



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 15, 2017 – 06:19 am GMT

PDB ID : 1Q3S
Title : Crystal structure of the chaperonin from Thermococcus strain KS-1 (FormIII crystal complexed with ADP)
Authors : Shomura, Y.; Yoshida, T.; Iizuka, R.; Maruyama, T.; Yohda, M.; Miki, K.
Deposited on : 2003-07-31
Resolution : 3.00 Å(reported)

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

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

A user guide is available at

<http://wwpdb.org/validation/2016/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
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix) : 1.9-1692
EDS : trunk28620
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : recalc28949

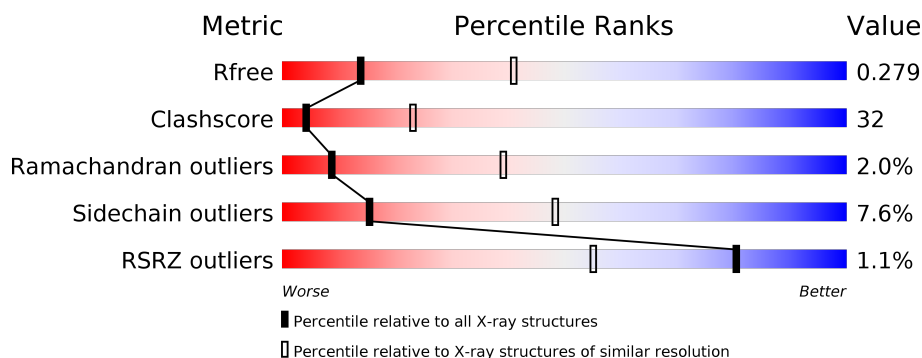
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	100719	1692 (3.00-3.00)
Clashscore	112137	2037 (3.00-3.00)
Ramachandran outliers	110173	1973 (3.00-3.00)
Sidechain outliers	110143	1976 (3.00-3.00)
RSRZ outliers	101464	1716 (3.00-3.00)

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. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	548	<div> <div>%</div> <div> <div></div> <div>47%</div> <div>42%</div> <div>5%</div> <div>6%</div> </div> </div>
1	B	548	<div> <div>%</div> <div> <div></div> <div>47%</div> <div>43%</div> <div>•</div> <div>6%</div> </div> </div>
1	C	548	<div> <div>%</div> <div> <div></div> <div>43%</div> <div>47%</div> <div>•</div> <div>6%</div> </div> </div>
1	D	548	<div> <div>%</div> <div> <div></div> <div>42%</div> <div>46%</div> <div>6%</div> <div>6%</div> </div> </div>
1	E	548	<div> <div>%</div> <div> <div></div> <div>42%</div> <div>48%</div> <div>5%</div> <div>6%</div> </div> </div>
1	F	548	<div> <div>%</div> <div> <div></div> <div>45%</div> <div>44%</div> <div>6%</div> <div>6%</div> </div> </div>

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Mol	Chain	Length	Quality of chain
1	G	548	<div><div>%</div><div><div></div></div><div>49%41%6%</div></div>
1	H	548	<div><div>%</div><div><div></div></div><div>46%45%6%</div></div>

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 31751 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 Thermosome alpha subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	B	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	C	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	D	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	E	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	F	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	G	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			
1	H	517	Total	C	N	O	S	0	0	0
			3941	2482	672	770	17			

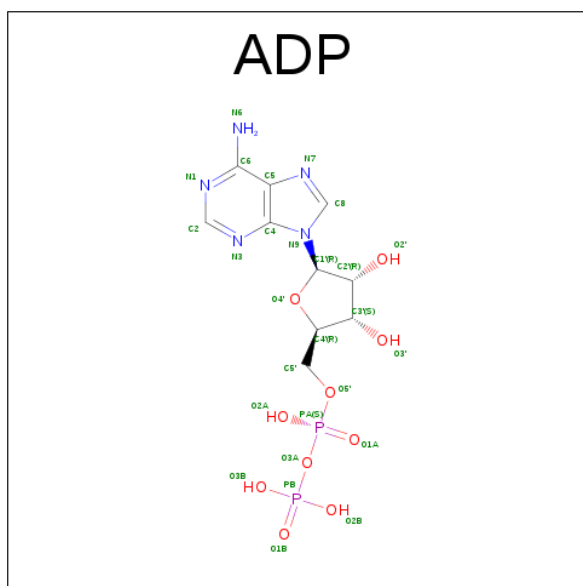
There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	65	CYS	GLY	ENGINEERED	UNP O24729
B	65	CYS	GLY	ENGINEERED	UNP O24729
C	65	CYS	GLY	ENGINEERED	UNP O24729
D	65	CYS	GLY	ENGINEERED	UNP O24729
E	65	CYS	GLY	ENGINEERED	UNP O24729
F	65	CYS	GLY	ENGINEERED	UNP O24729
G	65	CYS	GLY	ENGINEERED	UNP O24729
H	65	CYS	GLY	ENGINEERED	UNP O24729

