

Integrative Structure Validation Report ?

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The following software was used in the production of this report:

IHMValidation Version 3.0

Python-IHM Version 2.5

MolProbity Version 4.5.2

PDB ID	9A00 pdb_00009a00
PDB-Dev ID	PDBDEV_00000036
Structure Title	Structure of the human myeloid-derived growth factor (hMYDGF) engaging the chicken KDEL receptor 2 (cKDEL2)
Structure Authors	Bortnov V; Tonelli M; Lee W; Lin Z; Annis DS; Demerdash ON; Bateman A; Mitchell JC; Ge Y; Markley JL; Mosher DF
Deposited on	2019-10-21

This is a PDB-IHM Structure Validation Report.

We welcome your comments at helpdesk@pdb-ihm.org

A user guide is available at https://pdb-ihm.org/validation_help.html with specific help available everywhere you see the ? symbol.

List of references used to build this report is available [here](#).

1. Overview ?

1.1. Summary ?

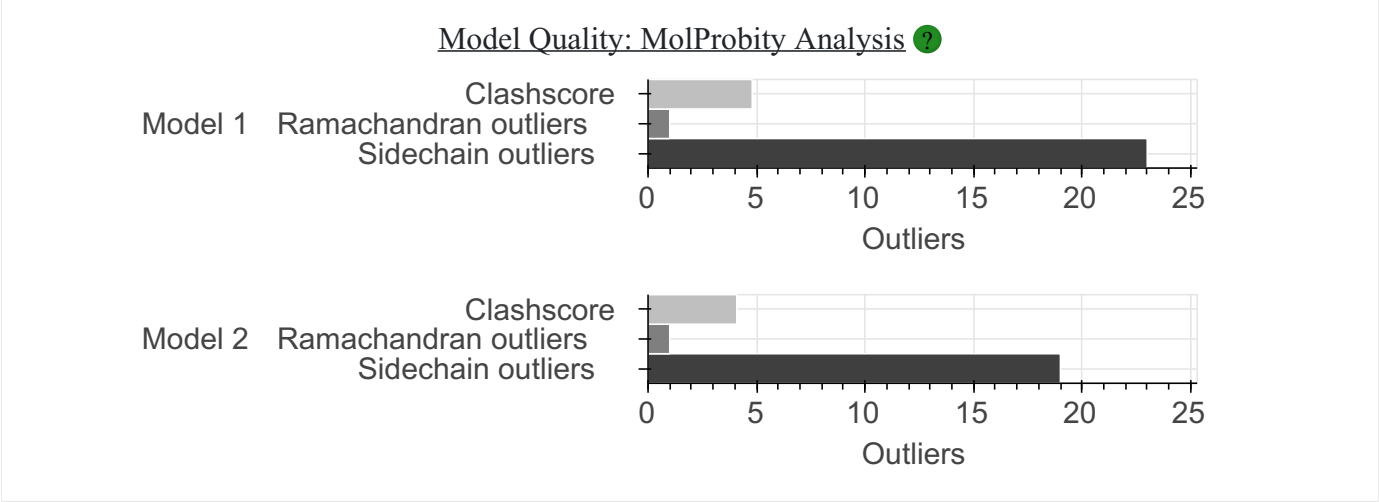
This entry consists of 2 model(s). A total of 2 dataset(s) were used to build this entry.

Name	Type	Count
Experimental model	Starting model	2

1.2. Overall quality ?

This validation report contains model quality assessments for all structures, data quality and fit to model assessments for SAS and

crosslinking-MS datasets. Data quality and fit to model assessments for other datasets and model uncertainty are under development. Number of plots is limited to 256.



2. Model Details ?

2.1. Ensemble information ?

This entry consists of 0 distinct ensemble(s).

2.2. Representation ?

This entry has 1 representation(s).

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1-2	1	ER lumen protein-retaining receptor 2	A	207	1-207	-	100.00 / 100.00	Atomic
		2	Myeloid-derived growth factor	B	142	1-142	-	100.00 / 100.00	Atomic

2.3. Datasets used for modeling ?

There are 2 unique datasets used to build the models in this entry.

ID	Dataset type	Database name	Data access code
1	Experimental model	PDB	pdb_00006o6w
2	Experimental model	PDB	pdb_00006i6h

2.4. Methodology and software ?

This entry is a result of 1 distinct protocol(s).

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
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Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
1	1	Not available	Not available	Not available	Not available	False	False

There is 1 software package reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	HADDOCK	Not available	molecular docking	http://haddock.science.uu.nl/services/HADDOCK/

3. Data quality ?

4. Model quality ?

For models with atomic structures, MolProbity analysis is performed. For models with coarse-grained or multi-scale structures, excluded volume analysis is performed.

4.1b. MolProbity Analysis ?

Excluded volume satisfaction for the models in the entry are listed below. The Analysed column shows the number of particle-particle or particle-atom pairs for which excluded volume was analysed.

Standard geometry: bond outliers ?

There are no bond length outliers.

Standard geometry: angle outliers ?

There are no bond angle outliers.

Too-close contacts ?

The following all-atom clashscore is based on a MolProbity analysis. All-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The table below contains clashscores for all atomic models in this entry.

Model ID	Clash score	Number of clashes
1	4.80	27
2	4.09	23

There are 50 clashes. The table below contains the detailed list of all clashes based on a MolProbity analysis. Bad clashes are ≥ 0.4 Angstrom.

