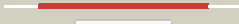



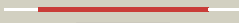



















Phyre2

Email	mdejesus@rockefeller.edu
Description	RVBD0306 (-)_375914_376585
Date	Tue Jul 23 14:50:37 BST 2019
Unique Job ID	77201b7029c05cbf

Detailed template
information

#	Template	Alignment Coverage	3D Model	Confidence	% i.d.	Template Information
1	c2isiB_	 Alignment		100.0	40	PDB header: flavoprotein Chain: B; PDB Molecule: blub; PDBTitle: blub bound to reduced flavin (fmnh2) and molecular oxygen.2 (clear crystal form)
2	d2frea1	 Alignment		100.0	22	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
3	c5heiE_	 Alignment		100.0	20	PDB header: oxidoreductase Chain: E; PDB Molecule: nfra2; PDBTitle: structure of b. megaterium nfra2
4	d1bkja_	 Alignment		100.0	20	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
5	c3n2sD_	 Alignment		100.0	21	PDB header: oxidoreductase Chain: D; PDB Molecule: nadph-dependent nitro/flavin reductase; PDBTitle: structure of nfra1 nitroreductase from b. subtilis
6	d1f5va_	 Alignment		100.0	26	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
7	d1zcha1	 Alignment		100.0	22	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
8	c5hdiA_	 Alignment		100.0	23	PDB header: oxidoreductase Chain: A; PDB Molecule: nfra1; PDBTitle: structure of b. megaterium nfra1
9	c4eo3A_	 Alignment		100.0	27	PDB header: oxidoreductase Chain: A; PDB Molecule: bacterioferritin comigratory protein/nadh dehydrogenase; PDBTitle: peroxiredoxin nitroreductase fusion enzyme
10	c3eofB_	 Alignment		100.0	20	PDB header: oxidoreductase Chain: B; PDB Molecule: putative oxidoreductase; PDBTitle: crystal structure of putative oxidoreductase (yp_213212.1) from2 bacteroides fragilis nctc 9343 at 1.99 a resolution
11	c5ko8B_	 Alignment		100.0	21	PDB header: oxidoreductase Chain: B; PDB Molecule: nitroreductase; PDBTitle: crystal structure of haliscomenobacter hydrossis iodotyrosine2 deiodinase (iyd) bound to fmn and mono-iodotyrosine (i-tyr)

12	c3gh8A_	Alignment		100.0	22	PDB header: oxidoreductase Chain: A: PDB Molecule: iodotyrosine dehalogenase 1; PDBTitle: crystal structure of mus musculus iodotyrosine deiodinase (iyd) bound2 to fmn and di-iodotyrosine (dit)
13	c2wzvB_	Alignment		100.0	20	PDB header: oxidoreductase Chain: B: PDB Molecule: nfnb protein; PDBTitle: crystal structure of the fmn-dependent nitroreductase nfnb2 from mycobacterium smegmatis
14	c4xomB_	Alignment		100.0	22	PDB header: unknown function Chain: B: PDB Molecule: coenzyme f420:l-glutamate ligase; PDBTitle: coenzyme f420:l-glutamate ligase (fbib) from mycobacterium2 tuberculosis (c-terminal domain).
