W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

wwPDB X-ray Structure Validation Summary Report (i)

Aug 7, 2023 – 03:56 PM EDT

PDB ID	:	6BBF
Title	:	The CRAC channel Orai in an open conformation; H206A gain-of-function mutation
Authors	:	Long, S.B.; Hou, X.; Burstein, S.
Deposited on	:	2017-10-18
Resolution	:	6.71 Å(reported)

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

|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 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 6.71 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.
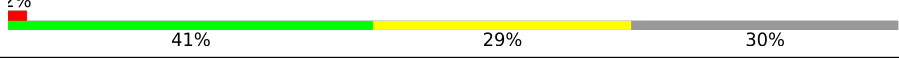

Percentile relative to all X-ray structures
Percentile relative to X-ray structures of similar resolution
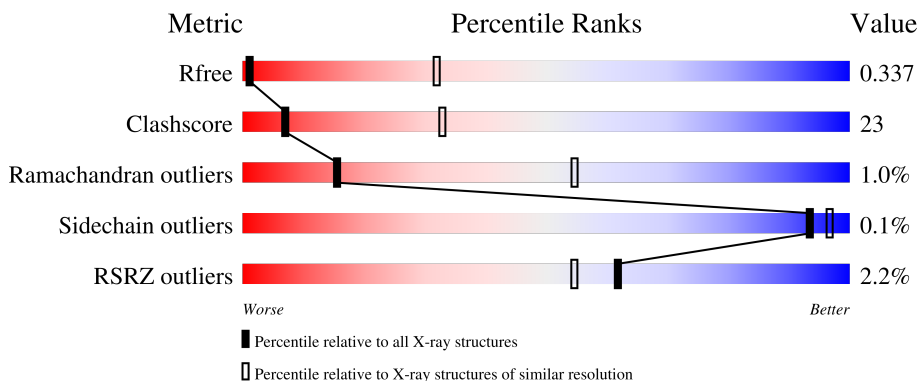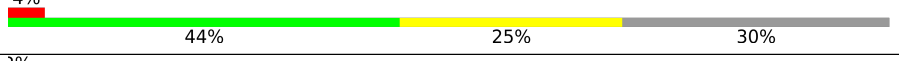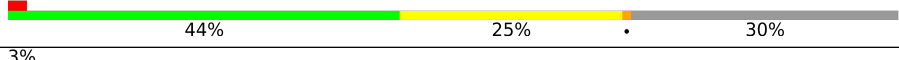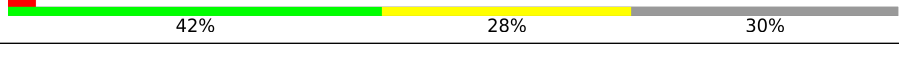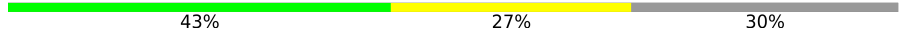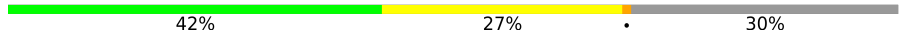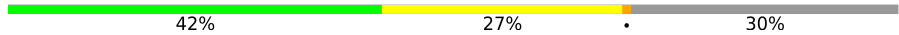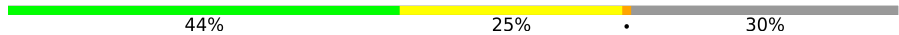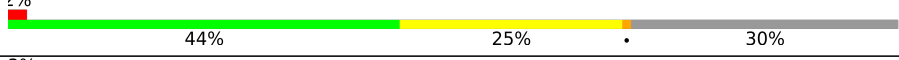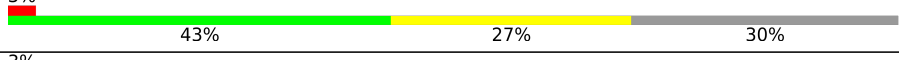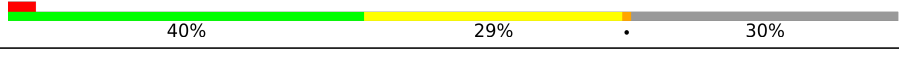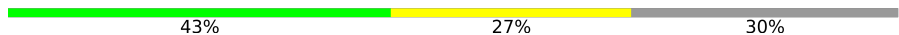
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1002 (9.50-3.90)
Clashscore	141614	1066 (9.50-3.90)
Ramachandran outliers	138981	1000 (9.50-3.90)
Sidechain outliers	138945	1000 (9.50-3.86)
RSRZ outliers	127900	1004 (9.50-3.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=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 <=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	214	45% 24% 30%
1	B	214	48% 21% 30%
1	C	214	42% 28% 30%
1	D	214	44% 25% • 30%
1	E	214	49% 21% 30%

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Mol	Chain	Length	Quality of chain
1	F	214	47% 23% 30%
1	G	214	5% 46% 23% 30%
1	H	214	46% 23% 30%
1	I	214	2% 41% 29% 30%
1	J	214	4% 44% 25% 30%
1	K	214	2% 48% 21% 30%
1	L	214	2% 44% 25% 30%
1	M	214	3% 42% 28% 30%
1	N	214	43% 27% 30%
1	O	214	43% 26% 30%
1	P	214	42% 27% 30%
1	Q	214	42% 27% 30%
1	R	214	44% 25% 30%
1	S	214	3% 42% 27% 30%
1	T	214	5% 43% 27% 30%
1	U	214	2% 44% 25% 30%
1	V	214	3% 43% 27% 30%
1	W	214	3% 40% 29% 30%
1	X	214	43% 27% 30%

2 Entry composition ⓘ

There is only 1 type of molecule in this entry. The entry contains 27120 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 Calcium release-activated calcium channel protein 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	B	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	C	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	D	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	E	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	F	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	G	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	H	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	I	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	J	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	K	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	L	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	M	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	N	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	O	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	P	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	R	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	S	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	T	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	U	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	V	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	W	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			
1	X	150	Total	C	N	O	S	0	0	0
			1130	753	176	190	11			