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	G	1	Total Mg 1 1	0	0
2	D	1	Total Mg 1 1	0	0
2	E	1	Total Mg 1 1	0	0
2	H	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	A	1	Total Mg 1 1	0	0

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O P 27 10 5 10 2	0	0
3	B	1	Total C N O P 27 10 5 10 2	0	0
3	C	1	Total C N O P 27 10 5 10 2	0	0
3	D	1	Total C N O P 27 10 5 10 2	0	0

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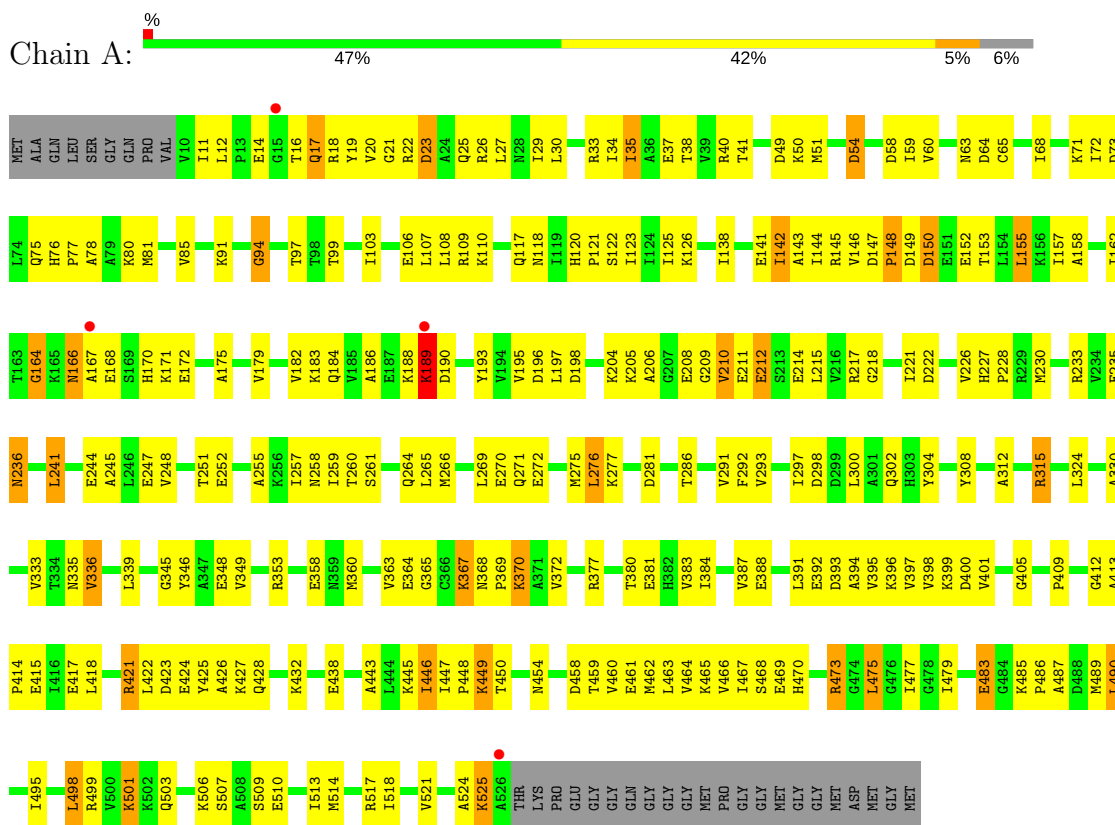
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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	E	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	F	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	G	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	H	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

