



Full wwPDB X-ray Structure Validation Report ⓘ

May 21, 2020 – 01:18 pm BST

PDB ID : 1GGT
Title : THREE-DIMENSIONAL STRUCTURE OF A TRANSGLUTAMINASE:
HUMAN BLOOD COAGULATION FACTOR XIII
Authors : Yee, V.C.; Pedersen, L.C.; Trong, I.L.; Bishop, P.D.; Stenkamp, R.E.; Teller,
D.C.
Deposited on : 1994-01-25
Resolution : 2.65 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

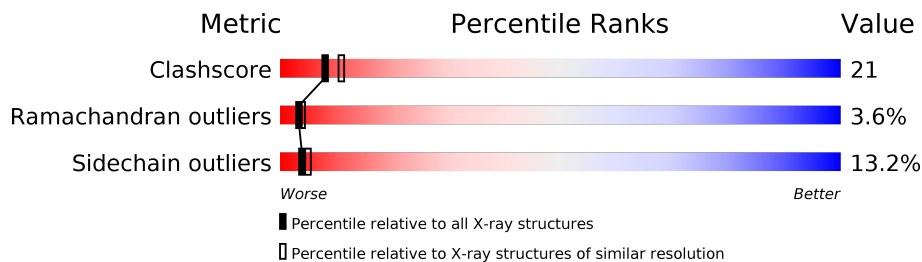
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.65 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1374 (2.68-2.64)
Ramachandran outliers	138981	1349 (2.68-2.64)
Sidechain outliers	138945	1349 (2.68-2.64)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower 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 $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	731	
1	B	731	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 11382 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called COAGULATION FACTOR XIII.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	710	5700	3614	983	1076	27	0	0	0
1	B	708	5682	3603	978	1074	27	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

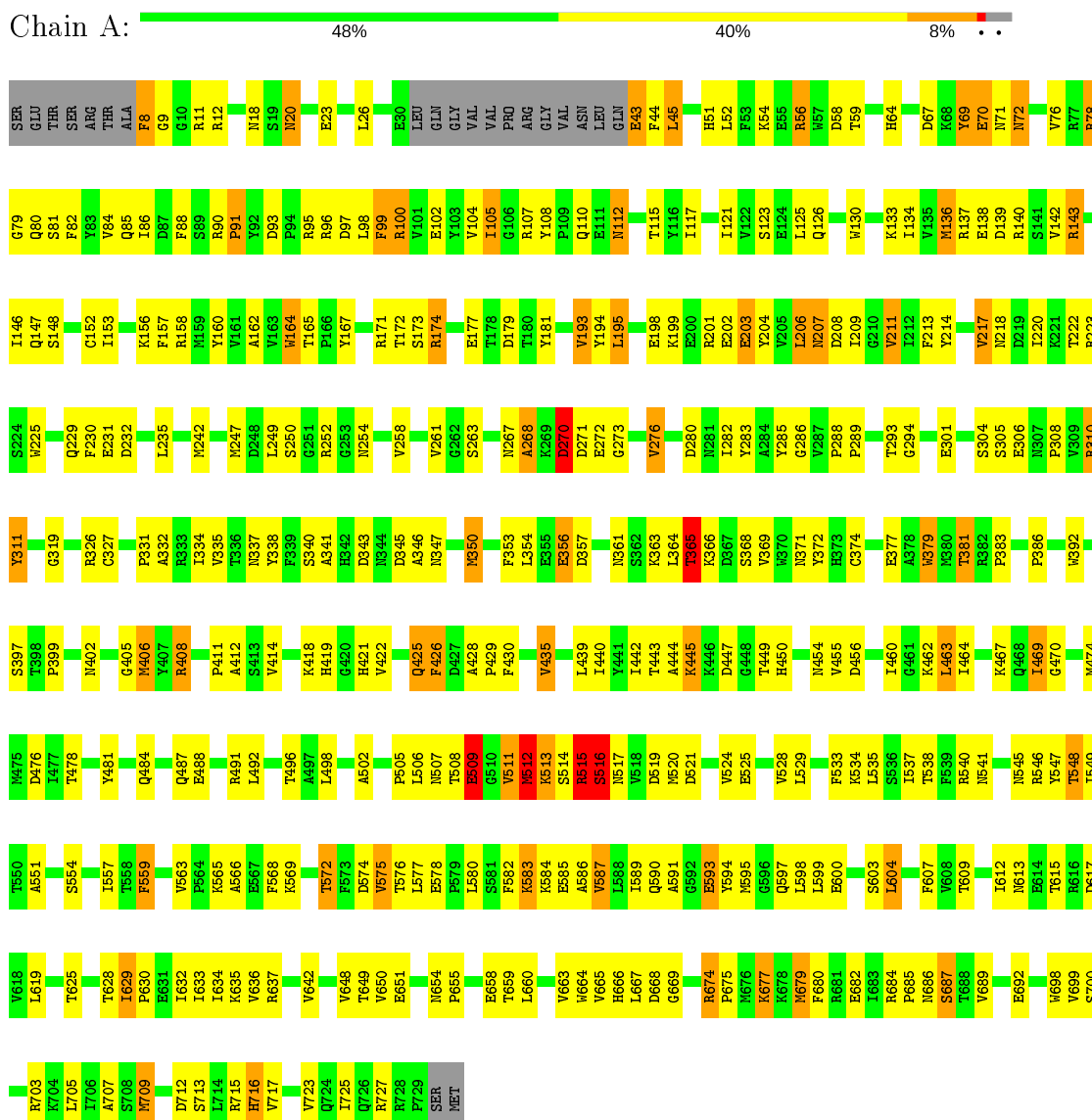
Chain	Residue	Modelled	Actual	Comment	Reference
A	651	GLU	GLN	CONFLICT	UNP P00488
B	651	GLU	GLN	CONFLICT	UNP P00488

3 Residue-property plots

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

Note EDS was not executed.