15	d1vfra_	Alignment		100.0	17	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
16	c3g14B_	Alignment		100.0	22	PDB header: oxidoreductase Chain: B: PDB Molecule: nitroreductase family protein; PDBTitle: crystal structure of nitroreductase family protein (yp_877874.1) from2 clostridium novyi nt at 1.75 a resolution
17	d2ifaa1	Alignment		100.0	14	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
18	c3bemA_	Alignment		100.0	19	PDB header: oxidoreductase Chain: A: PDB Molecule: putative nad(p)h nitroreductase ydfn; PDBTitle: crystal structure of putative nitroreductase ydfn (2632848) from2 bacillus subtilis at 1.65 a resolution
19	c2hayD_	Alignment		100.0	21	PDB header: oxidoreductase Chain: D: PDB Molecule: putative nad(p)h-flavin oxidoreductase; PDBTitle: the crystal structure of the putative nad(p)h-flavin oxidoreductase2 from streptococcus pyogenes m1 gas
20	c3gagB_	Alignment		100.0	21	PDB header: oxidoreductase Chain: B: PDB Molecule: putative nadh dehydrogenase, nadph nitroreductase; PDBTitle: crystal structure of a nitroreductase-like protein (smu.346) from2 streptococcus mutans at 1.70 a resolution
21	d1ywqa1	Alignment	not modelled	100.0	16	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
22	c6czpH_	Alignment	not modelled	100.0	20	PDB header: oxidoreductase Chain: H: PDB Molecule: oxygen-insensitive nad(p)h nitroreductase; PDBTitle: 2.2 angstrom resolution crystal structure oxygen-insensitive nad(p)h-2 dependent nitroreductase nfsb from vibrio vulnificus in complex with3 fmn
23	c3gr3B_	Alignment	not modelled	100.0	23	PDB header: flavoprotein Chain: B: PDB Molecule: nitroreductase; PDBTitle: crystal structure of a nitroreductase-like family protein (pnba,2 bh06130) from bartonella henselae str. houston-1 at 1.45 a resolution
24	d1ykia1	Alignment	not modelled	100.0	19	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
25	c4dn2A_	Alignment	not modelled	100.0	32	PDB header: oxidoreductase Chain: A: PDB Molecule: nitroreductase; PDBTitle: crystal structure of putative nitroreductase from geobacter2 metallireducens gs-15
26	c3e39A_	Alignment	not modelled	100.0	30	PDB header: oxidoreductase Chain: A: PDB Molecule: putative nitroreductase; PDBTitle: crystal structure of a putative nitroreductase in complex with fmn2 (dde_0787) from desulfovibrio desulfuricans subsp. at 1.70 a3 resolution
27	d1kqba_	Alignment	not modelled	100.0	21	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
						PDB header: oxidoreductase Chain: B: PDB Molecule: enone reductase cla-er;

28	c4glyB_	Alignment	not modelled	100.0	17	PDBTitle: crystal structure of cla-er, a novel enone reductase catalyzing a key2 step of a gut-bacterial fatty acid saturation metabolism,3 biohydrogenation PDB header: oxidoreductase Chain: C: PDB Molecule: nitroreductase family protein;
29	c3koqC_	Alignment	not modelled	100.0	24	PDBTitle: crystal structure of a nitroreductase family protein (cd3355) from2 clostridium difficile 630 at 1.58 a resolution PDB header: oxidoreductase Chain: C: PDB Molecule: nad(p)h-flavin oxidoreductase;
30	c3gbhC_	Alignment	not modelled	100.0	15	PDBTitle: crystal structure of a putative nad(p)h:fmn oxidoreductase (se1966)2 from staphylococcus epidermidis atcc 12228 at 2.00 a resolution PDB header: oxidoreductase Chain: A: PDB Molecule: nitroreductase;
