

SUPPLEMENTARY MATERIAL

Table S1: List of 246 protein complex pairs identified by DM-align.

Query PDB ID ^a (Chain1,Chain2)	PDB Class ^b : GO term ^c	Temp PDB ID ^d (Chain1,Chain2)	PDB Class ^b : GO term ^c	TM-score ^e	R(Å) ^f
1djt (A,B)	Toxin: Ion channel inhibitor activity	1aap (A,B)	Protease/Inhibitor complex: serine type endopeptidase activity and inhibitor	0.368	4.8
1dkf (A,B)	Hormone/Growth Factor Receptor: DNA binding and transcription factor activity	1xb7 (A1,A2)	DNA binding and Transcription factor activity	0.849	3.1
1dl5 (A,B)	Transferase: Methyltransferase activity	1utx (A,B)	DNA binding protein: Sequence specific DNA binding	0.437	3.9
1dlf (L,H)	Immunoglobulin: Antibody	1j05 (L,H)	Immunoglobulin: Antigen binding	0.917	1.6
1do5 (A,B)	Chaperone: Copper ion binding activity	1xso (A,B)	Superoxide Acceptor: Copper ion binding	0.953	0.9
1dos (A,B)	Lyase: fructose-biphosphate aldolase	1rvg (A,B)	Lyase: fructose-biphosphate aldolase	0.760	3.6
1dp4 (A,C)	Hormone/Growth Factor Receptor: protein kinase activity	1dz3 (A1,A2)	Response Regulator: DNA binding and transcription factor activity	0.481	4.7
1dqp (A,B)	Transferase: transferring glycosyl groups	1grv (A,B)	Transferase: transferring glycosyl groups	0.856	2.9
1dqw (A,B)	Lyase: orotidin-5-phosphate decarboxylase	2jgy (A,B)	Transferase: orotidin-5-phosphate decarboxylase	0.95	1.7
1ds6 (A,B)	Signalling Protein: GTPase activity	1cc0 (A,E)	Signalling Protein: GTPase activity	0.897	2.2
1dth (A,B)	Hydrolase: Metaloendopeptidase activity	1sqv (A2,K2)	Oxidoreductase: Metaloendopeptidase activity	0.423	2.7
1dvf (B,D)	Idiotope-Antiidiotope: Antigen binding	1jhl (H,A)	Antigen-Antibody: Antigen binding	0.907	1.2

	protein				
1dx5 (M,I)	Trypsin like Serine Protease	1h9h (E,I)	Trypsin like Serine Protease	0.837	1.4
1dz3 (A1,A2)	Response Regulator: 2-component response regulator activity	1srr (A1,A2)	Response Regulator: 2-component response regulator activity	0.586	4.3
1dzf (A1,A2)	RNA polymerase: DNA-dependent RNA polymerase activity	2hkq (A1,B1)	Strutural Protein: Microtubule binding activity	0.453	2.7
1ega (A,B)	Hydrolase: GTP binding	1j2j (A,B)	Transport protein: GTP binding	0.564	3.3
1e05 (L,I)	Serpin: Endopeptidase inhibitor activity involved in blood coagulation	1oc0 (A,B)	Serine Protease inhibitor: Endopeptidase inhibitor activity involved in blood coagulation	0.787	2.6
1e0b (A,B)	Chromatin binding: Transcription regulator	1igq (A,C)	DNA binding: Transcription regulator	0.451	3.8
1e0o (C,D)	Growth factor: Heparin binding protein with kinase activity	1ev2 (A,E)	Growth factor: Heparin binding protein with kinase activity	0.718	1.9
1e19 (A,B)	Transferase: Carbamate kinase activity	1b7b (A,C)	Transferase: Carbamate kinase activity	0.908	2.6
1e2k (A,B)	Transferase: Thymidine Kinase activity	1p6x (A,B)	Transferase: Thymidine Kinase activity	0.884	2.4
1e50 (A,C)	Transcription factor: Transcription activator activity	1g7h (B,C)	Hydrolase/Hydro lase Inhibior: lysozyme effect	0.553	3.2
1e6u (A1,A2)	Epimerase: GDP-L-fucose synthase activity	1udb (A1,A2)	Isomerase: UDP-glucose-4 epimerase activity	0.783	3.5
1e7w (A,B)	Dihydrofolase Reductase: oxidoreductase activity (pteridin)	1vl8 (A,B)	Dihydrofolase Reductase: oxidoreductase activity (torpin)	0.891	2.3
1e8i (A,B)	Hematopoeitic Cell Receptor:	1yxk (A,B)	Lipid Binding protein: Receptor	0.724	2.8

