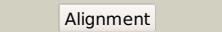
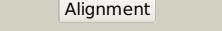
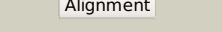
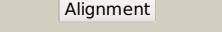
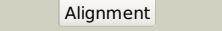
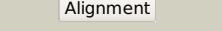
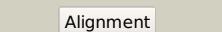
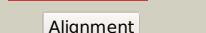
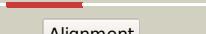
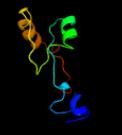
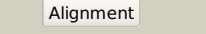
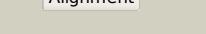
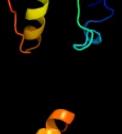
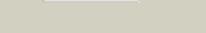
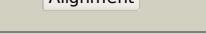
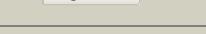


Phyre²

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Date	Fri Aug 9 18:20:06 BST 2019
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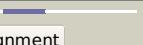
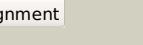
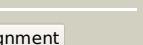
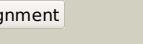
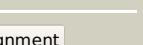
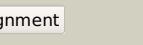
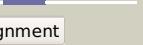
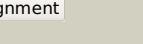
Detailed template information

#	Template	Alignment Coverage	3D Model	Confidence	% i.d.	Template Information
1	c3cmwA			99.6	20	PDB header: recombination/dna Chain: A; PDB Molecule: protein reca; PDBTitle: mechanism of homologous recombination from the recassdna/dsdna2 structures
2	c3cmuA			99.3	23	PDB header: recombination/dna Chain: A; PDB Molecule: protein reca; PDBTitle: mechanism of homologous recombination from the recassdna/dsdna2 structures
3	c2recB			99.0	24	PDB header: helicase PDB COMPND:
4	c1xp8A			99.0	27	PDB header: dna binding protein Chain: A; PDB Molecule: reca protein; PDBTitle: deinococcus radiodurans reca in complex with atp-gamma-s
5	c3cmvG			98.9	25	PDB header: recombination Chain: G; PDB Molecule: protein reca; PDBTitle: mechanism of homologous recombination from the recassdna/dsdna2 structures
6	c2zroA			98.8	30	PDB header: hydrolase Chain: A; PDB Molecule: protein reca; PDBTitle: msreca adp form iv
7	c3hr8A			98.8	24	PDB header: recombination Chain: A; PDB Molecule: protein reca; PDBTitle: crystal structure of thermotoga maritima reca
8	d1mo6a1			98.7	31	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
9	d1xp8a1			98.6	24	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
10	d1u94a1			98.6	23	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
11	d1ubea1			98.6	29	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)

12	c3io5B_			98.5	16	PDB header: dna binding protein Chain: B: PDB Molecule: recombination and repair protein; PDBTitle: crystal structure of a dimeric form of the uvsx recombinase core2 domain from enterobacteria phage t4
13	c1oftC_			97.6	16	PDB header: bacterial cell division inhibitor Chain: C: PDB Molecule: hypothetical protein pa3008; PDBTitle: crystal structure of sula from pseudomonas aeruginosa
14	d1ofux_			97.4	16	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: Bacterial cell division inhibitor SulA
15	d2i1qqa2			90.4	17	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
16	d1v5wa_			88.9	15	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
17	c2w0mxA_			87.5	23	PDB header: unknown function Chain: A: PDB Molecule: sso2452; PDBTitle: crystal structure of sso2452 from sulfolobus solfataricus p2
18	c3bh0A_			85.9	14	PDB header: replication Chain: A: PDB Molecule: dnab-like replicative helicase; PDBTitle: atpase domain of g40p
19	d1tf7a2			84.7	16	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
20	c2dr3A_			84.2	20	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: upf0273 protein ph0284; PDBTitle: crystal structure of reca superfamily atpase ph0284 from pyrococcus2 horikoshi ot3