There are 192 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	206	ALA	HIS	engineered mutation	UNP Q9U6B8
A	224	SER	CYS	engineered mutation	UNP Q9U6B8
A	283	THR	CYS	engineered mutation	UNP Q9U6B8
A	342	GLU	-	expression tag	UNP Q9U6B8
A	343	GLY	-	expression tag	UNP Q9U6B8
A	344	GLU	-	expression tag	UNP Q9U6B8
A	345	GLU	-	expression tag	UNP Q9U6B8
A	346	PHE	-	expression tag	UNP Q9U6B8
B	206	ALA	HIS	engineered mutation	UNP Q9U6B8
B	224	SER	CYS	engineered mutation	UNP Q9U6B8
B	283	THR	CYS	engineered mutation	UNP Q9U6B8
B	342	GLU	-	expression tag	UNP Q9U6B8
B	343	GLY	-	expression tag	UNP Q9U6B8
B	344	GLU	-	expression tag	UNP Q9U6B8
B	345	GLU	-	expression tag	UNP Q9U6B8
B	346	PHE	-	expression tag	UNP Q9U6B8
C	206	ALA	HIS	engineered mutation	UNP Q9U6B8
C	224	SER	CYS	engineered mutation	UNP Q9U6B8
C	283	THR	CYS	engineered mutation	UNP Q9U6B8
C	342	GLU	-	expression tag	UNP Q9U6B8
C	343	GLY	-	expression tag	UNP Q9U6B8
C	344	GLU	-	expression tag	UNP Q9U6B8
C	345	GLU	-	expression tag	UNP Q9U6B8

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Chain	Residue	Modelled	Actual	Comment	Reference
C	346	PHE	-	expression tag	UNP Q9U6B8
D	206	ALA	HIS	engineered mutation	UNP Q9U6B8
D	224	SER	CYS	engineered mutation	UNP Q9U6B8
D	283	THR	CYS	engineered mutation	UNP Q9U6B8
D	342	GLU	-	expression tag	UNP Q9U6B8
D	343	GLY	-	expression tag	UNP Q9U6B8
D	344	GLU	-	expression tag	UNP Q9U6B8
D	345	GLU	-	expression tag	UNP Q9U6B8
D	346	PHE	-	expression tag	UNP Q9U6B8
E	206	ALA	HIS	engineered mutation	UNP Q9U6B8
E	224	SER	CYS	engineered mutation	UNP Q9U6B8
E	283	THR	CYS	engineered mutation	UNP Q9U6B8
E	342	GLU	-	expression tag	UNP Q9U6B8
E	343	GLY	-	expression tag	UNP Q9U6B8
E	344	GLU	-	expression tag	UNP Q9U6B8
E	345	GLU	-	expression tag	UNP Q9U6B8
E	346	PHE	-	expression tag	UNP Q9U6B8
F	206	ALA	HIS	engineered mutation	UNP Q9U6B8
F	224	SER	CYS	engineered mutation	UNP Q9U6B8
F	283	THR	CYS	engineered mutation	UNP Q9U6B8
F	342	GLU	-	expression tag	UNP Q9U6B8
F	343	GLY	-	expression tag	UNP Q9U6B8
F	344	GLU	-	expression tag	UNP Q9U6B8
F	345	GLU	-	expression tag	UNP Q9U6B8
F	346	PHE	-	expression tag	UNP Q9U6B8
G	206	ALA	HIS	engineered mutation	UNP Q9U6B8
G	224	SER	CYS	engineered mutation	UNP Q9U6B8
G	283	THR	CYS	engineered mutation	UNP Q9U6B8
G	342	GLU	-	expression tag	UNP Q9U6B8
G	343	GLY	-	expression tag	UNP Q9U6B8
G	344	GLU	-	expression tag	UNP Q9U6B8
G	345	GLU	-	expression tag	UNP Q9U6B8
G	346	PHE	-	expression tag	UNP Q9U6B8
H	206	ALA	HIS	engineered mutation	UNP Q9U6B8
H	224	SER	CYS	engineered mutation	UNP Q9U6B8
H	283	THR	CYS	engineered mutation	UNP Q9U6B8
H	342	GLU	-	expression tag	UNP Q9U6B8
H	343	GLY	-	expression tag	UNP Q9U6B8
H	344	GLU	-	expression tag	UNP Q9U6B8
H	345	GLU	-	expression tag	UNP Q9U6B8
H	346	PHE	-	expression tag	UNP Q9U6B8
I	206	ALA	HIS	engineered mutation	UNP Q9U6B8

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Chain	Residue	Modelled	Actual	Comment	Reference
I	224	SER	CYS	engineered mutation	UNP Q9U6B8
I	283	THR	CYS	engineered mutation	UNP Q9U6B8
I	342	GLU	-	expression tag	UNP Q9U6B8
I	343	GLY	-	expression tag	UNP Q9U6B8
I	344	GLU	-	expression tag	UNP Q9U6B8
I	345	GLU	-	expression tag	UNP Q9U6B8
I	346	PHE	-	expression tag	UNP Q9U6B8
J	206	ALA	HIS	engineered mutation	UNP Q9U6B8
J	224	SER	CYS	engineered mutation	UNP Q9U6B8
J	283	THR	CYS	engineered mutation	UNP Q9U6B8
J	342	GLU	-	expression tag	UNP Q9U6B8
J	343	GLY	-	expression tag	UNP Q9U6B8
J	344	GLU	-	expression tag	UNP Q9U6B8
J	345	GLU	-	expression tag	UNP Q9U6B8
J	346	PHE	-	expression tag	UNP Q9U6B8
K	206	ALA	HIS	engineered mutation	UNP Q9U6B8
K	224	SER	CYS	engineered mutation	UNP Q9U6B8
K	283	THR	CYS	engineered mutation	UNP Q9U6B8
K	342	GLU	-	expression tag	UNP Q9U6B8
K	343	GLY	-	expression tag	UNP Q9U6B8
K	344	GLU	-	expression tag	UNP Q9U6B8
K	345	GLU	-	expression tag	UNP Q9U6B8
K	346	PHE	-	expression tag	UNP Q9U6B8
L	206	ALA	HIS	engineered mutation	UNP Q9U6B8
L	224	SER	CYS	engineered mutation	UNP Q9U6B8
L	283	THR	CYS	engineered mutation	UNP Q9U6B8
L	342	GLU	-	expression tag	UNP Q9U6B8
L	343	GLY	-	expression tag	UNP Q9U6B8
L	344	GLU	-	expression tag	UNP Q9U6B8
L	345	GLU	-	expression tag	UNP Q9U6B8
L	346	PHE	-	expression tag	UNP Q9U6B8
M	206	ALA	HIS	engineered mutation	UNP Q9U6B8
M	224	SER	CYS	engineered mutation	UNP Q9U6B8
M	283	THR	CYS	engineered mutation	UNP Q9U6B8
M	342	GLU	-	expression tag	UNP Q9U6B8
M	343	GLY	-	expression tag	UNP Q9U6B8
M	344	GLU	-	expression tag	UNP Q9U6B8
M	345	GLU	-	expression tag	UNP Q9U6B8
M	346	PHE	-	expression tag	UNP Q9U6B8
N	206	ALA	HIS	engineered mutation	UNP Q9U6B8
N	224	SER	CYS	engineered mutation	UNP Q9U6B8
N	283	THR	CYS	engineered mutation	UNP Q9U6B8