	Receptor activity		activity		
1e9g (A,B)	Hydrolase: Inorganic phosphatase activity	1ygz (A,B)	Hydrolase: Inorganic phosphatase activity	0.641	5.1
1eaj (A,B)	Viral protein Receptor: Cell adhesion, antibody variable domain like	1jhl (H,A)	Antigen- Antibody: Antibody variable domain like	0.747	2.9
1edz (A1,A2)	Oxidoreductase: methylenetetrahy drofolate reductase activity	2be9 (A2,B2)	Transferase: Aspartate carbamoyltransfe rase activity	0.555	4.8
1eeq (A,B)	Immunoglobulin: Antigen binding activity	1bww (A,B)	Immunoglobulin: Antigen binding activity	0.928	1.4
1ehi (A,B)	Ligase:D-alanine D-alanine ligase activity	2fb9 (A1,A2)	Ligase:D-alanine D-alanine ligase activity	0.908	2.2
1c3i (A,B)	Hydrolase: Metalloendopepti dase activity	2j0t (A,D)	Hydrolase: collagenase and metalloprotease inhibitor activity	0.55	0.9
1c40 (A,B)	Hemoglobin: Oxygen transport	1ird (A,B)	Hemoglobin: Oxygen transport	0.978	1.0
1c47 (A,B)	Transferase: Metal ion binding with transferase activity	1srr (A1,A2)	Regulatory protein: Metal ion binding with transferase activity	0.469	1.4
1c4k (A1,A2)	Structural protein: Metal ion binding involved in neutrophil chemotaxis (transport)	1ntm (A2,K2)	Oxidoreductase: Metal ion binding involved in transport	0.544	3.2
1c4z (A,D)	Ligase: ubiquitin ligase activity	2c2v (B,S)	Heat shock protein complex	0.506	3.1
1c6v (A,X)	DNA binding protein: RNA dependent DNA replication	1exq (A,B)	DNA binding protein: RNA dependent DNA replication	0.47	1.9
1c8k (A1,A2)	Transferase: Tran sferase activity	1et1 (A,B)	Hormone : parathyroid hormone receptor binding activity	0.439	8.3
1cc0 (A,E)	Signalling Protein: GTPase activity	1ds6 (A,B)	Signalling Protein: GTPase activity	0.913	2.2
1cd0 (A,B)	Antigen-	2cd0 (A,B)	Antigen-	0.97	0.9

	Antibody: Antibody variable domain like		Antibody: Antibody variable domain like		
1cgi (E,I)	Serine Protease inhibitor: Endopeptidase inhibitor activity	2f3c (E,I)	Serine Protease inhibitor: Endopeptidase inhibitor activity	0.936	1.5
1ci6 (A,B)	Transcription factor: Transcription activator activity	1zik (A,B)	Leucine Zipper: Transcription activator activity	0.938	0.5
1cjb (C,D)	Transferase: Metal ion binding with transferase activity	1izl (E,F)	Photosynthesis: Metal ion binding electron carrier activity	0.483	4.9
1cje (A,B)	Electron Transport: Metal ion binding electron carrier activity	1aar (A,B)	Ubiquitin: transcription regulator activity	0.496	4.0
1cki (A,B)	Phosphotransfera se: Casein kinase activity	1fgk (A,B)	Phosphotransfera se: Threonine kinase kinase activity	0.396	3.0
1clv (A,I)	Hydrolase: Alpha-amylase activity	1bvn (P,T)	Hydrolase: Alpha-amylase activity	0.841	2.1
1clx (A,B)	Xylanase: endo- 1,4-xylanase activity	1ta3 (A,B)	Xylanase/Xylana se inhibitor: endo-1,4- xylanase activity	0.625	5.5
1cm5 (A,B)	Transferase:acyl transferase activity	1et1 (A,B)	Hormone : parathyroid hormone receptor binding activity	0.515	2.7
1d2g (A,B)	Transferase:meth yl transferase activity	2ov2 (A,I)	Transferase: Toxin and serine threonine kinase	0.455	5.0
1d2z (A,B)	Apoptotic protein: ATP binding	1r4a (B,F)	Transport protein: GTP binding	0.53	2.4
1d3y (A,B)	Isomerase: DNA topoisomerase activity	110l (A,K)	Oxidoreductase: Metal ion binding involved in transport	0.475	4.9
1d4x (A,G)	Contractile Protein: Actin bound to actin binding protein	2btf (A,P)	Contractile Protein: Actin bound to actin binding protein	0.714	1.7
1d5z (A,C)	Immunoglobulin:	1klu (A,D)	Immunoglobulin:	0.961	0.9

	MHC class II receptor activity		MHC class II receptor activity		
1d6f (A1,A2)	Transferase: Naringenin-chalcone synthase activity	1u0u (A,B)	Transferase: Dihydropinosylvin synthase activity	0.987	0.7
1d7f (A,B)	Transferase: Calcium Ion binding	1clv (A,I)	Hydrolase: Alpha-amylase activity with calcium binding	0.715	3.6
1d7m (A,B)	Contractile Protein: Actin filament binding coiled coil	1t6f (A,B)	Cell cycle protein: Protein binding coiled coil	0.951	0.6
1d9k (A,B)	Immunoglobulin: T-cell receptor	1ac6 (A,B)	Immunoglobulin: T-cell receptor	0.871	2.0
1db2 (A,B)	Hydrolase inhibitor: Endopeptidase inhibitor activity involved in blood coagulation	1oc0 (A,B)	Serine Protease inhibitor: Endopeptidase inhibitor activity involved in blood coagulation	0.886	1.2
1dba (L,H)	Immunoglobulin : Fab Light and Heavy chains	1d5i (L,H)	Immunoglobulin : Fab Light and Heavy chains	0.96	1.5
1dbq (A,B)	DNA binding protein: transcription repressor activity	2fep (A1,A2)	DNA binding protein: Transcription regulator activity	0.829	3.4
1dc6 (A,B)	Oxidoreductase: Glyceraldehyde-3-phosphate dehydrogenase	1b7g (O,Q)	Oxidoreductase: Glyceraldehyde-3-phosphate dehydrogenase	0.746	3.6
1dcf (A1,A2)	Response Regulator: 2-component response regulator activity	1eay (A,C)	Response Regulator: 2-component response regulator activity	0.538	3.4
1ddz (A,B)	Lyase: Carbonic dehydratase activity	1ym3 (A1,A2)	Lyase: Carbonic dehydratase activity	0.498	5.5
1df0 (A,B)	Hydrolase: Calpain small and large subunits	1alv (A,B)	Hydrolase: Calpain small and large subunits	0.902	2.1
1dfj (E,I)	Complex of ribonuclease with ribonuclease inhibitor	1z7x (Z,Y)	Complex of ribonuclease with ribonuclease inhibitor	0.95	1.6
1dfk (A,Z)	Contractile	1w7j (A1,B1)	Contractile	0.839	3.2