- Molecule 1: COAGULATION FACTOR XIII



- Molecule 1: COAGULATION FACTOR XIII



I706	T615	H542	I460	R382	V258	R158	Q80	SER
A707	R616	S543	L463	F983	S263	A162	S81	GLU
M709	D617	R546	L464	D384	K269	V163	F82	THR
S713	V618	R546	I464	L385	K269	W164	Q85	SER
L714	L619	T548	K467	P386	D270	I166	I66	ARG
R715	K621	L549	M474	V387	D271	T165	D87	THR
H716	S624	L553	T480	S997	E272	L170	R90	ALA
V717	L627	S554	F483	E401	G273	R171	G9	
L721	E631	F559	F483	M402	V276	T172	N17	
D722	I632	V663	Q487	S403	D280	F184	D93	
V723	I633	P564	E488	M404	D280	N185	P94	
Q724	I634	K565	E489	G405	E281	R186	R95	
I725	I634	E489	E489	M406	I282	W187	R96	
Q726	I635	A566	L494	Y407	Y283	C188	D97	
R727	V636	E567	E495	R408	A284	E189	F99	
ARG	T639	F568	L498	G409	G286	W193	R100	
PRO	Q640	K589	L498	G410	V287	Y194	V101	
SER	V641	K570	M499	P411	W292	L195	V29	
MET	V642	E571	Y500	A412	E301	Y103	E30	
	M646	T572	K504	S413	Y302	V104	LEU	
	T649	V574	P505	I417	R303	I105	GLN	
	V650	V575	L506	K418	R310	G106	GLY	
	E651	L577	E509	H419	Y311	R107	VAL	
	M654	E578	G510	V422	F213	Y108	VAL	
	P655	P579	V511	C423	F213	P109	PRO	
	L656	L580	M512	F424	V217	Q110	ARG	
	R657	S581	K513	R426	I220	E111	GLY	
	R657	F582	R514	D427	K221	T115	VAL	
	T659	K583	R514	A428	Y338	Y116	ASN	
	V663	E585	S516	F430	T222	I117	LEU	
		E586	M517	V431	R223	P118	GLN	
		V587	V518	E434	F230	V119	E43	
		L588	D519	V435	E231	P120	F44	
		I589	M520	M436	D232	I121	L45	
		Q590	D521	S437	G233	V122	T48	
		A591	F522	M347	G233	G128	H51	
		G592	E523	N347	I234	K133	L52	
		E593	V524	M850	L235	I134	K54	
		Y594	E525	S340	D236	V136	E55	
		M595	M526	S340	T237	M136	D68	
		G596	L354	A341	Y240	D139	K61	
		Q597	V528	L354	Y240	R143	H64	
		L598	L529	T443	M247	L144	H65	
		L599	G530	A444	E246	S145	T66	
		E600	F533	K445	L249	I146	H66	
		H605	K534	K446	S250	K150	N71	
		F606	L535	G448	G251	P150	I75	
		F607	S536	V451	R252	K151	I76	
		V608	T537	V452	G253	C152	V76	
		I612	T538	E453	N254	I153	R77	
		M613	F539	D456	P255	R157	R78	
		E614	R540	M541	I256	F157	R79	
			N541		K257		G79	

4 Data and refinement statistics

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

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	101.20Å 182.70Å 93.40Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	10.00 – 2.65	Depositor
% Data completeness (in resolution range)	97.6 (10.00-2.65)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	X-PLOR	Depositor
R, R_{free}	0.216 , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	11382	wwPDB-VP
Average B, all atoms (Å ²)	31.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.66	1/5835 (0.0%)	0.90	9/7917 (0.1%)
1	B	0.69	3/5816 (0.1%)	0.92	11/7891 (0.1%)
All	All	0.67	4/11651 (0.0%)	0.91	20/15808 (0.1%)

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

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

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	651	GLU	CD-OE2	8.44	1.34	1.25
1	A	651	GLU	CD-OE2	6.95	1.33	1.25
1	B	188	CYS	CB-SG	-6.20	1.71	1.82
1	B	152	CYS	CB-SG	-5.07	1.73	1.81

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	365	THR	N-CA-C	-9.94	84.15	111.00
1	B	460	ILE	N-CA-C	8.19	133.12	111.00
1	B	365	THR	N-CA-C	-7.38	91.07	111.00
1	B	425	GLN	N-CA-C	7.01	129.94	111.00
1	B	553	LEU	CA-CB-CG	6.34	129.88	115.30
1	A	11	ARG	NE-CZ-NH2	-5.66	117.47	120.30
1	A	512	MET	N-CA-C	-5.66	95.72	111.00
1	B	574	ASP	N-CA-C	-5.66	95.72	111.00
1	A	425	GLN	N-CA-C	5.63	126.21	111.00
1	A	559	PHE	N-CA-C	-5.60	95.89	111.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	134	ILE	N-CA-C	-5.57	95.95	111.00
1	B	588	LEU	CA-CB-CG	5.49	127.92	115.30
1	A	425	GLN	CA-C-N	-5.41	105.29	117.20
1	A	604	LEU	CA-CB-CG	5.40	127.71	115.30
1	B	425	GLN	CA-C-N	-5.20	105.75	117.20
1	B	632	ILE	N-CA-C	-5.18	97.00	111.00
1	A	9	GLY	N-CA-C	-5.13	100.27	113.10
1	A	310	ARG	N-CA-C	5.04	124.59	111.00
1	B	52	LEU	N-CA-C	-5.03	97.43	111.00
1	B	705	LEU	CA-CB-CG	-5.01	103.77	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	214	TYR	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5700	0	5557	252	0
1	B	5682	0	5537	229	0
All	All	11382	0	11094	480	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 21.

All (480) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:659:THR:HG22	1:B:685:PRO:HD3	1.43	0.98
1:A:538:THR:HG22	1:A:584:LYS:HG2	1.50	0.92
1:A:100:ARG:HD2	1:A:164:TRP:HZ3	1.34	0.91
1:A:381:THR:HG23	1:A:383:PRO:HD3	1.51	0.91