21	c4wiaA_		not modelled	84.1	18	PDB header: atp-binding protein Chain: A: PDB Molecule: putative flagella-related protein h; PDBTitle: crystal structure of flagellar accessory protein flah from2 methanocaldococcus jannaschii
22	c2zjbB_		not modelled	83.0	15	PDB header: recombination Chain: B: PDB Molecule: meiotic recombination protein dmc1/lm15 homolog; PDBTitle: crystal structure of the human dmc1-m200v polymorphic2 variant
23	d1pzna2		not modelled	82.4	13	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
24	c1pznG_		not modelled	78.1	13	PDB header: recombination Chain: G: PDB Molecule: dna repair and recombination protein rad51; PDBTitle: rad51 (rada)
25	d1szpa2		not modelled	76.2	13	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
26	c1t4gA_		not modelled	74.7	16	PDB header: recombination Chain: A: PDB Molecule: dna repair and recombination protein rada; PDBTitle: atpase in complex with amp-pnp
27	c4ydsA_		not modelled	73.3	11	PDB header: hydrolase Chain: A: PDB Molecule: flagella-related protein h; PDBTitle: flah from sulfolobus acidocaldarius with atp and mg-ion
28	c4a1fB_		not modelled	72.8	20	PDB header: hydrolase Chain: B: PDB Molecule: replicative dna helicase; PDBTitle: crystal structure of c-terminal domain of helicobacter2 pylori dnab helicase

29	c3bgwD		Alignment	not modelled	71.2	11	PDB header: replication Chain: D: PDB Molecule: dnab-like replicative helicase; PDBTitle: the structure of a dnab-like replicative helicase and its interactions2 with primase
30	c3bs4A		Alignment	not modelled	70.8	8	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: uncharacterized protein ph0321; PDBTitle: crystal structure of uncharacterized protein ph0321 from pyrococcus horikoshii in complex with an unknown peptide
31	d1n0wa		Alignment	not modelled	68.9	11	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
32	c2dfIA		Alignment	not modelled	68.7	19	PDB header: recombination Chain: A: PDB Molecule: dna repair and recombination protein rada; PDBTitle: crystal structure of left-handed rada filament
33	c3ldaA		Alignment	not modelled	68.5	13	PDB header: dna binding protein Chain: A: PDB Molecule: dna repair protein rad51; PDBTitle: yeast rad51 h352y filament interface mutant
34	c1pzna		Alignment	not modelled	66.0	13	PDB header: recombination Chain: A: PDB Molecule: dna repair and recombination protein rad51; PDBTitle: rad51 (rada)
35	c2v3cC		Alignment	not modelled	62.5	21	PDB header: signaling protein Chain: C: PDB Molecule: signal recognition 54 kda protein; PDBTitle: crystal structure of the srp54-srp19-7s.s srp rna complex2 of m. jannaschii
36	c2cvhB		Alignment	not modelled	54.3	22	PDB header: dna binding protein Chain: B: PDB Molecule: dna repair and recombination protein radb; PDBTitle: crystal structure of the radb recombinase
37	c1szpC		Alignment	not modelled	51.5	13	PDB header: dna binding protein Chain: C: PDB Molecule: dna repair protein rad51; PDBTitle: a crystal structure of the rad51 filament
38	d1tf7a1		Alignment	not modelled	50.1	16	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
39	d1nlfa		Alignment	not modelled	48.0	26	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
40	c5jzcG		Alignment	not modelled	47.8	11	PDB header: dna binding protein Chain: G: PDB Molecule: dna repair protein rad51 homolog 1; PDBTitle: helical filament
41	c4nmnA		Alignment	not modelled	47.0	21	PDB header: replication Chain: A: PDB Molecule: replicative dna helicase; PDBTitle: aquifex aeolicus replicative helicase (dnab) complexed with adp, at2 3.3 resolution
