46
5:O:3809:THR:HA	5:O:3931:ALA:HA	1.98	0.46
9:F:35:ARG:O	9:F:39:ARG:HG2	2.16	0.46
1:K:94:LYS:HB2	1:K:103:TYR:CD1	2.50	0.46
1:K:102:ILE:HG12	1:K:146:VAL:HG12	1.98	0.46
1:K:262:LYS:HA	1:K:268:VAL:HG22	1.97	0.46
1:K:353:LEU:N	1:K:393:GLU:O	2.33	0.46
1:K:529:VAL:HG13	1:K:530:TYR:N	2.29	0.46
5:O:677:ALA:O	5:O:681:LYS:N	2.49	0.46
5:O:1301:ILE:O	5:O:1304:HIS:N	2.41	0.46
5:O:2228:ARG:HA	5:O:2231:PHE:HB3	1.96	0.46
5:O:2485:ARG:NH1	5:O:2530:ARG:HA	2.29	0.46
5:O:2511:ILE:HD11	5:O:2553:HIS:HB2	1.98	0.46
5:O:3034:PRO:O	5:O:3038:GLU:N	2.43	0.46
5:O:3880:ALA:O	5:O:3885:ARG:NH2	2.28	0.46
1:K:296:VAL:HG12	2:L:296:CYS:HA	1.97	0.46
2:L:59:PHE:HD2	2:L:105:ALA:HB3	1.81	0.46
2:L:285:LYS:HD3	2:L:285:LYS:HA	1.65	0.46
5:O:708:VAL:HG12	5:O:740:ILE:HG23	1.97	0.46
5:O:781:ASP:HB3	5:O:784:VAL:HG23	1.97	0.46
5:O:1015:ASP:N	5:O:1015:ASP:OD1	2.41	0.46
5:O:1323:SER:N	5:O:1328:GLU:OE2	2.49	0.46
5:O:1639:LEU:HA	5:O:1642:LYS:HD2	1.97	0.46
5:O:1744:LYS:HB2	5:O:1744:LYS:HE2	1.83	0.46
5:O:2802:PRO:O	5:O:2806:LYS:HG3	2.16	0.46
5:O:4008:GLU:HB2	5:O:4011:PHE:CE2	2.51	0.46
5:O:583:LEU:HB2	5:O:614:PRO:HA	1.98	0.45
5:O:650:SER:O	5:O:654:ILE:HG12	2.15	0.45
5:O:921:ALA:HB3	5:O:927:LYS:HB2	1.98	0.45
5:O:934:LEU:HD22	5:O:937:MET:HE3	1.98	0.45
5:O:1011:GLU:HA	5:O:1014:LEU:HG	1.98	0.45
5:O:1218:SER:O	5:O:1222:ASN:HB2	2.16	0.45
5:O:2182:ILE:HG13	5:O:2183:HIS:H	1.81	0.45
5:O:2804:ILE:HG13	5:O:2808:LEU:HD23	1.98	0.45
5:O:2978:LYS:HA	5:O:2978:LYS:HD2	1.69	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3118:ASP:OD1	5:O:3119:VAL:N	2.49	0.45
5:O:3244:ASP:HB3	5:O:3282:ARG:NH2	2.31	0.45
5:O:3625:LEU:HB2	5:O:3685:PRO:HD3	1.99	0.45
8:E:47:ALA:HB3	9:F:44:LYS:HD2	1.97	0.45
1:K:43:ASP:HB3	1:K:48:MET:HE3	1.99	0.45
2:L:531:SER:HA	2:L:534:LYS:HE3	1.97	0.45
3:I:90:DT:H1'	3:I:91:DT:C4	2.51	0.45
5:O:131:LEU:HG	5:O:177:LEU:HG	1.97	0.45
5:O:785:MET:HA	5:O:788:TYR:HD1	1.81	0.45
5:O:1479:VAL:H	5:O:1521:PHE:HE2	1.62	0.45
5:O:1963:GLN:HA	5:O:2125:TRP:CE2	2.51	0.45
5:O:2362:VAL:HG12	5:O:2366:LYS:HZ3	1.80	0.45
5:O:2395:THR:HA	5:O:2398:LEU:HD12	1.98	0.45
5:O:2724:ASP:OD1	5:O:2725:LEU:N	2.49	0.45
5:O:3737:ARG:CZ	5:O:3739:ILE:HG13	2.46	0.45
8:E:119:ILE:O	8:E:120:MET:HE2	2.16	0.45
2:L:12:LEU:HD13	2:L:38:ILE:HG12	1.97	0.45
2:L:33:GLN:O	2:L:37:VAL:HG23	2.16	0.45
3:I:10:DA:H2''	3:I:11:DA:H8	1.81	0.45
3:I:62:DA:H1'	3:I:63:DA:H5'	1.98	0.45
5:O:100:ILE:O	5:O:104:SER:N	2.50	0.45
5:O:275:PHE:CD2	5:O:315:ALA:HB1	2.51	0.45
5:O:1339:VAL:HA	5:O:1342:MET:HG3	1.99	0.45
5:O:2358:ASP:O	5:O:2362:VAL:HG23	2.16	0.45
5:O:3732:LEU:HG	5:O:3733:ARG:HH11	1.81	0.45
1:K:369:TYR:CG	1:K:370:PRO:HD2	2.51	0.45
1:K:403:ARG:HD2	4:J:140:DG:H4'	1.98	0.45
1:K:489:ASN:ND2	2:L:331:MET:HB3	2.32	0.45
2:L:9:ALA:HB2	2:L:127:PHE:CE2	2.51	0.45
3:I:74:DG:OP1	8:E:118:THR:OG1	2.25	0.45
5:O:178:LEU:HD22	5:O:227:LEU:HD11	1.98	0.45
5:O:487:LEU:CD1	5:O:575:ILE:HD13	2.45	0.45
5:O:923:ASP:O	5:O:926:THR:OG1	2.30	0.45
5:O:3321:LEU:O	5:O:3324:ARG:HG2	2.16	0.45
5:O:4080:VAL:HG11	5:O:4119:ARG:HH12	1.82	0.45
6:G:99:GLY:O	9:F:95:ARG:HA	2.17	0.45
1:K:374:LEU:HD23	1:K:374:LEU:H	1.82	0.45
2:L:14:MET:HE1	2:L:34:ALA:HB3	1.98	0.45
2:L:15:ASP:OD2	2:L:140:SER:OG	2.27	0.45
2:L:144:LYS:HE3	2:L:207:ILE:HD11	1.99	0.45
3:I:84:DC:H1'	3:I:85:DC:C2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:463:LYS:HB3	5:O:463:LYS:HE2	1.80	0.45
5:O:572:VAL:HA	5:O:575:ILE:HG12	1.98	0.45
5:O:938:VAL:HA	5:O:941:MET:HG3	1.98	0.45
5:O:1031:ARG:O	5:O:1034:ARG:HG2	2.16	0.45
5:O:1279:LEU:HG	5:O:1356:TRP:HE1	1.81	0.45
5:O:1403:MET:HA	5:O:1406:LEU:HD12	1.98	0.45
5:O:1415:LEU:HA	5:O:1418:HIS:ND1	2.31	0.45
5:O:1844:VAL:HG12	5:O:1845:VAL:HG23	1.98	0.45
5:O:2155:GLU:HG2	5:O:2158:ARG:HB2	1.99	0.45
5:O:3077:ILE:HG23	5:O:3081:HIS:CE1	2.52	0.45
5:O:3419:PHE:O	5:O:3423:GLN:HG2	2.17	0.45
5:O:3442:TYR:O	5:O:3445:LEU:HD22	2.17	0.45
5:O:3822:GLN:O	5:O:3825:LYS:NZ	2.32	0.45
5:O:4114:PRO:O	5:O:4118:GLY:N	2.50	0.45
8:A:99:TYR:OH	8:A:128:ARG:NH1	2.49	0.45
8:A:113:HIS:O	8:A:115:LYS:NZ	2.50	0.45
8:A:122:LYS:C	8:E:113:HIS:HE2	2.24	0.45
1:K:74:LYS:HZ1	1:K:81:ASP:HB2	1.81	0.45
2:L:154:LEU:HD23	2:L:159:ILE:CG2	2.46	0.45
2:L:229:GLU:HG3	2:L:233:LYS:HZ3	1.79	0.45
3:I:97:DG:N1	4:J:57:DC:N3	2.65	0.45
4:J:104:DG:H3'	9:F:79:LYS:HB2	1.98	0.45
5:O:175:TYR:HB2	5:O:223:CYS:HB2	1.97	0.45
5:O:183:GLU:O	5:O:185:HIS:ND1	2.42	0.45
5:O:529:ASP:O	5:O:533:HIS:ND1	2.42	0.45
5:O:1456:LYS:NZ	5:O:1516:GLU:OE1	2.46	0.45
5:O:1782:PHE:HA	5:O:1785:ILE:HG22	1.99	0.45
5:O:1836:LEU:O	5:O:1839:PHE:HB3	2.17	0.45
5:O:2235:LEU:HA	5:O:2238:ILE:HD12	1.99	0.45
5:O:2472:GLN:O	5:O:2476:ILE:HG12	2.17	0.45
5:O:2586:PHE:CE1	5:O:2782:ASP:HB3	2.52	0.45
5:O:2919:ASP:OD1	5:O:2919:ASP:N	2.49	0.45
5:O:3322:ALA:O	5:O:3326:GLN:HG2	2.17	0.45
5:O:3385:LEU:HB3	5:O:3416:LEU:HD11	1.98	0.45
5:O:3750:PHE:CD1	5:O:3804:GLU:HA	2.51	0.45
6:C:69:ALA:HB2	6:C:86:ALA:HB2	1.99	0.45
6:C:110:ASN:HB2	8:A:55:GLN:NE2	2.31	0.45
1:K:193:LEU:HB3	1:K:198:ILE:HB	1.98	0.45
2:L:33:GLN:OE1	2:L:227:PHE:HB2	2.17	0.45
2:L:68:LEU:HB3	2:L:74:TYR:CE2	2.52	0.45
2:L:132:ILE:HB	2:L:161:LEU:HD13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:346:CYS:C	2:L:389:MET:HG2	2.42	0.45
5:O:275:PHE:CZ	5:O:319:PHE:HB2	2.49	0.45
5:O:372:PRO:O	5:O:376:ILE:HG13	2.17	0.45
5:O:979:VAL:HA	5:O:982:GLN:HG2	1.99	0.45
5:O:2158:ARG:N	5:O:2159:PRO:HD2	2.32	0.45
8:E:99:TYR:CZ	8:E:103:LEU:HD11	2.52	0.45
3:I:70:DG:H21	4:J:85:DG:H22	1.65	0.45
5:O:363:ILE:HG12	5:O:413:PHE:CD1	2.52	0.45
5:O:989:MET:SD	5:O:1035:GLU:HG2	2.57	0.45
5:O:2319:ALA:O	5:O:2323:LEU:HD23	2.17	0.45
5:O:2839:ASP:O	5:O:2842:ARG:HG2	2.17	0.45
5:O:3835:PRO:HB3	5:O:3839:TYR:CE2	2.52	0.45
9:F:62:LEU:O	9:F:66:ILE:HG23	2.17	0.45
1:K:73:SER:HB3	1:K:249:LYS:HZ1	1.81	0.45
1:K:207:LYS:HD3	1:K:208:PRO:HD2	1.99	0.45
2:L:7:LYS:HG3	2:L:127:PHE:CD1	2.51	0.45
2:L:68:LEU:HD12	2:L:113:VAL:HA	1.97	0.45
2:L:246:HIS:HB2	2:L:262:ALA:HB1	1.99	0.45
3:I:75:DC:H2 ⁷	3:I:76:DG:H5 ⁷	1.98	0.45
5:O:406:ARG:HA	5:O:409:GLN:HE22	1.81	0.45
5:O:2923:TRP:HE3	5:O:2942:ILE:HG23	1.81	0.45
5:O:4077:TYR:HA	5:O:4080:VAL:HG22	1.99	0.45
8:A:113:HIS:CE1	8:E:110:CYS:HB3	2.52	0.45
9:B:38:ALA:O	9:B:43:VAL:N	2.50	0.45
9:B:78:ARG:NH2	9:B:80:THR:OG1	2.48	0.45
6:G:103:ALA:HB2	9:F:98:TYR:O	2.17	0.45
7:H:38:VAL:HB	7:H:56:MET:HE1	1.98	0.45
7:H:42:LEU:HD22	7:H:51:ILE:HD13	1.99	0.45
1:K:75:ILE:HG21	2:L:316:TYR:CE2	2.52	0.45
1:K:278:GLN:O	2:L:431:ARG:NH1	2.50	0.45
1:K:398:CYS:SG	1:K:399:ARG:N	2.90	0.45
3:I:48:DC:O2	4:J:106:DG:N2	2.50	0.45
5:O:197:PHE:O	5:O:201:LEU:HG	2.17	0.45
5:O:204:LEU:HD23	5:O:217:LEU:HD11	1.99	0.45
5:O:793:LEU:HA	5:O:796:LEU:HD12	1.98	0.45
5:O:1200:GLY:H	5:O:1202:ARG:HH12	1.65	0.45
5:O:1412:LYS:O	5:O:1416:GLU:N	2.34	0.45
5:O:1697:PRO:HB3	5:O:1753:SER:HB3	1.99	0.45
5:O:3868:VAL:HG12	5:O:4117:LEU:HD13	1.99	0.45
1:K:94:LYS:N	1:K:103:TYR:HA	2.32	0.44
1:K:440:ALA:HA	2:L:480:THR:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:490:LEU:HA	1:K:493:LEU:HD12	1.99	0.44
4:J:34:DA:P	6:G:17:ARG:H	2.40	0.44
4:J:95:DG:H2'	4:J:95:DG:OP2	2.17	0.44
4:J:124:DA:H2''	4:J:125:DG:C8	2.51	0.44
5:O:247:GLU:HG2	5:O:282:PHE:HD1	1.82	0.44
5:O:966:PHE:HD1	5:O:969:LEU:HD12	1.80	0.44
5:O:998:ASN:OD1	5:O:998:ASN:N	2.51	0.44
5:O:2427:ARG:HE	5:O:2465:PRO:HD2	1.82	0.44
5:O:2557:LEU:O	5:O:2560:ASN:HB2	2.18	0.44
5:O:3141:PHE:HA	5:O:3144:PHE:HD2	1.82	0.44
5:O:3738:ILE:HD11	5:O:3752:VAL:HG22	1.98	0.44
7:D:41:VAL:O	7:D:45:VAL:HG22	2.16	0.44
8:E:122:LYS:O	8:E:125:GLN:HG3	2.17	0.44
5:O:249:PHE:O	5:O:253:LEU:N	2.40	0.44
5:O:356:ASN:N	5:O:358:GLU:OE2	2.50	0.44
5:O:372:PRO:HA	5:O:375:VAL:HG22	1.97	0.44
5:O:1212:LEU:O	5:O:1216:GLY:N	2.50	0.44
5:O:1685:ASP:H	5:O:1688:LEU:HD12	1.82	0.44
5:O:1837:ARG:O	5:O:1840:PHE:HB3	2.16	0.44
5:O:2477:LEU:HD13	5:O:2505:VAL:HG23	2.00	0.44
5:O:2815:GLY:O	5:O:2819:GLU:HG2	2.17	0.44
5:O:3951:GLN:OE1	5:O:3951:GLN:N	2.50	0.44
8:E:49:ARG:HG3	8:E:53:ARG:HH22	1.82	0.44
8:E:119:ILE:HD11	9:F:46:ILE:HG22	1.99	0.44
9:F:87:VAL:HG22	9:F:97:LEU:HB3	1.99	0.44
3:I:80:DT:H2''	3:I:81:DC:OP2	2.17	0.44
4:J:58:DG:H5'	4:J:58:DG:H8	1.82	0.44
5:O:64:GLY:HA2	5:O:67:VAL:HG12	2.00	0.44
5:O:540:MET:O	5:O:544:ILE:HG12	2.17	0.44
5:O:1583:MET:SD	5:O:1586:SER:OG	2.67	0.44
5:O:2328:ARG:HA	5:O:2371:PHE:CD1	2.51	0.44
5:O:2333:ARG:HH22	5:O:2336:ILE:HD13	1.82	0.44
5:O:2374:LEU:O	5:O:2377:ARG:NH1	2.51	0.44
5:O:3270:ASP:HA	5:O:3273:LEU:HB3	1.99	0.44
5:O:3328:ILE:HD11	5:O:3415:THR:OG1	2.17	0.44
5:O:3493:TRP:CH2	5:O:3711:PRO:HD3	2.52	0.44
5:O:3617:LEU:HA	5:O:3629:ARG:HD2	1.99	0.44
1:K:74:LYS:NZ	1:K:81:ASP:HB2	2.32	0.44
1:K:340:PHE:CZ	2:L:486:ARG:HA	2.52	0.44
1:K:353:LEU:HD12	1:K:393:GLU:HA	1.99	0.44
2:L:121:GLU:OE2	2:L:125:LYS:NZ	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:122:DC:H2''	3:I:123:DA:N7	2.32	0.44
5:O:250:ASN:HA	5:O:253:LEU:HB2	1.99	0.44
5:O:579:LEU:HB3	5:O:581:LEU:HD23	1.99	0.44
5:O:1307:ILE:HG23	5:O:1311:LYS:H	1.81	0.44
5:O:2238:ILE:O	5:O:2242:VAL:HG12	2.18	0.44
1:K:58:THR:HG23	1:K:61:ASP:H	1.81	0.44
1:K:256:LEU:HD12	1:K:273:ILE:HG22	1.98	0.44
3:I:78:DT:O2	4:J:77:DG:N2	2.50	0.44
6:C:90:ASP:OD1	6:C:91:GLU:N	2.51	0.44
1:K:333:GLU:O	1:K:337:LEU:HG	2.18	0.44
2:L:7:LYS:HB2	2:L:52:ASP:HA	2.00	0.44
2:L:55:ALA:N	2:L:83:LEU:HD12	2.33	0.44
2:L:57:VAL:HG13	2:L:79:VAL:HG22	2.00	0.44
3:I:92:DT:H2''	3:I:93:DA:C8	2.52	0.44
4:J:20:DT:N3	4:J:21:DG:O6	2.51	0.44
5:O:40:GLN:HA	5:O:43:VAL:HG12	1.99	0.44
5:O:465:PHE:CD1	5:O:479:ILE:HG22	2.53	0.44
5:O:950:GLU:O	5:O:956:PRO:HG2	2.17	0.44
5:O:1105:VAL:HA	5:O:1108:MET:HG3	2.00	0.44
5:O:1601:LEU:HB3	5:O:2045:PHE:HZ	1.83	0.44