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:527:ALA:HB2	1:B:533:PHE:HB3	1.55	0.88
1:A:363:LYS:HG3	1:A:364:LEU:N	1.87	0.87
1:A:231:GLU:HB3	1:A:674:ARG:HH22	1.39	0.87
1:A:520:MET:HE2	1:A:619:LEU:HB3	1.57	0.85
1:A:363:LYS:HG3	1:A:364:LEU:H	1.40	0.85
1:A:356:GLU:HG2	1:A:445:LYS:NZ	1.92	0.84
1:A:56:ARG:HD2	1:A:67:ASP:O	1.80	0.81
1:B:43:GLU:HB2	1:B:165:THR:HG21	1.60	0.81
1:B:521:ASP:O	1:B:522:PHE:HB3	1.81	0.80
1:B:111:GLU:HB3	1:B:116:TYR:HD2	1.46	0.80
1:B:541:ASN:HB2	1:B:577:LEU:HD23	1.65	0.79
1:B:411:PRO:O	1:B:426:PHE:HB2	1.83	0.77
1:A:110:GLN:H	1:A:115:THR:HG23	1.49	0.76
1:A:211:VAL:HG13	1:A:467:LYS:HD2	1.66	0.75
1:A:516:SER:HB3	1:A:615:THR:HG21	1.67	0.75
1:A:217:VAL:HG22	1:A:338:TYR:HB3	1.69	0.75
1:B:331:PRO:HB2	1:B:379:TRP:HB3	1.69	0.74
1:B:233:GLY:O	1:B:237:THR:HG23	1.86	0.74
1:A:439:LEU:HB2	1:A:456:ASP:HB3	1.70	0.74
1:B:43:GLU:HA	1:B:165:THR:HB	1.67	0.74
1:A:559:PHE:HD1	1:A:563:VAL:O	1.71	0.74
1:B:520:MET:HA	1:B:538:THR:O	1.87	0.73
1:A:529:LEU:HD12	1:A:595:MET:HE1	1.71	0.73
1:A:549:ILE:HB	1:A:575:VAL:HG23	1.72	0.72
1:A:578:GLU:CD	1:A:578:GLU:H	1.93	0.71
1:A:492:LEU:O	1:A:496:THR:HG23	1.91	0.71
1:A:537:ILE:H	1:A:537:ILE:HD12	1.55	0.71
1:B:514:SER:O	1:B:515:ARG:HG2	1.90	0.71
1:A:285:TYR:O	1:A:310:ARG:HD3	1.91	0.71
1:A:698:TRP:CD1	1:A:699:VAL:HG23	2.25	0.71
1:B:51:HIS:HB2	1:B:85:GLN:HB3	1.71	0.71
1:A:242:MET:HB3	1:A:247:MET:HE3	1.73	0.70
1:B:385:LEU:HD22	1:B:424:PHE:HB3	1.74	0.70
1:B:211:VAL:HG22	1:B:467:LYS:HB2	1.75	0.69
1:A:650:VAL:HG11	1:A:665:VAL:HG11	1.73	0.68
1:A:110:GLN:N	1:A:115:THR:HG23	2.09	0.68
1:A:347:ASN:HD21	1:A:505:PRO:HG2	1.57	0.68
1:A:668:ASP:OD2	1:A:675:PRO:HB3	1.94	0.68
1:A:636:VAL:HG11	1:A:723:VAL:HG11	1.74	0.68
1:B:632:ILE:HG13	1:B:717:VAL:HG12	1.76	0.68
1:A:136:MET:HG3	1:A:143:ARG:HB3	1.76	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:356:GLU:HG2	1:A:445:LYS:HZ3	1.58	0.67
1:A:660:LEU:O	1:A:682:GLU:HA	1.95	0.67
1:B:363:LYS:HG2	1:B:364:LEU:N	2.08	0.67
1:A:529:LEU:HD22	1:A:529:LEU:H	1.59	0.66
1:A:440:ILE:HD13	1:A:455:VAL:HB	1.77	0.66
1:B:29:VAL:HG23	1:B:170:LEU:HD22	1.77	0.66
1:B:353:PHE:HB2	1:B:364:LEU:O	1.96	0.65
1:B:254:ASN:O	1:B:258:VAL:HG23	1.97	0.64
1:A:454:ASN:OD1	1:A:512:MET:SD	2.56	0.64
1:A:254:ASN:O	1:A:258:VAL:HG23	1.96	0.64
1:B:439:LEU:HB2	1:B:456:ASP:HB3	1.79	0.63
1:A:276:VAL:O	1:A:311:TYR:HA	1.98	0.63
1:A:648:VAL:O	1:A:692:GLU:HA	1.97	0.63
1:A:91:PRO:HD3	1:A:140:ARG:HG2	1.79	0.63
1:B:539:PHE:HB3	1:B:577:LEU:HD21	1.80	0.63
1:A:397:SER:HA	1:A:408:ARG:HB2	1.80	0.62
1:A:666:HIS:O	1:A:707:ALA:HA	1.98	0.62
1:B:90:ARG:HH11	1:B:90:ARG:HG3	1.64	0.62
1:A:709:MET:HB3	1:A:717:VAL:CG2	2.30	0.62
1:B:670:PRO:O	1:B:703:ARG:NH1	2.32	0.62
1:A:356:GLU:HG2	1:A:445:LYS:HZ2	1.60	0.62
1:A:535:LEU:HB2	1:A:587:VAL:HG13	1.80	0.62
1:B:43:GLU:HG3	1:B:170:LEU:HD11	1.81	0.62
1:B:303:ARG:HG2	1:B:303:ARG:HH11	1.64	0.61
1:B:582:PHE:N	1:B:582:PHE:HD1	1.99	0.61
1:A:411:PRO:O	1:A:426:PHE:HB2	2.00	0.61
1:B:594:TYR:CD1	1:B:595:MET:N	2.69	0.61
1:A:100:ARG:HD2	1:A:164:TRP:CZ3	2.26	0.61
1:A:100:ARG:HB3	1:A:100:ARG:HH11	1.65	0.61
1:A:193:VAL:HG13	1:A:331:PRO:HD3	1.81	0.61
1:A:419:HIS:O	1:B:387:VAL:HG11	2.00	0.60
1:B:445:LYS:NZ	1:B:445:LYS:HB3	2.16	0.60
1:B:66:THR:HG21	1:B:75:ILE:HG22	1.83	0.60
1:B:437:SER:HB2	1:B:460:ILE:HG12	1.83	0.60
1:A:435:VAL:CG2	1:A:464:ILE:HD11	2.32	0.60
1:A:379:TRP:HD1	1:A:392:TRP:CE2	2.20	0.60
1:A:443:THR:O	1:A:450:HIS:HA	2.02	0.60
1:A:529:LEU:HD21	1:A:629:ILE:HG23	1.83	0.60
1:A:213:PHE:CD2	1:A:222:THR:HG22	2.37	0.60
1:A:361:ASN:ND2	1:A:363:LYS:HG2	2.17	0.60
1:B:109:PRO:HB3	1:B:116:TYR:HB2	1.84	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:185:ASN:OD1	1:B:187:TRP:HB2	2.01	0.60
1:B:405:GLY:O	1:B:406:MET:HB3	2.02	0.60
1:B:634:ILE:HA	1:B:649:THR:O	2.02	0.60
1:A:463:LEU:HD21	1:A:476:ASP:OD2	2.02	0.59
1:A:207:ASN:HD22	1:A:208:ASP:N	2.01	0.59
1:A:528:VAL:HG13	1:A:628:THR:O	2.02	0.59
1:B:105:ILE:HG23	1:B:157:PHE:CD2	2.37	0.59
1:B:512:MET:N	1:B:512:MET:SD	2.75	0.59
1:A:51:HIS:HB2	1:A:85:GLN:HB3	1.84	0.59
1:B:698:TRP:CD1	1:B:699:VAL:HG23	2.37	0.59
1:B:217:VAL:HG22	1:B:338:TYR:HB3	1.85	0.59
1:A:549:ILE:HB	1:A:575:VAL:CG2	2.32	0.58
1:A:679:MET:HG3	1:A:680:PHE:N	2.17	0.58
1:B:657:LYS:O	1:B:685:PRO:HB3	2.03	0.58
1:B:582:PHE:N	1:B:582:PHE:CD1	2.70	0.58
1:B:642:VAL:HG13	1:B:698:TRP:HA	1.85	0.58
1:B:518:VAL:HG21	1:B:612:ILE:HD12	1.85	0.58
1:B:435:VAL:HG21	1:B:464:ILE:HD11	1.86	0.58
1:B:64:HIS:CE1	1:B:76:VAL:HG22	2.40	0.57
1:B:122:VAL:HG12	1:B:123:SER:N	2.19	0.57
1:A:353:PHE:CD2	1:A:364:LEU:O	2.57	0.57
1:A:554:SER:HB3	1:A:607:PHE:HB2	1.87	0.57
1:A:231:GLU:HB3	1:A:674:ARG:NH2	2.16	0.57
1:A:654:ASN:ND2	1:A:660:LEU:HG	2.19	0.56
1:B:615:THR:O	1:B:616:ARG:HG2	2.04	0.56
1:B:43:GLU:O	1:B:44:PHE:HD1	1.87	0.56
1:A:537:ILE:O	1:A:584:LYS:HA	2.05	0.56
1:A:100:ARG:CD	1:A:164:TRP:HZ3	2.13	0.56
1:B:211:VAL:HG22	1:B:467:LYS:HD2	1.87	0.56
1:A:379:TRP:HD1	1:A:392:TRP:CD2	2.23	0.56
1:A:529:LEU:HD22	1:A:529:LEU:N	2.20	0.56
1:A:541:ASN:HB2	1:A:577:LEU:HD23	1.87	0.56
1:B:573:PHE:N	1:B:573:PHE:CD1	2.72	0.56
1:A:174:ARG:NH2	1:A:179:ASP:OD1	2.39	0.56
1:A:220:ILE:H	1:A:220:ILE:HD12	1.70	0.56
1:A:247:MET:HE2	1:A:261:VAL:HG11	1.88	0.56