	Protein: Myosin head with motor activity		Protein: Myosin head with motor activity		
1dhf (A,B)	Oxidoreductase: Dehydrofolate reductase activity (human)	2pln (A1,A2)	Signalling protein: Two component regulator activity	0.468	4.4
1dj0 (A,B)	Lyase: pseudouridine synthesis	1g7h (B,C)	Hen Egg white lysozyme	0.467	3.9
1dj7 (A,B)	Electron Transport: Ferredoxin reductase activity	2bn1 (B1,B2)	Radiation Damage protein: Insulin receptor binding	0.44	2.2
1dj8 (A,B)	Structural protein: Acid resistance in bacteria	1r4a (A,E)	Transport protein: GTPase mediated signal transduction	0.418	3.6
1dk4 (A,B)	Hydrolase: inositol phosphatase activity	1vdw (A,B)	Hydrolase: inositol phosphatase activity	0.914	2.2
1dkx (A1,A2)	Chaperone-substrate peptide complex. Protein binding	2hkq (A1,B1)	Mictobule associated protein with Dynactin having motor activity	0.569	2.2
1dle (A,B)	Hydrolase: Serine type endopeptidase activity	1h9h (E,I)	Hydrolase/Hydro lase inhibitor : Trypsin like serine protease activity	0.757	3.0
1dml (A,B)	DNA binding protein: DNA dependent DNA polymerase activity	1t6l (A1,A2)	DNA binding protein: DNA dependent DNA polymerase processivity factor activity	0.42	3.1
1dok (A,B)	Chemokine: Signal transducer activity	1eqt (A,B)	Chemokine: Signal transducer activity	0.806	2.3
1dov (A1,A2)	Cell Adhesion: Cadherin binding	2bf9 (A1,A2)	Pancreatic hormone	0.709	2.5
1dpg (A,B)	Oxidoreductase: Glucose-6-phosphate dehydrogenase	1dz3 (A1,A2)	Response Regulator: 2-component response regulator activity	0.46	4.8
1dqt (A,B)	Antigen-Antibody:	1i85 (C,D)	Antigen-Antibody:	0.904	1.3

	Antbody variable domain like		Antbody variable domain like		
1dqz (A,B)	Immunoprotein: Acyltransferase activity	2fe1 (A1,A2)	Hypothetical protein from Pyrobaculum aerophilum	0.501	5.2
1dsu (A,B)	Serine Protease: Serine-type endopeptidase activity	1h9h (E,I)	Trypsin like Serine Protease	0.812	1.7
1dto (A1,A2)	Viral Protein: DNA binding regulator of DNA replication	1s5l (L,T)	Photosynthesis: Metal ion binding electron carrier activity	0.541	1.9
1dxg (A,B)	Non heme iron protein: Iron ion binding activity	1dfn (A,B)	Defensin: Defense response to bacteria	0.304	4.3
1e50 (C,D)	Transcription factor: Transcription activator activity	1h9d (A,B)	Transcription factor: Transcription activator activity	0.97	1.0
1e51 (A0,B0)	Dehydratase:Porphyrin biosynthetic process	2dqw (A,B)	Transferase: Folic acid and derivative biosynthetic process	0.578	4.7
1e6o (H,L)	Immunoglobulin: Light and Heavy chain	1jhl (H,A)	Immunoglobulin: Light and Heavy chain	0.956	0.8
1e8u (A,B)	Sialidase: Host cell surface receptor binding	1ofz (A,B)	Lectin: Sugar Binding	0.614	6.3
1ecj (A,B)	Transferase: amidophosphoribosyl transferase activity	2dy0 (A,B)	Transferase: phosphoribosyl transferase activity	0.618	4.7
1edh (A,B)	Cell Adhesioin: Calcium ion binding	1ncg (A1,A2)	Cadherin: Calcium ion binding	0.598	4.1
1eku (A,B)	Immunoprotein: Cytokine activity	2hkq (A1,B1)	Strutural Protein: Microtubule binding activity	0.505	2.7
1em8 (A,B)	DNA Polymerase: DNA-dependent DNA polymerase activity	1r4a (D,H)	Transport protein: GTP binding	0.497	3.4
1epa (A,B)	Retinoic acid binding protein: Transporter	2akq (A,B)	Transport protein: Retinol binding	0.668	4.4