42	c5gafi		Alignment	not modelled	44.0	19	PDB header: ribosome Chain: I: PDB Molecule: 50s ribosomal protein l10; PDBTitle: rnc in complex with srp
43	c2ztsB		Alignment	not modelled	42.6	17	PDB header: atp-binding protein Chain: B: PDB Molecule: putative uncharacterized protein ph0186; PDBTitle: crystal structure of kaic-like protein ph0186 from hyperthermophilic2 archaea pyrococcus horikoshii ot3
44	c1u9iA		Alignment	not modelled	39.5	19	PDB header: circadian clock protein Chain: A: PDB Molecule: kaic; PDBTitle: crystal structure of circadian clock protein kaic with phosphorylation2 sites
45	c1qzwC		Alignment	not modelled	38.1	16	PDB header: signaling protein/rna Chain: C: PDB Molecule: signal recognition 54 kda protein; PDBTitle: crystal structure of the complete core of archaeal srp and2 implications for inter-domain communication
46	c1e1ca		Alignment	not modelled	37.6	13	PDB header: isomerase Chain: A: PDB Molecule: methylmalonyl-coa mutase alpha chain; PDBTitle: methylmalonyl-coa mutase h244a mutant
47	d1xi8a3		Alignment	not modelled	36.7	15	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MoeA central domain-like
48	c6qeIB		Alignment	not modelled	36.7	15	PDB header: replication Chain: B: PDB Molecule: replicative dna helicase; PDBTitle: e. coli dnabc apo complex
49	d2jfga1		Alignment	not modelled	34.2	25	Fold: MurCD N-terminal domain Superfamily: MurCD N-terminal domain Family: MurCD N-terminal domain
50	c5fmsA		Alignment	not modelled	33.4	15	PDB header: transport protein Chain: A: PDB Molecule: intraflagellar transport protein 52 homolog; PDBTitle: mmift52 n-terminal domain
51	c3b9qA		Alignment	not modelled	32.8	17	PDB header: protein transport Chain: A: PDB Molecule: chloroplast srp receptor homolog, alpha subunit PDBTitle: the crystal structure of cptfsy from arabidopsis thaliana
52	d1wu2a3		Alignment	not modelled	30.2	15	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MoeA central domain-like
53	c3rhtB		Alignment	not modelled	30.2	29	PDB header: structural genomics, unknown function Chain: B: PDB Molecule: (gatase1)-like protein; PDBTitle: crystal structure of type 1 glutamine amidotransferase (gatase1)-like 2 protein from planctomyces limnophilus
54	c3kbqA		Alignment	not modelled	29.8	23	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: protein ta0487; PDBTitle: the crystal structure of the protein cina with unknown function from2 thermoplasma acidophilum
55	d1okkd2		Alignment	not modelled	27.6	15	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases

						Family: Nitrogenase iron protein-like
56	c5fmrC	Alignment	not modelled	27.4	15	PDB header: transport protein Chain: C: PDB Molecule: intraflagellar transport protein component ift52; PDBTitle: crift52 n-terminal domain
57	d1cr2a	Alignment	not modelled	26.9	14	Fold: P-loop containing nucleoside triphosphate hydrolases Superfamily: P-loop containing nucleoside triphosphate hydrolases Family: RecA protein-like (ATPase-domain)
58	c5jwqA	Alignment	not modelled	25.6	16	PDB header: transcription regulator Chain: A: PDB Molecule: circadian clock protein kinase kaic; PDBTitle: crystal structure of kaic s431e in complex with foldswitch-stabilized2 kaiB from thermosynechococcus elongatus
59	c5l3rC	Alignment	not modelled	23.8	13	PDB header: protein transport Chain: C: PDB Molecule: signal recognition particle 54 kda protein, chloroplastic; PDBTitle: structure of the gtpase heterodimer of chloroplast srp54 and ftsy from2 arabidopsis thaliana
60	d2ftsa3	Alignment	not modelled	23.3	18	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MoeA central domain-like
61	d2h1qal	Alignment	not modelled	22.5	24	Fold: PLP-dependent transferase-like Superfamily: Dhaf3308-like Family: Dhaf3308-like