1:A:577:LEU:HA	1:A:583:LYS:HE3	1.89	0.55
1:A:565:LYS:HD3	1:A:599:LEU:HD21	1.88	0.55
1:A:263:SER:HB2	1:A:408:ARG:HG3	1.89	0.55
1:B:516:SER:HB2	1:B:547:TYR:CZ	2.41	0.55
1:A:363:LYS:CG	1:A:364:LEU:N	2.66	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:364:LEU:HA	1:A:366:LYS:HG2	1.88	0.55
1:B:382:ARG:NH1	1:B:384:ASP:OD2	2.39	0.55
1:A:78:ARG:HG2	1:A:152:CYS:HB3	1.88	0.55
1:B:598:LEU:HD11	1:B:627:LEU:HD12	1.89	0.55
1:A:207:ASN:ND2	1:A:209:ILE:H	2.05	0.55
1:B:247:MET:CE	1:B:257:LYS:HG2	2.37	0.55
1:A:43:GLU:N	1:A:165:THR:HG1	2.04	0.55
1:A:551:ALA:O	1:A:572:THR:HA	2.06	0.55
1:A:488:GLU:CD	1:A:491:ARG:HH12	2.10	0.54
1:B:363:LYS:CG	1:B:364:LEU:N	2.70	0.54
1:A:156:LYS:HE2	1:A:181:TYR:CZ	2.41	0.54
1:B:303:ARG:NH1	1:B:303:ARG:HG2	2.21	0.54
1:B:554:SER:HB3	1:B:567:GLU:OE2	2.07	0.54
1:B:541:ASN:HB2	1:B:577:LEU:HB3	1.89	0.54
1:B:659:THR:HG22	1:B:685:PRO:CD	2.29	0.54
1:B:657:LYS:C	1:B:685:PRO:HB3	2.28	0.54
1:A:642:VAL:CG2	1:A:700:SER:HB3	2.38	0.54
1:B:43:GLU:HG2	1:B:43:GLU:O	2.06	0.54
1:A:107:ARG:HG2	1:A:108:TYR:CE2	2.43	0.54
1:A:663:VAL:O	1:A:679:MET:HA	2.08	0.53
1:B:516:SER:OG	1:B:612:ILE:HG21	2.07	0.53
1:B:109:PRO:CB	1:B:116:TYR:HB2	2.39	0.53
1:B:153:ILE:HD11	1:B:250:SER:HA	1.90	0.53
1:A:591:ALA:O	1:A:595:MET:HB2	2.08	0.53
1:A:591:ALA:HA	1:A:594:TYR:CE2	2.44	0.53
1:B:51:HIS:CD2	1:B:85:GLN:HE21	2.27	0.53
1:A:363:LYS:CG	1:A:364:LEU:H	2.19	0.53
1:B:263:SER:OG	1:B:408:ARG:HD3	2.08	0.53
1:B:530:GLY:HA2	1:B:595:MET:SD	2.49	0.53
1:A:435:VAL:HG21	1:A:464:ILE:HD11	1.91	0.53
1:A:52:LEU:HD23	1:A:84:VAL:HG22	1.90	0.53
1:A:629:ILE:H	1:A:629:ILE:HD12	1.74	0.53
1:A:455:VAL:HG13	1:A:512:MET:HG2	1.91	0.52
1:A:454:ASN:HA	1:A:512:MET:SD	2.49	0.52
1:B:100:ARG:HB2	1:B:119:VAL:O	2.09	0.52
1:A:455:VAL:HG11	1:A:508:THR:HG21	1.91	0.52
1:B:524:VAL:HG22	1:B:535:LEU:HG	1.92	0.52
1:A:229:GLN:HB2	1:A:327:CYS:HB2	1.90	0.52
1:A:203:GLU:HG3	1:A:469:ILE:HA	1.91	0.52
1:A:529:LEU:H	1:A:529:LEU:CD2	2.23	0.52
1:B:443:THR:HG22	1:B:445:LYS:HG3	1.92	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:90:ARG:NH1	1:B:90:ARG:HG3	2.25	0.52
1:A:484:GLN:O	1:A:487:GLN:HG2	2.09	0.52
1:A:524:VAL:HG12	1:A:525:GLU:O	2.10	0.52
1:A:345:ASP:O	1:A:346:ALA:HB3	2.10	0.52
1:B:573:PHE:N	1:B:573:PHE:HD1	2.08	0.51
1:B:632:ILE:HD11	1:B:709:MET:HB2	1.91	0.51
1:A:674:ARG:HA	1:A:674:ARG:HE	1.75	0.51
1:B:105:ILE:CD1	1:B:115:THR:HG22	2.41	0.51
1:B:515:ARG:HG3	1:B:518:VAL:O	2.11	0.51
1:B:77:ARG:HB3	1:B:185:ASN:HB2	1.92	0.51
1:B:213:PHE:CD2	1:B:222:THR:HG22	2.45	0.51
1:A:418:LYS:HA	1:A:481:TYR:O	2.11	0.51
1:A:213:PHE:CE2	1:A:474:MET:HB2	2.46	0.51
1:A:455:VAL:HG13	1:A:512:MET:CG	2.41	0.51
1:A:578:GLU:N	1:A:578:GLU:CD	2.64	0.51
1:A:270:ASP:O	1:A:271:ASP:HB2	2.10	0.50
1:A:45:LEU:O	1:A:45:LEU:HD22	2.11	0.50
1:A:513:LYS:O	1:A:515:ARG:HD2	2.11	0.50
1:B:418:LYS:HD2	1:B:480:THR:O	2.11	0.50
1:B:410:GLY:C	1:B:426:PHE:HB3	2.32	0.50
1:B:428:ALA:N	1:B:429:PRO:HD2	2.26	0.50
1:A:509:GLU:OE1	1:A:511:VAL:HG12	2.11	0.50
1:A:537:ILE:N	1:A:537:ILE:HD12	2.23	0.50
1:A:338:TYR:O	1:A:371:ASN:O	2.29	0.50
1:B:337:ASN:O	1:B:372:TYR:HA	2.12	0.50
1:B:520:MET:O	1:B:520:MET:HG3	2.11	0.50
1:B:568:PHE:HD2	1:B:593:GLU:HG2	1.75	0.50
1:A:341:ALA:HB2	1:A:460:ILE:HD13	1.93	0.50
1:A:81:SER:HA	1:A:146:ILE:O	2.12	0.50
1:A:525:GLU:HG3	1:A:533:PHE:HB2	1.94	0.50
1:A:64:HIS:CE1	1:A:76:VAL:HG22	2.47	0.50
1:A:548:THR:HB	1:A:613:ASN:HD22	1.76	0.50
1:A:633:ILE:HG22	1:A:635:LYS:HD3	1.94	0.50
1:A:557:ILE:CD1	1:A:597:GLN:HG3	2.42	0.50
1:B:256:ILE:N	1:B:256:ILE:HD12	2.27	0.50
1:B:363:LYS:HE3	1:B:364:LEU:CB	2.42	0.50
1:A:136:MET:HG3	1:A:143:ARG:CB	2.42	0.50
1:B:283:TYR:HE2	1:B:600:GLU:OE1	1.94	0.50
1:A:659:THR:HG22	1:A:682:GLU:HB2	1.93	0.50
1:B:54:LYS:O	1:B:55:GLU:O	2.30	0.50
1:B:559:PHE:HD1	1:B:563:VAL:O	1.95	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:714:LEU:HG	1:B:715:ARG:N	2.27	0.50
1:A:634:ILE:HA	1:A:649:THR:O	2.12	0.49
1:B:119:VAL:HG11	1:B:146:ILE:HG23	1.94	0.49
1:B:24:ASP:O	1:B:158:ARG:NH2	2.45	0.49
1:A:521:ASP:HB2	1:A:540:ARG:HH22	1.78	0.49
1:B:445:LYS:HZ3	1:B:445:LYS:HB3	1.77	0.49
1:B:516:SER:HB2	1:B:547:TYR:CE2	2.47	0.49
1:A:445:LYS:HB3	1:A:447:ASP:OD1	2.12	0.49
1:A:220:ILE:N	1:A:220:ILE:HD12	2.26	0.49
1:A:93:ASP:O	1:A:97:ASP:HB2	2.12	0.49
1:B:513:LYS:HE3	1:B:618:VAL:H	1.77	0.49
1:B:541:ASN:HB2	1:B:577:LEU:CD2	2.40	0.49
1:B:529:LEU:HD13	1:B:656:LEU:HD21	1.93	0.49
1:A:595:MET:CE	1:A:598:LEU:HD12	2.43	0.49
1:B:440:ILE:HG22	1:B:442:ILE:HG13	1.95	0.49
1:A:402:ASN:HA	1:A:430:PHE:CZ	2.47	0.49
1:A:211:VAL:HG22	1:A:467:LYS:HB2	1.93	0.49
1:A:594:TYR:CD1	1:A:595:MET:N	2.81	0.49
1:B:594:TYR:O	1:B:596:GLY:N	2.46	0.49
1:A:381:THR:CG2	1:A:383:PRO:HD3	2.34	0.49
1:A:498:LEU:HD23	1:A:502:ALA:O	2.12	0.48
1:A:283:TYR:HE2	1:A:600:GLU:OE1	1.96	0.48
1:B:237:THR:HA	1:B:240:TYR:HB3	1.95	0.48
1:B:270:ASP:O	1:B:271:ASP:HB2	2.13	0.48
1:B:521:ASP:HB2	1:B:540:ARG:HH21	1.77	0.48
1:B:93:ASP:O	1:B:97:ASP:HB2	2.13	0.48
1:A:469:ILE:CG2	1:A:470:GLY:N	2.75	0.48
1:B:419:HIS:HD2	1:B:483:PHE:HZ	1.60	0.48
1:B:587:VAL:HG12	1:B:588:LEU:H	1.78	0.48
1:A:64:HIS:CE1	1:A:80:GLN:HB3	2.48	0.48
1:B:522:PHE:CD1	1:B:535:LEU:HD21	2.48	0.48
1:A:198:GLU:OE1	1:A:201:ARG:NH1	2.46	0.48
1:B:220:ILE:HG21	1:B:474:MET:CE	2.42	0.48