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Chain	Residue	Modelled	Actual	Comment	Reference
N	342	GLU	-	expression tag	UNP Q9U6B8
N	343	GLY	-	expression tag	UNP Q9U6B8
N	344	GLU	-	expression tag	UNP Q9U6B8
N	345	GLU	-	expression tag	UNP Q9U6B8
N	346	PHE	-	expression tag	UNP Q9U6B8
O	206	ALA	HIS	engineered mutation	UNP Q9U6B8
O	224	SER	CYS	engineered mutation	UNP Q9U6B8
O	283	THR	CYS	engineered mutation	UNP Q9U6B8
O	342	GLU	-	expression tag	UNP Q9U6B8
O	343	GLY	-	expression tag	UNP Q9U6B8
O	344	GLU	-	expression tag	UNP Q9U6B8
O	345	GLU	-	expression tag	UNP Q9U6B8
O	346	PHE	-	expression tag	UNP Q9U6B8
P	206	ALA	HIS	engineered mutation	UNP Q9U6B8
P	224	SER	CYS	engineered mutation	UNP Q9U6B8
P	283	THR	CYS	engineered mutation	UNP Q9U6B8
P	342	GLU	-	expression tag	UNP Q9U6B8
P	343	GLY	-	expression tag	UNP Q9U6B8
P	344	GLU	-	expression tag	UNP Q9U6B8
P	345	GLU	-	expression tag	UNP Q9U6B8
P	346	PHE	-	expression tag	UNP Q9U6B8
Q	206	ALA	HIS	engineered mutation	UNP Q9U6B8
Q	224	SER	CYS	engineered mutation	UNP Q9U6B8
Q	283	THR	CYS	engineered mutation	UNP Q9U6B8
Q	342	GLU	-	expression tag	UNP Q9U6B8
Q	343	GLY	-	expression tag	UNP Q9U6B8
Q	344	GLU	-	expression tag	UNP Q9U6B8
Q	345	GLU	-	expression tag	UNP Q9U6B8
Q	346	PHE	-	expression tag	UNP Q9U6B8
R	206	ALA	HIS	engineered mutation	UNP Q9U6B8
R	224	SER	CYS	engineered mutation	UNP Q9U6B8
R	283	THR	CYS	engineered mutation	UNP Q9U6B8
R	342	GLU	-	expression tag	UNP Q9U6B8
R	343	GLY	-	expression tag	UNP Q9U6B8
R	344	GLU	-	expression tag	UNP Q9U6B8
R	345	GLU	-	expression tag	UNP Q9U6B8
R	346	PHE	-	expression tag	UNP Q9U6B8
S	206	ALA	HIS	engineered mutation	UNP Q9U6B8
S	224	SER	CYS	engineered mutation	UNP Q9U6B8
S	283	THR	CYS	engineered mutation	UNP Q9U6B8
S	342	GLU	-	expression tag	UNP Q9U6B8
S	343	GLY	-	expression tag	UNP Q9U6B8

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Chain	Residue	Modelled	Actual	Comment	Reference
S	344	GLU	-	expression tag	UNP Q9U6B8
S	345	GLU	-	expression tag	UNP Q9U6B8
S	346	PHE	-	expression tag	UNP Q9U6B8
T	206	ALA	HIS	engineered mutation	UNP Q9U6B8
T	224	SER	CYS	engineered mutation	UNP Q9U6B8
T	283	THR	CYS	engineered mutation	UNP Q9U6B8
T	342	GLU	-	expression tag	UNP Q9U6B8
T	343	GLY	-	expression tag	UNP Q9U6B8
T	344	GLU	-	expression tag	UNP Q9U6B8
T	345	GLU	-	expression tag	UNP Q9U6B8
T	346	PHE	-	expression tag	UNP Q9U6B8
U	206	ALA	HIS	engineered mutation	UNP Q9U6B8
U	224	SER	CYS	engineered mutation	UNP Q9U6B8
U	283	THR	CYS	engineered mutation	UNP Q9U6B8
U	342	GLU	-	expression tag	UNP Q9U6B8
U	343	GLY	-	expression tag	UNP Q9U6B8
U	344	GLU	-	expression tag	UNP Q9U6B8
U	345	GLU	-	expression tag	UNP Q9U6B8
U	346	PHE	-	expression tag	UNP Q9U6B8
V	206	ALA	HIS	engineered mutation	UNP Q9U6B8
V	224	SER	CYS	engineered mutation	UNP Q9U6B8
V	283	THR	CYS	engineered mutation	UNP Q9U6B8
V	342	GLU	-	expression tag	UNP Q9U6B8
V	343	GLY	-	expression tag	UNP Q9U6B8
V	344	GLU	-	expression tag	UNP Q9U6B8
V	345	GLU	-	expression tag	UNP Q9U6B8
V	346	PHE	-	expression tag	UNP Q9U6B8
W	206	ALA	HIS	engineered mutation	UNP Q9U6B8
W	224	SER	CYS	engineered mutation	UNP Q9U6B8
W	283	THR	CYS	engineered mutation	UNP Q9U6B8
W	342	GLU	-	expression tag	UNP Q9U6B8
W	343	GLY	-	expression tag	UNP Q9U6B8
W	344	GLU	-	expression tag	UNP Q9U6B8
W	345	GLU	-	expression tag	UNP Q9U6B8
W	346	PHE	-	expression tag	UNP Q9U6B8
X	206	ALA	HIS	engineered mutation	UNP Q9U6B8
X	224	SER	CYS	engineered mutation	UNP Q9U6B8
X	283	THR	CYS	engineered mutation	UNP Q9U6B8
X	342	GLU	-	expression tag	UNP Q9U6B8
X	343	GLY	-	expression tag	UNP Q9U6B8
X	344	GLU	-	expression tag	UNP Q9U6B8
X	345	GLU	-	expression tag	UNP Q9U6B8

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Chain	Residue	Modelled	Actual	Comment	Reference
X	346	PHE	-	expression tag	UNP Q9U6B8

