wwPDB X-ray Structure Validation Summary Report (i)

Feb 19, 2016 – 10:55 PM GMT

PDB ID	:	5EK0
Title	:	Human Nav1.7-VSD4-NavAb in complex with GX-936.
Authors	:	Ahuja, S.; Mukund, S.; Starovasnik, M.A.; Koth, C.M.; Payandeh, J.
Deposited on	:	2015-11-03
Resolution	:	3.53 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 (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

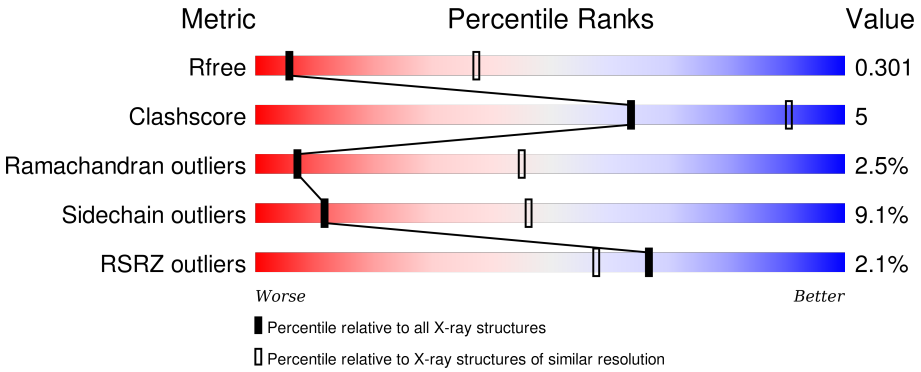
MolProbity	:	4.02b-467
Mogul	:	1.7.1 (RC1), CSD as537be (2016)
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20026982
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0135
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	rb-20026982

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.53 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}	91344	1136 (3.68-3.40)
Clashscore	102246	1248 (3.68-3.40)
Ramachandran outliers	100387	1208 (3.68-3.40)
Sidechain outliers	100360	1208 (3.68-3.40)
RSRZ outliers	91569	1143 (3.68-3.40)

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 <=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	296	2% 66% 18% • 16%
1	B	296	2% 66% 14% • 17%
1	C	296	% 61% 18% • 18%
1	D	296	3% 61% 19% • 18%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	PX4	A	1802	-	-	-	X
2	PX4	A	1806	-	-	-	X
2	PX4	B	1804	-	-	-	X
2	PX4	D	1803	-	-	-	X

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 8571 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 Chimera of bacterial Ion transport protein and human Sodium channel protein type 9 subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	250	Total	C	N	O	S	0	0	0
			2061	1395	316	335	15			
1	B	245	Total	C	N	O	S	0	0	0
			2023	1373	306	329	15			
1	C	242	Total	C	N	O	S	0	0	0
			1999	1356	303	325	15			
1	D	242	Total	C	N	O	S	0	0	0
			1999	1356	303	325	15			