1:B:418:LYS:HB2	1:B:480:THR:O	2.13	0.48
1:A:442:ILE:CG2	1:A:450:HIS:HB3	2.44	0.48
1:A:165:THR:HG22	1:A:167:TYR:H	1.79	0.48
1:A:541:ASN:HB2	1:A:577:LEU:HB3	1.96	0.48
1:B:133:LYS:O	1:B:144:LEU:HA	2.13	0.48
1:A:568:PHE:O	1:A:593:GLU:HG3	2.14	0.48
1:B:61:LYS:NZ	1:B:71:ASN:O	2.47	0.48
1:A:123:SER:O	1:A:133:LYS:NZ	2.42	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:204:TYR:O	1:A:326:ARG:HG2	2.14	0.47
1:A:405:GLY:O	1:A:406:MET:HB3	2.14	0.47
1:A:449:THR:HG22	1:A:450:HIS:N	2.30	0.47
1:B:285:TYR:CB	1:B:310:ARG:HH11	2.28	0.47
1:B:405:GLY:O	1:B:406:MET:CB	2.63	0.47
1:B:573:PHE:HZ	1:B:587:VAL:HG22	1.78	0.47
1:B:654:ASN:O	1:B:686:ASN:HA	2.14	0.47
1:B:95:ARG:NH2	1:B:96:ARG:HB2	2.30	0.47
1:B:549:ILE:HD12	1:B:577:LEU:HD13	1.96	0.47
1:A:664:TRP:CE2	1:A:679:MET:HE3	2.49	0.47
1:B:435:VAL:CG2	1:B:464:ILE:HD11	2.44	0.47
1:B:705:LEU:HA	1:B:705:LEU:HD23	1.74	0.47
1:A:217:VAL:O	1:A:220:ILE:HD11	2.15	0.47
1:B:51:HIS:HD2	1:B:85:GLN:HE21	1.62	0.47
1:B:546:ARG:HE	1:B:578:GLU:HG3	1.78	0.47
1:A:267:ASN:ND2	1:A:399:PRO:HG2	2.30	0.47
1:A:630:PRO:HG3	1:A:655:PRO:HB3	1.96	0.47
1:B:64:HIS:CE1	1:B:80:GLN:HB3	2.50	0.47
1:B:570:LYS:O	1:B:570:LYS:HG2	2.14	0.47
1:A:98:LEU:HD12	1:A:121:ILE:HD11	1.97	0.46
1:A:206:LEU:O	1:A:230:PHE:HE2	1.98	0.46
1:A:280:ASP:O	1:A:282:ILE:HD12	2.15	0.46
1:B:193:VAL:HG13	1:B:193:VAL:O	2.16	0.46
1:A:153:ILE:HD12	1:A:153:ILE:N	2.30	0.46
1:A:207:ASN:C	1:A:207:ASN:HD22	2.19	0.46
1:A:548:THR:HA	1:A:575:VAL:O	2.15	0.46
1:B:26:LEU:HD11	1:B:104:VAL:HG11	1.96	0.46
1:B:122:VAL:CG1	1:B:123:SER:N	2.77	0.46
1:B:247:MET:HE3	1:B:257:LYS:HG2	1.98	0.46
1:B:422:VAL:HG23	1:B:500:TYR:HB2	1.95	0.46
1:B:506:LEU:HA	1:B:506:LEU:HD23	1.71	0.46
1:B:95:ARG:CZ	1:B:96:ARG:HB2	2.46	0.46
1:B:78:ARG:HG3	1:B:150:PRO:HA	1.98	0.46
1:B:213:PHE:CZ	1:B:474:MET:HA	2.51	0.46
1:B:528:VAL:HG12	1:B:529:LEU:N	2.30	0.46
1:A:95:ARG:HE	1:A:95:ARG:HB2	1.63	0.46
1:B:546:ARG:HE	1:B:578:GLU:CG	2.28	0.46
1:A:350:MET:HB3	1:A:439:LEU:HD23	1.97	0.46
1:A:549:ILE:HG23	1:A:612:ILE:HD13	1.98	0.46
1:A:76:VAL:HG21	1:A:82:PHE:CD1	2.51	0.46
1:B:111:GLU:HB3	1:B:116:TYR:CD2	2.38	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:347:ASN:HD21	1:B:505:PRO:HG3	1.81	0.46
1:B:549:ILE:CD1	1:B:577:LEU:HD13	2.46	0.46
1:B:98:LEU:HD23	1:B:164:TRP:HB2	1.98	0.46
1:B:547:TYR:HD1	1:B:614:GLU:CG	2.29	0.46
1:A:165:THR:HG22	1:A:167:TYR:N	2.30	0.46
1:A:700:SER:HA	1:A:725:ILE:HB	1.98	0.46
1:B:359:ASN:HD21	1:B:570:LYS:HE3	1.81	0.46
1:B:220:ILE:HG21	1:B:474:MET:HE2	1.98	0.46
1:B:554:SER:HB2	1:B:607:PHE:HB2	1.96	0.46
1:A:86:ILE:HD12	1:A:86:ILE:N	2.30	0.46
1:B:632:ILE:CG2	1:B:650:VAL:HG13	2.46	0.46
1:B:539:PHE:CB	1:B:577:LEU:HD21	2.45	0.46
1:B:202:GLU:HA	1:B:206:LEU:HB2	1.97	0.45
1:A:23:GLU:HG2	1:A:158:ARG:HD2	1.98	0.45
1:A:26:LEU:HD12	1:A:160:TYR:CE2	2.51	0.45
1:A:515:ARG:HB3	1:A:617:ASP:HB3	1.98	0.45
1:B:578:GLU:O	1:B:579:PRO:C	2.53	0.45
1:A:463:LEU:HD23	1:A:478:THR:OG1	2.16	0.45
1:A:105:ILE:HG12	1:A:157:PHE:CE2	2.52	0.45
1:A:537:ILE:HD12	1:A:585:GLU:O	2.16	0.45
1:A:546:ARG:HD3	1:A:578:GLU:HA	1.98	0.45
1:B:51:HIS:N	1:B:85:GLN:O	2.48	0.45
1:A:428:ALA:N	1:A:429:PRO:HD2	2.32	0.45
1:A:549:ILE:O	1:A:574:ASP:HA	2.17	0.45
1:B:666:HIS:O	1:B:707:ALA:HA	2.17	0.45
1:B:51:HIS:HD2	1:B:85:GLN:NE2	2.14	0.45
1:A:64:HIS:CE1	1:A:80:GLN:OE1	2.70	0.45
1:A:112:ASN:N	1:A:112:ASN:HD22	2.13	0.45
1:A:125:LEU:HD23	1:A:125:LEU:HA	1.79	0.45
1:A:56:ARG:NH2	1:A:70:GLU:OE2	2.49	0.45
1:B:133:LYS:HE3	1:B:133:LYS:HB3	1.78	0.45
1:B:515:ARG:O	1:B:518:VAL:HG23	2.17	0.45
1:B:528:VAL:CG1	1:B:529:LEU:N	2.80	0.45
1:B:546:ARG:HH21	1:B:578:GLU:HG2	1.82	0.45
1:B:663:VAL:O	1:B:679:MET:HA	2.17	0.45
1:A:225:TRP:CE2	1:A:294:GLY:HA2	2.52	0.45
1:A:332:ALA:HA	1:A:377:GLU:O	2.17	0.45
1:A:665:VAL:O	1:A:677:LYS:HA	2.17	0.45
1:B:43:GLU:HB2	1:B:165:THR:CG2	2.39	0.45
1:B:453:GLU:O	1:B:512:MET:HB2	2.17	0.45
1:B:605:HIS:HE1	1:B:607:PHE:CZ	2.35	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:663:VAL:HB	1:A:680:PHE:HB2	1.99	0.44
1:B:105:ILE:HD11	1:B:115:THR:HG22	2.00	0.44
1:B:634:ILE:HD13	1:B:650:VAL:HG22	1.99	0.44
1:B:636:VAL:HG11	1:B:646:MET:HE3	1.98	0.44
1:A:331:PRO:HB2	1:A:379:TRP:HB2	2.00	0.44
1:B:640:GLN:O	1:B:726:GLN:OE1	2.35	0.44
1:A:529:LEU:HD12	1:A:598:LEU:CD1	2.48	0.44
1:B:276:VAL:O	1:B:311:TYR:HA	2.18	0.44
1:B:460:ILE:HA	1:B:460:ILE:HD12	1.68	0.44
1:B:511:VAL:HG22	1:B:512:MET:H	1.83	0.44
1:A:337:ASN:O	1:A:372:TYR:HA	2.18	0.44
1:A:379:TRP:CD1	1:A:392:TRP:CE2	3.04	0.44
1:B:443:THR:HB	1:B:451:VAL:HG13	1.98	0.44
1:B:515:ARG:HH12	1:B:519:ASP:CG	2.21	0.44
1:A:99:PHE:HA	1:A:162:ALA:O	2.18	0.44
1:A:547:TYR:O	1:A:576:THR:HA	2.17	0.44
1:A:674:ARG:HG3	1:A:675:PRO:HD2	1.99	0.44
1:A:705:LEU:HD23	1:A:705:LEU:HA	1.74	0.44
1:A:402:ASN:HA	1:A:430:PHE:CE1	2.52	0.44
1:A:565:LYS:O	1:A:566:ALA:HB2	2.18	0.44
1:A:577:LEU:HG	1:A:583:LYS:HE3	1.99	0.44
1:B:107:ARG:NH1	1:B:107:ARG:HG3	2.31	0.44
1:B:636:VAL:HG11	1:B:646:MET:CE	2.47	0.44
1:A:107:ARG:HG2	1:A:108:TYR:CD2	2.53	0.44
1:A:249:LEU:HA	1:A:252:ARG:HG3	2.00	0.44
1:A:506:LEU:HA	1:A:506:LEU:HD23	1.83	0.43
1:A:405:GLY:O	1:A:406:MET:CB	2.65	0.43
1:A:157:PHE:CD1	1:A:157:PHE:N	2.87	0.43
1:B:541:ASN:O	1:B:580:LEU:HA	2.18	0.43
1:A:79:GLY:HA2	1:A:148:SER:O	2.17	0.43