3 Residue-property plots ⓘ

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

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain A:
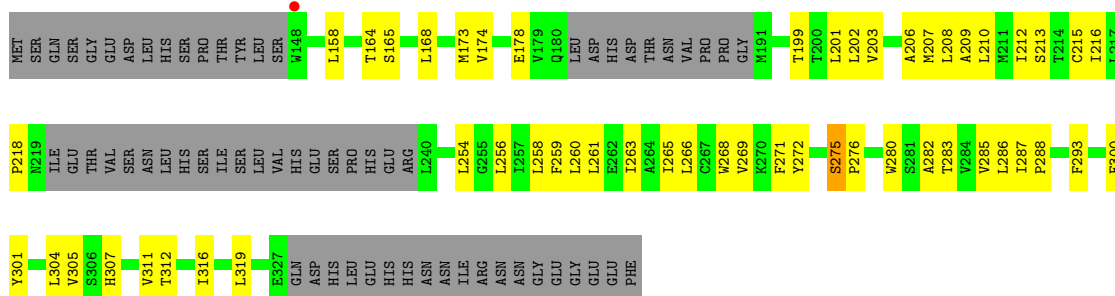
• Molecule 1: Calcium release-activated calcium channel protein 1

Chain B:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain C:

I292 F293 F300 Y301 L304 V305 S306 H307 K308 Y309 E310 V311 T312 I316 R317 E318 L319 E320 M321 L322 Q325 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain D:　　　　　　　44%　　　　　　　　25%　　　•　　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 M173 V174 E178 V179 Q180 LEU HIS ASP THR ASN VAL PRO PRO GLY M191 L192 T199 L202 V203 A206 M207 L208 A209 L210 M211 I212 S213 T214 C215

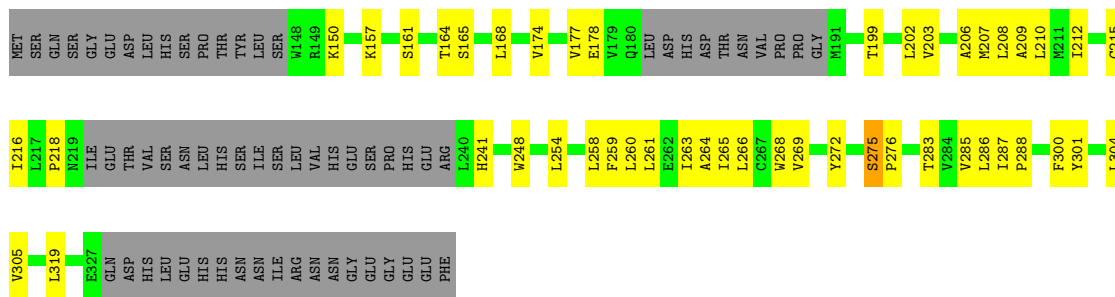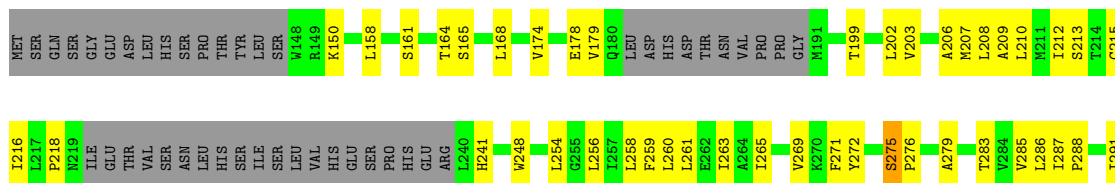I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 W248 L254 G255 L256 I257 L258 F259 L260 L261 E262 I263 A264 I265 W268 V269 Y272 S275 P276 W280 S281 A282 T283 V284 V285 L286 I287 P288 I291

I292 F293 F300 Y301 L304 V305 K308 Y309 T312 I316 L319 K323 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain E:　　　　　　　49%　　　　　　　21%　　　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 S161 T164 S165 L168 V174 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO PRO GLY M191 T199 L202 V203 A206 M207 L208 A209 L210 M211 I212 C215 I216 L217 P218 N219 ILE

GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 W248 L254 L258 F259 L260 L261 E262 I263 A264 I265 V269 Y272 S275 P276 A282 T283 V284 V285 L286 I287 P288 I292 F300 Y301 L304 V305 S306 H307 E310

V311 T312 I316 L319 E320 M321 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain F:　　　　　　　47%　　　　　　　23%　　　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 M173 V174 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO PRO GLY M191 T199 I200 L201 L202 V203 A206 M207 L208 A209 L210 M211 I212 S213 T214 C215

I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 W248 L254 G255 L256 I257 L258 F259 L260 L261 E262 I263 A264 I265 W268 V269 Y272 S275 P276 W280 T283 V284 V285 L286 I287 P288 F293

F300 Y301 L304 V305 T312 I316 L319 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain G:　5%　　　　　　46%　　　　　　23%　　•　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 V174 V177 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO GLY M191 L192 I193 A196 I197 C198 T199 L202 V203 A206 M207 L208 A209 L210 M211

• Molecule 1: Calcium release-activated calcium channel protein 1
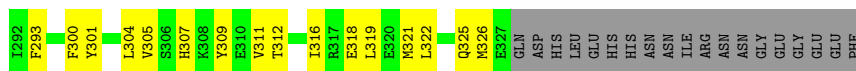
Chain H:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain I:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain J:

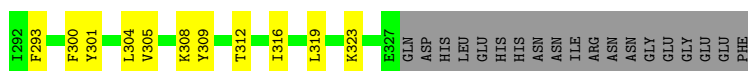• Molecule 1: Calcium release-activated calcium channel protein 1

Chain K:

• Molecule 1: Calcium release-activated calcium channel protein 1
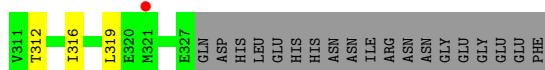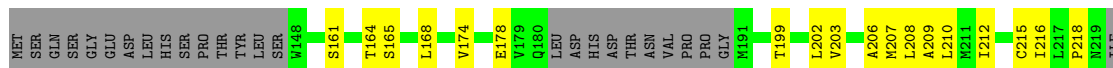
Chain L:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain M:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain N:

Y301 L304 V305 S306 H307 K308 Y309 E310 V311 T312 V313 S314 G315 I316 R317 E318 L319 L322 K323 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLU GLY GLU GLU PHE