3 Residue-property plots

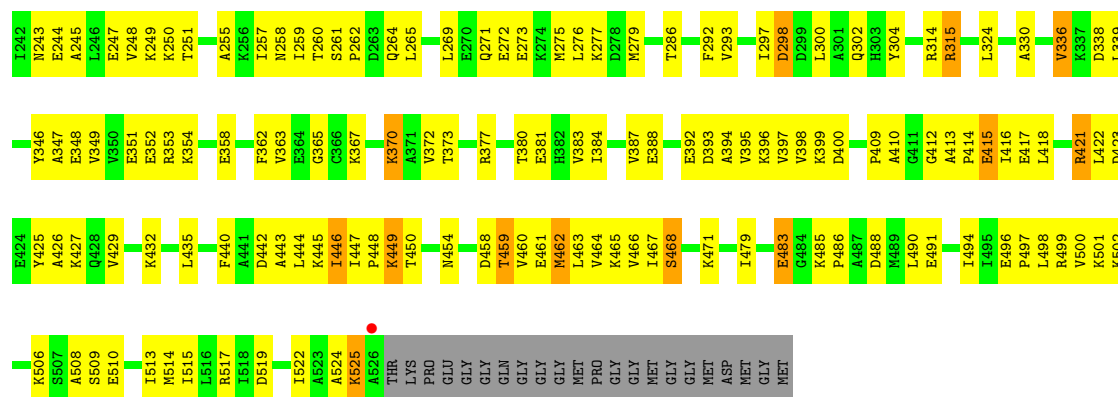
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are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