5:O:3588:TRP:HE1	5:O:3609:MET:C	2.25	0.44
5:O:3593:ARG:NE	5:O:3660:ASN:HD21	2.16	0.44
5:O:3809:THR:OG1	5:O:3930:VAL:O	2.36	0.44
6:C:47:ALA:HB3	6:C:48:PRO:HD3	1.99	0.44
7:D:66:ILE:HG22	7:D:69:ARG:HH12	1.83	0.44
6:G:103:ALA:HA	9:F:97:LEU:CD1	2.48	0.44
1:K:318:ARG:CZ	2:L:278:VAL:HB	2.46	0.44
1:K:412:ALA:HB2	1:K:437:LEU:HD21	1.98	0.44
2:L:348:SER:OG	2:L:390:VAL:HG13	2.18	0.44
3:I:116:DA:H5'	3:I:116:DA:C8	2.52	0.44
5:O:1368:LEU:HD12	5:O:1369:MET:N	2.32	0.44
5:O:1532:LEU:C	5:O:1592:MET:HE1	2.42	0.44
5:O:1773:VAL:HB	5:O:1778:PHE:HE2	1.82	0.44
5:O:3287:ARG:HE	5:O:3289:ARG:HH12	1.64	0.44
5:O:3294:SER:O	5:O:3298:LEU:N	2.41	0.44
5:O:3812:LEU:HB3	5:O:3925:LEU:HG	2.00	0.44
5:O:3819:THR:HA	5:O:3889:ARG:NH1	2.33	0.44
1:K:206:LYS:HD2	1:K:236:SER:HB3	1.99	0.44
1:K:459:VAL:O	1:K:463:LYS:HG2	2.18	0.44
2:L:295:TYR:H	2:L:307:LYS:HZ3	1.64	0.44
2:L:413:LYS:HB2	2:L:416:TYR:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:94:DA:H5''	4:J:63:DA:H4'	2.00	0.44
4:J:56:DG:H2''	4:J:57:DC:C5	2.52	0.44
5:O:42:CYS:HB3	5:O:88:PHE:CD1	2.52	0.44
5:O:265:TYR:HE1	5:O:308:LEU:HD22	1.82	0.44
5:O:525:LYS:O	5:O:528:VAL:HG22	2.17	0.44
5:O:894:PHE:HB2	5:O:940:PHE:CZ	2.53	0.44
5:O:1464:LEU:O	5:O:1468:LEU:N	2.50	0.44
5:O:2276:LEU:O	5:O:2280:VAL:HG23	2.18	0.44
5:O:3049:LEU:O	5:O:3053:LEU:HD23	2.18	0.44
5:O:3446:VAL:HG23	5:O:3468:LEU:HD21	2.00	0.44
5:O:3901:ARG:NH2	5:O:3970:LEU:O	2.47	0.44
7:D:89:ARG:O	7:D:92:GLN:HG3	2.18	0.44
8:A:104:PHE:HE2	9:B:37:LEU:HG	1.83	0.44
7:H:37:TYR:O	7:H:40:LYS:HG2	2.17	0.44
9:F:70:VAL:HA	9:F:73:THR:HG22	2.00	0.44
1:K:420:LEU:HB3	1:K:424:LYS:HA	2.00	0.44
2:L:327:ASP:HB2	2:L:331:MET:HE1	2.00	0.44
3:I:118:DT:H2''	3:I:119:DC:C6	2.53	0.44
4:J:81:DG:H2''	4:J:82:DT:O5'	2.16	0.44
4:J:115:DG:H3'	6:C:43:VAL:H	1.83	0.44
5:O:203:GLU:HB3	5:O:220:LEU:HD21	2.00	0.44
5:O:1428:ILE:HA	5:O:1431:LEU:HB2	1.99	0.44
5:O:1525:CYS:O	5:O:1529:VAL:HG23	2.18	0.44
5:O:2149:LEU:O	5:O:2153:THR:HG23	2.18	0.44
5:O:2528:GLU:H	5:O:2528:GLU:CD	2.21	0.44
5:O:2582:SER:HB2	5:O:2780:LEU:HD22	2.00	0.44
5:O:3135:LEU:O	5:O:3138:ILE:HG22	2.17	0.44
5:O:3580:ASN:ND2	5:O:3582:GLU:HB3	2.33	0.44
5:O:3767:LEU:HD23	5:O:3771:MET:CE	2.48	0.44
6:G:29:ARG:HA	6:G:32:ARG:HG2	2.00	0.44
8:E:71:VAL:HA	8:E:74:ILE:HG22	1.99	0.44
1:K:258:ARG:HG2	4:J:142:DA:H5'	2.00	0.43
1:K:265:LYS:HD2	1:K:265:LYS:HA	1.80	0.43
1:K:428:THR:HB	2:L:354:ARG:NH1	2.33	0.43
2:L:33:GLN:O	2:L:36:LYS:HG2	2.18	0.43
2:L:187:GLY:HA2	2:L:514:ASN:C	2.43	0.43
2:L:370:ASP:HB2	2:L:373:ALA:HB3	2.00	0.43
2:L:426:PHE:C	2:L:428:GLU:H	2.26	0.43
5:O:1477:HIS:ND1	5:O:1480:GLY:HA3	2.33	0.43
5:O:2133:LEU:HD12	5:O:2164:TRP:CZ3	2.53	0.43
5:O:2573:PRO:O	5:O:2786:LYS:NZ	2.35	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3072:GLU:HA	5:O:3075:LYS:HE2	1.99	0.43
5:O:3100:LYS:HG2	5:O:3104:GLN:HE22	1.83	0.43
5:O:3578:LEU:HD23	5:O:3677:PRO:HD2	2.00	0.43
1:K:95:ASN:N	1:K:95:ASN:HD22	2.16	0.43
2:L:381:ILE:HD13	2:L:417:GLU:HG2	2.00	0.43
2:L:431:ARG:NE	3:I:15:DC:OP1	2.47	0.43
3:I:132:DT:H6	3:I:132:DT:H2'	1.63	0.43
5:O:638:GLN:HB2	5:O:640:GLU:OE1	2.18	0.43
5:O:648:SER:O	5:O:651:TYR:N	2.51	0.43
5:O:1086:TYR:HA	5:O:1089:PHE:HB3	1.99	0.43
5:O:1205:ASN:O	5:O:1208:LEU:HG	2.19	0.43
5:O:1564:SER:O	5:O:1568:ASN:ND2	2.51	0.43
5:O:1675:TYR:CD1	5:O:1679:LEU:HD23	2.53	0.43
5:O:1743:MET:SD	5:O:1762:MET:HE1	2.57	0.43
5:O:1775:GLU:HA	5:O:1778:PHE:CD2	2.37	0.43
5:O:1963:GLN:HB2	5:O:2123:PRO:O	2.18	0.43
5:O:2869:LEU:HD13	5:O:2896:ALA:HA	1.99	0.43
5:O:2919:ASP:O	5:O:2923:TRP:HD1	2.01	0.43
6:G:18:SER:HA	6:G:27:VAL:H	1.83	0.43
7:H:37:TYR:HA	7:H:40:LYS:HE3	2.00	0.43
1:K:511:VAL:H	1:K:514:MET:HE2	1.82	0.43
3:I:15:DC:H2''	3:I:16:DG:C8	2.54	0.43
3:I:91:DT:H2'	3:I:92:DT:H72	2.00	0.43
3:I:95:DC:OP2	8:A:64:LYS:HB3	2.18	0.43
4:J:72:DG:H4'	4:J:73:DG:OP1	2.18	0.43
5:O:1105:VAL:HG21	5:O:1154:PRO:HB3	2.01	0.43
5:O:1300:SER:HA	5:O:1304:HIS:HB2	1.99	0.43
5:O:1825:LEU:HD21	5:O:1875:LYS:HG3	2.00	0.43
5:O:2442:MET:HE1	5:O:2446:LEU:HD22	2.01	0.43
5:O:3165:THR:O	5:O:3169:PRO:HD3	2.18	0.43
5:O:3291:GLN:O	5:O:3295:GLU:HG2	2.17	0.43
8:A:54:TYR:HB2	9:B:40:ARG:HA	2.00	0.43
1:K:149:VAL:HA	1:K:152:ASN:ND2	2.33	0.43
1:K:161:MET:CE	1:K:164:LYS:HG3	2.48	0.43
2:L:37:VAL:HG22	2:L:231:LEU:HG	2.00	0.43
2:L:151:ILE:O	2:L:155:LYS:HG2	2.18	0.43
3:I:50:DC:H1'	3:I:51:DT:C2	2.53	0.43
5:O:201:LEU:HD22	5:O:249:PHE:CD2	2.52	0.43
5:O:275:PHE:HA	5:O:282:PHE:CE2	2.53	0.43
5:O:405:ASP:OD1	5:O:405:ASP:N	2.50	0.43
5:O:430:VAL:HG11	5:O:1644:ALA:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:441:MET:HA	5:O:444:ASP:HB2	2.00	0.43
5:O:1205:ASN:CG	5:O:1275:THR:HA	2.43	0.43
5:O:1278:ALA:HB3	5:O:1356:TRP:CD1	2.53	0.43
5:O:1528:LEU:HD21	5:O:1567:ILE:HG23	2.00	0.43
5:O:1649:LEU:O	5:O:1652:ILE:HG12	2.18	0.43
5:O:2151:ILE:HD13	5:O:2188:GLU:HB3	2.01	0.43
5:O:2428:ASP:O	5:O:2432:GLN:HG2	2.17	0.43
5:O:2937:ASP:HB2	5:O:3982:SER:OG	2.19	0.43
5:O:3114:TYR:HB2	5:O:3128:LYS:HG2	2.00	0.43
5:O:3309:GLU:HA	5:O:3312:VAL:HG13	2.01	0.43
5:O:3617:LEU:HB3	5:O:3632:PHE:CZ	2.50	0.43
5:O:4088:ASN:HB3	5:O:4110:GLN:HB3	1.99	0.43
6:G:77:ARG:NE	7:H:51:ILE:O	2.50	0.43
8:E:48:LEU:HA	8:E:51:ILE:HD12	2.00	0.43
1:K:276:LEU:HD23	1:K:276:LEU:H	1.84	0.43
2:L:295:TYR:H	2:L:307:LYS:NZ	2.17	0.43
3:I:118:DT:H6	3:I:118:DT:H2'	1.63	0.43
5:O:142:ARG:HE	5:O:182:GLY:HA3	1.82	0.43
5:O:275:PHE:HD2	5:O:315:ALA:HB1	1.83	0.43
5:O:763:THR:OG1	5:O:764:PRO:HD3	2.18	0.43
5:O:1299:GLU:O	5:O:1304:HIS:ND1	2.52	0.43
5:O:1342:MET:O	5:O:1345:THR:OG1	2.29	0.43
5:O:1843:ILE:O	5:O:1843:ILE:HG22	2.18	0.43
5:O:1962:TYR:O	5:O:1963:GLN:C	2.61	0.43
5:O:2339:GLU:HA	5:O:2342:CYS:SG	2.58	0.43
5:O:3325:ASP:O	5:O:3328:ILE:HG22	2.18	0.43
5:O:4069:GLU:HA	5:O:4074:PHE:CG	2.53	0.43
8:A:126:LEU:HB2	8:E:113:HIS:CD2	2.53	0.43
1:K:300:THR:HG22	5:O:164:LYS:HD2	2.00	0.43
2:L:496:HIS:CD2	2:L:505:LEU:HD23	2.53	0.43
4:J:54:DT:P	8:A:72:ARG:HH21	2.41	0.43
5:O:670:LEU:HB3	5:O:732:PHE:CE1	2.53	0.43
5:O:2415:LEU:HD22	5:O:2420:PHE:HB2	2.01	0.43
5:O:2420:PHE:HA	5:O:2423:VAL:HG12	2.01	0.43
5:O:3463:LEU:O	5:O:3466:PRO:HD2	2.17	0.43
5:O:3660:ASN:OD1	5:O:3661:ASP:N	2.51	0.43
5:O:3682:GLU:HA	5:O:3688:SER:OG	2.18	0.43
5:O:3757:ASP:HA	5:O:3798:SER:H	1.84	0.43
6:C:26:PRO:O	6:C:29:ARG:N	2.51	0.43
7:D:105:LYS:HA	7:D:108:VAL:HG22	2.01	0.43
6:G:51:LEU:HD22	7:H:91:ILE:HG21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:205:LEU:HB3	2:L:209:LYS:NZ	2.34	0.43
2:L:467:ASP:OD1	2:L:472:THR:OG1	2.37	0.43
3:I:11:DA:H3'	5:O:124:LYS:HE2	2.00	0.43
3:I:32:DA:H4'	7:D:30:ARG:NH2	2.34	0.43
4:J:43:DA:H2''	4:J:44:DG:C4	2.54	0.43
5:O:151:GLU:OE1	5:O:151:GLU:N	2.45	0.43
5:O:473:PRO:O	5:O:477:ASN:ND2	2.52	0.43
5:O:487:LEU:HD12	5:O:488:ILE:N	2.33	0.43
5:O:1374:GLN:O	5:O:1378:GLU:N	2.39	0.43
5:O:2166:SER:OG	5:O:2167:PRO:HD3	2.18	0.43
5:O:2186:VAL:O	5:O:2190:VAL:HG23	2.17	0.43
5:O:3091:LEU:HD13	5:O:3141:PHE:HE2	1.82	0.43
5:O:3460:GLU:H	5:O:3460:GLU:CD	2.24	0.43
5:O:3548:GLY:O	5:O:3552:LYS:HG2	2.18	0.43
6:C:34:LEU:HD12	6:C:48:PRO:HG3	2.00	0.43
9:B:49:LEU:HD23	9:B:49:LEU:H	1.84	0.43
1:K:363:ARG:HB2	1:K:436:PHE:CD2	2.54	0.43
2:L:184:ARG:NH2	2:L:521:GLU:HG2	2.31	0.43
5:O:474:VAL:HA	5:O:477:ASN:HD21	1.83	0.43
5:O:1193:LYS:O	5:O:1196:PRO:HD2	2.19	0.43
5:O:2457:PRO:HA	5:O:2460:GLU:CD	2.44	0.43
5:O:2961:ALA:O	5:O:3989:ARG:NH1	2.44	0.43
5:O:3708:ARG:NH2	5:O:3709:GLY:O	2.51	0.43
5:O:3948:SER:HA	5:O:3951:GLN:NE2	2.33	0.43
7:H:105:LYS:HD3	7:H:105:LYS:HA	1.90	0.43
8:E:52:ARG:HA	8:E:52:ARG:HD3	1.86	0.43
1:K:161:MET:HE2	1:K:164:LYS:HG3	2.01	0.43
5:O:267:VAL:HB	5:O:268:PRO:HD3	2.01	0.43
5:O:586:GLN:CD	5:O:586:GLN:H	2.27	0.43
5:O:958:MET:HB2	5:O:961:LEU:HB2	2.00	0.43
5:O:1391:VAL:O	5:O:1395:LEU:HG	2.19	0.43
5:O:1633:TRP:CE3	5:O:1674:THR:HG23	2.54	0.43
5:O:2371:PHE:HD2	5:O:2374:LEU:HD23	1.84	0.43
5:O:3002:TYR:CE2	5:O:3014:CYS:HB3	2.54	0.43
5:O:3059:GLN:HA	5:O:3062:LEU:HD13	2.01	0.43
5:O:3110:PHE:CD2	5:O:3135:LEU:HD11	2.53	0.43
5:O:3179:TRP:HE1	5:O:3242:MET:HE1	1.83	0.43
5:O:3767:LEU:HD23	5:O:3771:MET:HE1	2.00	0.43
9:F:90:LEU:HB3	9:F:95:ARG:HB3	1.99	0.43
1:K:382:PHE:HZ	1:K:431:GLY:HA2	1.83	0.43
3:I:134:DA:N6	4:J:21:DG:H1	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:630:CYS:HB2	5:O:634:LEU:HD23	2.00	0.43
5:O:1444:ASP:OD1	5:O:1445:ARG:N	2.52	0.43
5:O:1920:TYR:O	5:O:1924:THR:N	2.47	0.43
5:O:3641:ASP:OD1	5:O:3642:LYS:NZ	2.52	0.43
5:O:3780:ALA:O	5:O:3783:GLN:HB2	2.19	0.43
5:O:3929:MET:O	5:O:3937:VAL:HA	2.18	0.43
6:C:51:LEU:HB2	7:D:91:ILE:HD13	2.01	0.43
9:F:76:ALA:HB3	9:F:78:ARG:HE	1.84	0.43
1:K:276:LEU:HD22	2:L:354:ARG:HH21	1.83	0.42
1:K:380:THR:HG23	2:L:444:TYR:CD1	2.53	0.42
2:L:457:LEU:HD13	2:L:529:PRO:HB2	2.01	0.42
4:J:87:DG:H4'	4:J:88:DC:OP1	2.19	0.42
5:O:157:TYR:O	5:O:160:LEU:HB3	2.19	0.42
5:O:493:LYS:HG3	5:O:494:PRO:HD2	2.01	0.42
5:O:755:ALA:O	5:O:759:GLY:N	2.51	0.42
5:O:1020:PRO:HA	5:O:1073:PHE:CE2	2.54	0.42
5:O:1284:THR:HG23	5:O:1286:ALA:H	1.84	0.42
5:O:1346:THR:HG22	5:O:1350:ASN:ND2	2.34	0.42
5:O:1854:ARG:HH12	5:O:1867:ILE:HG22	1.84	0.42
5:O:2301:GLN:O	5:O:2304:VAL:HG22	2.19	0.42
5:O:2335:ASN:OD1	5:O:2337:LEU:N	2.50	0.42
7:H:100:PRO:HA	7:H:104:ALA:HB2	1.99	0.42
1:K:36:ASP:HA	1:K:163:HIS:HB3	2.01	0.42
1:K:176:HIS:ND1	1:K:182:LYS:HB3	2.35	0.42
1:K:194:ARG:NH2	1:K:221:ILE:O	2.52	0.42
2:L:131:HIS:ND1	2:L:239:LYS:HG2	2.33	0.42
2:L:252:THR:HB	2:L:341:SER:HA	1.99	0.42
5:O:1707:LEU:N	5:O:1709:GLU:OE1	2.52	0.42
5:O:2233:HIS:O	5:O:2237:ILE:HG12	2.19	0.42
5:O:4108:MET:HE2	5:O:4108:MET:N	2.34	0.42
8:A:122:LYS:HG2	8:E:113:HIS:CD2	2.55	0.42
1:K:409:TYR:HE2	1:K:436:PHE:HA	1.83	0.42