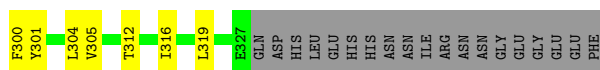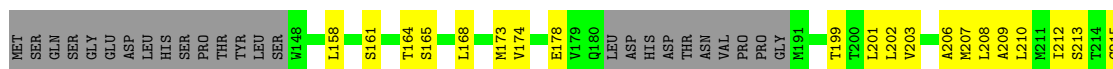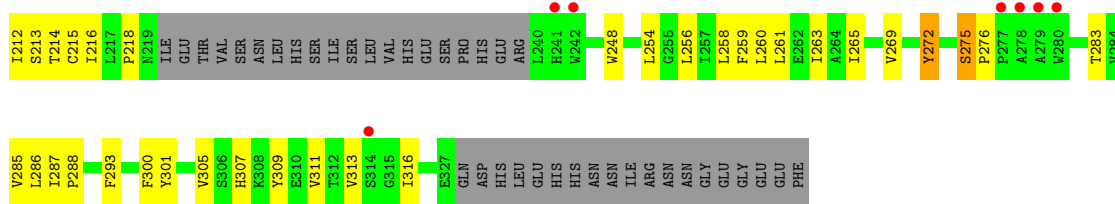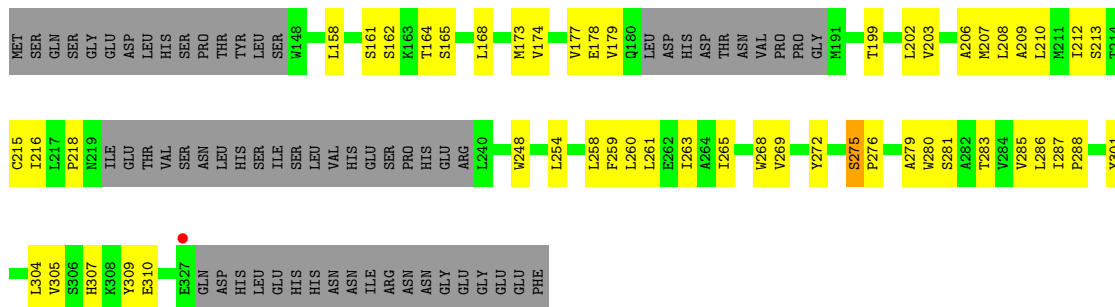• Molecule 1: Calcium release-activated calcium channel protein 1

Chain O:

MET SER GLN GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 V174 V177 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO GLY M191 T199 L202 V203 A206 M207 L208 A209 L210 M211 I212 S213 T214 C215 I216

L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 W248 L254 G255 I256 I257 L258 F259 L260 L261 E262 I263 A264 I265 L266 V269 Y272 S275 P276 S281 A282 T283 V284 V285 L286 I287 P288 F293 F300

Y301 L304 V305 Y309 E310 V311 T312 V313 S314 G315 I316 M321 L322 K323 E324 Q325 M326 E327 GLN ASP HIS GLU HIS ASN ASN ILE ARG ASN ASN GLY GLU GLU GLY GLU GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain P:

MET SER GLN GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 R149 K150 L158 S161 T164 S165 L168 V174 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO GLY M191 T199 T200 L201 L202 V203 A206 M207 L208 A209 L210 M211 I212 S213 T214

C215 I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 H241 W248 L254 G255 I256 I257 L258 F259 L260 L261 E262 I263 A264 I265 W268 V269 Y272 S275 P276 W280 S281 A282 T283 V284 V285 L286 I287 P288

I292 F293 F300 Y301 V305 Y309 T312 V313 I316 R317 E318 L319 E320 M321 L322 E326 E327 GLN ASP HIS GLU HIS ASN ASN ILE ARG ASN ASN GLY GLU GLU GLY GLU GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain Q:

MET SER GLN GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 M173 V174 V177 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO GLY M191 F195 T199 T200 L201 L202 V203 A206 M207 L208 A209 L210 M211 I212

S213 T214 C215 I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 H241 W242 E245 W248 L254 G255 I256 I257 L258 F259 L260 L261 E262 I263 A264 I265 V269 Y272 S275 P276 T283 V284 V285 L286 I287

P288 F293 F300 Y301 L304 V305 S306 H307 V311 T312 V313 I316 R317 E318 L319 E320 M321 L322 Q325 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLU GLY GLU GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain R:

MET SER GLN GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S161 T164 S165 L168 V174 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO GLY M191 I197 C198 T199 T200 L201 L202 V203 A206 M207 L208 A209 L210 M211 I212 S213 T214

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain S:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain T:

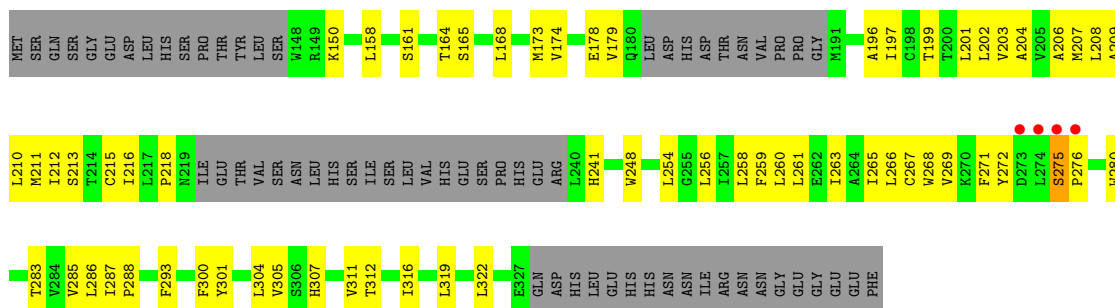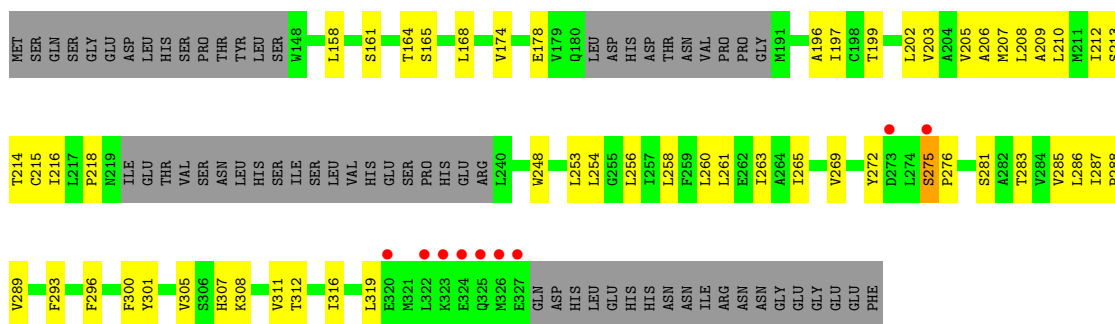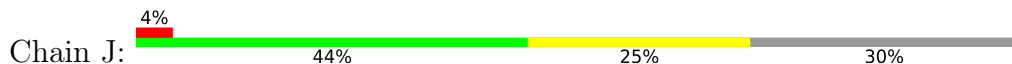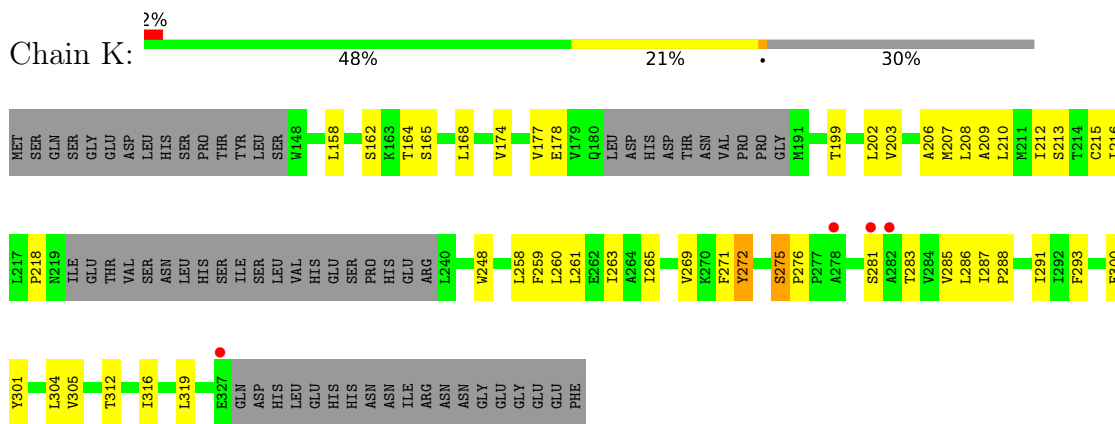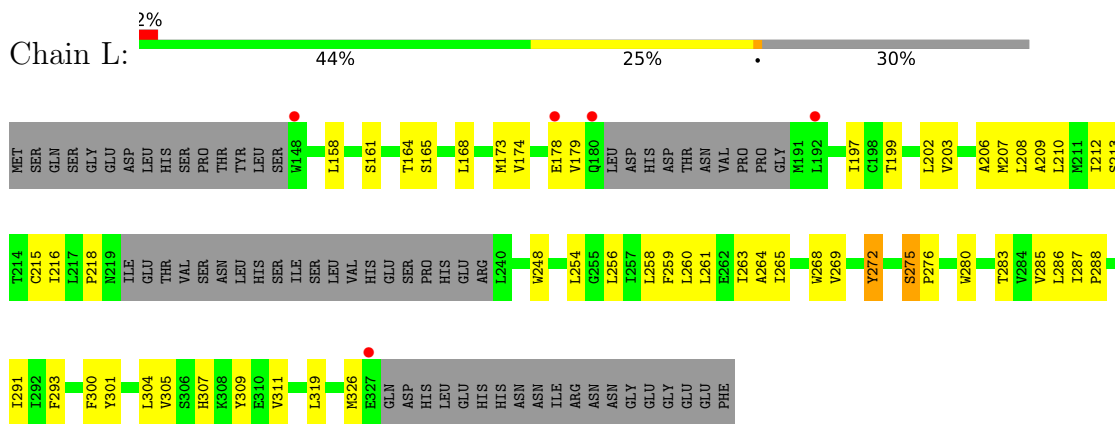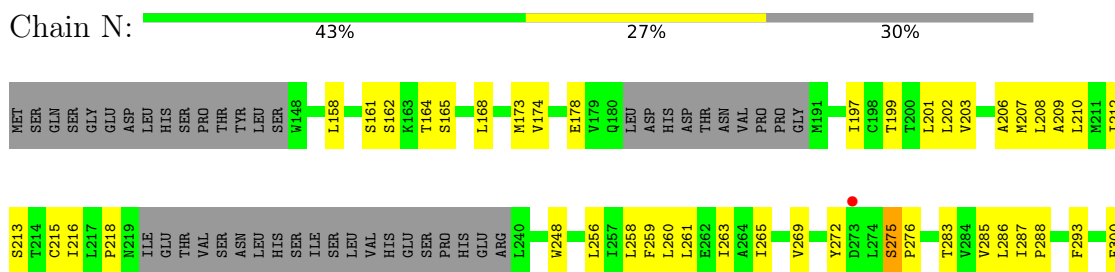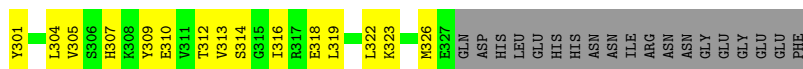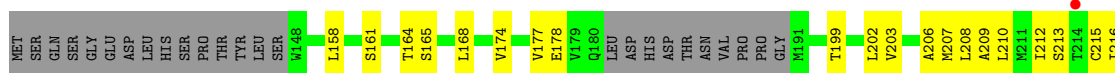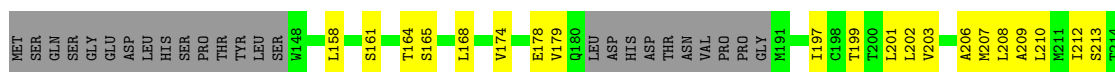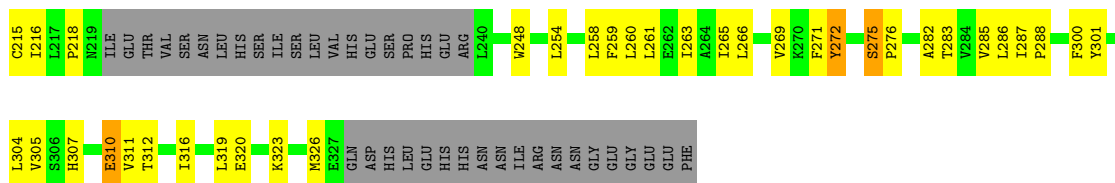• Molecule 1: Calcium release-activated calcium channel protein 1

Chain U:

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain V:

3%

43%　　　27%　　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 L158 S162 K163 T164 S165 L168 M173 V174 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO PRO GLY M191 A196 I197 C198 T199 T200 L201 L202 V203 A206 M207 L208 A209 L210 M211 I212

S213 T214 C215 I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 L254 G255 L256 I257 L258 F259 L260 L261 E262 I263 A264 I265 L266 V269 K270 F271 Y272 D273 L274 S275 P276 T283 V284 V285 L286 I287 P288 I291

I292 F293 F300 Y301 V305 S306 H307 V311 T312 I316 R317 E320 M321 Q325 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

• Molecule 1: Calcium release-activated calcium channel protein 1

Chain W:

3%

40%　　　29%　　•　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 R149 K150 L158 S161 S162 K163 T164 S165 L168 M173 V174 V177 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO PRO GLY M191 F195 T199 L202 V203 A206 M207 L208 A209 L210

M211 I212 S213 T214 C215 I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG L240 H241 W242 E245 W248 L254 L258 F259 L260 L261 E262 I263 A264 I265 V269 K270 F271 Y272 S275 P276 A279 W280 S281 A282