There are 72 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-17	MET	-	initiating methionine	UNP A8EVM5
A	-16	ASP	-	expression tag	UNP A8EVM5
A	-15	TYR	-	expression tag	UNP A8EVM5
A	-14	LYS	-	expression tag	UNP A8EVM5
A	-13	ASP	-	expression tag	UNP A8EVM5
A	-12	ASP	-	expression tag	UNP A8EVM5
A	-11	ASP	-	expression tag	UNP A8EVM5
A	-10	ASP	-	expression tag	UNP A8EVM5
A	-9	LYS	-	expression tag	UNP A8EVM5
A	-8	GLY	-	expression tag	UNP A8EVM5
A	-7	SER	-	expression tag	UNP A8EVM5
A	-6	LEU	-	expression tag	UNP A8EVM5
A	-5	VAL	-	expression tag	UNP A8EVM5
A	-4	PRO	-	expression tag	UNP A8EVM5
A	-3	ARG	-	expression tag	UNP A8EVM5
A	-2	GLY	-	expression tag	UNP A8EVM5
A	-1	SER	-	expression tag	UNP A8EVM5
A	0	HIS	-	expression tag	UNP A8EVM5
B	-17	MET	-	initiating methionine	UNP A8EVM5
B	-16	ASP	-	expression tag	UNP A8EVM5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-15	TYR	-	expression tag	UNP A8EVM5
B	-14	LYS	-	expression tag	UNP A8EVM5
B	-13	ASP	-	expression tag	UNP A8EVM5
B	-12	ASP	-	expression tag	UNP A8EVM5
B	-11	ASP	-	expression tag	UNP A8EVM5
B	-10	ASP	-	expression tag	UNP A8EVM5
B	-9	LYS	-	expression tag	UNP A8EVM5
B	-8	GLY	-	expression tag	UNP A8EVM5
B	-7	SER	-	expression tag	UNP A8EVM5
B	-6	LEU	-	expression tag	UNP A8EVM5
B	-5	VAL	-	expression tag	UNP A8EVM5
B	-4	PRO	-	expression tag	UNP A8EVM5
B	-3	ARG	-	expression tag	UNP A8EVM5
B	-2	GLY	-	expression tag	UNP A8EVM5
B	-1	SER	-	expression tag	UNP A8EVM5
B	0	HIS	-	expression tag	UNP A8EVM5
C	-17	MET	-	initiating methionine	UNP A8EVM5
C	-16	ASP	-	expression tag	UNP A8EVM5
C	-15	TYR	-	expression tag	UNP A8EVM5
C	-14	LYS	-	expression tag	UNP A8EVM5
C	-13	ASP	-	expression tag	UNP A8EVM5
C	-12	ASP	-	expression tag	UNP A8EVM5
C	-11	ASP	-	expression tag	UNP A8EVM5
C	-10	ASP	-	expression tag	UNP A8EVM5
C	-9	LYS	-	expression tag	UNP A8EVM5
C	-8	GLY	-	expression tag	UNP A8EVM5
C	-7	SER	-	expression tag	UNP A8EVM5
C	-6	LEU	-	expression tag	UNP A8EVM5
C	-5	VAL	-	expression tag	UNP A8EVM5
C	-4	PRO	-	expression tag	UNP A8EVM5
C	-3	ARG	-	expression tag	UNP A8EVM5
C	-2	GLY	-	expression tag	UNP A8EVM5
C	-1	SER	-	expression tag	UNP A8EVM5
C	0	HIS	-	expression tag	UNP A8EVM5
D	-17	MET	-	initiating methionine	UNP A8EVM5
D	-16	ASP	-	expression tag	UNP A8EVM5
D	-15	TYR	-	expression tag	UNP A8EVM5
D	-14	LYS	-	expression tag	UNP A8EVM5
D	-13	ASP	-	expression tag	UNP A8EVM5
D	-12	ASP	-	expression tag	UNP A8EVM5
D	-11	ASP	-	expression tag	UNP A8EVM5
D	-10	ASP	-	expression tag	UNP A8EVM5

