

Res	ults List																						
<u>Asses</u>	sors Home Gene	eral Discu	Issions Do	main	Definit	tions and	d Classifie	cific alig	Summary	on Expe	eriment	al Sequ	ences	Summ	i <u>ary on Tar</u>	<u>get Structu</u>	res <u>Availa</u>	ble Struc	<u>tures</u> <u>Ta</u>	<u>rget I</u>			
Tar	get: T1026-D1	✓ Group	p: - All Grou	ips -	acy	v	Model: -	All - 🗙	☐ Multi so	rt <u>NT</u> =	=146 res	sidues	P Text file	-									
General								LGA Sequence Dependent (4Å)				GA Sequence			Dali cull Molprobity IDDT			EabCr.	CAD				
	General						Full	<u>Z-</u>		Ful	Full		7-	7-	Full MP-	Clobal	Spridr						
#	◆ <u>Model</u>	◆ <u>GR#</u>	GR Name	e		Charts						◆ <u>AL4 I</u>		score	◆ <u>Score</u>	Score		◆ <u>SG</u>	♠ ▲▲	SS			
2.	T1026TS427 1-D1 T1026TS427 4-D1	427	AlphaFold2 ADIG			93.84	100.0	N/A	95.8	5 1	99.32 100.00	9.51		24.7	1.14	0.81	96.92	0.75 0.	52				
3.	T1026TS427 5-D1	427	AlphaFold2 Results List																				
5.	T1026TS427 2-D1	427	AlphaFold2 A	Assess	ors Ho	me <u>Ger</u>	neral Disc	ussions	Domain De	efinitions	and Cla	assificati	ions S	ummary	<u>y on Experi</u>	<u>mental Sequ</u>	iences Sur	<u>nmary on</u>	Target St	uctures Av	ailable S	tructure	s <u>Tar</u>
6. 7.	T1026TS480 1-D1 T1026TS018 3-D1	480 018	FEIG-R2 UNRES-terr Tables GDT Plots Local Accuracy Position-specific alignment Templates Help																				
8.	T1026TS403 3-D1	403	BAKER-exp	Targe	et T1(033	Y Grou		oups -		× Mod	el· - All	- •	Multi s	ort NT=1	00 residues	Text file						
10.	T1026TS362 3-D1	362	Seok-refine	. urg			divi		oupo		1100				<u></u> -1		<u>rexerne</u>						
11. 12. 13.	T1026TS362 2-D1 T1026TS018 4-D1 T1026TS403 5-D1	362 018 403	Seok-refine UNRES-tem BAKER-exp				General				LGA Sequence Dep Full			pendent (4Å) I		LGA Sequence Independent (4Å) <u>Full</u>		Dali <u>Full</u>	Molprobit <u>Full</u>	V IDDT	SphGr	SphGr CAD	
				<u>#</u>	\$ <u>Mod</u>	<u>el</u> ;	GR#	GR Name		Charts	\$ <u>GDT</u>	<u>r ts</u> ‡	<u>NP_P</u>	¢ <u>Z-</u> <u>M1-</u> <u>GDT</u>	\$ <u>AL0 P</u>	\$ <u>AL4_P</u>	¢ Z- score	¢ Z- <u>Score</u>	¢ <u>MP-</u> <u>Score</u>		\$ <u>56</u>	◆ <u>AA</u>	\$ <u>55</u>
				1.	T1033T	5427 <u>1</u> 4	27 A	phaFold2		ADIC	87.50	10	0.00	5.23	95.00	98.00	7.82	16.2	1.51	0.82	94.50	0.79	0.64
			-	2.	T1033T9	5427 3 4 5427 2 4	27 A	phaFold2		ADIG	85.75	10	0.00	N/A N/A	94.00	96.00	7.58	15.6	1.59	0.80	94.50	0.79	0.64
Results List)	95.00	0.79	0.65
Sesessors Home General Discussions Domain Definitions and Classifications Summary on Experimental Sequences Summary on Target Structures Available Structures Ta												argeta	95.50	0.79	0.64								