1:K:440:ALA:HB2	2:L:481:LYS:O	2.19	0.42
1:K:528:LEU:HD23	1:K:528:LEU:HA	1.82	0.42
2:L:307:LYS:HD3	2:L:307:LYS:HA	1.67	0.42
3:I:113:DC:H6	3:I:113:DC:H2'	1.64	0.42
5:O:98:GLN:O	5:O:100:ILE:N	2.53	0.42
5:O:485:GLN:HA	5:O:488:ILE:HG22	2.02	0.42
5:O:1047:GLN:H	5:O:1047:GLN:CD	2.27	0.42
5:O:1267:TYR:HB3	5:O:1344:PHE:HE1	1.83	0.42
5:O:1621:THR:O	5:O:1625:HIS:ND1	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1661:PHE:H	5:O:1665:HIS:CD2	2.37	0.42
5:O:1791:CYS:SG	5:O:1792:VAL:N	2.91	0.42
5:O:2125:TRP:HB3	5:O:2128:PHE:HB3	2.01	0.42
5:O:2252:PRO:C	5:O:2254:ARG:H	2.26	0.42
5:O:2349:LEU:HB3	5:O:2360:PHE:HE1	1.84	0.42
5:O:2587:GLN:OE1	5:O:2587:GLN:N	2.52	0.42
5:O:2782:ASP:OD1	5:O:2782:ASP:N	2.48	0.42
5:O:2987:THR:HG22	5:O:2990:GLU:HG3	2.01	0.42
5:O:3008:TRP:HB2	5:O:3051:LEU:HD22	2.00	0.42
5:O:3591:ASP:HB3	5:O:3609:MET:HE1	2.00	0.42
5:O:3624:GLY:N	5:O:3685:PRO:HD2	2.34	0.42
5:O:3640:PHE:HB2	5:O:3667:LEU:HD21	2.02	0.42
5:O:3687:MET:HA	5:O:3722:PHE:HE2	1.84	0.42
5:O:3887:PHE:O	5:O:3891:SER:N	2.52	0.42
8:A:126:LEU:HD22	8:E:113:HIS:ND1	2.35	0.42
6:G:83:LEU:O	6:G:87:ILE:HG12	2.20	0.42
6:G:100:VAL:HG13	9:F:96:THR:OG1	2.18	0.42
1:K:94:LYS:HE2	1:K:104:VAL:HB	2.00	0.42
1:K:100:LYS:O	1:K:102:ILE:HD12	2.19	0.42
1:K:176:HIS:CE1	1:K:182:LYS:HB3	2.55	0.42
1:K:299:LYS:HG3	5:O:164:LYS:NZ	2.34	0.42
1:K:350:PHE:H	2:L:461:MET:HE1	1.84	0.42
2:L:397:TYR:CE2	4:J:132:DC:H4'	2.53	0.42
3:I:20:DC:N4	4:J:134:DG:O6	2.53	0.42
4:J:25:DC:H2''	4:J:26:DG:H8	1.85	0.42
5:O:950:GLU:OE1	5:O:950:GLU:N	2.52	0.42
5:O:955:ALA:CB	5:O:1004:GLN:HB3	2.48	0.42
5:O:1559:PHE:N	5:O:1559:PHE:CD1	2.85	0.42
5:O:1588:ASP:OD1	5:O:1589:ASN:N	2.52	0.42
5:O:3448:GLU:HB2	5:O:3449:LYS:HZ2	1.83	0.42
5:O:3669:LYS:HA	5:O:3669:LYS:HD3	1.74	0.42
8:A:113:HIS:ND1	8:E:126:LEU:HD22	2.34	0.42
1:K:64:ILE:HD11	1:K:119:LEU:HB3	2.01	0.42
1:K:115:ARG:O	1:K:119:LEU:HG	2.20	0.42
1:K:379:SER:HB2	2:L:444:TYR:CD1	2.54	0.42
2:L:38:ILE:O	2:L:42:VAL:HG23	2.18	0.42
5:O:153:PHE:CE2	5:O:189:MET:HG2	2.54	0.42
5:O:524:TYR:OH	5:O:629:PHE:HB2	2.19	0.42
5:O:2186:VAL:O	5:O:2189:ILE:HG12	2.19	0.42
5:O:3103:ILE:HD12	5:O:3142:ILE:HD13	2.02	0.42
5:O:3772:ASN:OD1	5:O:3788:LEU:HB2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3901:ARG:HB2	5:O:3970:LEU:HD21	2.00	0.42
6:G:66:ALA:HB1	6:G:78:ILE:HD12	2.00	0.42
1:K:329:LEU:HD12	2:L:276:TRP:CH2	2.55	0.42
1:K:440:ALA:N	2:L:482:ILE:O	2.39	0.42
2:L:15:ASP:CG	2:L:20:MET:HE1	2.44	0.42
3:I:114:DC:H1'	3:I:115:DT:C2	2.55	0.42
4:J:44:DG:P	7:H:83:ARG:HH12	2.42	0.42
5:O:358:GLU:H	5:O:358:GLU:CD	2.26	0.42
5:O:1474:ASP:OD1	5:O:1474:ASP:N	2.52	0.42
5:O:2421:VAL:HG23	5:O:2457:PRO:HG3	2.02	0.42
5:O:3045:ILE:HG13	5:O:3046:ARG:N	2.35	0.42
5:O:3271:ASP:OD1	5:O:3272:TRP:N	2.50	0.42
5:O:3509:ASP:OD1	5:O:3509:ASP:N	2.53	0.42
5:O:3569:GLN:O	5:O:3573:ASN:ND2	2.53	0.42
5:O:3614:TYR:CE2	5:O:3618:GLY:HA3	2.55	0.42
5:O:3728:VAL:HG12	5:O:3736:LYS:HD2	2.02	0.42
5:O:3870:SER:O	5:O:3874:ARG:HG2	2.19	0.42
1:K:276:LEU:C	2:L:431:ARG:H	2.26	0.42
2:L:81:ARG:HH12	2:L:86:PRO:HA	1.84	0.42
3:I:42:DA:H2''	3:I:43:DG:H8	1.83	0.42
3:I:129:DG:H2''	3:I:130:DT:O5'	2.19	0.42
4:J:63:DA:H5''	8:A:63:ARG:CZ	2.49	0.42
4:J:140:DG:H2''	4:J:141:DG:C8	2.55	0.42
5:O:19:LEU:HD13	5:O:38:LEU:HG	2.02	0.42
5:O:87:LYS:HD2	5:O:831:LEU:HD22	2.02	0.42
5:O:994:TRP:CE3	5:O:997:ASN:ND2	2.87	0.42
5:O:2249:LEU:O	5:O:2251:ILE:HD12	2.20	0.42
5:O:2306:ASN:HA	5:O:2309:PHE:HB2	2.01	0.42
5:O:2564:GLU:O	5:O:2567:SER:OG	2.36	0.42
6:C:81:ARG:HD2	6:C:106:GLY:HA3	2.02	0.42
2:L:167:PHE:HA	2:L:226:SER:HB2	2.02	0.42
2:L:508:ILE:HD12	2:L:508:ILE:H	1.84	0.42
4:J:23:DC:C2	4:J:24:DA:C6	3.08	0.42
4:J:124:DA:H2''	4:J:125:DG:H8	1.85	0.42
5:O:539:GLN:OE1	5:O:539:GLN:N	2.50	0.42
5:O:1476:HIS:CE1	5:O:1522:GLY:H	2.38	0.42
5:O:1533:LEU:HD23	5:O:1592:MET:HE2	2.01	0.42
5:O:1853:SER:O	5:O:1870:LYS:NZ	2.53	0.42
5:O:1921:ASP:OD1	5:O:1922:ALA:N	2.51	0.42
5:O:2353:GLN:HB3	5:O:2360:PHE:CB	2.49	0.42
5:O:2863:CYS:SG	5:O:2864:GLN:N	2.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:3114:TYR:CE2	5:O:3125:ARG:HD2	2.54	0.42
5:O:3175:PRO:O	5:O:3179:TRP:HB3	2.19	0.42
5:O:3459:ASN:O	5:O:3463:LEU:HG	2.20	0.42
5:O:3483:MET:O	5:O:3486:GLU:CB	2.64	0.42
5:O:3609:MET:O	5:O:3612:ARG:HG2	2.20	0.42
5:O:3700:GLU:HB2	5:O:3718:ARG:NH1	2.34	0.42
5:O:3877:LYS:HZ2	5:O:4127:TRP:CD1	2.37	0.42
5:O:3988:LEU:HD23	5:O:4100:GLU:HA	2.00	0.42
6:G:47:ALA:HB3	6:G:48:PRO:HD3	2.02	0.42
6:G:103:ALA:O	8:E:94:GLU:HG2	2.20	0.42
1:K:179:ASP:HB3	1:K:182:LYS:HB2	2.02	0.42
1:K:296:VAL:HG13	2:L:299:ASP:H	1.83	0.42
3:I:111:DT:H1'	4:J:44:DG:H22	1.84	0.42
4:J:143:DT:H6	4:J:143:DT:H2'	1.63	0.42
5:O:119:ARG:HA	5:O:122:LYS:HG2	2.02	0.42
5:O:217:LEU:HB2	5:O:220:LEU:HD23	2.00	0.42
5:O:1458:LEU:O	5:O:1462:GLY:N	2.53	0.42
5:O:1476:HIS:O	5:O:1476:HIS:ND1	2.52	0.42
5:O:2834:GLN:NE2	5:O:2838:GLN:OE1	2.43	0.42
5:O:3011:LEU:HB3	5:O:3047:SER:HB2	2.01	0.42
5:O:3018:SER:O	5:O:3020:ASP:N	2.46	0.42
9:B:32:PRO:O	9:B:36:ARG:HG3	2.19	0.42
6:G:20:ARG:HD2	6:G:20:ARG:HA	1.80	0.42
6:G:25:PHE:CZ	7:H:41:VAL:HG22	2.54	0.42
6:G:31:HIS:HA	6:G:48:PRO:CB	2.50	0.42
1:K:388:LYS:HE3	2:L:451:LEU:HB3	2.02	0.42
1:K:416:GLN:O	1:K:430:PRO:HA	2.20	0.42
4:J:48:DT:H2''	4:J:49:DC:H5'	2.00	0.42
5:O:569:VAL:O	5:O:572:VAL:HG22	2.20	0.42
5:O:631:ARG:HG3	5:O:668:LYS:HD3	2.02	0.42
5:O:753:GLN:NE2	5:O:791:ASP:O	2.52	0.42
5:O:1112:ALA:HB1	5:O:1180:GLN:HG2	2.02	0.42
5:O:1196:PRO:O	5:O:1202:ARG:NH2	2.43	0.42
5:O:1960:LYS:C	5:O:1962:TYR:N	2.76	0.42
5:O:2476:ILE:O	5:O:2480:ILE:HG12	2.20	0.42
5:O:2995:GLU:O	5:O:2999:LEU:HG	2.19	0.42
5:O:3236:PHE:HD2	5:O:3269:ARG:HH21	1.67	0.42
5:O:3797:THR:O	5:O:3800:LEU:HB2	2.20	0.42
7:D:39:TYR:O	7:D:43:LYS:HG2	2.19	0.42
6:G:100:VAL:HG12	6:G:100:VAL:O	2.20	0.42
2:L:7:LYS:HD2	2:L:53:GLU:HG2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:489:ARG:NH1	2:L:508:ILE:HG13	2.35	0.41
2:L:497:ARG:NH2	2:L:501:PRO:O	2.52	0.41
2:L:538:PRO:C	2:L:539:LEU:HD12	2.45	0.41
3:I:19:DG:N2	4:J:136:DA:H2	2.16	0.41
3:I:85:DC:OP2	9:B:35:ARG:NE	2.53	0.41
4:J:77:DG:H2'	4:J:78:DC:C2	2.55	0.41
5:O:217:LEU:HG	5:O:221:ALA:HB2	2.00	0.41
5:O:756:PHE:HE2	5:O:792:ILE:HD11	1.85	0.41
5:O:1208:LEU:HD11	5:O:1275:THR:O	2.20	0.41
5:O:1630:ASP:HA	5:O:1633:TRP:NE1	2.35	0.41
5:O:2771:LEU:HD23	5:O:2771:LEU:H	1.85	0.41
5:O:2973:ASP:OD2	5:O:3002:TYR:OH	2.35	0.41
5:O:3247:ARG:HD3	5:O:3283:LEU:HA	2.00	0.41
5:O:3823:GLU:OE1	5:O:3823:GLU:N	2.36	0.41
8:A:126:LEU:HD22	8:E:113:HIS:CG	2.55	0.41
8:A:128:ARG:NE	8:A:134:ARG:HD2	2.35	0.41
2:L:16:VAL:HA	2:L:31:PHE:CE1	2.55	0.41
2:L:184:ARG:HH21	2:L:520:ALA:N	2.19	0.41
2:L:347:LYS:NZ	2:L:387:LEU:O	2.34	0.41
3:I:49:DT:H1'	3:I:50:DC:O2	2.21	0.41
4:J:108:DT:H2''	4:J:109:DG:N7	2.35	0.41
4:J:117:DC:H2''	4:J:118:DC:C5	2.55	0.41
5:O:245:SER:O	5:O:248:ILE:HG12	2.20	0.41
5:O:575:ILE:HG13	5:O:576:VAL:N	2.35	0.41
5:O:1256:TRP:O	5:O:1260:LEU:HG	2.20	0.41
5:O:1630:ASP:HA	5:O:1633:TRP:HE1	1.83	0.41
5:O:1780:SER:OG	5:O:1784:ARG:NH2	2.53	0.41
5:O:1948:ALA:HA	5:O:1951:VAL:HG22	2.02	0.41
5:O:2305:ASN:O	5:O:2309:PHE:N	2.51	0.41
5:O:2548:PRO:HB2	5:O:2848:PHE:CD1	2.56	0.41
5:O:3274:VAL:HG11	5:O:3312:VAL:HA	2.03	0.41
5:O:3348:LEU:HA	5:O:3351:ILE:HD12	2.02	0.41
5:O:3587:ASP:HA	5:O:3590:ASN:HD22	1.85	0.41
8:A:72:ARG:HG2	8:A:84:PHE:CE2	2.55	0.41
6:G:59:THR:HG23	7:H:41:VAL:HG11	2.01	0.41
6:G:71:ARG:NH2	6:G:76:THR:HA	2.35	0.41
8:E:51:ILE:HA	9:F:39:ARG:HB3	2.01	0.41
8:E:74:ILE:HG23	9:F:66:ILE:HD13	2.02	0.41
9:F:87:VAL:HG12	9:F:91:LYS:HE2	2.01	0.41
1:K:125:GLN:HA	1:K:128:GLN:HG2	2.00	0.41
5:O:151:GLU:H	5:O:151:GLU:CD	2.26	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:163:LYS:O	5:O:164:LYS:HD3	2.19	0.41
5:O:474:VAL:HA	5:O:477:ASN:ND2	2.36	0.41
5:O:930:ALA:O	5:O:934:LEU:HD23	2.20	0.41
5:O:1418:HIS:HA	5:O:1421:GLU:CD	2.46	0.41
5:O:2190:VAL:O	5:O:2194:LEU:HD23	2.21	0.41
5:O:2415:LEU:O	5:O:2419:ASP:N	2.53	0.41
5:O:3036:TYR:O	5:O:3039:THR:OG1	2.32	0.41
5:O:3277:VAL:HG13	5:O:3306:LEU:HB2	2.02	0.41
5:O:3626:GLY:C	5:O:3628:PHE:H	2.29	0.41
6:C:62:ILE:HD11	6:C:87:ILE:HD11	2.02	0.41
6:C:85:LEU:HG	6:C:108:LEU:HD23	2.03	0.41
8:A:116:ARG:HG3	8:A:118:THR:H	1.85	0.41
7:H:35:SER:HA	7:H:56:MET:HE2	2.02	0.41
1:K:52:GLN:HG3	1:K:206:LYS:HG2	2.02	0.41
1:K:161:MET:SD	1:K:163:HIS:N	2.93	0.41
2:L:299:ASP:HB2	2:L:305:VAL:N	2.36	0.41
2:L:407:VAL:HB	2:L:424:LEU:HD11	2.01	0.41
2:L:427:MET:HA	2:L:430:LEU:HD23	2.03	0.41
4:J:135:DC:H2'	4:J:136:DA:C8	2.55	0.41
4:J:144:DT:H1'	4:J:145:DC:C2	2.55	0.41
5:O:113:SER:O	5:O:117:LYS:HG2	2.20	0.41
5:O:924:ARG:O	5:O:928:VAL:HG22	2.20	0.41
5:O:1152:ARG:O	5:O:1163:LEU:HD11	2.20	0.41
5:O:1422:LYS:HA	5:O:1422:LYS:HD3	1.85	0.41
5:O:1949:ILE:HG23	5:O:2100:LEU:HD12	2.01	0.41
5:O:2470:ARG:HB2	5:O:2517:LEU:HD21	2.01	0.41
5:O:2551:GLU:OE2	5:O:2851:PHE:N	2.47	0.41
5:O:3771:MET:O	5:O:3775:LEU:HG	2.20	0.41
5:O:3959:MET:HG3	5:O:3960:PRO:O	2.20	0.41
5:O:4007:LYS:HD2	5:O:4038:TRP:HE3	1.85	0.41
8:A:79:LYS:HB2	9:B:70:VAL:HG11	2.03	0.41
9:B:66:ILE:O	9:B:70:VAL:HG23	2.20	0.41
9:B:88:TYR:HA	9:B:91:LYS:HE3	2.02	0.41
1:K:399:ARG:HD2	1:K:408:PRO:HB2	2.02	0.41
1:K:445:LYS:HD2	1:K:445:LYS:HA	1.83	0.41
3:I:63:DA:H2''	3:I:64:DA:C8	2.55	0.41
5:O:391:ARG:O	5:O:395:MET:HG3	2.19	0.41
5:O:671:SER:HA	5:O:674:VAL:HG12	2.02	0.41
5:O:865:GLN:O	5:O:868:LYS:NZ	2.54	0.41
5:O:1230:GLY:O	5:O:1233:SER:OG	2.33	0.41
5:O:1477:HIS:CB	5:O:1481:THR:HG23	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:1690:GLY:HA2	5:O:1693:VAL:HG12	2.01	0.41
5:O:2310:VAL:HA	5:O:2316:TYR:CD2	2.55	0.41
5:O:2429:ASP:N	5:O:2429:ASP:OD1	2.54	0.41
5:O:3088:LEU:HG	5:O:3138:ILE:HD12	2.01	0.41
