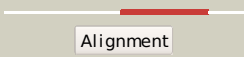

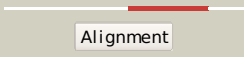

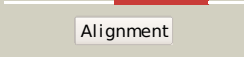

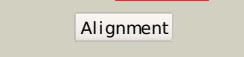
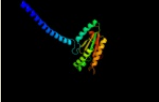
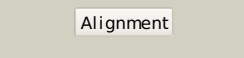

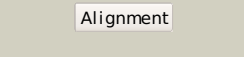

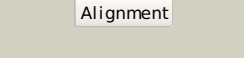

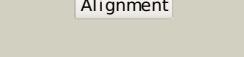

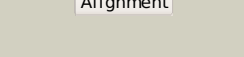

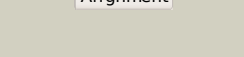

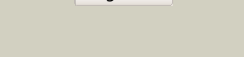



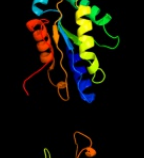

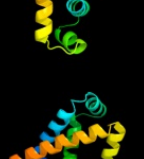
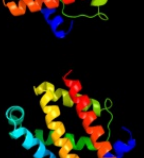
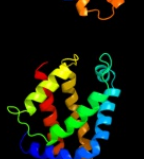

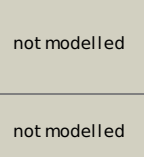


Phyre2

Email	I.a.kelley@imperial.ac.uk
Description	P0AA89
Date	Thu Jan 5 11:12:12 GMT 2012
Unique Job ID	84daa70d63b43769

Detailed template information

#	Template	Alignment Coverage	3D Model	Confidence	% i.d.	Template Information
1	c1w25B_	 Alignment		100.0	35	PDB header: signaling protein Chain: B: PDB Molecule: stalked-cell differentiation controlling protein; PDBTitle: response regulator pled in complex with c-digmp
2	c3ezuA_	 Alignment		100.0	30	PDB header: signaling protein Chain: A: PDB Molecule: ggdef domain protein; PDBTitle: crystal structure of multidomain protein of unknown function with2 ggdef-domain (np_951600.1) from geobacter sulfurreducens at 1.95 a3 resolution
3	c3breA_	 Alignment		100.0	34	PDB header: signaling protein Chain: A: PDB Molecule: probable two-component response regulator; PDBTitle: crystal structure of p.aeruginosa pa3702
4	c3i5aA_	 Alignment		100.0	32	PDB header: signaling protein Chain: A: PDB Molecule: response regulator/ggdef domain protein; PDBTitle: crystal structure of full-length wpsr from pseudomonas syringae
5	c3i5cA_	 Alignment		100.0	37	PDB header: signaling protein Chain: A: PDB Molecule: fusion of general control protein gcn4 and wpsr response PDBTitle: crystal structure of a fusion protein containing the leucine zipper of2 gcn4 and the ggdef domain of wpsr from pseudomonas aeruginosa
6	c3hvaA_	 Alignment		100.0	18	PDB header: transferase Chain: A: PDB Molecule: protein fimx; PDBTitle: crystal structure of fimx ggdef domain from pseudomonas2 aeruginosa
7	c3i5bA_	 Alignment		100.0	40	PDB header: signaling protein Chain: A: PDB Molecule: wpsr response regulator; PDBTitle: crystal structure of the isolated ggdef domain of wpsr from2 pseudomonas aeruginosa
8	c3ignA_	 Alignment		100.0	39	PDB header: transferase Chain: A: PDB Molecule: diguanylate cyclase; PDBTitle: crystal structure of the ggdef domain from marinobacter2 aquaeolei diguanylate cyclase complexed with c-di-gmp -3 northeast structural genomics consortium target mqr89a
9	c3ic1A_	 Alignment		100.0	33	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: eal/ggdef domain protein; PDBTitle: x-ray structure of protein (eal/ggdef domain protein) from2 m.capsulatus, northeast structural genomics consortium3 target mcr174c
10	c3qyyB_	 Alignment		100.0	31	PDB header: signaling protein/inhibitor Chain: B: PDB Molecule: response regulator; PDBTitle: a novel interaction mode between a microbial ggdef domain and the bis-2 (3, 5)-cyclic di-gmp
11	d1w25a3	 Alignment		100.0	41	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: GGDEF domain