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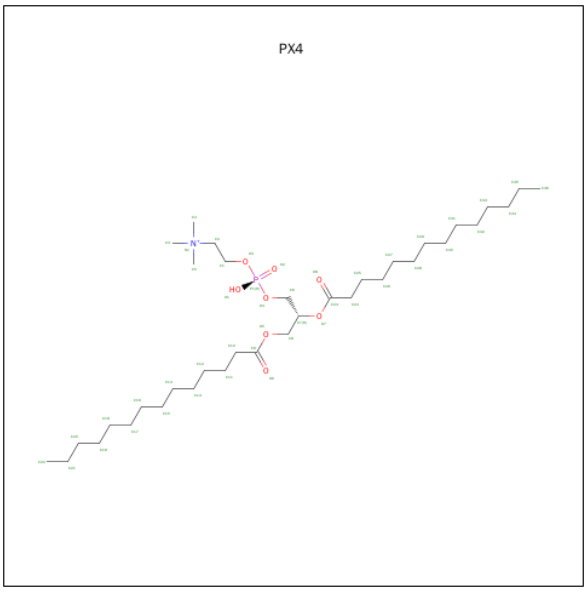
Chain	Residue	Modelled	Actual	Comment	Reference
D	-9	LYS	-	expression tag	UNP A8EVM5
D	-8	GLY	-	expression tag	UNP A8EVM5
D	-7	SER	-	expression tag	UNP A8EVM5
D	-6	LEU	-	expression tag	UNP A8EVM5
D	-5	VAL	-	expression tag	UNP A8EVM5
D	-4	PRO	-	expression tag	UNP A8EVM5
D	-3	ARG	-	expression tag	UNP A8EVM5
D	-2	GLY	-	expression tag	UNP A8EVM5
D	-1	SER	-	expression tag	UNP A8EVM5
D	0	HIS	-	expression tag	UNP A8EVM5

- Molecule 2 is 1,2-DIMYRISTOYL-SN-GLYCERO-3-PHOSPHOCHOLINE (three-letter code: PX4) (formula: $C_{36}H_{73}NO_8P$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C N O P 15 8 1 5 1	0	0
2	A	1	Total C N O P 31 21 1 8 1	0	0
2	A	1	Total C 6 6	0	0
2	A	1	Total C 11 11	0	0
2	A	1	Total C 6 6	0	0
2	A	1	Total C 7 7	0	0

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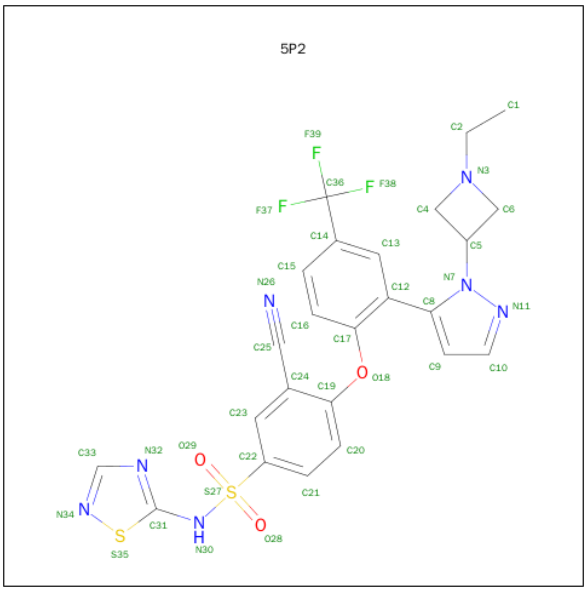
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C N O P 15 8 1 5 1	0	0
2	B	1	Total C N O P 15 8 1 5 1	0	0
2	B	1	Total C N O P 31 21 1 8 1	0	0
2	B	1	Total C N O P 28 19 1 7 1	0	0
2	B	1	Total C 6 6	0	0
2	B	1	Total C N O P 23 15 1 6 1	0	0
2	C	1	Total C N O P 14 7 1 5 1	0	0
2	C	1	Total C N O P 34 24 1 8 1	0	0
2	C	1	Total C 8 8	0	0
2	C	1	Total C O P 9 3 5 1	0	0
2	D	1	Total C N O P 28 19 1 7 1	0	0
2	D	1	Total C N O P 15 8 1 5 1	0	0
2	D	1	Total C 5 5	0	0
2	D	1	Total C 6 6	0	0
2	D	1	Total C N O P 20 12 1 6 1	0	0

- Molecule 3 is 3-cyano-4-[2-[2-(1-ethylazetidin-3-yl)pyrazol-3-yl]-4-(trifluoromethyl)phenoxy]- {N}-(1,2,4-thiadiazol-5-yl)benzenesulfonamide (three-letter code: 5P2) (formula: $C_{24}H_{20}F_3N_7O_3S_2$).