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
A:22:LYS:HG3	A:147:ILE:HG21	0.78	2	1
A:100:VAL:HB	A:101:PRO:HD3	0.72	1	2
B:60:THR:HG22	B:134:VAL:HG12	0.69	2	1
A:163:LEU:HD23	A:166:TRP:HZ3	0.64	1	1
B:48:MET:HG2	B:63:ILE:HG12	0.63	1	1
B:106:LYS:HB3	B:109:GLU:HG3	0.61	1	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
A:120:TRP:HZ2	B:140:THR:HA	0.59	2	1
B:96:ALA:HB2	B:102:ASP:HB3	0.57	2	1
A:149:THR:HG22	A:194:PHE:HE1	0.57	1	1
B:87:GLU:HB2	B:134:VAL:HG23	0.56	2	1
B:62:THR:HG23	B:132:VAL:HB	0.55	1	2
B:24:VAL:HG12	B:26:PRO:HD2	0.55	1	2
B:60:THR:HG23	B:134:VAL:HG22	0.53	1	1
A:43:VAL:HG13	A:123:SER:HB2	0.52	1	2
A:120:TRP:CZ2	B:140:THR:HA	0.52	2	1
A:165:ASN:HD22	B:142:LEU:HD21	0.51	1	1
B:111:GLU:HB3	B:118:ALA:HB3	0.51	1	1
B:17:VAL:HG12	B:35:THR:HG22	0.51	2	1
A:47:ARG:HH12	B:142:LEU:HD13	0.49	2	1
A:185:VAL:O	A:189:VAL:HG23	0.49	2	1
A:120:TRP:O	A:124:ILE:HG12	0.49	1	1
B:113:THR:HB	B:116:ALA:O	0.48	1	1
A:127:GLU:OE2	B:142:LEU:HD11	0.48	2	1
A:165:ASN:O	A:169:ARG:HG3	0.48	2	1
A:162:TYR:CD2	B:142:LEU:HD23	0.47	1	1
A:159:ARG:HA	A:159:ARG:HD2	0.47	1	1
B:55:ASP:HB3	B:57:GLN:HG2	0.47	2	1
A:120:TRP:HZ2	B:140:THR:HB	0.46	1	1
B:113:THR:HG22	B:114:LYS:HD3	0.45	2	1
A:102:VAL:HG13	A:125:TYR:HB2	0.45	2	1
A:12:HIS:HB2	A:158:TYR:CD1	0.44	1	1
B:59:PHE:HE2	B:137:ALA:HB2	0.44	2	1
A:149:THR:HG22	A:194:PHE:CE1	0.43	1	1
A:181:VAL:O	A:185:VAL:HG23	0.43	1	1
A:123:SER:O	A:127:GLU:HB2	0.43	1	1
A:163:LEU:HA	A:166:TRP:CE3	0.43	1	1
B:78:LYS:HE2	B:119:HIS:HB3	0.43	1	1
A:106:SER:HB3	A:122:PHE:HA	0.42	1	1
B:9:PHE:O	B:45:GLN:HA	0.42	1	1
A:13:LEU:O	A:17:ILE:HG12	0.41	1	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
A:98:LEU:HD21	A:132:LEU:HD12	0.41	2	1
B:17:VAL:HG13	B:37:ALA:HB2	0.41	2	1
B:19:SER:HA	B:34:PHE:O	0.41	2	1
B:39:GLN:HB3	B:73:TYR:HD2	0.41	1	1
B:63:ILE:HD11	B:131:LEU:HD12	0.41	2	1
B:9:PHE:CE1	B:46:TRP:HB2	0.41	1	1

Torsion angles: Protein backbone ?

In the following table, Ramachandran outliers are listed. The Analysed column shows the number of residues for which the backbone conformation was analysed.

Model ID	Analysed	Favored	Allowed	Outliers
1	345	324	20	1
2	345	324	20	1

There are 2 unique backbone outliers. Detailed list of outliers are tabulated below.

Chain	Res	Type	Models (Total)
A	56	ILE	1
B	2	SER	1

Torsion angles : Protein sidechains ?

In the following table, sidechain rotameric outliers are listed. The Analysed column shows the number of residues for which the sidechain conformation was analysed.

Model ID	Analysed	Favored	Allowed	Outliers
1	302	255	24	23
2	302	260	23	19

There are 33 unique sidechain outliers. Detailed list of outliers are tabulated below.

Chain	Res	Type	Models (Total)
A	9	ASP	2
A	85	THR	2
A	92	THR	2
A	116	LEU	2
A	128	SER	2
A	146	THR	2
A	149	THR	2
A	162	TYR	2
B	52	THR	2

Chain	Res	Type	Models (Total)
A	29	CYS	1
A	53	THR	1
A	54	SER	1
A	106	SER	1
A	114	SER	1
A	117	GLU	1
A	141	THR	1
A	148	THR	1
A	159	ARG	1
A	188	THR	1
B	5	THR	1
B	17	VAL	1
B	19	SER	1
B	21	SER	1
B	29	LYS	1
B	35	THR	1
B	38	SER	1
B	42	THR	1
B	74	PHE	1
B	87	GLU	1
B	93	SER	1
B	97	PHE	1
B	140	THR	1
B	141	GLU	1

5. Fit to Data Used for Modeling Assessment ?

6. Fit to Data Used for Validation Assessment ?

Validation for this section is under development.

Acknowledgments

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