	activity				
1epf (A,B)	Cell Adhesion: Heparin binding (receptor activity)	1kb5 (B,L)	Antigen- Antibody: Antibody variable domain like with receptor activity	0.66	2.0
1eqg (A,B)	Oxidoreductase: prostaglandin- endoperoxidase synthase activity	2bf9 (A1,A2)	Pancreatic hormone	0.487	2.5
1eqw (A,C)	Oxidoreductase: Superoxide dismutase activity	2aqp (A,B)	Oxidoreductase: Superoxide dismutase activity	0.861	1.4
1ern (A,B)	Cytokine: erythropoietin receptor activity	1g7h (B,C)	Hen Egg white lysozyme	0.572	3.0
1es0 (A,B)	Immunpprotein: MHC class II antigen processing activity	1jl4 (A,B)	Immunpprotein: MHC class II antigen processing activity	0.953	1.0
1ete (A,B)	Cytokine: Positive regulation of cell proliferation	2o27 (A,B)	Cytokine: Stem cell factor receptor binding	0.711	3.5
1eui (A,C)	Hydrolase/Hydro lase inhibitor: Uracil DNA-N glycosylase activity	1uug (A,B)	Hydrolase/Hydro lase inhibitor: Uracil DNA-N glycosylase activity	0.94	0.7
1euv (A,B)	Hydrolase: SUMO specific peptidase activity	2ckh (A,B)	Hydrolase: SUMO specific peptidase activity	0.902	1.6
1a22 (A,B)	Hormone/Hormo ne Receptor: Growth hormone bound to growth hormone receptor	1bp3 (A,B)	Hormone/Hormo ne Receptor: Growth hormone bound to growth hormone receptor	0.857	2.4
1a25 (A,B)	Calcium Binding Protein: Protein kinase C activity	1kb5 (B,L)	Antigen- Antibody: Antibody variable domain like with receptor activity	0.528	3.3
1a2d (A,B)	Fatty Acid Binding Protein: Transporter activity	1ftp (A,B)	Fatty Acid Binding Protein: Transporter activity	0.459	2.1
1a4y (A,B)	Inhibitor/Nucleas e: Ribonuclease	2bex (A,C)	Inhibitor/Nucleas e: Ribonuclease	0.909	2.4

	activity protein bound to inhibitor		activity protein bound to inhibitor		
1a50 (A2,B2)	Lyase: tryptophan synthase activity	1k8y (A1,B1)	Lyase: tryptophan synthase activity	0.991	0.7
1a6d (A1,A5)	Chaperonin: Unfolded protein binding	1we3 (G,U)	Chaperone: Unfolded protein binding	0.625	3.6
1aih (A,B)	DNA integration: DNA recombination integration and transposition	1utx (A,B)	DNA binding protein: Sequence specific DNA binding	0.435	5.3
1aor (A,B)	Oxidoreductase: aldehyde-ferrodoxin reductase activity and electron carrier activity	1sph (A,B)	Phosphotransferase: Kinase activity	0.442	5.4
1aoz (A,B)	Oxidoreductase: L-ascorbate oxidase activity	1a25 (A,B)	Calcium Binding Protein: Protein kinase C activity	0.468	5.1
1az3 (A,B)	Endonuclease: Magnesium ion binding with endonuclease activity	1k0z (A,B)	Hydrolase: Magnesium ion binding with endonuclease activity	0.467	5.7
1b0n (A,B)	DNA binding protein: Sequence specific DNA binding with DNA sporulation activity	1y7y (A,B)	DNA binding protein: Sequence specific DNA binding	0.425	1.7
1b34 (A,B)	RNA binding protein:spliceosomal snRNP biogenesis and assembly	1igq (A,C)	Transcription factor: Transcription activator activity	0.422	3.7
1b4f (G2,H2)	Signal protein: Transmembrane ephrin receptor with protein tyrosine kinase activity	1b4f (A1,B1)	Signal protein: Transmembrane ephrin receptor with protein tyrosine kinase activity	0.96	0.3
1b73 (A1,A2)	Isomerase: Glutamate racemase activity	1r4a (B,F)	Transport protein: GTP binding involved in vesicle mediated	0.435	5.9

			transport		
1b98 (A,M)	Hormone/Growth factor: growth factor involved in regulation of synaptic plasticity	1bnd (A2,B2)	Hormone/Growth factor: growth factor involved in positive regulation of glial cell differentiation	0.873	1.8
1b9x (A,B)	Signalling protein: signal transducer activity	1tbg (B,F)	Signalling protein: signal transducer activity	0.972	1.4
1bd2 (A,B)	MHC Class I protein Complex: Antigen processing	1qvo (A1,B1)	MHC Class I protein Complex: Antigen processing	0.984	0.7
1bi7 (A1,A2)	Kinase: Cyclin dependent protein kinase activity	2a1a (A1,B1)	Translation initiation factor bound to protein serine/threonine kinase	0.686	1.6
1bi8 (C,D)	Kinase: Cyclin dependent protein kinase bound to kinase inhibitor	1bi7 (A1,B1)	Kinase: Cyclin dependent protein kinase bound to multiple tumor suppressor	0.955	1.2
1bjf (A,B)	Calcium Binding Protein: Clathrin, tubulin and actin binding	2bn1 (B1,B2)	Radiation Damage protein: Insulin receptor binding	0.442	5.0
1bml (A,C)	Blood Clotting: peptidase activity in blood coagulation	1gl1 (C,K)	Peptidase/Inhibitor or complex: Peptidase activity in digestion and proteolysis	0.823	2.6
1bog (A1,B1)	Antibody-peptide complex: Antigen binding	1ggb (L,H)	Immunoglobulin: Light and Heavy chains	0.96	1.4
1bp6 (A1,A2)	Transferase: thymidilate synthase activity	1sqv (A2,K2)	Oxidoreductase: Metalloendopeptidase activity	0.491	1.1
1bqu (A,B)	Signalling protein: Interleukin-6 receptor activity	1pvh (A,B)	Signalling protein/cytokine complex: Interleukin-6 receptor activity	0.618	3.8
1btg (B,C)	Growth factor: Growth factor activity	1bnd (A2,B2)	Hormone/Growth factor: growth factor involved in positive	0.932	1.4