5:O:3136:THR:O	5:O:3140:GLU:OE1	2.38	0.41
5:O:3252:PHE:CE2	5:O:3289:ARG:HD3	2.55	0.41
5:O:3279:SER:O	5:O:3282:ARG:HG2	2.20	0.41
5:O:3296:GLN:HE21	5:O:3301:LEU:H	1.63	0.41
5:O:3420:CYS:O	5:O:3424:LEU:HG	2.20	0.41
5:O:3498:TRP:HD1	5:O:3501:HIS:CE1	2.39	0.41
5:O:3952:PHE:CE2	5:O:4038:TRP:HB3	2.56	0.41
6:C:92:GLU:HA	6:C:95:LYS:HE2	2.01	0.41
9:F:31:LYS:HB3	9:F:32:PRO:HD3	2.01	0.41
1:K:470:ARG:HH22	2:L:347:LYS:HB2	1.85	0.41
3:I:104:DG:H2''	3:I:105:DG:H5'	2.03	0.41
4:J:41:DG:H2''	4:J:42:DG:C8	2.53	0.41
4:J:66:DC:H41	9:B:31:LYS:HD2	1.86	0.41
5:O:82:ARG:HA	5:O:85:ILE:HG22	2.03	0.41
5:O:472:GLY:O	5:O:475:LEU:HB3	2.20	0.41
5:O:616:LYS:HZ1	5:O:2034:SER:H	1.69	0.41
5:O:891:ARG:NH2	5:O:956:PRO:O	2.53	0.41
5:O:941:MET:HE1	5:O:962:TYR:CE1	2.56	0.41
5:O:1396:PRO:HB3	5:O:1457:GLN:NE2	2.34	0.41
5:O:1909:ASN:HB3	5:O:1910:GLU:H	1.56	0.41
5:O:1959:LEU:C	5:O:1961:PHE:N	2.79	0.41
5:O:2531:LEU:HG	5:O:2538:ARG:NE	2.35	0.41
5:O:3283:LEU:O	5:O:3287:ARG:HG2	2.21	0.41
5:O:3460:GLU:OE1	5:O:3460:GLU:N	2.37	0.41
5:O:3579:SER:HB3	5:O:3736:LYS:NZ	2.36	0.41
5:O:3731:SER:OG	5:O:3732:LEU:N	2.52	0.41
5:O:3919:GLY:HA3	5:O:3946:PHE:HA	2.01	0.41
5:O:3929:MET:HE2	5:O:3929:MET:HA	2.02	0.41
9:B:47:SER:OG	9:B:50:ILE:HG12	2.20	0.41
1:K:276:LEU:HD11	2:L:355:PHE:CE1	2.56	0.41
1:K:302:THR:HA	2:L:291:LYS:HA	2.03	0.41
1:K:355:LEU:HD21	2:L:473:LEU:HB2	2.02	0.41
1:K:358:LYS:HE3	1:K:358:LYS:HB3	1.92	0.41
2:L:35:LYS:HZ2	2:L:98:ILE:HB	1.85	0.41
5:O:978:GLN:N	5:O:978:GLN:OE1	2.54	0.41
5:O:1333:SER:O	5:O:1337:VAL:HG23	2.21	0.41
5:O:1487:VAL:HG12	5:O:1559:PHE:CE1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:2295:GLN:HG3	5:O:2298:GLU:H	1.86	0.41
5:O:2533:SER:OG	5:O:2534:ASN:N	2.54	0.41
5:O:2995:GLU:HG3	5:O:2996:LEU:HD12	2.01	0.41
5:O:3090:TYR:HE2	5:O:3102:TYR:CE2	2.38	0.41
5:O:3660:ASN:HB2	5:O:3664:ASN:OD1	2.21	0.41
5:O:3771:MET:HB2	5:O:3991:PHE:HE1	1.86	0.41
9:B:35:ARG:NH2	9:B:39:ARG:HH12	2.19	0.41
2:L:56:LEU:HD23	2:L:80:HIS:ND1	2.36	0.41
2:L:131:HIS:HB2	2:L:240:ILE:HD11	2.01	0.41
5:O:135:LEU:HD21	5:O:177:LEU:HA	2.03	0.41
5:O:241:ASP:OD1	5:O:244:THR:OG1	2.39	0.41
5:O:424:LEU:HD21	5:O:427:VAL:HG23	2.03	0.41
5:O:631:ARG:HE	5:O:668:LYS:NZ	2.19	0.41
5:O:654:ILE:HD12	5:O:710:PHE:CD1	2.56	0.41
5:O:679:LYS:HE3	5:O:679:LYS:HB3	1.91	0.41
5:O:1146:ASN:ND2	5:O:1165:LEU:HD23	2.36	0.41
5:O:1414:ILE:HD12	5:O:1414:ILE:HA	1.88	0.41
5:O:1531:LEU:HD11	5:O:1559:PHE:HE2	1.86	0.41
5:O:1589:ASN:CG	5:O:1592:MET:HG2	2.46	0.41
5:O:2214:ARG:HA	5:O:2217:ASN:ND2	2.35	0.41
5:O:2497:GLU:HA	5:O:2500:LYS:HE2	2.03	0.41
5:O:3552:LYS:HA	5:O:3555:VAL:HG22	2.03	0.41
5:O:3593:ARG:HE	5:O:3660:ASN:HD21	1.68	0.41
5:O:3692:VAL:HG21	5:O:3719:ILE:O	2.20	0.41
5:O:4040:PRO:HB2	5:O:4041:ARG:NH2	2.36	0.41
5:O:4064:LEU:O	5:O:4068:HIS:N	2.47	0.41
6:G:81:ARG:NH2	6:G:109:PRO:HD3	2.30	0.41
7:H:61:SER:OG	9:F:99:GLY:N	2.49	0.41
9:F:88:TYR:HA	9:F:91:LYS:HD2	2.03	0.41
1:K:32:TYR:HE2	4:J:143:DT:H4'	1.85	0.41
1:K:95:ASN:HD22	1:K:95:ASN:C	2.28	0.41
1:K:164:LYS:HE3	1:K:164:LYS:HB2	1.74	0.41
1:K:171:ASN:O	1:K:207:LYS:HB2	2.21	0.41
1:K:265:LYS:HG3	1:K:266:ASP:H	1.86	0.41
1:K:275:ASN:HD21	2:L:431:ARG:HD2	1.86	0.41
1:K:451:LYS:HB2	1:K:451:LYS:HE2	1.64	0.41
3:I:102:DG:H1'	3:I:103:DG:C8	2.56	0.41
3:I:105:DG:OP1	9:B:79:LYS:N	2.35	0.41
3:I:119:DC:N4	4:J:35:DG:O6	2.54	0.41
5:O:13:LEU:HD13	5:O:59:PHE:CD1	2.56	0.41
5:O:180:LEU:HG	5:O:185:HIS:CE1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:236:LYS:HA	5:O:236:LYS:HD3	1.85	0.41
5:O:392:CYS:O	5:O:396:PHE:HB2	2.21	0.41
5:O:574:LYS:HD3	5:O:574:LYS:HA	1.89	0.41
5:O:678:LYS:HE3	5:O:735:SER:O	2.21	0.41
5:O:785:MET:HA	5:O:788:TYR:CD1	2.56	0.41
5:O:933:LEU:HG	5:O:937:MET:CE	2.50	0.41
5:O:938:VAL:O	5:O:942:LEU:HD23	2.21	0.41
5:O:941:MET:SD	5:O:942:LEU:HD22	2.60	0.41
5:O:965:THR:HG21	5:O:969:LEU:HD11	2.02	0.41
5:O:1323:SER:OG	5:O:1324:PRO:HD3	2.21	0.41
5:O:1565:GLU:HG2	5:O:1566:THR:N	2.35	0.41
5:O:1605:PHE:HB3	5:O:2042:GLN:OE1	2.21	0.41
5:O:1824:LEU:O	5:O:1828:LEU:N	2.40	0.41
5:O:2303:LEU:HA	5:O:2306:ASN:ND2	2.36	0.41
5:O:2421:VAL:O	5:O:2425:ARG:HG2	2.21	0.41
5:O:2835:LYS:O	5:O:2838:GLN:HG2	2.21	0.41
5:O:3110:PHE:HD2	5:O:3135:LEU:HD11	1.86	0.41
5:O:3681:LYS:NZ	5:O:3683:CYS:HB2	2.36	0.41
5:O:3758:LEU:C	5:O:3762:GLN:HE22	2.28	0.41
5:O:3930:VAL:HG12	5:O:3937:VAL:HG12	2.02	0.41
9:B:75:HIS:CE1	7:H:90:GLU:HA	2.56	0.41
1:K:37:SER:HA	1:K:82:LEU:O	2.21	0.41
1:K:217:TYR:HD1	1:K:220:ILE:HD12	1.86	0.41
1:K:463:LYS:HD3	2:L:383:ALA:HB1	2.03	0.41
3:I:104:DG:H2"	3:I:105:DG:H8	1.85	0.41
4:J:97:DG:C6	4:J:98:DG:C6	3.09	0.41
5:O:671:SER:HB2	5:O:675:ARG:HH22	1.86	0.41
5:O:720:GLN:OE1	5:O:720:GLN:N	2.44	0.41
5:O:1013:ILE:HG21	5:O:1062:ARG:HH21	1.85	0.41
5:O:1251:GLN:HA	5:O:1254:LEU:HD12	2.03	0.41
5:O:1421:GLU:HB2	5:O:1422:LYS:NZ	2.36	0.41
5:O:1554:SER:N	5:O:1557:GLU:OE2	2.52	0.41
5:O:2467:THR:HA	5:O:2470:ARG:HH11	1.86	0.41
5:O:3241:LYS:HA	5:O:3244:ASP:OD2	2.21	0.41
5:O:3882:LEU:HD22	5:O:3885:ARG:NH2	2.36	0.41
5:O:3912:CYS:HB3	5:O:3961:PHE:CD2	2.56	0.41
5:O:3979:LEU:HD23	5:O:3980:MET:N	2.36	0.41
5:O:4086:ASP:N	5:O:4086:ASP:OD1	2.54	0.41
6:G:58:LEU:O	6:G:62:ILE:HG12	2.21	0.41
8:E:127:ALA:O	8:E:131:ARG:HB2	2.21	0.41
1:K:343:PRO:HA	1:K:401:THR:HB	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:347:LEU:HA	1:K:398:CYS:HA	2.03	0.40
1:K:353:LEU:HD23	1:K:395:ALA:HB2	2.02	0.40
1:K:369:TYR:CD1	1:K:370:PRO:HD2	2.55	0.40
1:K:478:PHE:HA	1:K:506:LEU:CD1	2.51	0.40
2:L:299:ASP:HB2	2:L:305:VAL:H	1.85	0.40
3:I:130:DT:H2''	3:I:131:DG:C4	2.56	0.40
4:J:45:DT:H2''	4:J:46:DA:C8	2.56	0.40
4:J:77:DG:OP2	4:J:78:DC:N4	2.54	0.40
5:O:58:VAL:HG23	5:O:61:ARG:HE	1.86	0.40
5:O:487:LEU:HD21	5:O:571:SER:HB2	2.01	0.40
5:O:540:MET:HE3	5:O:543:SER:OG	2.21	0.40
5:O:1057:LYS:O	5:O:1061:LYS:HG2	2.20	0.40
5:O:3842:TRP:O	5:O:3843:LEU:HG	2.21	0.40
5:O:3864:ARG:O	5:O:3868:VAL:HG13	2.21	0.40
5:O:3946:PHE:HE1	5:O:4046:TYR:HB2	1.86	0.40
6:C:92:GLU:HG2	7:D:100:PRO:HG2	2.03	0.40
6:C:96:LEU:HG	6:C:97:LEU:HG	2.02	0.40
6:G:27:VAL:O	6:G:31:HIS:HB2	2.21	0.40
1:K:244:ARG:HD2	1:K:244:ARG:HA	1.81	0.40
1:K:274:TYR:HB2	1:K:367:PHE:HD2	1.86	0.40
1:K:340:PHE:HZ	2:L:486:ARG:HA	1.85	0.40
1:K:510:LYS:N	1:K:514:MET:HE1	2.35	0.40
3:I:134:DA:H2''	3:I:135:DG:C8	2.56	0.40
4:J:35:DG:C2	4:J:36:DA:C5	3.10	0.40
4:J:74:DA:P	8:A:116:ARG:HB2	2.62	0.40
5:O:168:ASP:H	5:O:171:LEU:HB3	1.86	0.40
5:O:270:ALA:HA	5:O:273:ARG:HH21	1.87	0.40
5:O:890:LYS:HD2	5:O:906:PHE:CG	2.56	0.40
5:O:1369:MET:O	5:O:1373:VAL:HG22	2.20	0.40
5:O:1570:GLU:HG3	5:O:1571:LEU:HD23	2.04	0.40
5:O:2395:THR:O	5:O:2399:GLU:OE1	2.39	0.40
5:O:2571:ASP:OD1	5:O:2574:ASN:HB2	2.21	0.40
5:O:3828:TYR:HE2	5:O:4128:MET:HE1	1.86	0.40
9:B:67:ARG:HD3	7:H:96:ARG:HH12	1.86	0.40
7:H:114:ALA:HA	7:H:117:LYS:HZ2	1.86	0.40
1:K:403:ARG:HB2	5:O:213:ARG:HH12	1.85	0.40
2:L:247:TRP:HB3	2:L:263:ALA:HB3	2.04	0.40
5:O:91:ILE:HD12	5:O:833:HIS:CE1	2.56	0.40
5:O:460:ALA:O	5:O:463:LYS:HG2	2.22	0.40
5:O:836:LYS:HD2	5:O:836:LYS:HA	1.84	0.40
5:O:1797:LEU:O	5:O:1800:SER:OG	2.38	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:2215:LEU:HD23	5:O:2218:PHE:HD2	1.87	0.40
5:O:2328:ARG:NE	5:O:2370:SER:O	2.55	0.40
5:O:2336:ILE:HD12	5:O:2336:ILE:HA	1.91	0.40
5:O:2395:THR:N	5:O:2431:ARG:HH12	2.19	0.40
5:O:2804:ILE:HD12	5:O:2804:ILE:HA	1.93	0.40
5:O:4084:SER:OG	5:O:4085:LYS:N	2.51	0.40
6:C:39:TYR:HB3	7:D:75:SER:HB2	2.02	0.40
6:C:88:ARG:NH1	6:C:98:GLY:O	2.47	0.40
1:K:76:ILE:HD12	1:K:76:ILE:HA	1.93	0.40
1:K:350:PHE:N	2:L:461:MET:HE1	2.36	0.40
1:K:493:LEU:HD21	2:L:323:PHE:HD1	1.85	0.40
1:K:510:LYS:H	1:K:514:MET:HE1	1.85	0.40
3:I:22:DG:H2 [?]	3:I:23:DA:C5	2.57	0.40
3:I:80:DT:H6	3:I:80:DT:H2 [?]	1.64	0.40
5:O:57:LEU:HD11	5:O:100:ILE:HG23	2.04	0.40
5:O:628:GLU:OE1	5:O:631:ARG:NH2	2.41	0.40
5:O:715:ALA:O	5:O:718:MET:HG3	2.21	0.40
5:O:899:ARG:NH2	5:O:2565:MET:O	2.51	0.40
5:O:914:VAL:HG13	5:O:934:LEU:HD21	2.04	0.40
5:O:1166:LEU:HD11	5:O:1207:TRP:CZ2	2.57	0.40
5:O:1619:ALA:HA	5:O:1622:ILE:HG22	2.03	0.40
5:O:1648:LEU:O	5:O:1652:ILE:HG23	2.21	0.40
5:O:3270:ASP:O	5:O:3273:LEU:HB3	2.22	0.40
5:O:3376:GLY:N	5:O:3379:GLN:OE1	2.51	0.40
5:O:3547:THR:HG23	5:O:3550:LYS:HE2	2.03	0.40
8:E:100:LEU:HD13	9:F:37:LEU:HD13	2.04	0.40
1:K:465:ILE:HD12	1:K:518:LEU:HD22	2.04	0.40
2:L:147:LEU:O	2:L:151:ILE:HG12	2.21	0.40
2:L:476:LEU:O	2:L:477:PHE:HD1	2.04	0.40
2:L:528:ILE:HB	2:L:529:PRO:HD3	2.03	0.40
3:I:87:DC:H2 [?]	3:I:88:DG:H8	1.85	0.40
5:O:628:GLU:CD	5:O:631:ARG:HH12	2.28	0.40
5:O:672:ILE:HG22	5:O:676:ASN:HD21	1.87	0.40
5:O:935:HIS:CD2	5:O:2773:ARG:HH12	2.39	0.40
5:O:1961:PHE:C	5:O:1963:GLN:N	2.78	0.40
5:O:2376:ASP:O	5:O:2379:MET:HE1	2.22	0.40
5:O:2592:ASP:OD1	5:O:2593:SER:N	2.45	0.40
5:O:2925:GLU:O	5:O:2929:LEU:HG	2.21	0.40
5:O:3179:TRP:HH2	5:O:3246:ALA:HB2	1.85	0.40
5:O:3192:LYS:HG3	5:O:3196:LYS:HZ1	1.87	0.40
6:C:26:PRO:HD2	7:D:34:TYR:CE1	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:57:TYR:CZ	7:H:106:HIS:HB3	2.57	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	K	491/609 (81%)	438 (89%)	49 (10%)	4 (1%)	16	54
2	L	523/732 (71%)	471 (90%)	52 (10%)	0	100	100
5	O	3455/4128 (84%)	3065 (89%)	379 (11%)	11 (0%)	37	72
6	C	93/143 (65%)	83 (89%)	9 (10%)	1 (1%)	12	46
6	G	92/143 (64%)	81 (88%)	11 (12%)	0	100	100
7	D	91/126 (72%)	88 (97%)	3 (3%)	0	100	100
7	H	90/126 (71%)	83 (92%)	7 (8%)	0	100	100
8	A	86/136 (63%)	82 (95%)	4 (5%)	0	100	100
8	E	86/136 (63%)	82 (95%)	4 (5%)	0	100	100
9	B	69/103 (67%)	68 (99%)	1 (1%)	0	100	100
9	F	70/103 (68%)	66 (94%)	4 (6%)	0	100	100
All	All	5146/6485 (79%)	4607 (90%)	523 (10%)	16 (0%)	38	72