T283 V284 V285 L286 I287 P288 F293 F300 Y301 R302 S303 L304 V305 S306 H307 K308 Y309 E310 V311 T312 V313 S314 R317 E318 L319 E320 M321 L322 K323 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE
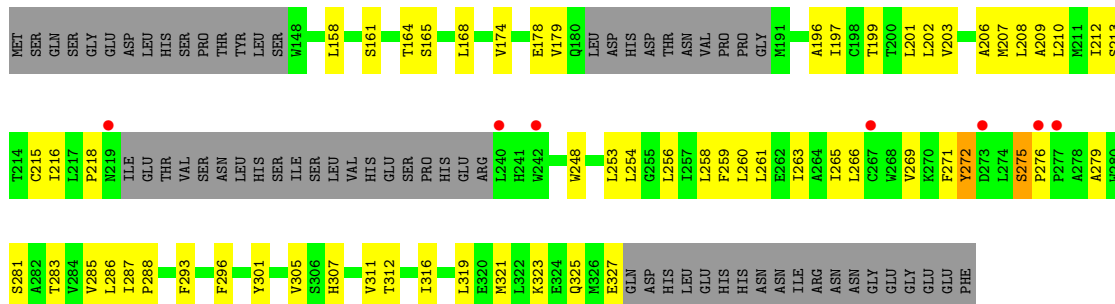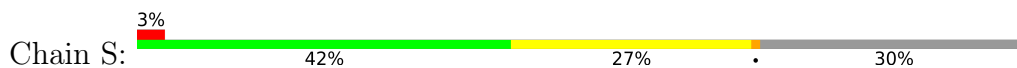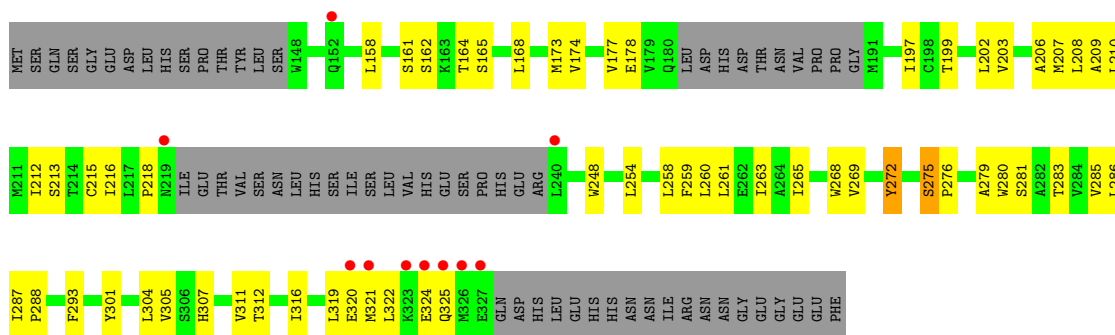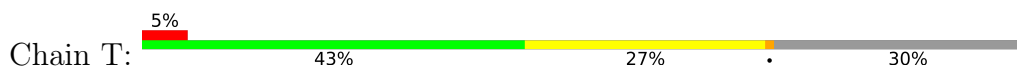
• Molecule 1: Calcium release-activated calcium channel protein 1

Chain X:

43%　　　27%　　　30%

MET SER GLN SER GLY GLU ASP LEU HIS SER PRO THR TYR LEU SER W148 K157 L158 S161 T164 S165 L168 M173 V174 A175 M176 V177 E178 V179 Q180 LEU ASP HIS ASP THR ASN VAL PRO PRO GLY M191 I197 C198 T199 T200 L201 L202 V203 A206 M207 L208 A209 L210

M211 I212 S213 T214 C215 I216 L217 P218 N219 ILE GLU THR VAL SER ASN LEU HIS SER ILE SER LEU VAL HIS GLU SER PRO HIS GLU ARG I240 W248 L254 L258 F259 L260 L261 E262 I263 A264 I265 L266 C267 W268 V269 K270 F271 Y272 S275 P276 W280 T283 V284 V285 L286

I287 P288 Y301 L304 V305 Y309 T312 V313 I316 K323 M326 E327 GLN ASP HIS LEU GLU HIS HIS ASN ASN ILE ARG ASN ASN GLY GLU GLY GLU PHE

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	I 41	Depositor
Cell constants a, b, c, α, β, γ	262.34Å 262.34Å 220.44Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.98 – 6.71 19.98 – 6.71	Depositor EDS
% Data completeness (in resolution range)	99.3 (19.98-6.71) 99.5 (19.98-6.71)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.08	Depositor
$< I/\sigma(I) >$ [1]	1.68 (at 6.98Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.312 , 0.337 0.312 , 0.337	Depositor DCC
R_{free} test set	1302 reflections (10.12%)	wwPDB-VP
Wilson B-factor (Å²)	655.8	Xtriage
Anisotropy	0.066	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.19 , 551.6	EDS
L-test for twinning[2]	$< |L| > = 0.43, < L^2 > = 0.26$	Xtriage
Estimated twinning fraction	0.044 for -k,-h,-l	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	27120	wwPDB-VP
Average B, all atoms (Å²)	722.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.79% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

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	0.30	0/1155	0.48	0/1571
1	B	0.30	0/1155	0.48	0/1571
1	C	0.31	0/1155	0.48	0/1571
1	D	0.30	0/1155	0.48	0/1571
1	E	0.30	0/1155	0.48	0/1571
1	F	0.30	0/1155	0.48	0/1571
1	G	0.30	0/1155	0.48	0/1571
1	H	0.30	0/1155	0.48	0/1571
1	I	0.30	0/1155	0.48	0/1571
1	J	0.30	0/1155	0.48	0/1571
1	K	0.31	0/1155	0.48	0/1571
1	L	0.30	0/1155	0.48	0/1571
1	M	0.30	0/1155	0.48	0/1571
1	N	0.30	0/1155	0.48	0/1571
1	O	0.31	0/1155	0.48	0/1571
1	P	0.30	0/1155	0.48	0/1571
1	Q	0.30	0/1155	0.48	0/1571
1	R	0.30	0/1155	0.48	0/1571
1	S	0.30	0/1155	0.48	0/1571
1	T	0.30	0/1155	0.48	0/1571
1	U	0.30	0/1155	0.48	0/1571
1	V	0.30	0/1155	0.48	0/1571
1	W	0.30	0/1155	0.48	0/1571
1	X	0.30	0/1155	0.48	0/1571
All	All	0.30	0/27720	0.48	0/37704

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 ⓘ

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	1130	0	1141	59	0
1	B	1130	0	1141	52	0
1	C	1130	0	1141	73	0
1	D	1130	0	1141	70	0
1	E	1130	0	1141	48	0
1	F	1130	0	1141	58	0
1	G	1130	0	1141	50	0
1	H	1130	0	1141	55	0
1	I	1130	0	1141	65	0
1	J	1130	0	1141	61	0
1	K	1130	0	1141	55	0
1	L	1130	0	1141	55	0
1	M	1130	0	1141	76	0
1	N	1130	0	1141	76	0
1	O	1130	0	1141	55	0
1	P	1130	0	1141	62	0
1	Q	1130	0	1141	67	0
1	R	1130	0	1141	59	0
1	S	1130	0	1141	66	0
1	T	1130	0	1141	66	0
1	U	1130	0	1141	69	0
1	V	1130	0	1141	67	0
1	W	1130	0	1141	63	0
1	X	1130	0	1141	64	0
All	All	27120	0	27384	1246	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.