			regulation of glial cell differentiation		
1bth (H,P)	Serine Protease/inhibitor : Endopeptidase activity involved in blood coagulation with inhibitor	1eaw (C,D)	Serine Protease/inhibitor : Endopeptidase activity involved in blood coagulation with inhibitor	0.954	1.3
1buo (A1,A2)	Gene Regulation: transcription repressor activity involved in myeloid cell regulation	2if5 (A1,A2)	Gene Regulation: transcription repressor activity involved in myeloid cell regulation	0.953	1.3
1bvl (A,B)	Humanized antibody bound to lysozyme: Antibody variable domain like boun	1g7h (B,C)	Lysozyme/Inhibit or complex	0.961	0.8
1bww (A,B)	Immunoglobulin: Antigen binding	1eeq (A,B)	Immunoglobulin: Antigen binding	0.944	1.4
1byl (A1,A2)	Antibiotic resistant protein: drug binding	1qto (A1,A2)	Antibiotic resistant protein: drug binding	0.96	1.1
1byr (A1,A2)	Endonuclease: endonuclease activity	2ppx (A2,A4)	Strutural Protein: Sequence specific DNA binding	0.483	3.6
1u0s (Y,A)	Response Regulator: 2-component response regulator activity	1eay (A,C)	Response Regulator: 2-component response regulator activity	0.593	3.6
1u3h (C,D)	Immunoprotein : MHC class I protein binding	1jl4 (A,B)	Immunoprotein : MHC class I protein binding	0.988	0.5
1u3h (G,H)	Immunoprotein : MHC class I protein binding	1jl4 (A,B)	Immunoprotein : MHC class I protein binding	0.974	0.8
1u5t (A,B)	Transport Protein: G-protein signalling regulator and telomere maintainenance	1u5t (A,C)	Transport Protein: telomere maintainenance	0.549	1.2
1u7u (A1,A2)	Ligase:phosphop antothenate--cysteine ligase	3rap (R,S)	Signalling Protein: GTP binding	0.572	5.1

	activity				
1uad (A,C)	Endocytosis/exocytosis: Ras protein signal transduction and in exocytosis	1k8r (A,B)	Transport Protein: Ras related protein involved in signal transduction and transport	0.777	3.3
1ub9 (A1,A2)	Transcription factor: Transcription activator activity	2bf9 (A1,A2)	DNA binding Protein: Termination of DNA replication	0.544	3.0
1uc4 (A,G)	Lyase: Propanediol dehydratase activity	1tyg (C2,G2)	Biosynthetic Protein: Thymine biosynthesis activity	0.515	4.9
1ugh (E,I)	Glycosylase: uracil DNA-N glycosylase activity involved in base excision repair	1uug (A,B)	Glycosylase: uracil DNA-N glycosylase activity involved in base excision repair	0.968	0.9
1ul1 (X,A)	Hydrolase/DNA binding protein: DNA repair and DNA polymerase processivity factor activity	1ul1 (Z,C)	Hydrolase/DNA binding protein: DNA repair and DNA polymerase processivity factor activity	0.597	4.8
1ulz (A1,A2)	Ligase: Biotin binding with carbamoyl synthase activity	1dv1 (A,B)	Ligase: Biotin binding with carbamoyl synthase activity	0.964	1.8
1uq5 (A1,A2)	Ligase:rRNA N-glycosylase activity	2bf9 (A1,A2)	Pancreatic hormone	0.435	4.0
1ut7 (A,B)	Transcription regulator: DNA dependent regulation of transcription	1r4a (A,E)	Transport Protein: GTP binding	0.394	3.1
1uuf (A1,A2)	Oxidoreductase: Metal ion binding oxidoreductase activity	1q1n (A1,A2)	Oxidoreductase: Metal ion binding oxidoreductase activity	0.837	3.2
1uw4 (A,B)	RNA binding protein: nonsense mediated decay	1a7g (E1,E2)	Transcription factor: Transcription activator activity	0.504	4.4
1uyt (A1,A2)	Transferase: biotin carboxylase	1zm7 (A,B)	Transcription factor: phosphotransferase	0.477	5.7

	activity		se activity		
1a3a (A,C)	Phosphotransferase: Sugar-hydrogen symporter activity	1aar (A,B)	Ubiquitin: transcription regulator activity	0.490	4.0
1a4r (A,B)	Hydrolase: Establishment and maintenance of cell polarity via GTP dependent protein binding	2ov2 (A,I)	Transferase: GTP binding with involvement in actin cytoskeleton assembly	0.810	1.1
1a4u (A,B)	Oxidoreductase: Alcohol dehydrogenase activity	1k2w (A,B)	Oxidoreductase: L-idoitol 2 dehydrogenase activity	0.818	3.1
1a6z (A,B)	MHC Class I protein Complex: Antigen processing	1qo3 (A,B)	MHC Class I protein Complex: Antigen processing	0.918	1.8
1ac6 (A,B)	Receptor: T-cell receptor	1d9k (A,B)	Receptor: T-cell receptor	0.874	2.1
1acb (E,I)	Hydrolase: Serine type endopeptidase activity	1gl1 (C,K)	Hydrolase: Serine type endopeptidase activity	0.929	1.5
1ad1 (A,B)	Transferase: Dihydropteorate synthase activity	2dqw (A,B)	Transferase: Dihydropteorate synthase activity	0.862	2.2
1ad3 (A,B)	Oxidoreductase: aldehyde dehydrogenase activity	1ez0 (A,D)	Oxidoreductase: aldehyde dehydrogenase activity	0.751	3.9
1ade (A,B)	Ligase: Adenylosuccinate synthase activity	1loo (A1,A2)	Ligase: Adenylosuccinate synthase activity	0.943	2.0
1adj (A,B)	Histidyl tRNA synthase:aminoacyl tRNA synthase activity	1htt (A,B)	Histidyl tRNA synthase:aminoacyl tRNA synthase activity	0.932	2.3
1adw (A,B)	Electron Transport: Copper ion binding electronic carrier activity	1r4a (D,H)	Transport Protein: GTP binding	0.449	3.1
1ae1 (A,B)	Oxidoreductase: tropine dehydrogenase	2ae2 (A,B)	Oxidoreductase: tropine dehydrogenase	0.958	0.8