31	c3of4A_	Alignment	not modelled	100.0	14	PDBTitle: crystal structure of a fmn/fad- and nad(p)h-dependent nitroreductase2 (nfnb, il2077) from idiomarina loihiensis l2tr at 1.90 a resolution PDB header: flavoprotein Chain: A: PDB Molecule: blub-like flavoprotein;
32	c3eo8A_	Alignment	not modelled	100.0	21	PDBTitle: crystal structure of blub-like flavoprotein (yp_001089088.1) from2 clostridium difficile 630 at 1.74 a resolution PDB header: oxidoreductase Chain: B: PDB Molecule: nitroreductase;
33	c3ge6B_	Alignment	not modelled	100.0	21	PDBTitle: crystal structure of a putative nitroreductase in complex with fmn2 (exig_2970) from exiguobacterium sibiricum 255-15 at 1.85 a3 resolution PDB header: oxidoreductase Chain: B: PDB Molecule: putative nitroreductase;
34	c3gfaB_	Alignment	not modelled	100.0	24	PDBTitle: crystal structure of a putative nitroreductase in complex with fmn2 (cd3205) from clostridium difficile 630 at 1.35 a resolution PDB header: oxidoreductase Chain: A: PDB Molecule: iodotyrosine deiodinase 1;
35	c3to0A_	Alignment	not modelled	100.0	27	PDBTitle: crystal structure of mus musculus iodotyrosine deiodinase (iyd) c217a,2 c239a bound to fmn PDB header: oxidoreductase Chain: A: PDB Molecule: copper induced nitroreductase d;
36	c2wqfA_	Alignment	not modelled	100.0	16	PDBTitle: crystal structure of the nitroreductase cind from2 lactococcus lactis in complex with fmn Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
37	d2b67a1	Alignment	not modelled	100.0	17	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
38	d1noxa_	Alignment	not modelled	100.0	24	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: NADH oxidase/flavin reductase
39	c3k6hB_	Alignment	not modelled	100.0	17	PDB header: oxidoreductase Chain: B: PDB Molecule: nitroreductase family protein; PDBTitle: crystal structure of a nitroreductase family protein from2 agrobacterium tumefaciens str. c58 PDB header: oxidoreductase Chain: A: PDB Molecule: putative nad(p)h:fmn oxidoreductase;
40	c3ge5A_	Alignment	not modelled	100.0	28	PDBTitle: crystal structure of a putative nad(p)h:fmn oxidoreductase (pg0310)2 from porphyromonas gingivalis w83 at 1.70 a resolution PDB header: oxidoreductase Chain: D: PDB Molecule: oxygen-insensitive nadph nitroreductase;
41	c3qdID_	Alignment	not modelled	100.0	23	PDBTitle: crystal structure of rdxa from helicobacter pylori PDB header: oxidoreductase Chain: A: PDB Molecule: putative nadh dehydrogenase/nad(p)h nitroreductase;
42	c2h0uA_	Alignment	not modelled	100.0	14	PDBTitle: crystal structure of nad(p)h-flavin oxidoreductase from helicobacter2 pylori PDB header: oxidoreductase Chain: A: PDB Molecule: nitroreductase family protein;
43	c2r01A_	Alignment	not modelled	100.0	22	PDBTitle: crystal structure of a putative fmn-dependent nitroreductase (ct0345)2 from chlorobium tepidum t1s at 1.15 a resolution PDB header: oxidoreductase Chain: A: PDB Molecule: putative nadh dehydrogenase/nad(p)h nitroreductase;
44	c3kwkA_	Alignment	not modelled	100.0	26	PDBTitle: crystal structure of putative nadh dehydrogenase/nad(p)h2 nitroreductase (np_809094.1) from bacteroides thetaiotaomicron vpi-3 5482 at 1.54 a resolution PDB header: oxidoreductase Chain: E: PDB Molecule: nitroreductase-like family protein;
45	c2i7hE_	Alignment	not modelled	100.0	24	PDBTitle: crystal structure of the nitroreductase-like family protein from2 bacillus cereus PDB header: oxidoreductase Chain: A: PDB Molecule: putative nadh dehydrogenase/nad(p)h nitroreductase;