1:B:195:LEU:O	1:B:201:ARG:NE	2.51	0.43
1:A:247:MET:HE2	1:A:261:VAL:CG1	2.48	0.43
1:A:444:ALA:HA	1:A:450:HIS:ND1	2.33	0.43
1:B:385:LEU:CD2	1:B:424:PHE:HB3	2.47	0.43
1:B:527:ALA:HB2	1:B:533:PHE:CB	2.38	0.43
1:B:547:TYR:HD1	1:B:614:GLU:HG2	1.82	0.43
1:B:620:ALA:O	1:B:621:LYS:HG2	2.18	0.43
1:A:69:TYR:O	1:A:71:ASN:N	2.52	0.43
1:B:17:ASN:OD1	1:B:106:GLY:HA3	2.18	0.43
1:B:446:LYS:C	1:B:448:GLY:H	2.20	0.43
1:B:520:MET:CE	1:B:608:VAL:HG12	2.49	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:LEU:HD12	1:A:160:TYR:CD2	2.54	0.43
1:A:268:ALA:HB2	1:A:308:PRO:HB3	2.01	0.43
1:B:587:VAL:HG12	1:B:588:LEU:N	2.33	0.43
1:B:82:PHE:CD1	1:B:82:PHE:N	2.86	0.43
1:A:194:TYR:HE1	1:A:201:ARG:HH21	1.66	0.43
1:A:353:PHE:HB2	1:A:365:THR:OG1	2.18	0.43
1:A:513:LYS:NZ	1:A:516:SER:H	2.15	0.43
1:A:684:ARG:HA	1:A:684:ARG:HD3	1.73	0.43
1:A:703:ARG:HA	1:A:703:ARG:NE	2.33	0.43
1:B:543:SER:O	1:B:580:LEU:HD12	2.19	0.43
1:A:20:ASN:C	1:A:20:ASN:HD22	2.22	0.43
1:A:283:TYR:CD2	1:A:288:PRO:HB3	2.53	0.43
1:A:535:LEU:O	1:A:586:ALA:HA	2.18	0.43
1:B:220:ILE:HD13	1:B:474:MET:HE1	2.00	0.43
1:B:666:HIS:HA	1:B:676:MET:O	2.18	0.43
1:A:286:GLY:HA3	1:A:310:ARG:HB3	2.00	0.43
1:B:135:VAL:HG12	1:B:143:ARG:O	2.19	0.43
1:B:447:ASP:N	1:B:447:ASP:OD1	2.52	0.43
1:B:573:PHE:HZ	1:B:587:VAL:CG2	2.32	0.43
1:A:335:VAL:O	1:A:374:CYS:HA	2.19	0.42
1:B:153:ILE:HD13	1:B:249:LEU:O	2.19	0.42
1:A:535:LEU:N	1:A:535:LEU:HD12	2.35	0.42
1:B:213:PHE:CE2	1:B:474:MET:HB3	2.54	0.42
1:A:519:ASP:HB2	1:A:540:ARG:CG	2.49	0.42
1:A:582:PHE:O	1:A:583:LYS:HE2	2.19	0.42
1:A:534:LYS:HB2	1:A:587:VAL:O	2.19	0.42
1:A:72:ASN:OD1	1:A:72:ASN:N	2.52	0.42
1:B:633:ILE:HA	1:B:633:ILE:HD13	1.90	0.42
1:A:134:ILE:HD12	1:A:134:ILE:H	1.85	0.42
1:A:288:PRO:HA	1:A:289:PRO:HD3	1.74	0.42
1:A:455:VAL:HG11	1:A:508:THR:CG2	2.49	0.42
1:B:206:LEU:HD12	1:B:230:PHE:HZ	1.84	0.42
1:B:361:ASN:OD1	1:B:362:SER:N	2.53	0.42
1:A:43:GLU:OE1	1:A:43:GLU:HA	2.19	0.42
1:A:88:PHE:HE2	1:A:142:VAL:CG2	2.33	0.42
1:B:99:PHE:HB2	1:B:162:ALA:O	2.19	0.42
1:B:363:LYS:HE3	1:B:364:LEU:HB3	2.00	0.42
1:B:489:GLU:H	1:B:489:GLU:HG2	1.60	0.42
1:A:535:LEU:CD1	1:A:589:ILE:HD11	2.50	0.42
1:A:90:ARG:HA	1:A:91:PRO:HD2	1.77	0.42
1:B:605:HIS:HD2	1:B:624:SER:OG	2.03	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:414:VAL:O	1:A:414:VAL:HG12	2.19	0.42
1:B:256:ILE:H	1:B:256:ILE:CD1	2.32	0.42
1:B:578:GLU:HB3	1:B:579:PRO:HD2	2.00	0.42
1:B:580:LEU:N	1:B:580:LEU:HD12	2.35	0.42
1:B:598:LEU:HD11	1:B:627:LEU:CD1	2.50	0.42
1:A:195:LEU:HA	1:A:195:LEU:HD23	1.77	0.42
1:B:413:SER:O	1:B:417:ILE:HG12	2.19	0.42
1:B:342:HIS:ND1	1:B:434:GLU:OE2	2.48	0.42
1:B:48:THR:N	1:B:87:ASP:O	2.50	0.42
1:A:419:HIS:HB3	1:A:421:HIS:CD2	2.54	0.42
1:A:629:ILE:H	1:A:629:ILE:CD1	2.32	0.42
1:B:280:ASP:O	1:B:282:ILE:N	2.53	0.42
1:B:668:ASP:HB3	1:B:706:ILE:HB	2.01	0.42
1:B:43:GLU:O	1:B:44:PHE:CD1	2.71	0.41
1:B:575:VAL:HG22	1:B:585:GLU:OE2	2.20	0.41
1:A:45:LEU:HD22	1:A:88:PHE:HB3	2.02	0.41
1:A:8:PHE:CD1	1:A:8:PHE:N	2.88	0.41
1:B:269:LYS:O	1:B:272:GLU:HB2	2.19	0.41
1:B:353:PHE:HE2	1:B:364:LEU:HD22	1.85	0.41
1:B:530:GLY:O	1:B:591:ALA:CB	2.68	0.41
1:A:206:LEU:HD12	1:A:230:PHE:HZ	1.85	0.41
1:A:568:PHE:HB2	1:A:593:GLU:OE1	2.20	0.41
1:B:287:VAL:HB	1:B:292:TRP:CZ2	2.55	0.41
1:B:347:ASN:ND2	1:B:505:PRO:HG3	2.35	0.41
1:A:633:ILE:CG2	1:A:635:LYS:HD3	2.50	0.41
1:B:20:ASN:ND2	1:B:20:ASN:O	2.43	0.41
1:A:102:GLU:CD	1:A:171:ARG:HH21	2.24	0.41
1:A:513:LYS:NZ	1:A:514:SER:O	2.40	0.41
1:B:153:ILE:HG23	1:B:252:ARG:HB2	2.03	0.41
1:B:247:MET:HE2	1:B:257:LYS:HG2	2.03	0.41
1:B:401:GLU:HA	1:B:406:MET:H	1.84	0.41
1:A:268:ALA:HA	1:A:272:GLU:O	2.20	0.41
1:B:101:VAL:HG12	1:B:102:GLU:N	2.36	0.41
1:B:684:ARG:HD3	1:B:684:ARG:HA	1.95	0.41
1:A:117:ILE:HG21	1:A:130:TRP:CE2	2.56	0.41
1:A:134:ILE:HD12	1:A:134:ILE:N	2.35	0.41
1:A:685:PRO:C	1:A:687:SER:H	2.24	0.41
1:B:634:ILE:HD11	1:B:707:ALA:CB	2.51	0.41
1:B:93:ASP:HA	1:B:94:PRO:HD2	1.73	0.41
1:A:105:ILE:HG12	1:A:157:PHE:CD2	2.56	0.41
1:A:199:LYS:HA	1:A:202:GLU:HG3	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:412:ALA:HB2	1:A:426:PHE:O	2.21	0.41
1:A:90:ARG:HD2	1:A:90:ARG:HH11	1.73	0.41
1:A:319:GLY:HA2	1:A:334:ILE:HD11	2.02	0.41
1:B:446:LYS:HD3	1:B:446:LYS:HA	1.67	0.41
1:A:353:PHE:HD2	1:A:364:LEU:O	2.02	0.41
1:A:516:SER:O	1:A:517:ASN:HB2	2.21	0.41
1:A:559:PHE:CD1	1:A:563:VAL:O	2.63	0.40
1:A:715:ARG:O	1:A:716:HIS:CB	2.69	0.40
1:B:117:ILE:HA	1:B:118:PRO:HD2	1.92	0.40
1:B:338:TYR:O	1:B:339:PHE:HB2	2.21	0.40
1:A:268:ALA:HA	1:A:273:GLY:HA3	2.03	0.40
1:B:134:ILE:HD12	1:B:134:ILE:H	1.87	0.40
1:B:513:LYS:HB3	1:B:514:SER:H	1.70	0.40
1:A:172:THR:HG22	1:A:173:SER:H	1.86	0.40
1:A:305:SER:O	1:A:306:GLU:HB2	2.21	0.40
1:A:283:TYR:CE2	1:A:600:GLU:OE1	2.75	0.40
1:A:86:ILE:HD12	1:A:86:ILE:H	1.86	0.40
1:B:184:PHE:CE2	1:B:255:PRO:HG3	2.56	0.40
1:B:64:HIS:HE1	1:B:80:GLN:HB3	1.87	0.40
1:B:515:ARG:CB	1:B:619:LEU:HD21	2.50	0.40
1:B:515:ARG:HB2	1:B:619:LEU:HD21	2.03	0.40
1:B:71:ASN:HB3	1:B:75:ILE:HD11	2.03	0.40
1:A:541:ASN:ND2	1:A:545:ASN:O	2.54	0.40
1:B:55:GLU:OE1	1:B:55:GLU:HA	2.21	0.40
1:B:563:VAL:HA	1:B:564:PRO:HD3	1.93	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	706/731 (97%)	633 (90%)	49 (7%)	24 (3%)	3 4