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	O	2229	ALA
5	O	2535	THR
5	O	3295	GLU
5	O	3480	LEU
5	O	3855	TYR

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Mol	Chain	Res	Type
1	K	373	SER
5	O	1936	ARG
5	O	1427	SER
1	K	327	ILE
5	O	169	THR
1	K	100	LYS
1	K	511	VAL
5	O	3304	VAL
6	C	102	ILE
5	O	1123	THR
5	O	3842	TRP

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K	432/548 (79%)	430 (100%)	2 (0%)	86	89
2	L	462/649 (71%)	462 (100%)	0	100	100
5	O	3042/3671 (83%)	3040 (100%)	2 (0%)	92	94
6	C	63/106 (59%)	63 (100%)	0	100	100
6	G	65/106 (61%)	65 (100%)	0	100	100
7	D	77/105 (73%)	77 (100%)	0	100	100
7	H	78/105 (74%)	78 (100%)	0	100	100
8	A	71/111 (64%)	71 (100%)	0	100	100
8	E	75/111 (68%)	75 (100%)	0	100	100
9	B	59/79 (75%)	59 (100%)	0	100	100
9	F	60/79 (76%)	60 (100%)	0	100	100
All	All	4484/5670 (79%)	4480 (100%)	4 (0%)	92	94