	activity		activity		
1afr (A,F)	Oxidoreductase: acyl desaturase binding	2uw1 (A,B)	Oxidoreductase: acyl desaturase binding	0.987	1.0
1afs (A,B)	Oxidoreductase: 3-alpha- hydroxysteroid dehydrogenase activity	1exb (A1,E1)	Oxidoreductase: 3-alpha- hydroxysteroid dehydrogenase activity	0.609	2.6
1agr (A,E)	Signal Transduction : GTP bound signal transduction activity	2ihb (A,B)	Signal Transduction : GTP bound signal transduction activity	0.988	0.7
1aiz (A,B)	Electron transport: Cadmium binding protein	1nwp (A,B)	Electron transport: Cadmium binding protein	0.702	4.0
1all (A,B)	Light harvesting protein: Protein chromophore linkage	2j96 (A,B)	Light harvesting protein: Protein chromophore linkage	0.895	2.0
1aoh (A,B)	Cellulosome subunit: Hydrolyzing O- glycosyl compounds	1ohz (A1,B1)	Cellulosome Scaffolding proteinwith dockerin complex having O- glycosyl hydrolyzing activity	0.775	2.4
1ap2 (A,B)	Immunoglobulin: Antibody variable domain like	1j05 (L,H)	Immunoglobulin: Antibody variable domain like	0.948	1.2
1aqu (A,B)	Transferase: estrone sulfotransferase activity	2f1r (A,B)	Biosynthetic Protein: Mo- Molybdopterine biosynthesis activity	0.498	4.9
1ati (A,B)	Protein biosynthesis: glycine tRNA ligase activity	2g4c (A,C)	Transferase: glycine tRNA ligase activity	0.854	3.1
1aui (A,B)	Hydrolase: serine/threonine phosphatase activity	2o8g (A,I)	Hydrolase: serine/threonine phosphatase activity	0.782	1.6
1avg (H,I)	Blood Clotting: peptidase activity	1h9h (E,I)	Hydrolase/Hydro lase inhibitor :	0.84	1.3

	in blood coagulation		Trypsin like serine protease activity		
1aw2 (A,B)	Isomerase: triose phosphate isomerase activity	1tre (A,B)	Isomerase: triose phosphate isomerase activity	0.97	1.2
1ay1 (L,H)	Immunoglobulin: Antibody variable domain like	1mf2 (M,N)	Immunoglobulin: Antibody variable domain like	0.941	1.8
1ay7 (A,B)	Enzyme/Inhibitor complex: Endoribonuclease activity with Barstar	1b2s (A,D)	Enzyme/Inhibitor complex: Endoribonuclease activity with Barstar	0.762	1.9
1azt (A,B)	Hydrolase: GTP binding with signal transducer activity	1fqj (A,C)	Hydrolase: GTP binding with signal transducer activity	0.832	1.6
1azy (A,B)	Glycosyltransferase: thymidine phosphorylase activity	2dsj (A,B)	Glycosyltransferase: thymidine phosphorylase activity	0.942	2.5
1b41 (A,B)	Hydrolase/Toxin: acetylcholine esterase activity and its inhibitor	1fss (A,B)	Hydrolase/Toxin: acetylcholine esterase activity and its inhibitor	0.98	1.0
1b43 (A,B)	Transferase: magnesium binding protein involved in DNA repair	2izo (A,C)	Hydrolase: magnesium binding protein involved in DNA repair	0.496	1.7
1b49 (A,C)	Methyltransferase: Thymidylate synthase activity	2ftn (A1,A2)	Methyltransferase: Thymidylate synthase activity	0.746	3.0
1b5q (A,B)	Oxidoreductase: Polyamine oxidase activity	2v1d (A,B)	Oxidoreductase: Electron carrier activity	0.507	3.7
1b67 (A,B)	DNA binding protein: Sequence specific DNA binding	1ku5 (A,B)	DNA binding protein: Sequence specific DNA binding	0.94	0.9
1b6d (A,B)	Immunoglobulin: Antibody variable domain like	1bww (A,B)	Immunoglobulin: Antibody variable domain like	0.962	0.7
1b6s (A,B)	Lyase: phosphoribosylaminoimidazole	2dwc (A,B)	Lyase: phosphoribosylglycinamide	0.76	3.0