12	c3mtkA_	Alignment		100.0	24	PDB header: transferase Chain: A: PDB Molecule: diguanylate cyclase/phosphodiesterase; PDBTitle: x-ray structure of diguanylate cyclase/phosphodiesterase from2 caldicellulosiruptor saccharolyticus, northeast structural genomics3 consortium target clr27c
13	c3pjwA_	Alignment		99.9	23	PDB header: lyase Chain: A: PDB Molecule: cyclic dimeric gmp binding protein; PDBTitle: structure of pseudomonas fluorescence lapd ggdef-eal dual domain, i23
14	c3hvwA_	Alignment		99.9	13	PDB header: lyase Chain: A: PDB Molecule: diguanylate-cyclase (dgc); PDBTitle: crystal structure of the ggdef domain of the pa2567 protein2 from pseudomonas aeruginosa, northeast structural genomics3 consortium target par365c
15	c3gfbB_	Alignment		99.6	10	PDB header: hydrolase, signaling protein Chain: B: PDB Molecule: klebsiella pneumoniae blrp1; PDBTitle: klebsiella pneumoniae blrp1 ph 6 manganese/cy-digmp complex
16	c3p7nB_	Alignment		98.6	11	PDB header: dna binding protein Chain: B: PDB Molecule: sensor histidine kinase; PDBTitle: crystal structure of light activated transcription factor el222 from2 erythrobacter litoralis
17	d1or4a_	Alignment		98.3	15	Fold: Globin-like Superfamily: Globin-like Family: Globins
18	c2w31A_	Alignment		98.0	20	PDB header: oxygen transport Chain: A: PDB Molecule: globin; PDBTitle: globin domain of geobacter sulfurreducens globin-coupled2 sensor
19	c2veeC_	Alignment		97.8	14	PDB header: transport protein Chain: C: PDB Molecule: protoglobin; PDBTitle: structure of protoglobin from methanosarcina acetivorans2 c2a
20	c2qv6D_	Alignment		97.7	20	PDB header: hydrolase Chain: D: PDB Molecule: gtp cyclohydrolase iii; PDBTitle: gtp cyclohydrolase iii from m. jannaschii (mj0145)2 complexed with gtp and metal ions
21	c1cjkA_	Alignment	not modelled	95.3	10	PDB header: lyase/lyase/signaling protein Chain: A: PDB Molecule: adenylate cyclase, type v; PDBTitle: complex of gs-alpha with the catalytic domains of mammalian adenyl2 cyclase: complex with adenosine 5'-(alpha thio)-triphosphate (rp),3 mg, and mn
22	d1fx2a_	Alignment	not modelled	95.3	18	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: Adenylyl and guanylyl cyclase catalytic domain
23	d1azsa_	Alignment	not modelled	93.5	10	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: Adenylyl and guanylyl cyclase catalytic domain
24	c3uvjC_	Alignment	not modelled	91.5	13	PDB header: lyase Chain: C: PDB Molecule: guanylate cyclase soluble subunit alpha-3; PDBTitle: crystal structure of the catalytic domain of the heterodimeric human2 soluble guanylate cyclase 1.
25	c3mr7B_	Alignment	not modelled	91.4	10	PDB header: hydrolase Chain: B: PDB Molecule: adenylate/guanylate cyclase/hydrolase, alpha/beta fold PDBTitle: crystal structure of adenylate/guanylate cyclase/hydrolase from2 silicibacter pomeroyi
26	d1fx4a_	Alignment	not modelled	91.0	18	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: Adenylyl and guanylyl cyclase catalytic domain
27	c2aq4A_	Alignment	not modelled	88.3	27	PDB header: transferase Chain: A: PDB Molecule: dna repair protein rev1; PDBTitle: ternary complex of the catalytic core of rev1 with dna and dctp.
28	c1wc6B_	Alignment	not modelled	86.8	15	PDB header: lyase Chain: B: PDB Molecule: adenylate cyclase;