46	c3m5kA_	Alignment	not modelled	100.0	28	PDBTitle: crystal structure of putative nadh dehydrogenase/nad(p)h2 nitroreductase (bdi_1728) from parabacteroides distasonis atcc 85033 at 1.86 a resolution PDB header: flavoprotein Chain: A: PDB Molecule: nitroreductase;
47	c3ek3A_	Alignment	not modelled	100.0	20	PDBTitle: crystal structure of nitroreductase with bound fmn (yp_211706.1) from2 bacteroides fragilis nctc 9343 at 1.70 a resolution PDB header: oxidoreductase Chain: B: PDB Molecule: putative nadh oxidase;
48	c3e10B_	Alignment	not modelled	100.0	25	PDBTitle: crystal structure of putative nadh oxidase (np_348178.1) from2 clostridium acetobutylicum at 1.40 a resolution PDB header: oxidoreductase Chain: A: PDB Molecule: putative reductase;
49	c5j6cA_	Alignment	not modelled	100.0	24	PDBTitle: fmn-dependent nitroreductase (cdr20291_0767) from clostridium2 difficile r20291 PDB header: oxidoreductase Chain: D: PDB Molecule: nitroreductase;
50	c3pxvD_	Alignment	not modelled	100.0	23	PDBTitle: crystal structure of a nitroreductase with bound fmn (dhaf_2018) from2 desulfitobacterium hafniense dcb-2 at 2.30 a resolution PDB header: oxidoreductase Chain: B: PDB Molecule: putative reductase;
51	c5i62B_	Alignment	not modelled	100.0	10	PDB header: oxidoreductase Chain: B: PDB Molecule: putative reductase;

51	c3jz6B_	Alignment	not modelled	100.0	15	PDBTitle: fmn-dependent nitroreductase (cdr20291_0684) from clostridium2 difficile r20291 PDB header: oxidoreductase
52	c3hoiA_	Alignment	not modelled	100.0	16	Chain: A: PDB Molecule: fmn-dependent nitroreductase bf3017; PDBTitle: crystal structure of fmn-dependent nitroreductase bf3017 from2 bacteroides fragilis nctc 9343 (yp_212631.1) from bacteroides3 fragilis nctc 9343 at 1.55 a resolution PDB header: oxidoreductase
53	c4urpB_	Alignment	not modelled	100.0	20	Chain: B: PDB Molecule: fatty acid repression mutant protein 2; PDBTitle: the crystal structure of nitroreductase from saccharomyces2 cerevisiae PDB header: oxidoreductase
54	c3hj9A_	Alignment	not modelled	100.0	18	Chain: A: PDB Molecule: oxidoreductase; PDBTitle: crystal structure of a putative nitroreductase (reut_a1228) from2 ralstonia eutropha jmp134 at 2.00 a resolution PDB header: oxidoreductase
55	c3bm2B_	Alignment	not modelled	100.0	19	Chain: B: PDB Molecule: protein ydja; PDBTitle: crystal structure of a minimal nitroreductase ydja from escherichia2 coli k12 with and without fmn cofactor PDB header: oxidoreductase
56	c5lq4B_	Alignment	not modelled	100.0	15	Chain: B: PDB Molecule: cyagox; PDBTitle: the structure of thcox, the first oxidase protein from the cyanobactin2 pathways PDB header: flavoprotein
57	c3eo7A_	Alignment	not modelled	100.0	16	Chain: A: PDB Molecule: putative nitroreductase; PDBTitle: crystal structure of a putative nitroreductase (ava_2154) from2 anabaena variabilis atcc 29413 at 1.80 a resolution
58	d1vkwa_	Alignment	not modelled	99.9	16	Fold: FMN-dependent nitroreductase-like Superfamily: FMN-dependent nitroreductase-like Family: Putative nitroreductase TM1586
59	c2ymvA_	Alignment	not modelled	99.9	20	PDB header: oxidoreductase Chain: A: PDB Molecule: acg nitroreductase; PDBTitle: structure of reduced m smegmatis 5246, a homologue of m.2 tuberculosis acg PDB header: antibiotic/inhibitor