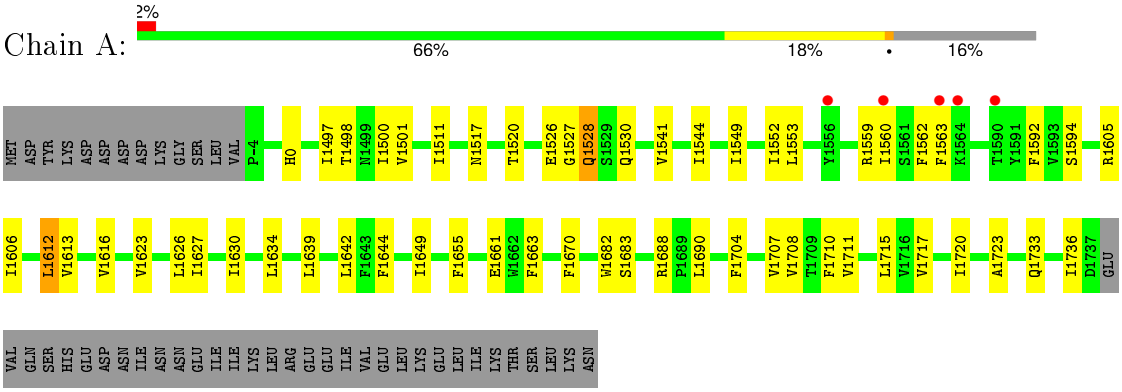


Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	F	N	O	S	0	0
			39	24	3	7	3	2		
3	B	1	Total	C	F	N	O	S	0	0
			39	24	3	7	3	2		
3	C	1	Total	C	F	N	O	S	0	0
			39	24	3	7	3	2		
3	D	1	Total	C	F	N	O	S	0	0
			39	24	3	7	3	2		

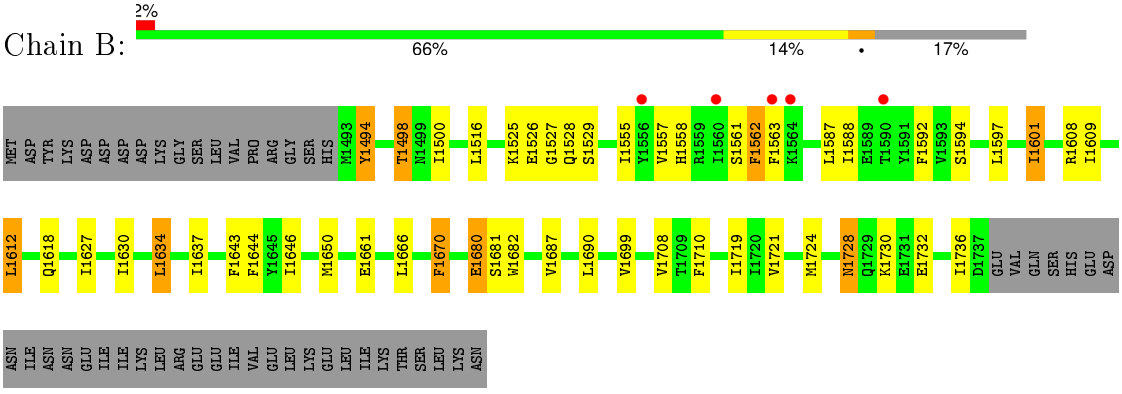
3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