28	c1wc0b_	Alignment	not modelled	88.8	15	PDBTitle: soluble adenyllyl cyclase cyac from s. platensis in complex2 with rp-atpalphas in presence of bicarbonate PDB header: lyase
29	c1y10C_	Alignment	not modelled	86.6	16	Chain: C: PDB Molecule: hypothetical protein rv1264/mt1302; PDBTitle: mycobacterial adenyllyl cyclase rv1264, holoenzyme, inhibited state
30	c1yk9A_	Alignment	not modelled	86.1	17	PDB header: lyase Chain: A: PDB Molecule: adenylate cyclase; PDBTitle: crystal structure of a mutant form of the mycobacterial2 adenyllyl cyclase rv1625c
31	c2w01C_	Alignment	not modelled	83.0	10	PDB header: lyase Chain: C: PDB Molecule: adenylate cyclase; PDBTitle: crystal structure of the guanylyl cyclase cya2
32	c3r5gB_	Alignment	not modelled	83.0	13	PDB header: lyase Chain: B: PDB Molecule: cyab; PDBTitle: crystal structure of the adenyllyl cyclase cyab from p. aeruginosa
33	d1azsb_	Alignment	not modelled	81.5	13	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: Adenyllyl and guanylyl cyclase catalytic domain
34	c3gqcB_	Alignment	not modelled	78.5	22	PDB header: transferase/dna Chain: B: PDB Molecule: dna repair protein rev1; PDBTitle: structure of human rev1-dna-dntp ternary complex
35	d1wc1a_	Alignment	not modelled	77.3	17	Fold: Ferredoxin-like Superfamily: Nucleotide cyclase Family: Adenyllyl and guanylyl cyclase catalytic domain
36	c1s97D_	Alignment	not modelled	77.1	15	PDB header: transferase/dna Chain: D: PDB Molecule: dna polymerase iv; PDBTitle: dpo4 with gt mismatch
37	c1k1qA_	Alignment	not modelled	73.4	20	PDB header: transcription Chain: A: PDB Molecule: dbh protein; PDBTitle: crystal structure of a dinb family error prone dna2 polymerase from sulfolobus solfataricus
38	d1k1sa2	Alignment	not modelled	70.2	18	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Lesion bypass DNA polymerase (Y-family), catalytic domain
39	c3onqB_	Alignment	not modelled	65.8	10	PDB header: structural genomics, unknown function Chain: B: PDB Molecule: regulator of polyketide synthase expression; PDBTitle: crystal structure of regulator of polyketide synthase expression2 bad_0249 from bifidobacterium adolescentis
40	c3et6A_	Alignment	not modelled	63.6	12	PDB header: lyase Chain: A: PDB Molecule: soluble guanylyl cyclase beta; PDBTitle: the crystal structure of the catalytic domain of a eukaryotic2 guanylate cyclase