62	c1zu4A	Alignment	not modelled	22.3	21	PDB header: protein transport Chain: A: PDB Molecule: ftsy; PDBTitle: crystal structure of ftsy from mycoplasma mycoides-space2 group p21212
63	d1oi7a1	Alignment	not modelled	21.6	14	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: CoA-binding domain
64	c4tskA	Alignment	not modelled	20.9	13	PDB header: oxidoreductase, isomerase Chain: A: PDB Molecule: ketol-acid reductoisomerase; PDBTitle: ketol-acid reductoisomerase from alicyclobacillus acidocaldaricus
65	c1m7IA	Alignment	not modelled	20.6	29	PDB header: sugar binding protein Chain: A: PDB Molecule: pulmonary surfactant-associated protein d; PDBTitle: solution structure of the coiled-coil trimerization domain2 from lung surfactant protein d
66	d1np3a2	Alignment	not modelled	19.9	21	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: 6-phosphogluconate dehydrogenase-like, N-terminal domain
67	c3bicA	Alignment	not modelled	19.5	16	PDB header: isomerase Chain: A: PDB Molecule: methylmalonyl-coa mutase, mitochondrial precursor; PDBTitle: crystal structure of human methylmalonyl-coa mutase
68	d2nu7a1	Alignment	not modelled	18.6	19	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: CoA-binding domain
69	c2iy3A	Alignment	not modelled	18.6	16	PDB header: rna-binding Chain: A: PDB Molecule: signal recognition particle protein, signal recognition PDBTitle: structure of the e. coli signal recognition particle
70	d1euca1	Alignment	not modelled	18.5	26	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: CoA-binding domain
71	c5yeqB	Alignment	not modelled	18.5	14	PDB header: isomerase Chain: B: PDB Molecule: ketol-acid reductoisomerase (nadp(+)); PDBTitle: the structure of sac-kari protein
72	c2qy9A	Alignment	not modelled	16.8	15	PDB header: protein transport Chain: A: PDB Molecule: cell division protein ftsy; PDBTitle: structure of the ng+1 construct of the e. coli srp receptor2 ftsy
73	d2nqra3	Alignment	not modelled	16.6	18	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MoeA central domain-like
74	c2q5cA	Alignment	not modelled	16.3	11	PDB header: transcription Chain: A: PDB Molecule: ntrc family transcriptional regulator; PDBTitle: crystal structure of ntrc family transcriptional regulator from2 clostridium acetobutylicum
75	d1pjqa1	Alignment	not modelled	16.0	17	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: Siroheme synthase N-terminal domain-like
76	c4lhbc	Alignment	not modelled	15.9	18	PDB header: transferase Chain: C: PDB Molecule: molybdopterin adenyllyltransferase; PDBTitle: crystal structure of tungsten cofactor synthesizing protein moab from2 pyrococcus furiosus
77	c2vyea	Alignment	not modelled	15.3	15	PDB header: hydrolase/dna Chain: A: PDB Molecule: replicative dna helicase; PDBTitle: crystal structure of the dnac-ssdna complex
78	c3iynR	Alignment	not modelled	14.9	30	PDB header: virus Chain: R: PDB Molecule: hexon-associated protein; PDBTitle: 3.6-angstrom cryoem structure of human adenovirus type 5
79	c3w01A	Alignment	not modelled	14.9	13	PDB header: transferase Chain: A: PDB Molecule: heptaprenylglycerol phosphate synthase; PDBTitle: crystal structure of pcrb complexed with peg from staphylococcus2 aureus subsp. aureus mu3
80	d1kola2	Alignment	not modelled	14.7	22	Fold: NAD(P)-binding Rossmann-fold domains Superfamily: NAD(P)-binding Rossmann-fold domains Family: Alcohol dehydrogenase-like, C-terminal domain
81	c2q9cA	Alignment	not modelled	13.7	20	PDB header: signaling protein Chain: A: PDB Molecule: cell division protein ftsy; PDBTitle: structure of ftsy:gmppnp with mgcl complex