• Molecule 1: Thermosome alpha subunit

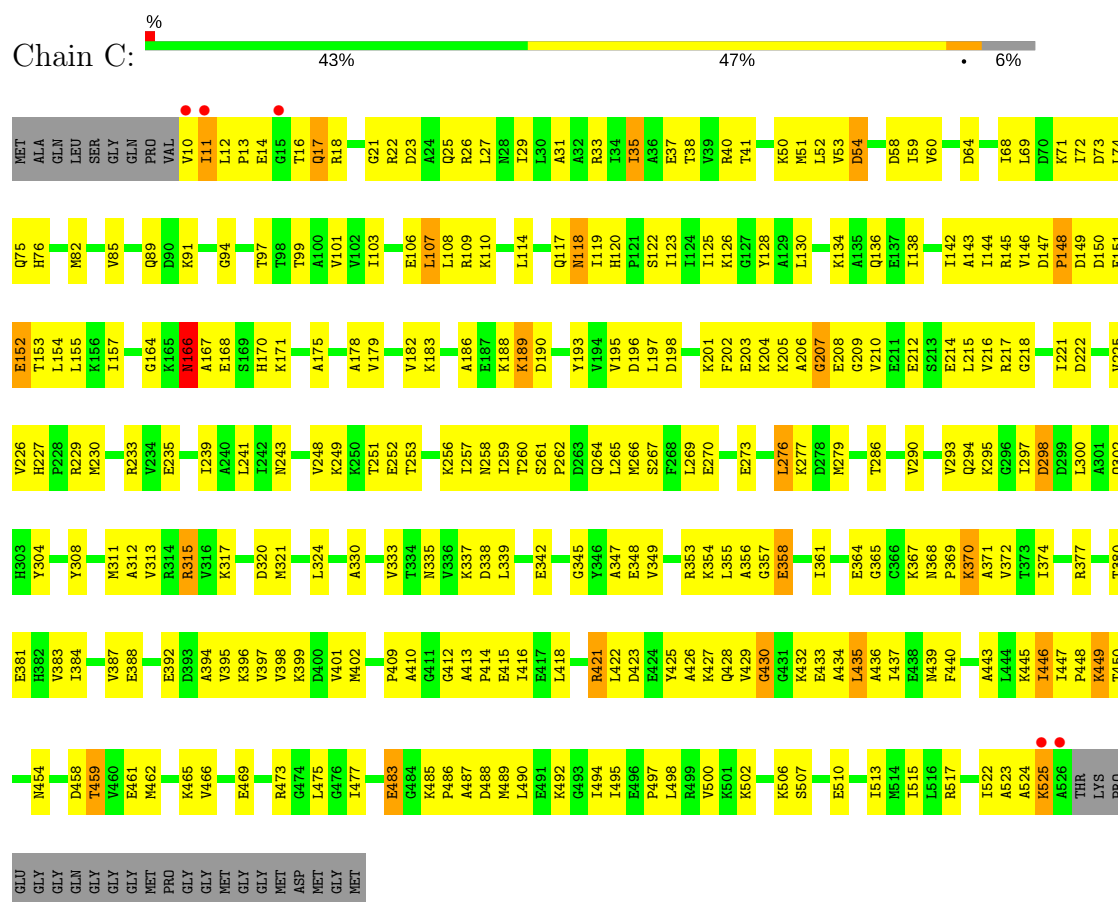


• Molecule 1: Thermosome alpha subunit

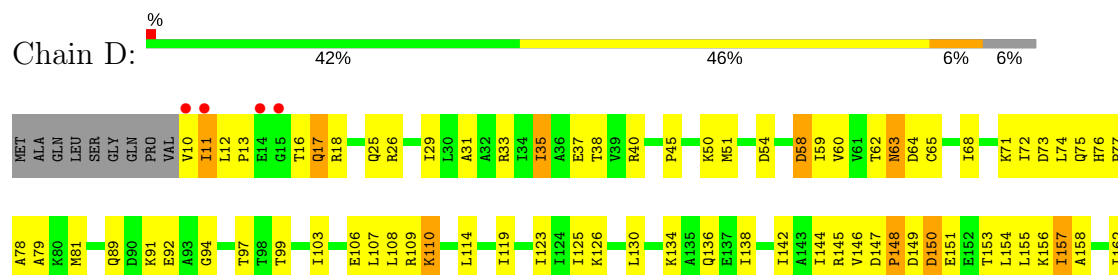




• Molecule 1: Thermosome alpha subunit

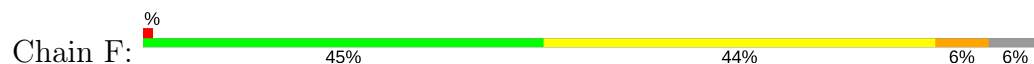


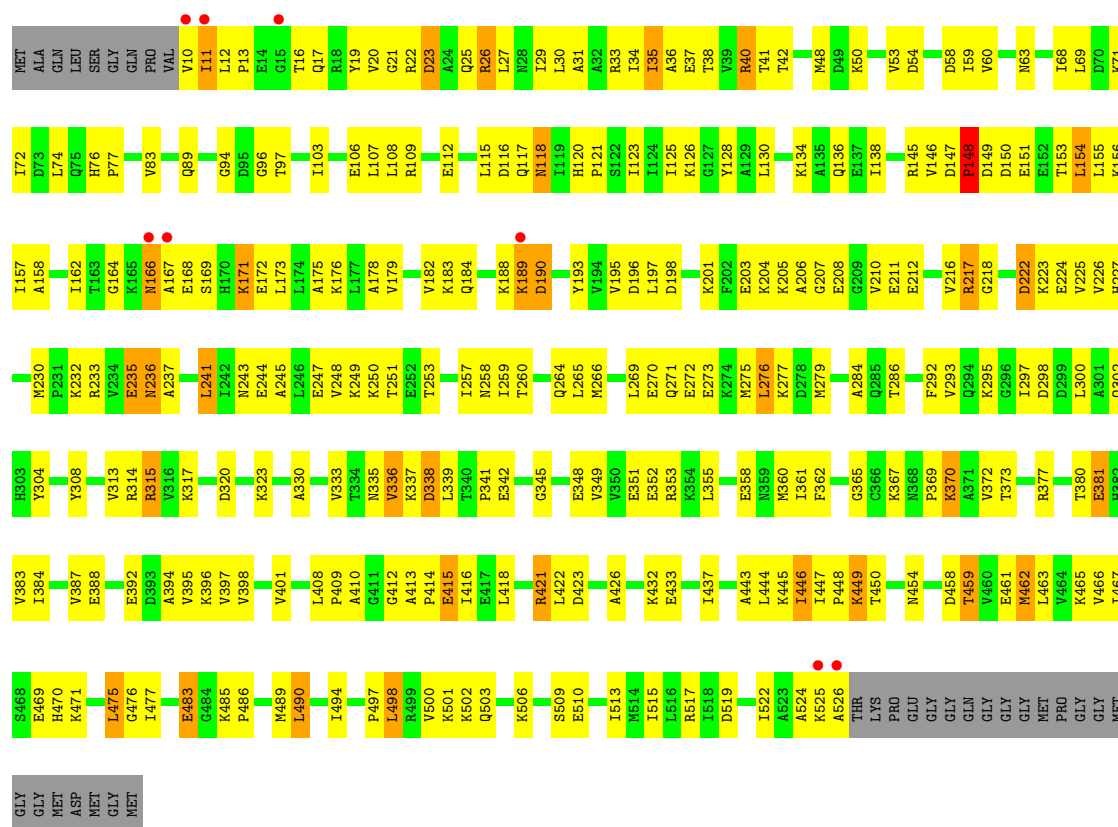
• Molecule 1: Thermosome alpha subunit



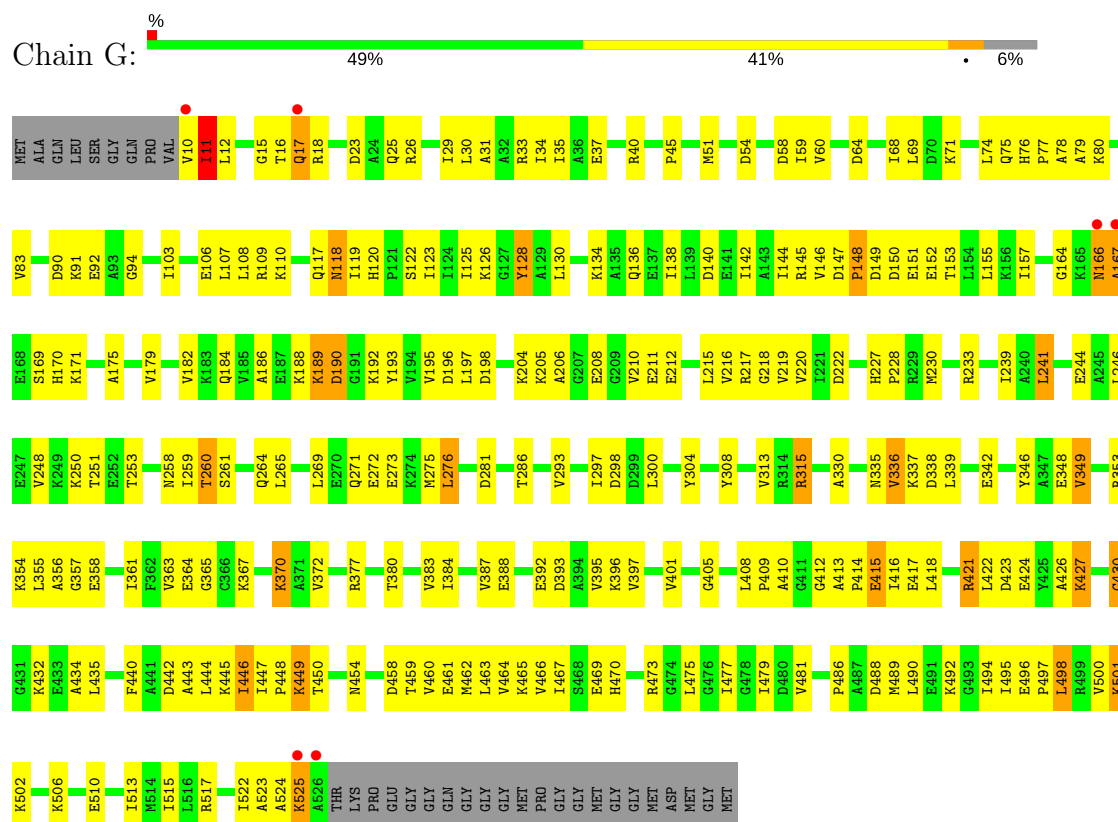
- Molecule 1: Thermosome alpha subunit

- Molecule 1: Thermosome alpha subunit

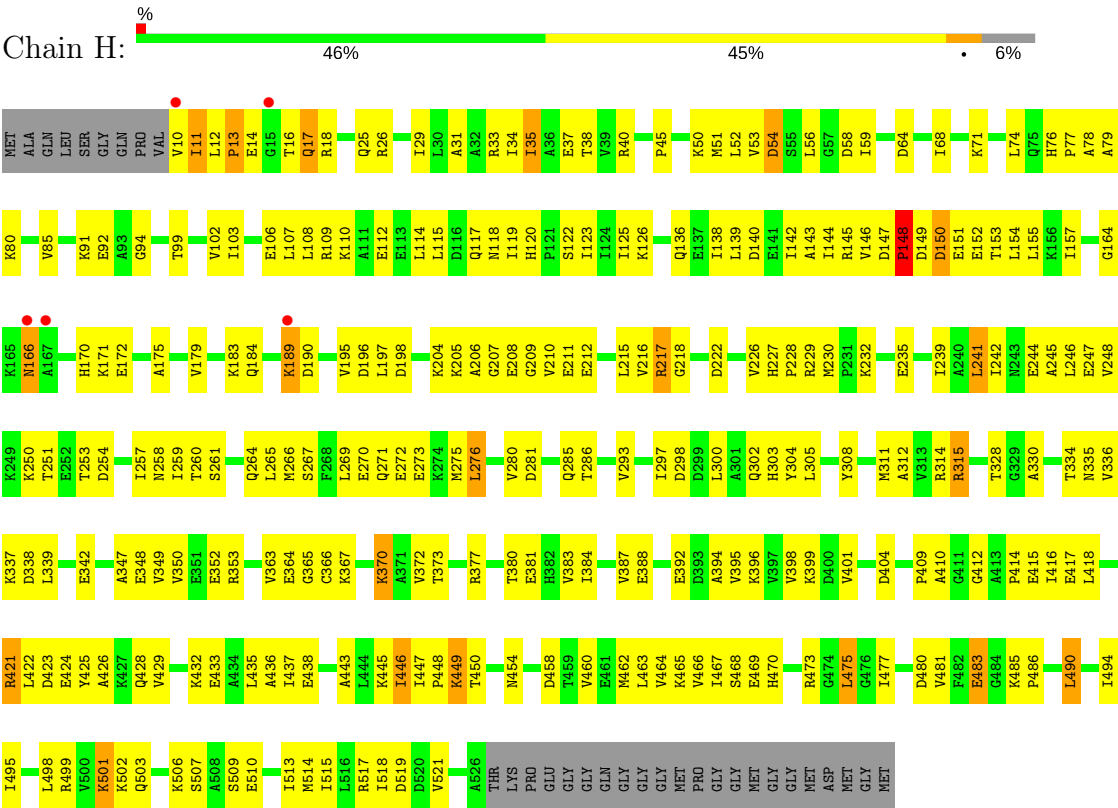




• Molecule 1: Thermosome alpha subunit



• Molecule 1: Thermosome alpha subunit



4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	207.43Å 236.23Å 234.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	73.62 – 3.00 155.87 – 3.00	Depositor EDS
% Data completeness (in resolution range)	98.0 (73.62-3.00) 98.1 (155.87-3.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.12	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.93 (at 3.01Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.251 , 0.288 0.240 , 0.279	Depositor DCC
R_{free} test set	5646 reflections (5.03%)	DCC
Wilson B-factor (Å ²)	42.2	Xtriage
Anisotropy	0.386	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 32.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.25$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	31751	wwPDB-VP
Average B, all atoms (Å ²)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.93% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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

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	0.43	0/3976	0.65	1/5358 (0.0%)
1	B	0.43	0/3976	0.66	0/5358
1	C	0.43	0/3976	0.65	1/5358 (0.0%)
1	D	0.42	0/3976	0.64	1/5358 (0.0%)
1	E	0.42	0/3976	0.66	0/5358
1	F	0.42	0/3976	0.65	0/5358
1	G	0.41	0/3976	0.64	0/5358
1	H	0.41	0/3976	0.64	0/5358
All	All	0.42	0/31808	0.65	3/42864 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
1	E	0	1
All	All	0	2

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	207	GLY	O-C-N	-8.59	108.95	122.70
1	D	238	LYS	N-CA-C	-5.90	95.08	111.00
1	A	164	GLY	N-CA-C	-5.45	99.48	113.10