41	c1ybuA_	Alignment	not modelled	63.2	15	PDB header: hydrolase Chain: A: PDB Molecule: lipj; PDBTitle: mycobacterium tuberculosis adenyllyl cyclase rv1900c chd, in complex2 with a substrate analog.
42	d1im4a_	Alignment	not modelled	62.8	18	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Lesion bypass DNA polymerase (Y-family), catalytic domain
43	c3mr2A_	Alignment	not modelled	59.0	20	PDB header: transferase/dna Chain: A: PDB Molecule: dna polymerase eta; PDBTitle: human dna polymerase eta in complex with normal dna and incoming2 nucleotide (nrm)
44	d1jx4a2	Alignment	not modelled	57.1	11	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Lesion bypass DNA polymerase (Y-family), catalytic domain
45	c2oh2B_	Alignment	not modelled	54.9	23	PDB header: transferase/dna Chain: B: PDB Molecule: dna polymerase kappa; PDBTitle: ternary complex of human dna polymerase
46	c2r8kB_	Alignment	not modelled	50.2	33	PDB header: replication, transferase/dna Chain: B: PDB Molecule: dna polymerase eta; PDBTitle: structure of the eukaryotic dna polymerase eta in complex with 1,2-2 d(gpg)-cisplatin containing dna
47	c1jihA_	Alignment	not modelled	48.7	33	PDB header: translation Chain: A: PDB Molecule: dna polymerase eta; PDBTitle: yeast dna polymerase eta
48	c3l7xA_	Alignment	not modelled	46.5	27	PDB header: cell cycle Chain: A: PDB Molecule: putative hit-like protein involved in cell-cycle PDBTitle: the crystal structure of smu.412c from streptococcus mutans ua159
49	d1jiha2	Alignment	not modelled	38.8	33	Fold: DNA/RNA polymerases Superfamily: DNA/RNA polymerases Family: Lesion bypass DNA polymerase (Y-family), catalytic domain
50	d1s69a_	Alignment	not modelled	38.2	10	Fold: Globin-like Superfamily: Globin-like Family: Truncated hemoglobin
51	c2ig3A_	Alignment	not modelled	37.0	18	PDB header: oxygen storage/transport Chain: A: PDB Molecule: group iii truncated haemoglobin; PDBTitle: crystal structure of group iii truncated hemoglobin from campylobacter2 jejuni
52	d1dlyA_	Alignment	not modelled	36.3	17	Fold: Globin-like Superfamily: Globin-like Family: Truncated hemoglobin
53	c1dlyA_	Alignment	not modelled	36.3	17	PDB header: oxygen storage/transport Chain: A: PDB Molecule: hemoglobin; PDBTitle: x-ray crystal structure of hemoglobin from the green2 unicellular alga chlamydomonas eugametos
54	c3rbuA_	Alignment	not modelled	36.1	14	PDB header: hydrolase/hydrolase inhibitor Chain: A: PDB Molecule: glutamate carboxypeptidase 2; PDBTitle: n-terminally avitev-tagged human glutamate