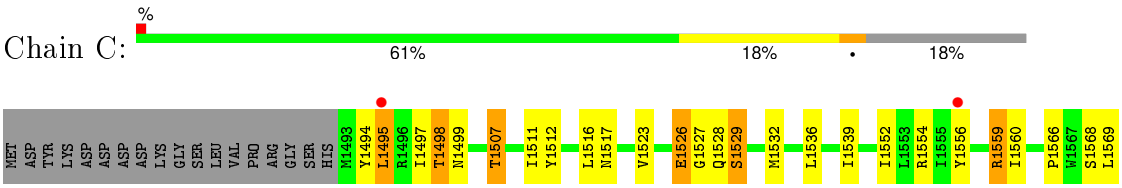
• Molecule 1: Chimera of bacterial Ion transport protein and human Sodium channel protein type 9 subunit alpha

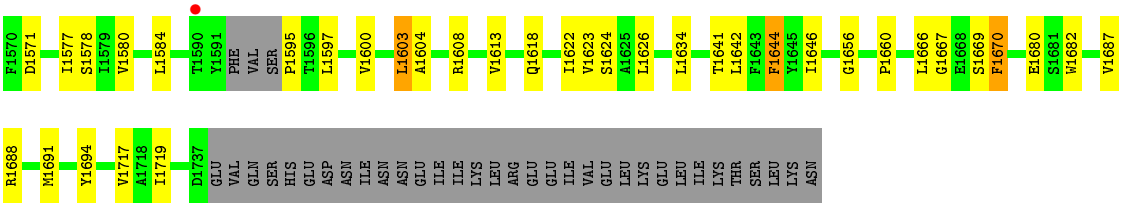


• Molecule 1: Chimera of bacterial Ion transport protein and human Sodium channel protein type 9 subunit alpha

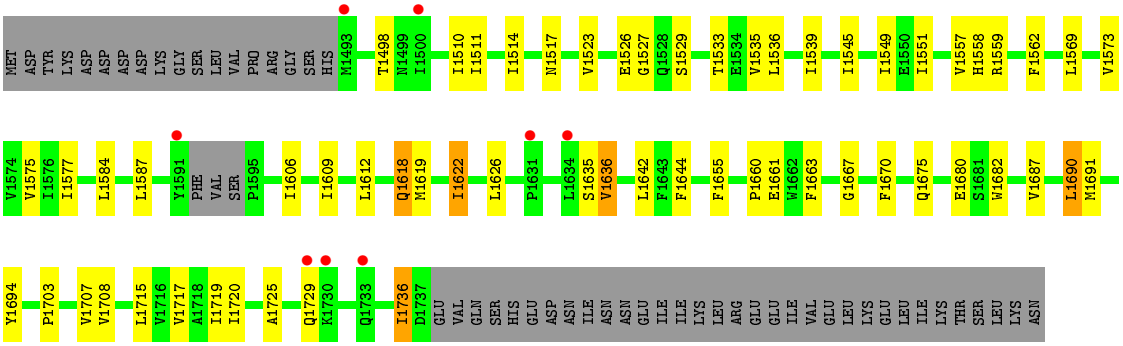


• Molecule 1: Chimera of bacterial Ion transport protein and human Sodium channel protein type 9 subunit alpha





• Molecule 1: Chimera of bacterial Ion transport protein and human Sodium channel protein type 9 subunit alpha



4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	169.42Å 188.83Å 171.13Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	26.59 – 3.53 32.74 – 3.53	Depositor EDS
% Data completeness (in resolution range)	99.7 (26.59-3.53) 99.9 (32.74-3.53)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.76 (at 3.56Å)	Xtriage
Refinement program	BUSTER 2.11.5	Depositor
R, R_{free}	0.243 , 0.272 0.271 , 0.301	Depositor DCC
R_{free} test set	1714 reflections (5.33%)	DCC
Wilson B-factor (Å^2)	118.9	Xtriage
Anisotropy	0.564	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 103.7	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.41$, $< L^2 > = 0.24$	Xtriage
Outliers	0 of 33896 reflections	Xtriage
F_o,F_c correlation	0.88	EDS
Total number of atoms	8571	wwPDB-VP
Average B, all atoms (Å^2)	106.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.34% 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, 0.375 respectively for untwinned datasets, and 0.333, 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: 5P2, PX4