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	207	GLY	Mainchain
1	E	207	GLY	Mainchain

5.2 Too-close contacts ⓘ

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	3941	0	4122	274	0
1	B	3941	0	4122	254	0
1	C	3941	0	4122	271	0
1	D	3941	0	4122	296	0
1	E	3941	0	4122	333	0
1	F	3941	0	4122	270	0
1	G	3941	0	4122	248	0
1	H	3941	0	4122	268	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	G	1	0	0	0	0
2	H	1	0	0	0	0
3	A	27	0	12	0	0
3	B	27	0	12	1	0
3	C	27	0	12	0	0
3	D	27	0	12	0	0
3	E	27	0	12	0	0
3	F	27	0	12	1	0
3	G	27	0	12	2	0
3	H	27	0	12	1	0
All	All	31751	0	33072	2088	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 32.

The worst 5 of 2088 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:D:380:THR:HG22	1:D:383:VAL:HG23	1.26	1.15
1:H:380:THR:HG22	1:H:383:VAL:HG23	1.27	1.14
1:E:380:THR:HG22	1:E:383:VAL:HG23	1.23	1.11
1:A:380:THR:HG22	1:A:383:VAL:HG23	1.10	1.09
1:B:380:THR:HG22	1:B:383:VAL:HG23	1.34	1.09

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	515/548 (94%)	468 (91%)	34 (7%)	13 (2%)	6	32
1	B	515/548 (94%)	464 (90%)	41 (8%)	10 (2%)	9	41
1	C	515/548 (94%)	463 (90%)	42 (8%)	10 (2%)	9	41
1	D	515/548 (94%)	459 (89%)	46 (9%)	10 (2%)	9	41
1	E	515/548 (94%)	468 (91%)	38 (7%)	9 (2%)	11	44
1	F	515/548 (94%)	467 (91%)	36 (7%)	12 (2%)	7	35
1	G	515/548 (94%)	452 (88%)	52 (10%)	11 (2%)	8	38
1	H	515/548 (94%)	459 (89%)	47 (9%)	9 (2%)	11	44
All	All	4120/4384 (94%)	3700 (90%)	336 (8%)	84 (2%)	9	39

5 of 84 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	148	PRO
1	A	367	LYS
1	B	167	ALA
1	B	248	VAL
1	C	148	PRO

5.3.2 Protein sidechains ⓘ

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	422/441 (96%)	389 (92%)	33 (8%)	15	47
1	B	422/441 (96%)	391 (93%)	31 (7%)	16	50
1	C	422/441 (96%)	388 (92%)	34 (8%)	14	45
1	D	422/441 (96%)	387 (92%)	35 (8%)	13	44
1	E	422/441 (96%)	392 (93%)	30 (7%)	17	52
1	F	422/441 (96%)	387 (92%)	35 (8%)	13	44
1	G	422/441 (96%)	394 (93%)	28 (7%)	19	55
1	H	422/441 (96%)	393 (93%)	29 (7%)	18	53
All	All	3376/3528 (96%)	3121 (92%)	255 (8%)	15	48

5 of 255 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	276	LEU
1	E	148	PRO
1	H	171	LYS
1	D	315	ARG
1	D	490	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 102 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	184	GLN
1	E	166	ASN
1	H	136	GLN
1	D	258	ASN
1	E	17	GLN

5.3.3 RNA ⓘ

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](#)

Of 15 ligands modelled in this entry, 7 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
3	ADP	A	1528	2	25,29,29	1.56	6 (24%)	24,45,45	2.63	2 (8%)
3	ADP	B	2528	2	25,29,29	1.48	6 (24%)	24,45,45	2.63	2 (8%)
3	ADP	C	3528	2	25,29,29	1.45	4 (16%)	24,45,45	2.63	2 (8%)
3	ADP	D	4528	2	25,29,29	1.56	4 (16%)	24,45,45	2.67	2 (8%)
3	ADP	E	5528	2	25,29,29	1.48	5 (20%)	24,45,45	2.61	2 (8%)
3	ADP	F	6528	-	25,29,29	1.55	6 (24%)	24,45,45	2.62	2 (8%)
3	ADP	G	7528	2	25,29,29	1.54	6 (24%)	24,45,45	2.63	2 (8%)
3	ADP	H	8528	2	25,29,29	1.54	6 (24%)	24,45,45	2.65	2 (8%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ADP	A	1528	2	-	0/12/32/32	0/3/3/3
3	ADP	B	2528	2	-	0/12/32/32	0/3/3/3
3	ADP	C	3528	2	-	0/12/32/32	0/3/3/3
3	ADP	D	4528	2	-	0/12/32/32	0/3/3/3
3	ADP	E	5528	2	-	0/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ADP	F	6528	-	-	0/12/32/32	0/3/3/3
3	ADP	G	7528	2	-	0/12/32/32	0/3/3/3
3	ADP	H	8528	2	-	0/12/32/32	0/3/3/3