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	704/731 (96%)	607 (86%)	70 (10%)	27 (4%)	3	3
All	All	1410/1462 (96%)	1240 (88%)	119 (8%)	51 (4%)	3	4

All (51) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	44	PHE
1	A	91	PRO
1	A	139	ASP
1	A	426	PHE
1	A	509	GLU
1	B	54	LYS
1	B	55	GLU
1	B	270	ASP
1	B	272	GLU
1	B	365	THR
1	B	509	GLU
1	B	522	PHE
1	A	69	TYR
1	A	217	VAL
1	A	512	MET
1	A	513	LYS
1	A	515	ARG
1	A	580	LEU
1	B	45	LEU
1	B	128	GLY
1	B	273	GLY
1	B	460	ILE
1	B	595	MET
1	B	716	HIS
1	A	78	ARG
1	A	138	GLU
1	A	406	MET
1	A	516	SER
1	B	136	MET
1	B	139	ASP
1	B	189	GLU
1	B	252	ARG
1	B	514	SER
1	B	631	GLU
1	A	268	ALA
1	A	270	ASP

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	70	GLU
1	A	311	TYR
1	A	425	GLN
1	A	687	SER
1	B	232	ASP
1	B	311	TYR
1	B	406	MET
1	B	425	GLN
1	B	447	ASP
1	A	686	ASN
1	A	716	HIS
1	B	445	LYS
1	B	697	PRO
1	A	669	GLY
1	B	9	GLY