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	0.49	0/2117	0.66	0/2877
1	B	0.49	0/2077	0.67	0/2824
1	C	0.50	0/2051	0.68	1/2786 (0.0%)
1	D	0.48	0/2051	0.68	0/2786
All	All	0.49	0/8296	0.67	1/11273 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	1528	GLN	C-N-CA	5.08	134.39	121.70

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	2061	0	2149	25	0
1	B	2023	0	2111	22	0
1	C	1999	0	2088	34	0
1	D	1999	0	2088	27	0
2	A	91	0	114	0	0
2	B	103	0	123	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	65	0	73	3	0
2	D	74	0	87	1	0
3	A	39	0	20	0	0
3	B	39	0	20	1	0
3	C	39	0	20	1	0
3	D	39	0	20	0	0
All	All	8571	0	8913	90	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 5.

The worst 5 of 90 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:C:1529:SER:HB2	1:C:1532:MET:HB2	1.77	0.66
1:A:1527:GLY:HA2	1:A:1528:GLN:HB3	1.79	0.64
1:C:1608:ARG:HH22	3:C:1805:5P2:H20	1.44	0.63
1:C:1554:ARG:HH22	1:C:1568:SER:HA	1.63	0.63
1:B:1634:LEU:HA	1:B:1637:ILE:HD12	1.81	0.63

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	248/296 (84%)	234 (94%)	10 (4%)	4 (2%)	12 54
1	B	243/296 (82%)	221 (91%)	16 (7%)	6 (2%)	7 45
1	C	238/296 (80%)	219 (92%)	12 (5%)	7 (3%)	6 42
1	D	238/296 (80%)	221 (93%)	10 (4%)	7 (3%)	6 42
All	All	967/1184 (82%)	895 (93%)	48 (5%)	24 (2%)	7 45

5 of 24 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1526	GLU
1	A	1592	PHE
1	B	1592	PHE
1	B	1594	SER
1	C	1529	SER

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	230/275 (84%)	208 (90%)	22 (10%)	10	44
1	B	226/275 (82%)	205 (91%)	21 (9%)	11	45
1	C	223/275 (81%)	205 (92%)	18 (8%)	15	52
1	D	223/275 (81%)	202 (91%)	21 (9%)	11	45
All	All	902/1100 (82%)	820 (91%)	82 (9%)	12	46

5 of 82 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	1670	PHE
1	C	1507	THR
1	D	1644	PHE
1	B	1680	GLU
1	B	1708	VAL

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 9 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	1653	GLN
1	D	1675	GLN
1	C	1728	ASN
1	B	1728	ASN
1	C	1714	ASN

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 carbohydrates in this entry.

5.6 Ligand geometry

25 ligands are modelled in this entry.