82	d1uz5a3		Alignment	not modelled	13.4	21	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MoeA central domain-like
83	c2j289		Alignment	not modelled	13.3	19	PDB header: ribosome Chain: 9; PDB Molecule: signal recognition particle 54; PDBTitle: model of e. coli srp bound to 70s rncs
84	c1vmaA		Alignment	not modelled	13.2	20	PDB header: protein transport Chain: A; PDB Molecule: cell division protein ftsy; PDBTitle: crystal structure of cell division protein ftsy (tm0570) from2 thermotoga maritima at 1.60 a resolution
85	c2f1rA		Alignment	not modelled	12.9	26	PDB header: biosynthetic protein Chain: A; PDB Molecule: molybdopterin-guanine dinucleotide biosynthesis PDBTitle: crystal structure of molybdopterin-guanine biosynthesis2 protein b (mobb)
86	c4cgbE		Alignment	not modelled	12.2	10	PDB header: cell cycle Chain: E; PDB Molecule: echinoderm microtubule-associated protein-like 2; PDBTitle: crystal structure of the trimerization domain of eml2
87	c4xdzB		Alignment	not modelled	12.1	17	PDB header: oxidoreductase Chain: B; PDB Molecule: ketol-acid reductoisomerase; PDBTitle: halo structure of ketol-acid reductoisomerase from ignisphaera2 agggregans
88	c2g4rB		Alignment	not modelled	11.7	17	PDB header: biosynthetic protein Chain: B; PDB Molecule: molybdopterin biosynthesis mog protein; PDBTitle: anomalous substructure of moga
89	c2piuD		Alignment	not modelled	11.6	12	PDB header: transcription Chain: D; PDB Molecule: propionate catabolism operon regulatory protein; PDBTitle: crystal structure of propionate catabolism operon regulatory protein2 prpr
90	c5mc9B		Alignment	not modelled	11.3	26	PDB header: cell adhesion Chain: B; PDB Molecule: laminin subunit beta-1; PDBTitle: crystal structure of the heterotrimeric integrin-binding region of2 laminin-111
91	c2og2A		Alignment	not modelled	11.2	17	PDB header: protein transport Chain: A; PDB Molecule: putative signal recognition particle receptor; PDBTitle: crystal structure of chloroplast ftsy from arabidopsis2 thaliana
92	c3fk4A		Alignment	not modelled	10.9	14	PDB header: isomerase Chain: A; PDB Molecule: rubisco-like protein; PDBTitle: crystal structure of rubisco-like protein from bacillus2 cereus atcc 14579
93	d1y5ea1		Alignment	not modelled	10.9	13	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MogA-like
94	c3dm5A		Alignment	not modelled	10.8	19	PDB header: rna binding protein, transport protein Chain: A; PDB Molecule: signal recognition 54 kda protein; PDBTitle: structures of srp54 and srp19, the two proteins assembling the2 ribonucleic core of the signal recognition particle from the archaeon3 pyrococcus furiosus.
95	c4cgbA		Alignment	not modelled	10.7	10	PDB header: cell cycle Chain: A; PDB Molecule: echinoderm microtubule-associated protein-like 2; PDBTitle: crystal structure of the trimerization domain of eml2
96	c2yfqA		Alignment	not modelled	10.7	19	PDB header: oxidoreductase Chain: A; PDB Molecule: nad-specific glutamate dehydrogenase; PDBTitle: crystal structure of glutamate dehydrogenase from2 peptoniphilus asaccharolyticus
97	c3rfqC		Alignment	not modelled	10.7	23	PDB header: biosynthetic protein Chain: C; PDB Molecule: pterin-4-alpha-carbinolamine dehydratase moab2; PDBTitle: crystal structure of pterin-4-alpha-carbinolamine dehydratase moab22 from mycobacterium marinum
98	c4bucA		Alignment	not modelled	9.8	11	PDB header: ligase Chain: A; PDB Molecule: udp-n-acetyl muramoylalanine--d-glutamate ligase; PDBTitle: crystal structure of murd ligase from thermotoga maritima in apo form
99	d1mkza		Alignment	not modelled	9.7	18	Fold: Molybdenum cofactor biosynthesis proteins Superfamily: Molybdenum cofactor biosynthesis proteins Family: MogA-like