																			3	89.50	0.70	0.44	
Tables • GDT Plots • Local Accuracy • Position-specific alignment • Templates • Help													7	87.00	0.69	0.40							
Target: T1031-D1 V Group: - All Groups - V Model: - All - V Multi sort NT=95 residues Text file													5	86.50	0.68	0.41							
)	79.00	0.63	0.30		
General							LGA Sequence Dependent (4Å)			Â) In	LGA Seq	Sequence endent (4Å)		маммотн	Dali Full	Molprobity		SphGr	CAD	1	81.00	0.64	0.34
						<u>Full</u>				Fu	Full				<u>ruii</u>	Clabel	+			1 80.00	0.62	0.29	
#	Model	\$ <u>GR#</u>	≑ <u>GR Name</u>	e		Charts	\$ <u>GDT</u>		P = M	<u>1-</u> DT	LO P	\$ <u>AL4</u>	₽ \$	Z- score	¢ <u>∠-</u> <u>Score</u>	¢ MP- Score	Global <u>score</u>	\$ <u>SG</u>	\$ <u>AA</u>	\$ <u>55</u>			
1.	T1031TS427 4-D1	427	AlphaFold2			ADI	87.63	100.0	D N/A	88.4	2	95.79	7.3	6	15.9	1.05	0.71	82.11	0.71 0	.52			
2.	T1031T5427 1-D1 T1031T5427 5-D1	427	AlphaFold2 A D I G			ADIG	86.84	100.0	0 3.89	86.3	2	94.74	7.24	4 6	15.8	1.62	0.71	83.16	0.71 0	54			
4.	T1031TS427 2-D1	427	AlphaFold2 Results List																				
5.	T1031TS427 3-D1	427	AlphaFold2	Assess	sors Ho	ome I Ge	neral Disc	ussions I	Domain De	finitions	and Cla	assificatio	ons S	ummarv	on Experin	nental Segu	ences Sum	mary on T	Farget Stru	ctures Ava	ilable Str	uctures	Targe
6.	T1031TS480 5-D1	480	FEIG-R2															1					
7. 8.	T1031T5480 1-D1	480	BAKER		Tab	les	DT Plots	Loc	Accurac	cy⊔ Po	osition	-specifi	c align	ment	Templa	tes 🕛 Hel	р						
9.	T1031TS335 3-D1	335	FEIG	Targ	jet: T1	037-D1	✓ Grou	ip: - All G	oups -		✓ Mode	el: - All ·	- •	Multi so	ort <u>NT</u> =40	4 residues	Text file						
10.	T1031TS473 2-D1	473	BAKER																				
11.	T1031TS480_3-D1	480	FEIG-R2				Concert				LGA Sequence Depend			ndent (4	ent (4Å) LGA Seq		equence		Molprot	ity			
13.	13. <u>T1031TS042 1-D1</u> 042 s Q			QUARK				General				Full			Indep	Independent (4Å)		I Dali <u>Fu</u>	I <u>Full</u>	IDDT	SphG	C C	AD
14. 15.	T1031TS473 3-D1 T1031TS129 1-D1	473 129	BAKER Zhang	<u>#</u>	\$ <u>Mod</u>	iel	≑ <u>GR</u> #	≑ <u>GR N</u>	ime	Char	<u>ts</u> \$ (\$ <u>NP</u>		: <u>1-</u> DT <u>AL0</u>	P \$ AL4 F	2 ≑ ^{Z-} score	\$ <u>Z-</u> <u>Scor</u>	e + MP- Scor		1 + <u>sc</u>	¢ <u>AA</u>	\$ <u>55</u>
				1.	T1037T	5427 4-D	1 427	AlphaFold	2	ADI	90.7	72	100.00	N/A	95.79	98.76	13.99	55.1	1.09	0.82	97.28	0.78	0.64
				2.	T1037T	S427 5-D	1 427	AlphaFold	2	ADI	G 89.3	00	100.00	N/A	93.56	97.28	13.95	53.2	1.22	0.81	96.16	0.77	0.62
			-	3.	11037T	5427 3-D	427	AlphaFold	2	ADI	6 88.4	+3	100.00	N/A	91.83	97.03	13.65	53	1.23	0.80	93.44	0.77	0.61