The worst 5 of 1246 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:X:161:SER:HB2	1:X:248:TRP:HE1	1.09	1.11
1:F:319:LEU:HD12	1:Q:316:ILE:HG23	1.44	0.99
1:C:316:ILE:HG22	1:N:316:ILE:HA	1.43	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:316:ILE:HG22	1:W:319:LEU:HD13	1.45	0.97
1:J:197:ILE:HG23	1:K:285:VAL:HG21	1.45	0.97

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	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	B	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	C	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	D	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	E	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	F	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	G	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	H	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	I	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	J	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	K	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	L	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	M	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	N	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	O	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	P	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	Q	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	R	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46

Continued on next page...

WORLDWIDE
wwPDB
PROTEIN DATA BANK

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	S	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	T	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	U	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
1	V	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	W	144/214 (67%)	140 (97%)	2 (1%)	2 (1%)	11	46
1	X	144/214 (67%)	140 (97%)	3 (2%)	1 (1%)	22	63
All	All	3456/5136 (67%)	3360 (97%)	60 (2%)	36 (1%)	15	54

5 of 36 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	272	TYR
1	J	272	TYR
1	W	272	TYR
1	D	272	TYR
1	I	272	TYR

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	115/189 (61%)	115 (100%)	0	100	100
1	B	115/189 (61%)	115 (100%)	0	100	100
1	C	115/189 (61%)	115 (100%)	0	100	100
1	D	115/189 (61%)	115 (100%)	0	100	100
1	E	115/189 (61%)	115 (100%)	0	100	100
1	F	115/189 (61%)	115 (100%)	0	100	100
1	G	115/189 (61%)	115 (100%)	0	100	100
1	H	115/189 (61%)	115 (100%)	0	100	100
1	I	115/189 (61%)	115 (100%)	0	100	100
1	J	115/189 (61%)	115 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K	115/189 (61%)	115 (100%)	0	100	100
1	L	115/189 (61%)	115 (100%)	0	100	100
1	M	115/189 (61%)	115 (100%)	0	100	100
1	N	115/189 (61%)	115 (100%)	0	100	100
1	O	115/189 (61%)	115 (100%)	0	100	100
1	P	115/189 (61%)	114 (99%)	1 (1%)	78	87
1	Q	115/189 (61%)	115 (100%)	0	100	100
1	R	115/189 (61%)	114 (99%)	1 (1%)	78	87
1	S	115/189 (61%)	115 (100%)	0	100	100
1	T	115/189 (61%)	115 (100%)	0	100	100
1	U	115/189 (61%)	114 (99%)	1 (1%)	78	87
1	V	115/189 (61%)	115 (100%)	0	100	100
1	W	115/189 (61%)	115 (100%)	0	100	100
1	X	115/189 (61%)	115 (100%)	0	100	100
All	All	2760/4536 (61%)	2757 (100%)	3 (0%)	93	96

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	P	326	MET
1	R	310	GLU
1	U	316	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	O	325	GLN
1	Q	325	GLN
1	T	325	GLN
1	V	325	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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(Å²)	Q<0.9
1	A	150/214 (70%)	-0.31	1 (0%)	87	82	584, 646, 758, 811	0
1	B	150/214 (70%)	-0.37	0	100	100	598, 671, 767, 807	0
1	C	150/214 (70%)	-0.45	0	100	100	581, 656, 730, 754	0
1	D	150/214 (70%)	-0.56	0	100	100	549, 611, 728, 776	0
1	E	150/214 (70%)	-0.40	1 (0%)	87	82	523, 568, 843, 918	0
1	F	150/214 (70%)	-0.57	0	100	100	543, 575, 708, 752	0
1	G	150/214 (70%)	0.15	10 (6%)	17	18	592, 781, 885, 905	0
1	H	150/214 (70%)	-0.07	1 (0%)	87	82	585, 712, 910, 931	0
1	I	150/214 (70%)	-0.15	4 (2%)	54	48	252, 719, 907, 986	0
1	J	150/214 (70%)	0.14	9 (6%)	21	21	609, 771, 916, 967	0
1	K	150/214 (70%)	-0.14	4 (2%)	54	48	617, 778, 945, 962	0
1	L	150/214 (70%)	-0.09	5 (3%)	46	41	607, 778, 851, 884	0
1	M	150/214 (70%)	-0.33	7 (4%)	31	30	635, 696, 790, 832	0
1	N	150/214 (70%)	-0.50	1 (0%)	87	82	646, 684, 747, 771	0
1	O	150/214 (70%)	-0.23	1 (0%)	87	82	640, 710, 788, 825	0
1	P	150/214 (70%)	-0.49	0	100	100	584, 643, 785, 850	0
1	Q	150/214 (70%)	-0.48	1 (0%)	87	82	565, 633, 752, 815	0
1	R	150/214 (70%)	-0.45	0	100	100	613, 699, 815, 878	0
1	S	150/214 (70%)	-0.02	7 (4%)	31	30	679, 746, 880, 973	0
1	T	150/214 (70%)	0.29	10 (6%)	17	18	20, 764, 884, 971	0
1	U	150/214 (70%)	-0.19	4 (2%)	54	48	740, 830, 912, 950	0
1	V	150/214 (70%)	0.07	6 (4%)	38	34	731, 835, 900, 932	0
1	W	150/214 (70%)	0.12	7 (4%)	31	30	711, 814, 948, 981	0
1	X	150/214 (70%)	-0.25	1 (0%)	87	82	674, 741, 884, 952	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2		OWAB(Å²)	Q<0.9
All	All	3600/5136 (70%)	-0.22	80 (2%)	62 54	20, 712, 880, 986	0

The worst 5 of 80 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	J	324	GLU	7.2
1	T	325	GLN	6.7
1	T	324	GLU	6.2
1	T	327	GLU	5.9
1	I	274	LEU	5.2

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.