						carboxypeptidase ii in2 complex with 2-mpa
55	d1ux8a_	Alignment	not modelled	35.6	11	Fold: Globin-like Superfamily: Globin-like Family: Truncated hemoglobin
56	c1t3nB_	Alignment	not modelled	35.3	30	PDB header: replication/dna Chain: B: PDB Molecule: polymerase (dna directed) iota; PDBTitle: structure of the catalytic core of dna polymerase iota in2 complex with dna and dttp
57	c2bmmA_	Alignment	not modelled	34.1	11	PDB header: oxygen storage/transport Chain: A: PDB Molecule: thermostable hemoglobin from thermobifida fusca; PDBTitle: x-ray structure of a novel thermostable hemoglobin from the2 actinobacterium thermobifida fusca
58	c2wz1B_	Alignment	not modelled	33.4	10	PDB header: lyase Chain: B: PDB Molecule: guanylate cyclase soluble subunit beta-1; PDBTitle: structure of the catalytic domain of human soluble2 guanylate cyclase 1 beta 3.
59	c2kscA_	Alignment	not modelled	32.9	17	PDB header: unknown function Chain: A: PDB Molecule: cyanoglobin; PDBTitle: solution structure of synechococcus sp. pcc 7002 hemoglobin
60	c1cx8F_	Alignment	not modelled	32.9	26	PDB header: metal transport Chain: F: PDB Molecule: transferrin receptor protein; PDBTitle: crytal structure of the ectodomain of human transferrin receptor
61	c3i24B_	Alignment	not modelled	32.7	16	PDB header: hydrolase Chain: B: PDB Molecule: hit family hydrolase; PDBTitle: crystal structure of a hit family hydrolase protein from2 vibrio fischeri. northeast structural genomics consortium3 target id vfr176
62	c3mpbA_	Alignment	not modelled	32.2	35	PDB header: isomerase Chain: A: PDB Molecule: sugar isomerase; PDBTitle: z5688 from e. coli o157:h7 bound to fructose
63	c2fIIA_	Alignment	not modelled	29.8	30	PDB header: replication/dna Chain: A: PDB Molecule: dna polymerase iota; PDBTitle: ternary complex of human dna polymerase iota with dna and dttp
64	c2xykB_	Alignment	not modelled	29.2	12	PDB header: oxygen storage/transport Chain: B: PDB Molecule: 2-on-2 hemoglobin; PDBTitle: group ii 2-on-2 hemoglobin from the plant pathogen2 agrobacterium tumefaciens
65	c2ootA_	Alignment	not modelled	28.2	16	PDB header: hydrolase Chain: A: PDB Molecule: glutamate carboxypeptidase 2; PDBTitle: a high resolution structure of ligand-free human glutamate2 carboxypeptidase ii
66	c3p0tB_	Alignment	not modelled	27.6	11	PDB header: unknown function Chain: B: PDB Molecule: uncharacterized protein; PDBTitle: crystal structure of an hit-like protein from mycobacterium2 paratuberculosis
67	d1w55a2	Alignment	not modelled	26.7	20	Fold: Bacillus chorismate mutase-like Superfamily: lpsF-like Family: lpsF-like
68	c3imiB_	Alignment	not modelled	25.6	13	PDB header: structural genomics, unknown function Chain: B: PDB Molecule: hit family protein; PDBTitle: 2.01 angstrom resolution crystal structure of a hit family protein2 from bacillus anthracis str. 'ames ancestor'
69	d1y23a_	Alignment	not modelled	23.9	18	Fold: HIT-like Superfamily: HIT-like Family: HIT (HINT, histidine triad) family of protein kinase-interacting proteins
70	d1t0aa_	Alignment	not modelled	23.9	28	Fold: Bacillus chorismate mutase-like Superfamily: lpsF-like Family: lpsF-like
71	c3f0gA_	Alignment	not modelled	23.7	24	PDB header: lyase Chain: A: PDB Molecule: 2-c-methyl-d-erythritol 2,4-cyclodiphosphate synthase; PDBTitle: co-crystal structure of 2c-methyl-d-erythritol 2,4-cyclodiphosphate2 synthase with cmp
72	d1gx1a_	Alignment	not modelled	23.7	24	Fold: Bacillus chorismate mutase-like Superfamily: lpsF-like Family: lpsF-like
73	c3oheA_	Alignment	not modelled	23.5	16	PDB header: hydrolase Chain: A: PDB Molecule: histidine triad (hit) protein; PDBTitle: crystal structure of a histidine triad protein (maqu_1709) from2 marinobacter aquaeolei vt8 at 1.20 a resolution
74	c2ylaA_	Alignment	not modelled	23.4	14	PDB header: hydrolase Chain: A: PDB Molecule: beta-n-acetylhexosaminidase; PDBTitle: inhibition of the pneumococcal virulence factor strh and2 molecular insights into n-glycan recognition and3 hydrolysis
75	c3anoA_	Alignment	not modelled	22.9	20	PDB header: transferase Chain: A: PDB Molecule: ap-4-a phosphorylase; PDBTitle: crystal structure of a novel diadenosine 5',5'''-p1,p4-tetraphosphate2 phosphorylase from mycobacterium tuberculosis h37rv
76	d1iv3a_	Alignment	not modelled	22.9	20	Fold: Bacillus chorismate mutase-like Superfamily: lpsF-like Family: lpsF-like
77	d1vh8a_	Alignment	not modelled	22.8	24	Fold: Bacillus chorismate mutase-like Superfamily: lpsF-like Family: lpsF-like
78	d2o5aa1	Alignment	not modelled	22.8	15	Fold: Nucleotidyltransferase Superfamily: Nucleotidyltransferase Family: lojap/YbeB-like
79	d1yhta1	Alignment	not modelled	21.8	23	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-N-acetylhexosaminidase catalytic domain