	carboxylase activity		formyltransferase 2 activity		
1b78 (A,B)	Nucleoside triphosphatase activity	2car (A,B)	Nucleoside triphosphatase activity	0.82	2.9
1b79 (A,B)	Hydrolase: Nucleoside triphosphatase activity	1r4a (D,H)	Transport Protein: GTP binding	0.42	2.9
1b7b (A,C)	Transferase: Carbamate kinase activity	1e19 (A,B)	Transferase: Carbamate kinase activity	0.892	2.6
1b8a (A,B)	Liagase: Carbamate kinase activity	1wyd (A,B)	Liagase: Carbamate kinase activity	0.963	1.9
1b8m (A,B)	Growth factor/neurotrophin: cytokine activity	1bnd (A2,B2)	Growth factor/neurotrophin: cytokine activity	0.93	1.5
1b8z (A,B)	DNA binding protein: Mitotic chromosome condensation	2o97 (A1,B1)	DNA binding protein: Mitotic chromosome condensation	0.894	1.1
1b9n (A,B)	Molybdate ion transmembrane transporter protein	1h9s (A,B)	Molybdate ion transmembrane transporter protein	0.846	2.4
1bay (A,B)	Transferase: Glutathione transferase activity	16gs (A,B)	Transferase: Glutathione transferase activity	0.917	0.5
1bc2 (A,B)	Hydrolase: beta lactamase activity	1vgn (A,B)	Hydrolase: beta lactamase activity	0.51	4.0
1bcc (A,B)	Oxidoreductase: Metalloendopeptidase activity	1ezv (A1,B1)	Oxidoreductase: Metalloendopeptidase activity	0.928	2.4
1bd9 (A,B)	Lipid Binding: phosphatidylethanolamine binding	1i85 (C,D)	Immunoprotein: Transcription activator activity	0.574	3.3
1bdm (A,B)	Oxidoreductase: Malate dehydrogenase activity	1b8p (A1,A2)	Oxidoreductase: Malate dehydrogenase activity	0.964	0.9
1bdy (A,B)	Calcium Binding Protein: Protein kinase C activity	1edm (B,C)	Coagulation factor: Calcium binding activity	0.457	4.2
1bfo (A,B)	Antibody: Constant domain like	1dvf (A,B)	Antibody: Constant domain like	0.952	1.1
1bh5 (A,B)	Lyase:	1f9z (A,B)	Lyase:	0.866	2.5

	Lactoglutathione lyase activity		Lactoglutathione lyase activity		
1bht (A,B)	Heparin binding protein: serine type endopeptidase activity involved in epithelial to mesenchymal activity	1gmo (G,H)	Heparin binding protein: serine type endopeptidase activity involved in epithelial to mesenchymal activity	0.99	0.4
1bih (A,B)	Insect immunity: Innate immune response	1i85 (C,D)	Immunoprotein: Immune response by positive regulation of cell proliferation	0.609	2.7
1bk5 (A,B)	Transport protein: protein import into nucleus	2c1t (A,C)	Transport protein: protein import into nucleus	0.921	1.4
1bkn (A,B)	DNA repair: Mismatched DNA binding	1hss (A,B)	Cereal Inhibitor: Serine type endopeptidase inhibitor	0.457	4.7
1bkz (A,B)	Lectin: heterophilic cell adhesion	1g7h (B,C)	Hen Egg white lysozyme	0.483	4.5
1blx (A,B)	Kinase: Cyclin dependent protein kinase bound to kinase inhibitor	1bi8 (A,B)	Kinase: Cyclin dependent protein kinase bound to kinase inhibitor	0.944	1.3
1bo1 (A,B)	Transferase: phosphatidylinositol phosphate kinase activity	2gk9 (A,D)	Transferase: phosphatidylinositol phosphate kinase activity	0.955	1.6
1bp3 (A,B)	Hormone/growth factor: involved in hematopoietin/interferon-class (D200-domain) cytokine receptor activity	1a22 (A,B)	Hormone/growth factor: involved in hematopoietin/interferon-class (D200-domain) cytokine receptor activity	0.88	2.4
1bqq (M,T)	Hydrolase/Inhibitor: Metalloendopeptidase activity	2e2d (A,C)	Hydrolase/Inhibitor: Metalloendopeptidase activity	0.899	2.2
1br1 (A,B)	Muscle protein: Motor activity	1w7j (A1,B1)	Muscle protein: Motor activity	0.688	3.1
1brc (E,I)	Protease/Inhibitor complex: serine type	1taw (A1,B1)	Protease/Inhibitor complex: serine type	0.978	0.8

	endopeptidase activity and inhibitor		endopeptidase activity and inhibitor		
1bsl (A,B)	Flavoprotein: monooxygenase activity in biolumination	1luc (A,B)	Flavoprotein: monooxygenase activity in biolumination	0.955	1.8
1bt6 (A,B)	Ligand (S100)/annexin complex: Calcium ion binding protein involved signal transduction	1k96 (A1,A2)	S100 protein: Calcium ion binding protein involved xenobiotic metabolic process	0.881	1.6
1btk (A,B)	Transferase: protein tyrosine kinase activity	1r4a (B,F)	Transport Protein: GTP binding	0.514	3.3
1bvn (P,T)	Hydrolase/inhibitor: alpha amylase activity and its inhibitor	1clv (A,I)	Hydrolase/inhibitor: alpha amylase activity and its inhibitor	0.945	1.6
1bvr (A,B)	Oxidoreductase: enoyl reductase activity	1eny (A1,A2)	Oxidoreductase: enoyl reductase activity	0.992	0.7
1u0u (A,B)	Transferase: Acyl transferase activity	1d6f (A1,A2)	Transferase: Acyl transferase activity	0.987	0.7
1u20 (A,B)	Hydrolase:snoRNA binding protein	2bn1 (B1,B2)	Hydrolase:hydrolase activity	0.499	3.0
1u2w (A,B)	DNA binding protein: DNA dependent regulation of transcription	1r1u (A,B)	DNA binding protein: DNA dependent regulation of transcription	0.867	1.9
1u41 (A,B)	DNA binding protein (NF kappa B mutant): DNA dependent regulation of transcription	1my7 (A,B)	DNA binding protein (NF kappa B mutant): DNA dependent regulation of transcription	0.923	0.7
1u5k (A,B)	Response to DNA damage stimulus	2v1c (A1,C1)	Response to DNA damage stimulus	0.595	3.1
1u5w (A,B)	Hypthetical protein	1msc (A1,A2)	Virial protein: RNA binding	0.469	5.6
1u60 (A,B)	Hydrolase: glutaminase activity	1hss (A,B)	Cereal Inhibitor: Serine type endopeptidase inhibitor	0.479	5.5
1u6e (A,B)	Transferase: Acyl	1hnj (A1,A2)	Transferase: Acyl	0.966	1.7