60	c6gosC_	Alignment	not modelled	99.8	17	Chain: C: PDB Molecule: microcin b17-processing protein mcbc; PDBTitle: e. coli microcin synthetase mcbcd complex with pro-mccb17 bound
61	d1oeyj_	Alignment	not modelled	52.6	23	Fold: beta-Grasp (ubiquitin-like) Superfamily: CAD & PB1 domains Family: PB1 domain
62	d2ovra1	Alignment	not modelled	42.0	20	Fold: Skp1 dimerisation domain-like Superfamily: Skp1 dimerisation domain-like Family: Skp1 dimerisation domain-like
63	d1fs2b1	Alignment	not modelled	41.6	21	Fold: Skp1 dimerisation domain-like Superfamily: Skp1 dimerisation domain-like Family: Skp1 dimerisation domain-like
64	c2ovqA_	Alignment	not modelled	39.3	20	PDB header: transcription/cell cycle Chain: A: PDB Molecule: s-phase kinase-associated protein 1a; PDBTitle: structure of the skp1-fbw7-cyclinedegc complex
65	c2p1nD_	Alignment	not modelled	38.4	20	PDB header: signaling protein Chain: D: PDB Molecule: skp1-like protein 1a; PDBTitle: mechanism of auxin perception by the tir1 ubiquitin ligase
66	c1nexC_	Alignment	not modelled	38.0	20	PDB header: ligase, cell cycle Chain: C: PDB Molecule: centromere dna-binding protein complex cbf3 PDBTitle: crystal structure of scskp1-sccd4-cpd peptide complex
67	d1nexa1	Alignment	not modelled	33.3	20	Fold: Skp1 dimerisation domain-like Superfamily: Skp1 dimerisation domain-like Family: Skp1 dimerisation domain-like
68	d2oc6a1	Alignment	not modelled	29.7	14	Fold: Secretion chaperone-like Superfamily: YdhG-like Family: YdhG-like
69	d2i8da1	Alignment	not modelled	26.0	10	Fold: Secretion chaperone-like Superfamily: YdhG-like Family: YdhG-like
70	c1h6zA_	Alignment	not modelled	22.7	14	PDB header: transferase Chain: A: PDB Molecule: pyruvate phosphate dikinase; PDBTitle: 3.0 a resolution crystal structure of glycosomal pyruvate2 phosphate dikinase from trypanosoma brucei
71	c2kl4A_	Alignment	not modelled	14.6	12	PDB header: structural genomics, unknown function Chain: A: PDB Molecule: bh2032 protein; PDBTitle: nmr structure of the protein nb7804a
72	d1vbga1	Alignment	not modelled	14.1	13	Fold: TIM beta/alpha-barrel Superfamily: Phosphoenolpyruvate/pyruvate domain Family: Pyruvate phosphate dikinase, C-terminal domain
73	c3nznA_	Alignment	not modelled	13.7	11	PDB header: oxidoreductase Chain: A: PDB Molecule: glutaredoxin; PDBTitle: the crystal structure of the glutaredoxin from methanosarcina mazei2 go1
74	c2ds2B_	Alignment	not modelled	13.1	27	PDB header: plant protein Chain: B: PDB Molecule: sweet protein mabinlin-2 chain b; PDBTitle: crystal structure of mabinlin ii
75	c4n0hF_	Alignment	not modelled	11.1	11	PDB header: ligase Chain: F: PDB Molecule: glutamyl-trna(gln) amidotransferase subunit f, PDBTitle: crystal structure of s. cerevisiae mitochondrial gatfab
76	c5domA_	Alignment	not modelled	10.9	18	PDB header: plant protein Chain: A: PDB Molecule: 2s albumin; PDBTitle: crystal structure, maturation and flocculating properties of a 2s2 albumin from moringa oleifera seeds
77	c1jsuC_	Alignment	not modelled	10.6	24	PDB header: complex (transferase/cyclin/inhibitor) Chain: C: PDB Molecule: p27; PDBTitle: p27(kip1)/cyclin a/cdk2 complex

78	c5u87A_	Alignment	not modelled	9.9	14	PDB header: plant protein Chain: A: PDB Molecule: preproalbumin paws1; PDBTitle: nmr structure of the precursor protein paws1 comprising sfti-1 and a2 seed storage albumin