ADIG 87.62

ADIG 62.31

<u>ADIG</u> 62.31

ADIG 61.88

ADIG 61.70

ADIG 61.63

ADIG 60.64

<u>A D I G</u> 63.12

ADIG 62.56 100.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00 N/A

2.71

1.50

N/A

1.46

N/A

N/A

1.43

1.44

90.35

68.32

66.34

66.58

66.58

65.84

64.60

65.35

63.37

95.54

79.70

78.22

79.46

79.46

83.17

79.95

77.97

77.48

13.65

10.75

10.92

10.62

10.62

11.13

10.58

10.49

10.28

52.7

35.7

35.9

35.6

35.6

36.7

34.7

34.7

33.8

0.90

1.07

0.97

1.24

1.24

1.25

1.39

1.07

1.67

0.79

0.57

0.57

0.57

0.57

0.61

0.57

0.58

0.55

5. T1037TS427 1-D1 427

 6.
 T1037TS362 1-D1
 362

 7.
 T1037TS362 2-D1
 362

8. T1037TS031 1-D1 031 s

9. T1037TS067 2-D1 067

10. T1037TS403 1-D1 403

 11.
 T1037TS129 2-D1
 129

 12.
 T1037TS473 1-D1
 473

13. T1037TS226 3-D1 226 s

AlphaFold2

Seok-refine

Seok-refine

ProQ2

Zhang

BAKER

Zhang-TBM

Zhang-CEthreader

BAKER-experimental

93.19 0.75 0.60

69.18 0.62 0.36

66.46 0.59 0.36

68.19 0.62

68.32 0.62

69.80 0.61

69.80 0.61

78.09 0.63

69.93 0.61

0.36 0.38

0.36

0.36

0.41

0.35

Accuracy of models in CASP14





(or are protein models useful?)

<u>Talks</u>

- 1. Henning Tidow
- 2. Petr Leiman
- 3. Osnat Herzberg
- 4. Andrei Lupas

Professor, University of Hamburg Associate Professor, University of Texas (UTMB) Professor, University of Maryland Professor, Max Planck Institute, Tübingen

Discussion: brief communications

Steven Rees
 Rhys Grinter

3. Valerio Chiarini

Post-doctoral fellow at UCSD Research Fellow at Monash Unversity Post-doctoral fellow at University of Helsinki



T1058 Integral membrane protein

(X-ray phasing)

Henning Tidow University of Hamburg The model you sent me (from the leading group) worked for MR and we finally solved the structure by MR-SAD. I am still astonished that the human expert model worked, while none of the server models we tried did not (as they were rather similar). Great job!

Henning



H1097 [T1092, T1093, T1094, T1095, T1096] AR9 RNA Polymerase

(threading poly-A model into cryo-EM map)

Petr Leiman University of Texas (UTMB)

Both my student (Alec Fraser in CC) and I are shocked... stunned... by the quality of the model... We need to re-evaluate what we do here. Alec remarked that he has just learned cryoEM and it is already an antiquated field. My conclusion - you do not need a \$10M microscope to get an accurate model. You need to know people who can model your protein for you. Or you learn how do modeling yourself. Seriously, this is mind boggling. You would not believe how much effort we have put into getting this structure. Years of work... Both, cryoEM and crystallography... I mean, this is really shocking...

Petr

T1070

attachment region to the phage tail

(identify registry error)

Osnat Herzberg University of Maryland Unbelievable. They have predicted residues 16-75 correctly with an RMS of 1.26 A. Also, the prediction includes a different assignment of a cis proline (P236) than my original assignment. It turned out that the predicted version is correct because it enables repositioning of a tyrosine residue (Y247) in the right place. The change, together with another adjustment ultimately results in a 2residue shift of 20 residues (237-256).

Osnat



T1100 Transmembrane receptor

(NMR model could not help to solve the same protein)

Andrei Lupas, Max Planck Institute, Tübingen I cannot overstate my excitement at the fact that Marcus solved the structure of Af1503 by molecular replacement with the models of group g427 and sent around the coordinates today. I will let him gloat over his success and share the structure when he is ready.

Andrei