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	$\#\|Z\| > 2$
2	PX4	A	1801	-	14,14,45	0.62	0	14,20,53	0.56	0
2	PX4	A	1802	-	30,30,45	1.06	2 (6%)	34,38,53	1.03	2 (5%)
2	PX4	A	1803	-	5,5,45	0.28	0	4,4,53	0.39	0
2	PX4	A	1804	-	10,10,45	0.24	0	9,9,53	0.55	0
2	PX4	A	1805	-	5,5,45	0.30	0	4,4,53	0.33	0
2	PX4	A	1806	-	6,6,45	0.24	0	5,5,53	0.41	0
2	PX4	A	1807	-	14,14,45	0.68	0	17,19,53	0.50	0
3	5P2	A	1808	-	32,43,43	1.02	3 (9%)	43,64,64	1.66	5 (11%)
2	PX4	B	1801	-	14,14,45	0.62	0	14,20,53	0.53	0
2	PX4	B	1802	-	30,30,45	1.24	2 (6%)	34,38,53	1.22	4 (11%)
2	PX4	B	1803	-	27,27,45	1.03	1 (3%)	30,34,53	1.14	2 (6%)
2	PX4	B	1804	-	5,5,45	0.25	0	4,4,53	0.32	0
2	PX4	B	1805	-	22,22,45	1.10	1 (4%)	26,28,53	0.85	1 (3%)
3	5P2	B	1806	-	32,43,43	1.04	3 (9%)	43,64,64	1.53	4 (9%)
2	PX4	C	1801	-	13,13,45	0.67	0	16,18,53	0.55	0
2	PX4	C	1802	-	33,33,45	1.19	2 (6%)	37,41,53	1.17	4 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	PX4	C	1803	-	7,7,45	0.25	0	6,6,53	0.50	0
2	PX4	C	1804	-	8,8,45	1.33	1 (12%)	8,10,53	1.47	1 (12%)
3	5P2	C	1805	-	32,43,43	1.00	2 (6%)	43,64,64	1.65	3 (6%)
2	PX4	D	1801	-	27,27,45	1.00	1 (3%)	30,34,53	1.06	1 (3%)
2	PX4	D	1802	-	14,14,45	0.61	0	14,20,53	0.60	0
2	PX4	D	1803	-	4,4,45	0.25	0	3,3,53	0.36	0
2	PX4	D	1804	-	5,5,45	0.29	0	4,4,53	0.37	0
2	PX4	D	1805	-	19,19,45	1.16	1 (5%)	23,25,53	0.89	2 (8%)
3	5P2	D	1806	-	32,43,43	1.04	2 (6%)	43,64,64	1.48	3 (6%)

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
2	PX4	A	1801	-	-	0/14/14/49	0/0/0/0
2	PX4	A	1802	-	-	0/33/33/49	0/0/0/0
2	PX4	A	1803	-	-	0/3/3/49	0/0/0/0
2	PX4	A	1804	-	-	0/8/8/49	0/0/0/0
2	PX4	A	1805	-	-	0/3/3/49	0/0/0/0
2	PX4	A	1806	-	-	0/4/4/49	0/0/0/0
2	PX4	A	1807	-	-	0/14/14/49	0/0/0/0
3	5P2	A	1808	-	-	0/25/41/41	0/4/5/5
2	PX4	B	1801	-	-	0/14/14/49	0/0/0/0
2	PX4	B	1802	-	-	0/34/34/49	0/0/0/0
2	PX4	B	1803	-	-	0/30/30/49	0/0/0/0
2	PX4	B	1804	-	-	0/3/3/49	0/0/0/0
2	PX4	B	1805	-	-	0/23/23/49	0/0/0/0
3	5P2	B	1806	-	-	0/25/41/41	0/4/5/5
2	PX4	C	1801	-	-	0/13/13/49	0/0/0/0
2	PX4	C	1802	-	-	0/37/37/49	0/0/0/0
2	PX4	C	1803	-	-	0/5/5/49	0/0/0/0
2	PX4	C	1804	-	-	0/6/6/49	0/0/0/0
3	5P2	C	1805	-	-	0/25/41/41	0/4/5/5
2	PX4	D	1801	-	-	0/30/30/49	0/0/0/0
2	PX4	D	1802	-	-	0/14/14/49	0/0/0/0
2	PX4	D	1803	-	-	0/2/2/49	0/0/0/0
2	PX4	D	1804	-	-	0/3/3/49	0/0/0/0
2	PX4	D	1805	-	-	0/20/20/49	0/0/0/0
3	5P2	D	1806	-	-	0/25/41/41	0/4/5/5

The worst 5 of 21 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1806	5P2	F37-C36	2.03	1.40	1.32
3	D	1806	5P2	F39-C36	2.03	1.40	1.32
3	A	1808	5P2	F39-C36	2.04	1.40	1.32
3	B	1806	5P2	F38-C36	2.05	1.40	1.32
3	C	1805	5P2	F37-C36	2.06	1.40	1.32