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	K	95	ASN
1	K	171	ASN
5	O	305	ASN
5	O	1961	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	K	458	GLN
5	O	1385	ASN
5	O	1926	ASN
5	O	2217	ASN
5	O	3470	GLN

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 oligosaccharides 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.

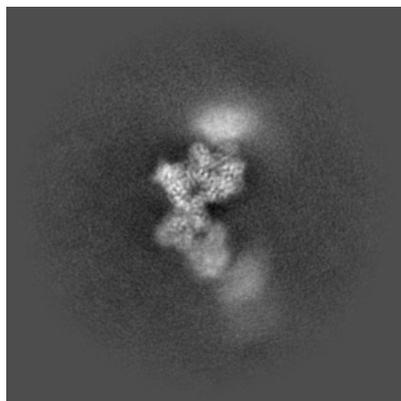
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-52958. These allow visual inspection of the internal detail of the map and identification of artifacts.

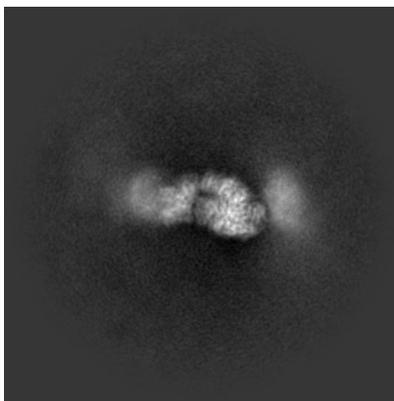
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

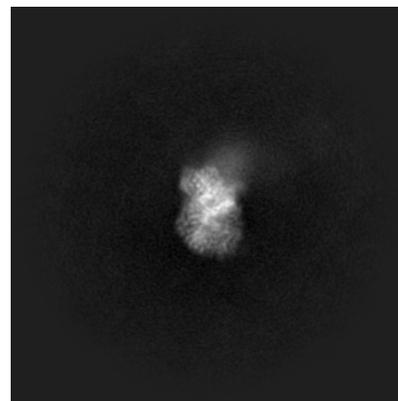
6.1.1 Primary map



X

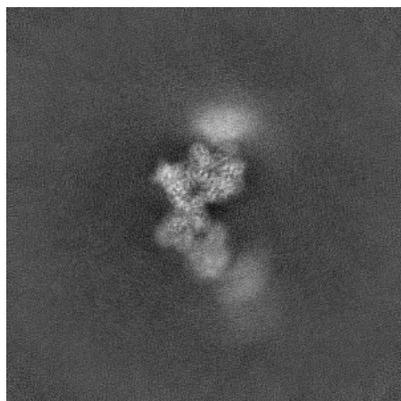


Y

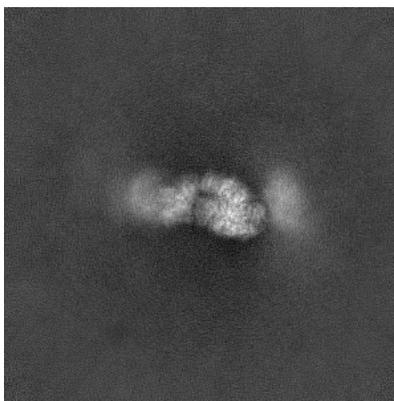


Z

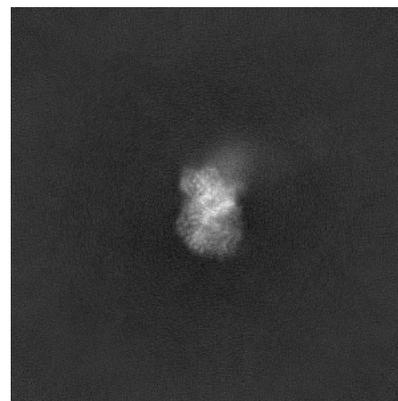
6.1.2 Raw map



X



Y

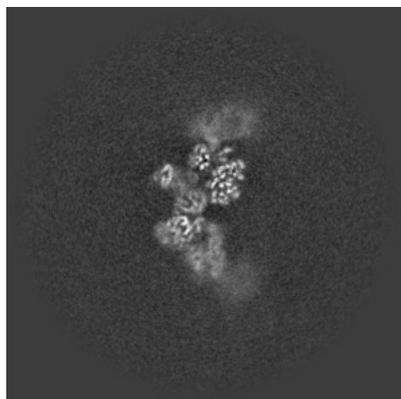


Z

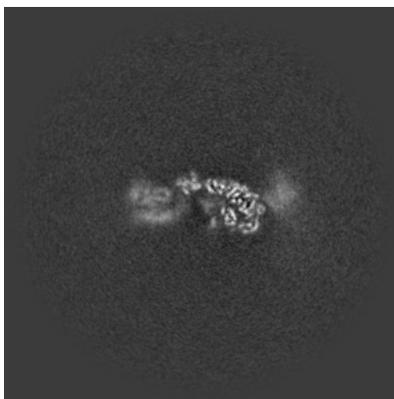
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

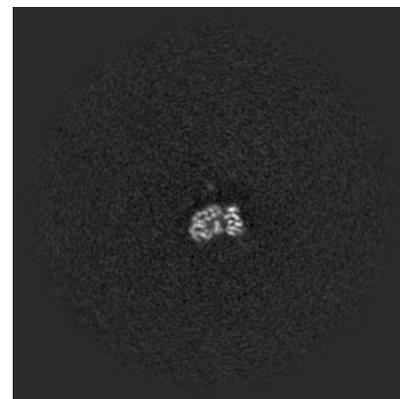
6.2.1 Primary map



X Index: 210



Y Index: 210



Z Index: 210

6.2.2 Raw map



X Index: 210



Y Index: 210

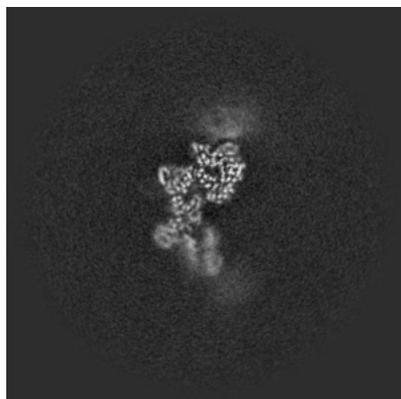


Z Index: 210

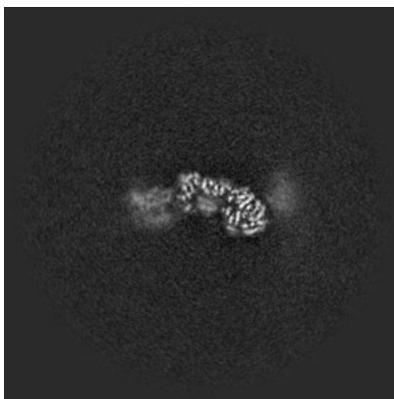
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

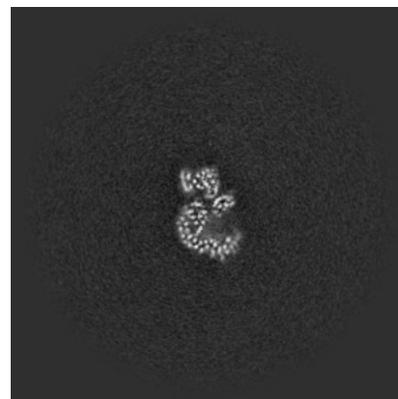
6.3.1 Primary map



X Index: 202



Y Index: 206



Z Index: 243

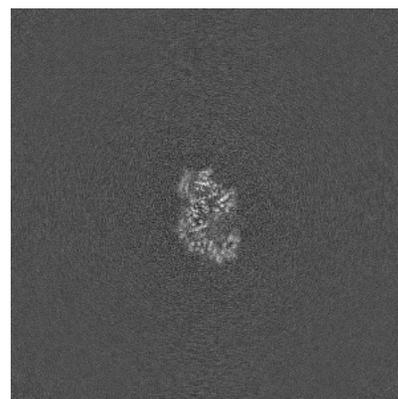
6.3.2 Raw map



X Index: 202



Y Index: 212

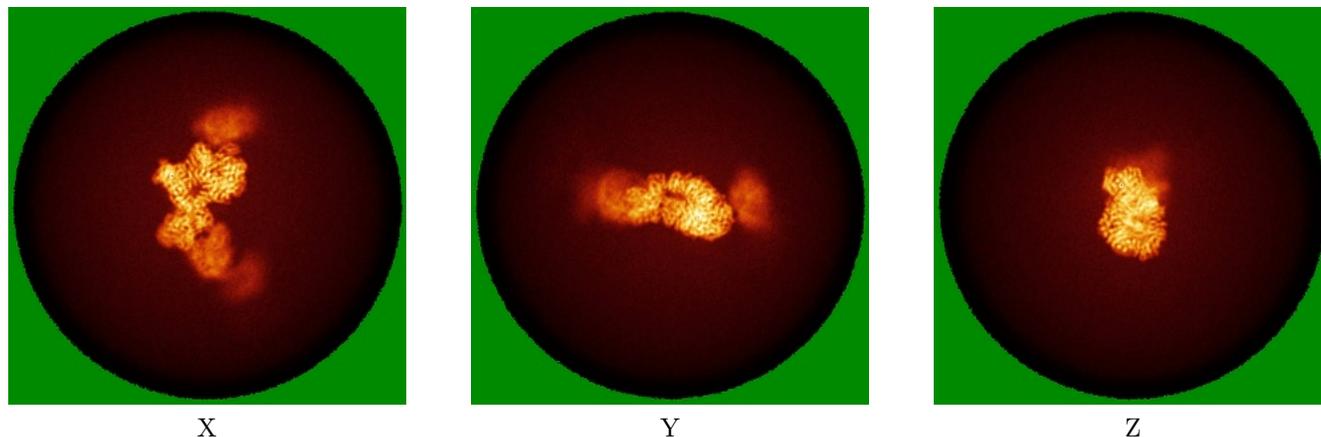


Z Index: 238

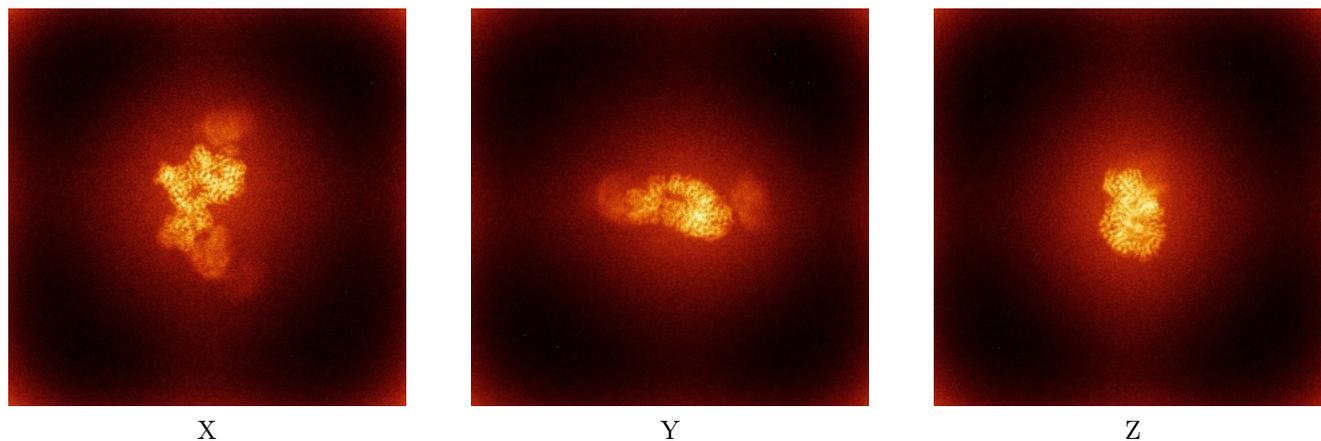
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