	transferase activity		transferase activity		
1u73 (A,B)	Hydrolase: Phospholipase A2 activity	2bf9 (A1,A2)	Pancreatic hormone	0.503	3.7
1u75 (A,C)	Oxidoreductase: Cytochrome C - peroxidase activity	2vnz (X1,X2)	Oxidoreductase: L-ascorbate peroxidase activity	0.487	2.6
1u8s (A,B)	Transcription factor: glycine cleavage system transcriptional repressor	1usm (A1,A2)	Transcriptional stimulator: lyase activity	0.566	3.3
1uc2 (A,B)	Intron mediated protein splicing	1r4a (A,E)	Transport protein: GTP binding	0.546	1.7
1uc8 (A,B)	Biosynthetic protein: lysine biosynthesis	1i7n (A,B)	Neuropeptide: Neurotransmitter secretion	0.68	3.4
1udi (E,I)	Hydrolase/inhibitor: uracil DNA-N glycosylase activity	1ugh (E,I)	Hydrolase/inhibitor: uracil DNA-N glycosylase activity	0.965	1.0
1udu (A,B)	Hydrolase:3',5'-cyclic-nucleotide phosphodiesterase activity	1r4a (D,H)	Transport protein: GTP binding	0.496	2.6
1udv (A,B)	DNA binding protein: Double stranded DNA binding	1h0x (A,B)	DNA binding protein: Double stranded DNA binding	0.869	1.4
1ueh (A,B)	Transferase: di-trans,poly-cis-decaprenylcistransferase activity involved in peptidoglycan biosynthesis process	1f75 (A,B)	Transferase: di-trans,poly-cis-decaprenylcistransferase activity involved in peptidoglycan biosynthesis process	0.929	2.0
1un8 (A,B)	Kinase: Glycerone kinase activity	1oi2 (A,B)	Kinase: Glycerone kinase activity	0.839	2.7
1unk (A,C)	Immunoprotein: Toxin binding	2guz (A,B)	Protein Transport: protein transporter activity	0.472	4.0
1unl (A,D)	Cyclin Dependent	1unh (B,E)	Cyclin Dependent	0.984	0.9

	Kinase 5:protein serine/threonine kinase activator activity		Kinase 5:protein serine/threonine kinase activator activity		
1us7 (A,B)	Chaperone: unfolded protein binding	2hkq (A1,B1)	Strutural Protein: Microtubule binding activity	0.58	1.6
1usl (A,B)	Isomerase: ribose-5-phosphate isomerase activity	1nn4 (A,D)	Isomerase: ribose-5-phosphate isomerase activity	0.88	1.5
1usu (A,B)	Chaperone: unfolded protein binding	1r4a (A,E)	Transport protein: GTP binding	0.507	2.6
1uth (A,B)	Transcription regulator: DNA dependent regulation of trnscription	2fyi (A,B)	Transcription regulator: DNA dependent regulation of trnscription	0.77	3.8
1utx (A,B)	DNA binding protein: Sequence specific DNA binding	1y7y (A,B)	DNA binding protein: Sequence specific DNA binding	0.703	2.2
1uty (A,B)	Viral Protein: RNA binding	1moy (A1,A3)	Biotin binding protein	0.393	4.8
1uu0 (A,B)	Transferase:histid inol-phosphate transaminase activity	1lc5 (A1,A2)	Transferase: N-succinyldiaminop imelate aminotransferase activity	0.804	3.0
1uup (A,D)	Toxin: Pathogenesis	1ktk (A,C)	Toxin/Receptor: Pathogenesis	0.803	2.8
1uuz (A,D)	Lyozyme/Inhibit or complex	1gpq (B,C)	Lyozyme/Inhibit or complex	0.876	2.0
1uz6 (E,F)	Antigen-Antibody: Antbody variable domain like	1rvf (B,C)	Antigen-Antibody: Antbody variable domain like	0.906	2.0
1amh (A,B)	Hydrolase: serine-type endopeptidase activity	1h9h (E,I)	Hydrolase: serine-type endopeptidase activity	0.915	2.2
1avw (A,B)	Trypsin/Trypsin inhibitor	1h9h (E,I)	Trypsin/Trypsin inhibitor	0.929	1.8
1uer (A,B)	Oxidoreductase: Superoxide dismutase activity	2nyb (A,B)	Oxidoreductase: Superoxide dismutase activity	0.964	1.1
1ugs (A,B)	Lyase:nitrile	1ahj (A,B)	Lyase:nitrile	0.89	2.3

	hydratase activity		hydratase activity		
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^aPDB and Chain ID of the proteins in Benchmark 1.

^bClassification of the complexes as annotated in the PDB library (1).

^cGene Ontology terms (2).

^dPDB and Chain ID of the proteins in Benchmark 2 which is the best match to the complexes in the first column as identified by DM-align.

^eTM-score of the complex structures in Column 1 and Column 3.

^fRMSD of complex structures in the aligned region.

References

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