The worst 5 of 32 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	1805	5P2	C8-N7-N11	-6.37	107.41	111.84
3	D	1806	5P2	C8-N7-N11	-6.36	107.42	111.84
3	A	1808	5P2	C8-N7-N11	-6.32	107.45	111.84
3	B	1806	5P2	C8-N7-N11	-6.30	107.46	111.84
3	A	1808	5P2	C22-S27-N30	-2.57	103.45	106.84

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

6 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1802	PX4	1	0
3	B	1806	5P2	1	0
2	C	1801	PX4	1	0
2	C	1802	PX4	2	0
3	C	1805	5P2	1	0
2	D	1801	PX4	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

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, 95^{th} 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	250/296 (84%)	-0.16	5 (2%)	68	59	67, 104, 144, 169	0
1	B	245/296 (82%)	-0.27	5 (2%)	68	59	26, 101, 132, 159	0
1	C	242/296 (81%)	-0.25	3 (1%)	81	73	45, 101, 132, 154	0
1	D	242/296 (81%)	-0.17	8 (3%)	50	40	62, 100, 132, 153	0
All	All	979/1184 (82%)	-0.21	21 (2%)	67	58	26, 101, 138, 169	0

The worst 5 of 21 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1564	LYS	4.9
1	A	1560	ILE	4.3
1	B	1590	THR	3.4
1	C	1495	LEU	2.8
1	C	1556	TYR	2.8

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 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, 95^{th} 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
2	PX4	A	1806	7/46	0.45	1.38	24.71	117,135,141,148	0
2	PX4	B	1804	6/46	0.65	1.57	22.57	89,100,109,110	0
2	PX4	D	1803	5/46	0.77	0.72	13.97	84,93,103,108	0
2	PX4	A	1802	31/46	0.77	0.46	1.89	101,132,211,213	0
2	PX4	D	1801	28/46	0.84	0.30	1.79	85,125,160,166	0
2	PX4	B	1802	31/46	0.87	0.36	1.55	96,152,193,201	0
2	PX4	C	1802	34/46	0.85	0.32	1.06	116,141,173,192	0
3	5P2	D	1806	39/39	0.78	0.33	0.54	131,159,179,180	0
2	PX4	B	1801	15/46	0.90	0.32	0.27	77,137,171,175	0
3	5P2	A	1808	39/39	0.73	0.29	0.18	123,157,174,186	0
2	PX4	A	1804	11/46	0.80	0.26	0.16	86,116,127,130	0
3	5P2	B	1806	39/39	0.73	0.29	0.10	126,153,173,184	0
2	PX4	D	1802	15/46	0.91	0.26	-0.07	102,141,162,164	0
3	5P2	C	1805	39/39	0.82	0.20	-0.39	107,166,198,201	0
2	PX4	B	1803	28/46	0.74	0.30	-0.45	85,125,160,166	0
2	PX4	C	1801	14/46	0.89	0.27	-0.48	100,136,164,164	0
2	PX4	A	1801	15/46	0.86	0.21	-0.49	103,121,168,175	0
2	PX4	D	1804	6/46	0.74	0.36	-	98,106,110,111	0
2	PX4	C	1803	8/46	0.90	0.18	-	86,99,103,106	0
2	PX4	B	1805	23/46	0.74	0.32	-	101,144,188,195	0
2	PX4	A	1807	15/46	0.68	0.31	-	154,180,258,259	0
2	PX4	A	1805	6/46	0.88	0.39	-	98,106,110,111	0
2	PX4	A	1803	6/46	0.83	0.38	-	92,103,112,113	0
2	PX4	C	1804	9/46	0.58	0.20	-	147,154,179,183	0
2	PX4	D	1805	20/46	0.78	0.22	-	104,186,227,252	0

6.5 Other polymers (i)

There are no such residues in this entry.