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

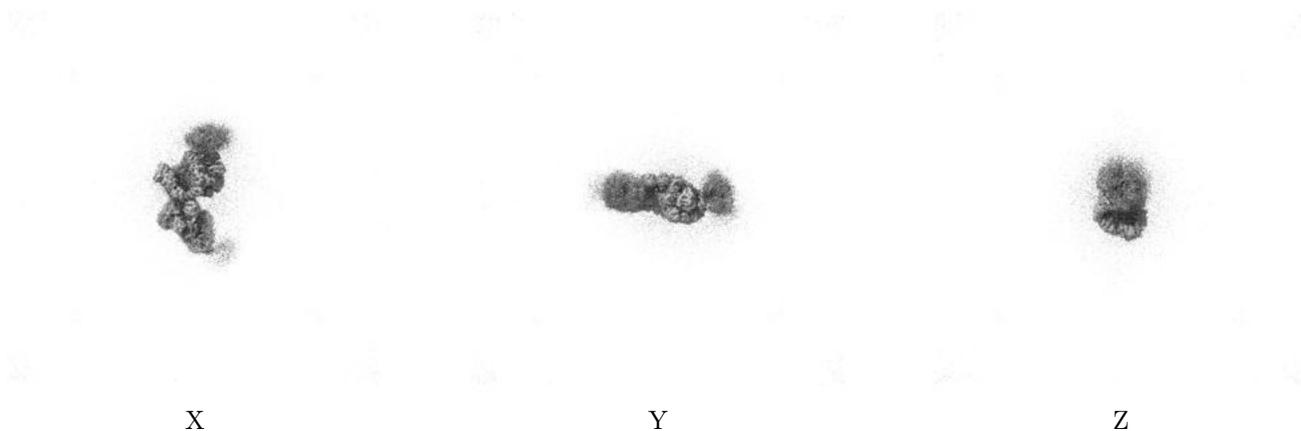
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

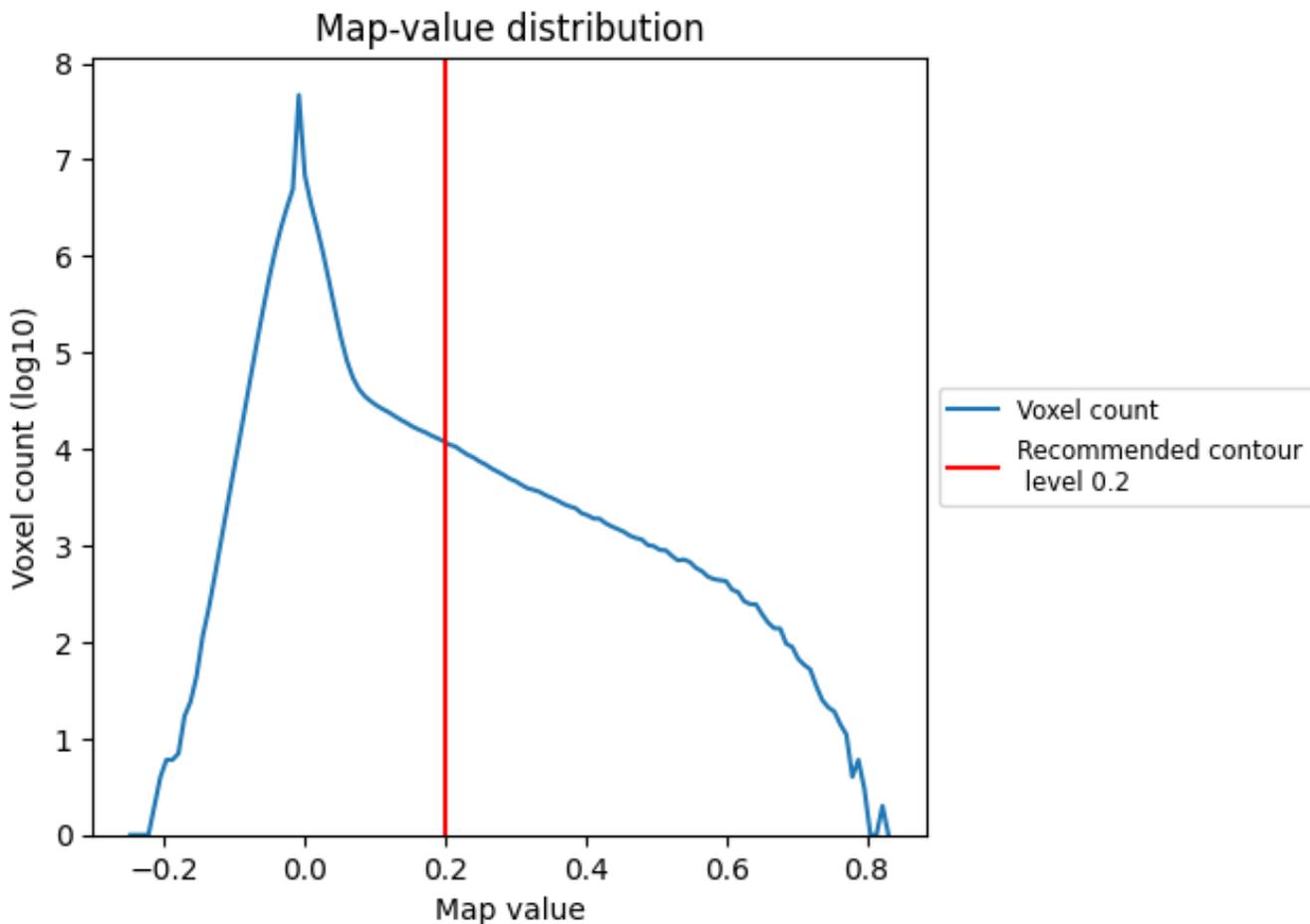
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

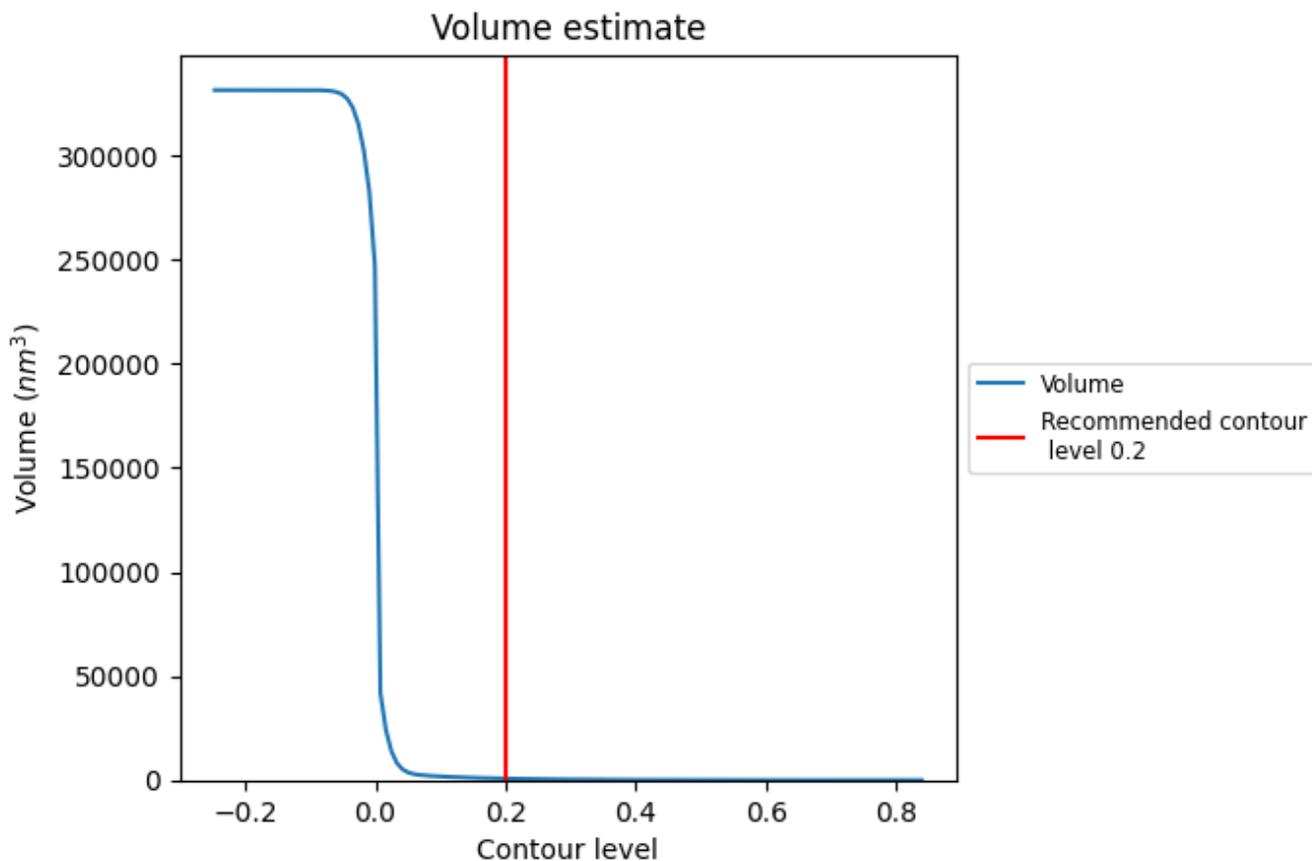
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

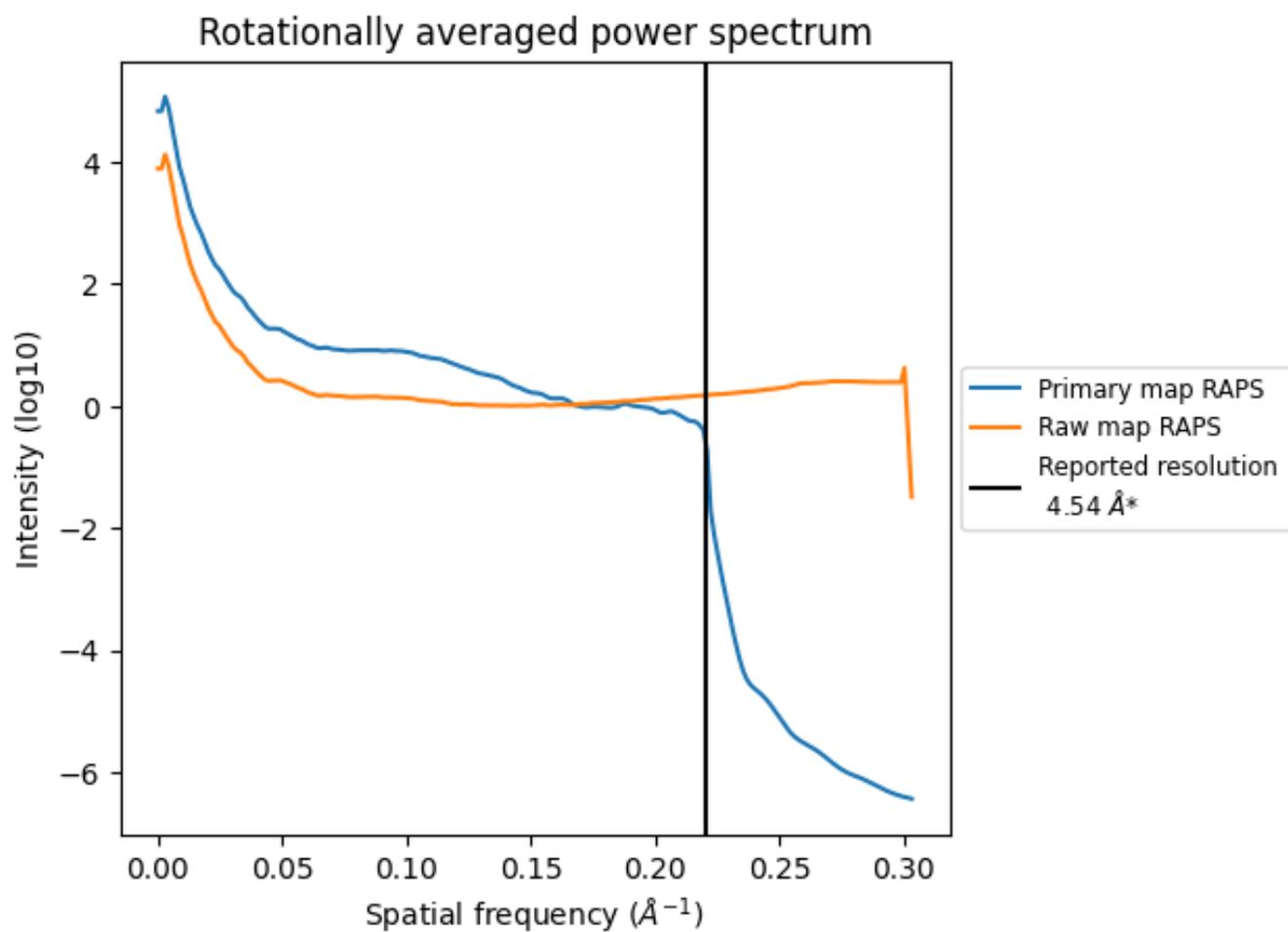
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 724 nm^3 ; this corresponds to an approximate mass of 654 kDa.