80	c1xaxA	Alignment	not modelled	21.8	17	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: hypothetical upf0054 protein hi0004; PDBTitle: nmr structure of hi0004, a putative essential gene product2 from haemophilus influenzae
81	d1vr6a1	Alignment	not modelled	21.6	18	Fold: TIM beta/alpha-barrel Superfamily: Aldolase Family: Class I DAHP synthetase
82	d1oz9a	Alignment	not modelled	21.3	20	Fold: Zincin-like Superfamily: Metalloproteases ("zincins"), catalytic domain Family: Predicted metal-dependent hydrolase
83	c2kloA	Alignment	not modelled	21.0	7	PDB header: cell cycle Chain: A: PDB Molecule: dna replication factor cdt1; PDBTitle: structure of the cdt1 c-terminal domain
84	c1w57A	Alignment	not modelled	20.7	20	PDB header: transferase Chain: A: PDB Molecule: ispd/ispf bifunctional enzyme; PDBTitle: structure of the bifunctional ispdf from campylobacter2 jejuni containing zn
85	c2yl8A	Alignment	not modelled	20.7	11	PDB header: hydrolase Chain: A: PDB Molecule: beta-n-acetylhexosaminidase; PDBTitle: inhibition of the pneumococcal virulence factor strh and2 molecular insights into n-glycan recognition and3 hydrolysis
86	c2pmpA	Alignment	not modelled	20.7	28	PDB header: lyase Chain: A: PDB Molecule: 2-c-methyl-d-erythritol 2,4-cyclodiphosphate synthase; PDBTitle: structure of 2c-methyl-d-erythritol 2,4-cyclodiphosphate synthase from2 the isoprenoid biosynthetic pathway of arabidopsis thaliana
87	c1qbaA	Alignment	not modelled	20.4	21	PDB header: glycosyl hydrolase Chain: A: PDB Molecule: chitobiase; PDBTitle: bacterial chitobiase, glycosyl hydrolase family 20
88	c3rpmA	Alignment	not modelled	19.3	14	PDB header: hydrolase Chain: A: PDB Molecule: beta-n-acetyl-hexosaminidase; PDBTitle: crystal structure of the first gh20 domain of a novel beta-n-acetyl-2 hexosaminidase strh from streptococcus pneumoniae r6
89	c3aq8A	Alignment	not modelled	19.0	11	PDB header: oxygen binding Chain: A: PDB Molecule: group 1 truncated hemoglobin; PDBTitle: crystal structure of truncated hemoglobin from tetrahymena pyriformis,2 q46e mutant, fe(iii) form
90	d1xm5a	Alignment	not modelled	19.0	14	Fold: Zincin-like Superfamily: Metalloproteases ("zincins"), catalytic domain Family: Predicted metal-dependent hydrolase
91	c2byvE	Alignment	not modelled	18.9	25	PDB header: regulation Chain: E: PDB Molecule: rap guanine nucleotide exchange factor 4; PDBTitle: structure of the camp responsive exchange factor epac2 in2 its auto-inhibited state
92	c1m04A	Alignment	not modelled	18.1	17	PDB header: hydrolase Chain: A: PDB Molecule: beta-n-acetylhexosaminidase; PDBTitle: mutant streptomyces plicatus beta-hexosaminidase (d313n) in complex2 with product (glcnac)
93	d1n8pa	Alignment	not modelled	17.7	19	Fold: PLP-dependent transferase-like Superfamily: PLP-dependent transferases Family: Cystathionine synthase-like
94	d1qbaa3	Alignment	not modelled	17.6	21	Fold: TIM beta/alpha-barrel Superfamily: (Trans)glycosidases Family: beta-N-acetylhexosaminidase catalytic domain
95	d1ldra	Alignment	not modelled	17.3	15	Fold: Globin-like Superfamily: Globin-like Family: Truncated hemoglobin
96	c2jroA	Alignment	not modelled	17.3	14	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: uncharacterized protein; PDBTitle: solution nmr structure of so0334 from shewanella oneidensis. northeast2 structural genomics target sor75
97	d1dlwa	Alignment	not modelled	17.0	12	Fold: Globin-like Superfamily: Globin-like Family: Truncated hemoglobin
98	c3ugsB	Alignment	not modelled	16.9	17	PDB header: transferase Chain: B: PDB Molecule: undecaprenyl pyrophosphate synthase; PDBTitle: crystal structure of a probable undecaprenyl diphosphate synthase2 (upps) from campylobacter jejuni
99	d1cgme	Alignment	not modelled	16.7	15	Fold: Four-helical up-and-down bundle Superfamily: TMV-like viral coat proteins Family: TMV-like viral coat proteins