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	626/644 (97%)	536 (86%)	90 (14%)	3 3
1	B	624/644 (97%)	549 (88%)	75 (12%)	5 7
All	All	1250/1288 (97%)	1085 (87%)	165 (13%)	4 5

All (165) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	PHE
1	A	12	ARG
1	A	18	ASN
1	A	20	ASN
1	A	43	GLU
1	A	45	LEU
1	A	54	LYS
1	A	56	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	58	ASP
1	A	59	THR
1	A	72	ASN
1	A	96	ARG
1	A	99	PHE
1	A	100	ARG
1	A	104	VAL
1	A	105	ILE
1	A	112	ASN
1	A	126	GLN
1	A	136	MET
1	A	137	ARG
1	A	143	ARG
1	A	147	GLN
1	A	164	TRP
1	A	174	ARG
1	A	177	GLU
1	A	193	VAL
1	A	195	LEU
1	A	203	GLU
1	A	206	LEU
1	A	207	ASN
1	A	211	VAL
1	A	218	ASN
1	A	223	ARG
1	A	232	ASP
1	A	235	LEU
1	A	250	SER
1	A	270	ASP
1	A	276	VAL
1	A	293	THR
1	A	301	GLU
1	A	304	SER
1	A	340	SER
1	A	343	ASP
1	A	350	MET
1	A	354	LEU
1	A	356	GLU
1	A	357	ASP
1	A	365	THR
1	A	368	SER
1	A	369	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	379	TRP
1	A	381	THR
1	A	386	PRO
1	A	408	ARG
1	A	422	VAL
1	A	435	VAL
1	A	445	LYS
1	A	462	LYS
1	A	463	LEU
1	A	469	ILE
1	A	507	ASN
1	A	509	GLU
1	A	511	VAL
1	A	515	ARG
1	A	516	SER
1	A	548	THR
1	A	569	LYS
1	A	572	THR
1	A	575	VAL
1	A	583	LYS
1	A	587	VAL
1	A	590	GLN
1	A	593	GLU
1	A	603	SER
1	A	604	LEU
1	A	609	THR
1	A	625	THR
1	A	629	ILE
1	A	632	ILE
1	A	637	ARG
1	A	658	GLU
1	A	667	LEU
1	A	674	ARG
1	A	677	LYS
1	A	679	MET
1	A	689	VAL
1	A	709	MET
1	A	712	ASP
1	A	713	SER
1	A	727	ARG
1	B	8	PHE
1	B	20	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	28	THR
1	B	30	GLU
1	B	44	PHE
1	B	48	THR
1	B	58	ASP
1	B	95	ARG
1	B	96	ARG
1	B	110	GLN
1	B	121	ILE
1	B	135	VAL
1	B	136	MET
1	B	143	ARG
1	B	165	THR
1	B	172	THR
1	B	193	VAL
1	B	206	LEU
1	B	217	VAL
1	B	221	LYS
1	B	223	ARG
1	B	235	LEU
1	B	237	THR
1	B	270	ASP
1	B	272	GLU
1	B	301	GLU
1	B	314	CYS
1	B	340	SER
1	B	350	MET
1	B	354	LEU
1	B	363	LYS
1	B	386	PRO
1	B	397	SER
1	B	403	SER
1	B	408	ARG
1	B	427	ASP
1	B	431	VAL
1	B	446	LYS
1	B	452	VAL
1	B	460	ILE
1	B	463	LEU
1	B	487	GLN
1	B	494	LEU
1	B	495	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	498	LEU
1	B	499	MET
1	B	504	LYS
1	B	509	GLU
1	B	512	MET
1	B	515	ARG
1	B	516	SER
1	B	517	ASN
1	B	520	MET
1	B	523	GLU
1	B	526	ASN
1	B	529	LEU
1	B	536	SER
1	B	565	LYS
1	B	571	GLU
1	B	572	THR
1	B	573	PHE
1	B	582	PHE
1	B	583	LYS
1	B	588	LEU
1	B	590	GLN
1	B	593	GLU
1	B	597	GLN
1	B	639	THR
1	B	640	GLN
1	B	703	ARG
1	B	713	SER
1	B	721	LEU
1	B	722	ASP
1	B	724	GLN
1	B	725	ILE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	18	ASN
1	A	126	GLN
1	A	207	ASN
1	A	218	ASN
1	A	267	ASN
1	A	322	ASN
1	A	347	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	459	HIS
1	A	526	ASN
1	A	545	ASN
1	A	590	GLN
1	A	622	GLN
1	B	51	HIS
1	B	322	ASN
1	B	337	ASN
1	B	419	HIS
1	B	517	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.