The worst 5 of 43 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	7528	ADP	C2'-C1'	-2.91	1.49	1.53
3	F	6528	ADP	C5-N7	-2.42	1.31	1.39
3	A	1528	ADP	C5-N7	-2.40	1.31	1.39
3	B	2528	ADP	C2'-C1'	-2.37	1.49	1.53
3	H	8528	ADP	C5-N7	-2.31	1.31	1.39

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	H	8528	ADP	N3-C2-N1	-12.06	118.35	128.86
3	D	4528	ADP	N3-C2-N1	-12.04	118.37	128.86
3	A	1528	ADP	N3-C2-N1	-11.95	118.45	128.86
3	G	7528	ADP	N3-C2-N1	-11.94	118.46	128.86
3	B	2528	ADP	N3-C2-N1	-11.94	118.46	128.86

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	2528	ADP	1	0
3	F	6528	ADP	1	0
3	G	7528	ADP	2	0
3	H	8528	ADP	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

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

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	517/548 (94%)	-0.17	4 (0%) 86 64	10, 30, 62, 102	0
1	B	517/548 (94%)	-0.12	5 (0%) 82 58	8, 28, 62, 105	0
1	C	517/548 (94%)	-0.10	5 (0%) 82 58	16, 40, 70, 100	0
1	D	517/548 (94%)	-0.02	8 (1%) 74 47	13, 41, 70, 102	0
1	E	517/548 (94%)	-0.06	6 (1%) 79 53	16, 41, 67, 108	0
1	F	517/548 (94%)	-0.08	8 (1%) 74 47	14, 34, 65, 109	0
1	G	517/548 (94%)	-0.08	6 (1%) 79 53	12, 35, 65, 98	0
1	H	517/548 (94%)	-0.14	5 (0%) 82 58	8, 29, 56, 96	0
All	All	4136/4384 (94%)	-0.10	47 (1%) 80 55	8, 35, 66, 109	0

The worst 5 of 47 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	10	VAL	10.7
1	E	526	ALA	10.3
1	D	526	ALA	9.3
1	A	526	ALA	8.2
1	C	10	VAL	7.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å ²)	Q<0.9
3	ADP	A	1528	27/27	0.95	0.20	0.00	21,33,39,41	0
3	ADP	H	8528	27/27	0.95	0.21	-0.14	26,28,31,32	0
3	ADP	G	7528	27/27	0.94	0.21	-0.21	30,39,44,45	0
3	ADP	F	6528	27/27	0.93	0.21	-0.22	21,27,34,35	0
3	ADP	B	2528	27/27	0.95	0.19	-0.23	17,24,28,29	0
3	ADP	D	4528	27/27	0.94	0.20	-0.32	32,37,44,45	0
3	ADP	C	3528	27/27	0.95	0.20	-0.38	32,35,37,38	0
3	ADP	E	5528	27/27	0.95	0.18	-0.47	30,32,35,36	0
2	MG	B	2527	1/1	0.97	0.21	-	10,10,10,10	0
2	MG	H	8527	1/1	0.91	0.21	-	25,25,25,25	0
2	MG	A	1527	1/1	0.84	0.18	-	15,15,15,15	0
2	MG	C	3527	1/1	0.88	0.16	-	18,18,18,18	0
2	MG	E	5527	1/1	0.94	0.20	-	14,14,14,14	0
2	MG	D	4527	1/1	0.97	0.17	-	17,17,17,17	0
2	MG	G	6527	1/1	0.97	0.16	-	16,16,16,16	0

6.5 Other polymers

There are no such residues in this entry.