79	c3dnjB_	Alignment	not modelled	8.5	15	PDB header: peptide binding protein Chain: B: PDB Molecule: atp-dependent clp protease adapter protein clps; PDBTitle: the structure of the caulobacter crescentus clps protease adaptor2 protein in complex with a n-end rule peptide
80	d1gz0a2	Alignment	not modelled	7.8	17	Fold: Bacillus chorismate mutase-like Superfamily: L30e-like Family: RNA 2'-O ribose methyltransferase substrate binding domain
81	c3gyxJ_	Alignment	not modelled	7.1	17	PDB header: oxidoreductase Chain: J: PDB Molecule: adenylsulfate reductase; PDBTitle: crystal structure of adenylsulfate reductase from2 desulfovibrio gigas
82	c6chgE_	Alignment	not modelled	7.0	22	PDB header: transferase Chain: E: PDB Molecule: klla0e03521p; PDBTitle: crystal structure of the yeast compass catalytic module
83	c4yxjB_	Alignment	not modelled	7.0	15	PDB header: protein binding Chain: B: PDB Molecule: atp-dependent clp protease adapter protein clps 2; PDBTitle: the structure of agrobacterium tumefaciens clps2 bound to l-2 phenylalaninamide
84	d1jwea_	Alignment	not modelled	6.9	27	Fold: N-terminal domain of DnaB helicase Superfamily: N-terminal domain of DnaB helicase Family: N-terminal domain of DnaB helicase
85	d1k78a1	Alignment	not modelled	6.7	25	Fold: DNA/RNA-binding 3-helical bundle Superfamily: Homeodomain-like Family: Paired domain
86	c2lvfA_	Alignment	not modelled	6.6	24	PDB header: allergen Chain: A: PDB Molecule: 2s albumin; PDBTitle: solution structure of the brazil nut 2s albumin ber e 1
87	c4pauA_	Alignment	not modelled	6.6	40	PDB header: unknown function Chain: A: PDB Molecule: nitrogen regulatory protein a; PDBTitle: hypothetical protein sa1058 from s. aureus.
88	d1h6za1	Alignment	not modelled	6.2	16	Fold: TIM beta/alpha-barrel Superfamily: Phosphoenolpyruvate/pyruvate domain Family: Pyruvate phosphate dikinase, C-terminal domain
89	c5i87A_	Alignment	not modelled	6.0	8	PDB header: membrane protein Chain: A: PDB Molecule: peroxin 14; PDBTitle: targeting the pex14-pex5 interaction by small molecules provides novel2 therapeutic routes to treat trypanosomiasis.
90	d3cnva1	Alignment	not modelled	5.9	24	Fold: Chorismate lyase-like Superfamily: Chorismate lyase-like Family: UTRA domain
91	c3nr7A_	Alignment	not modelled	5.8	14	PDB header: dna binding protein Chain: A: PDB Molecule: dna-binding protein h-ns; PDBTitle: crystal structure of s. typhimurium h-ns 1-83
92	c5abxB_	Alignment	not modelled	5.7	13	PDB header: translation Chain: B: PDB Molecule: 4e-binding protein mexkli; PDBTitle: complex of c. elegans eif4e-3 with the 4e-binding protein2 mexkli and cap analog
93	d6paxa1	Alignment	not modelled	5.6	21	Fold: DNA/RNA-binding 3-helical bundle Superfamily: Homeodomain-like Family: Paired domain
94	d1gz0f2	Alignment	not modelled	5.2	17	Fold: Bacillus chorismate mutase-like Superfamily: L30e-like Family: RNA 2'-O ribose methyltransferase substrate binding domain
95	c1sm7A_	Alignment	not modelled	5.2	24	PDB header: plant protein Chain: A: PDB Molecule: recombinant ib pronapin; PDBTitle: solution structure of the recombinant pronapin precursor, bnib.
96	c5dbul_	Alignment	not modelled	5.2	14	PDB header: lyase Chain: I: PDB Molecule: deoxyribose-phosphate aldolase; PDBTitle: crystal structure of 2-deoxyribose-5-phosphate aldolase (1-220) from2 streptococcus suis
97	c1pnbB_	Alignment	not modelled	5.1	26	PDB header: seed storage protein Chain: B: PDB Molecule: napin bnib; PDBTitle: structure of napin bnib, nmr, 10 structures