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

7.3 Rotationally averaged power spectrum [i](#)

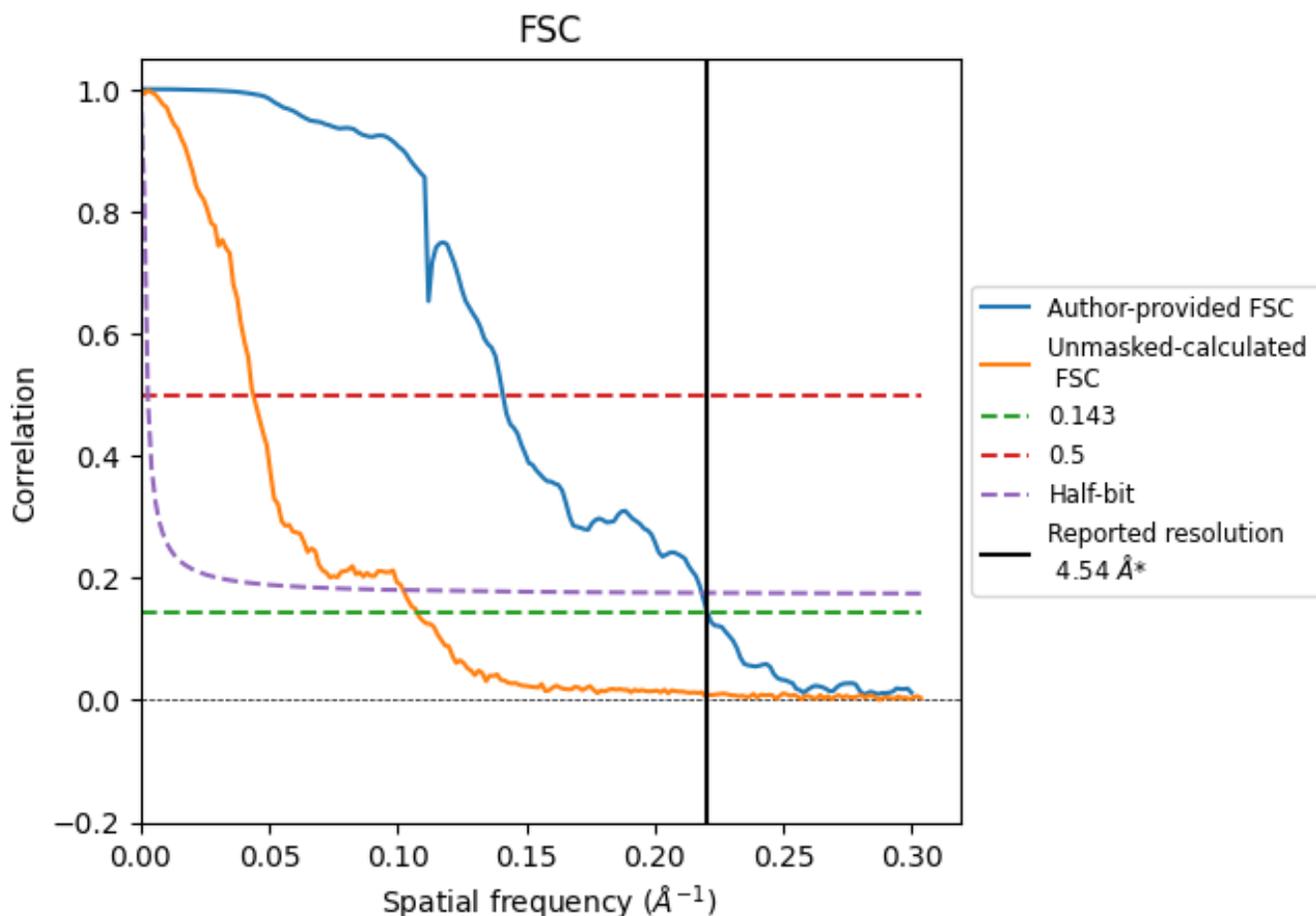


*Reported resolution corresponds to spatial frequency of 0.220 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.220 Å⁻¹

8.2 Resolution estimates [i](#)

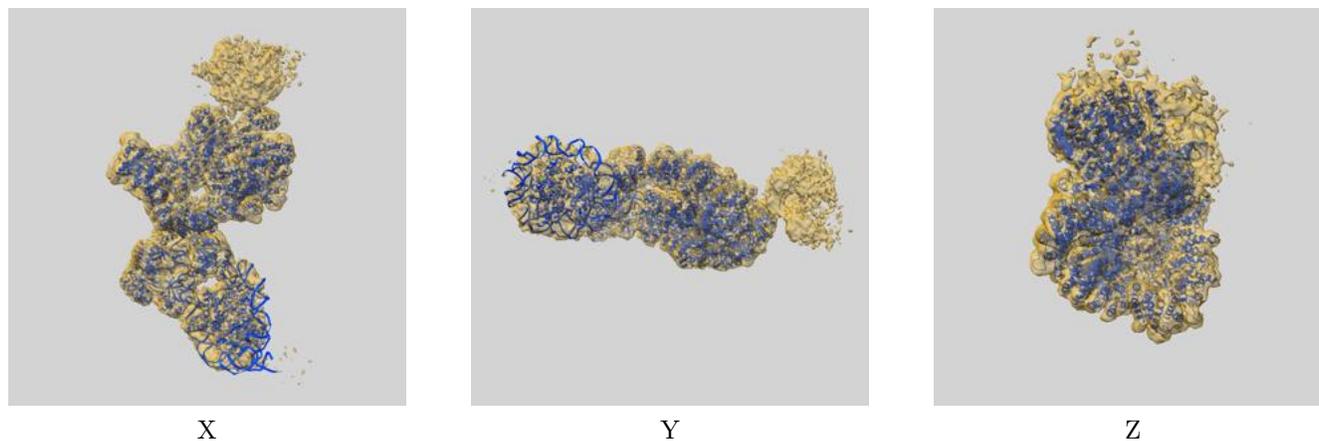
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.54	-	-
Author-provided FSC curve	4.54	7.10	4.58
Unmasked-calculated*	9.29	22.78	9.79

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.29 differs from the reported value 4.54 by more than 10 %

9 Map-model fit [i](#)

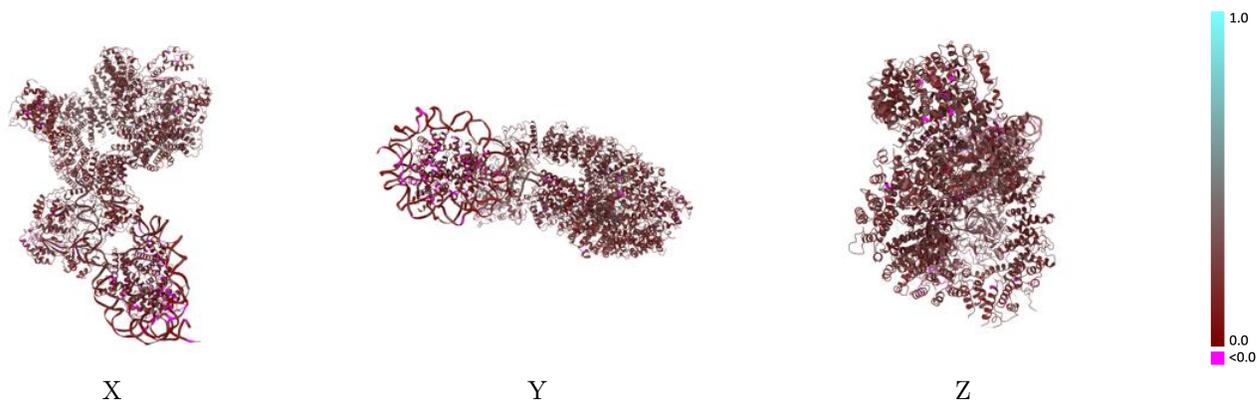
This section contains information regarding the fit between EMDB map EMD-52958 and PDB model 9Q9F. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



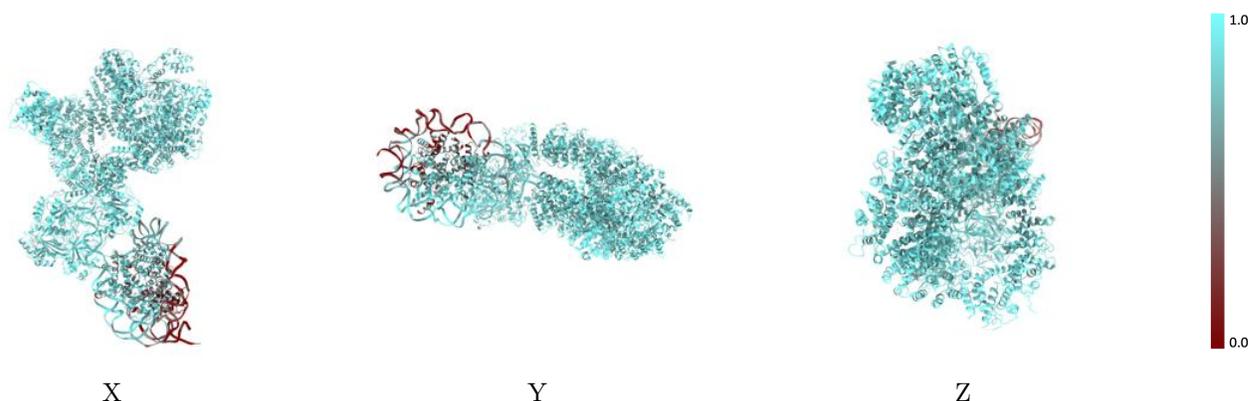
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



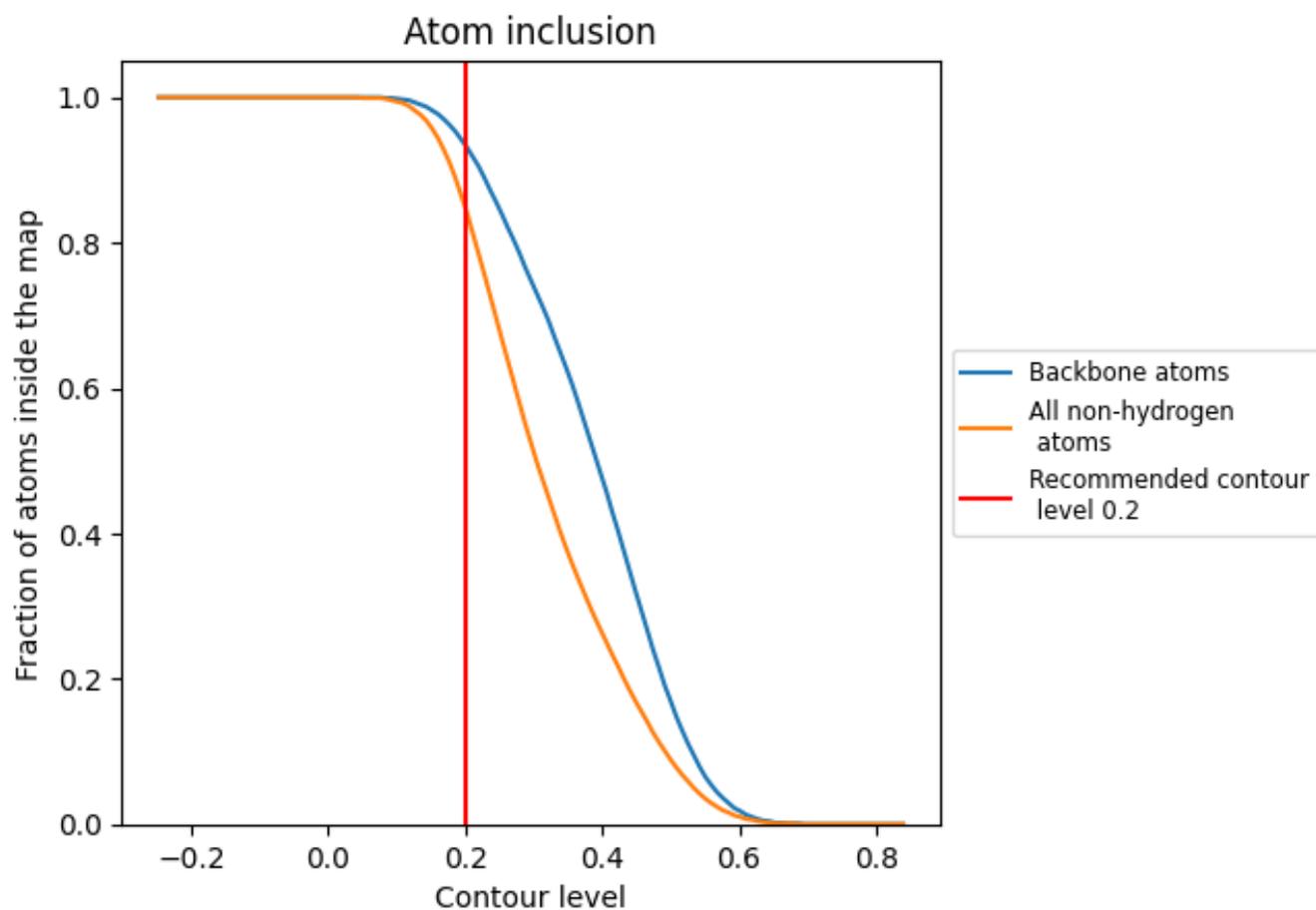
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.2).

9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8500	 0.2150
A	 0.7080	 0.1420
B	 0.8730	 0.1350
C	 0.7110	 0.1680
D	 0.7520	 0.1730
E	 0.4830	 0.1280
F	 0.5730	 0.1700
G	 0.6360	 0.1440
H	 0.6560	 0.1340
I	 0.6720	 0.1590
J	 0.6990	 0.1710
K	 0.9250	 0.2250
L	 0.9060	 0.2030
O	 0.8960	 0.2380

