

MeSH Tree Structures - 2008

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes and Coenzymes	D8		
Coenzymes	D8.211		
Biopterin	D8.211.90	D3.438.	
Neopterin	D8.211.90.500	D3.438.	
Biotin	D8.211.96	D3.383.	
Cobamides	D8.211.175	D3.383.	D3.549.
		D4.345.	
Coenzyme A	D8.211.211	D3.438.	D13.695.
		D13.695.	
Acyl Coenzyme A	D8.211.211.300	D3.438.	D13.695.
		D13.695.	
Acetyl Coenzyme A	D8.211.211.300.75	D3.438.	D13.695.
		D13.695.	
Malonyl Coenzyme A	D8.211.211.300.500	D3.438.	D13.695.
		D13.695.	
Palmitoyl Coenzyme A	D8.211.211.300.700	D3.438.	D10.251.
		D13.695.	D13.695.
Flavins	D8.211.474	D3.438.	D3.494.
		D23.767.	
Riboflavin	D8.211.474.650	D3.438.	D3.494.
		D23.767.	
Flavin-Adenine Dinucleotide	D8.211.474.650.249	D3.438.	D3.438.
		D3.494.	D13.695.
		D13.695.	D23.767.
Flavin Mononucleotide	D8.211.474.650.500	D3.438.	D3.494.
		D13.695.	D23.767.
NAD	D8.211.589	D3.438.	D13.695.
		D13.695.	
NADP	D8.211.625	D3.438.	D13.695.
		D13.695.	
PQQ Cofactor	D8.211.682	D3.438.	
Pyridoxal Phosphate	D8.211.740	D3.383.	
Sphingolipid Activator Proteins	D8.211.790		
G(M2) Activator Protein	D8.211.790.249		
Saposins	D8.211.790.500		
Tetrahydrofolates	D8.211.840	D3.438.	
Formyltetrahydrofolates	D8.211.840.300	D3.438.	
Leucovorin	D8.211.840.300.500	D3.438.	
Thiamine Pyrophosphate	D8.211.878	D2.886.	D3.383.
		D3.383.	
Thioctic Acid	D8.211.906	D2.241.	D2.886.
		D10.251.	
Ubiquinone	D8.211.935	D2.806.	
Cytochromes	D8.244	D12.776.	
Cytochrome a Group	D8.244.175	D12.776.	
Cytochromes a	D8.244.175.249	D12.776.	
Cytochromes a1	D8.244.175.500	D12.776.	
Cytochromes a3	D8.244.175.600	D12.776.	
Cytochrome b Group	D8.244.187	D12.776.	
Cytochromes b	D8.244.187.249	D12.776.	
Cytochromes b5	D8.244.187.500	D12.776.	
Cytochromes b6	D8.244.187.600	D8.811.	D12.776.
		D12.776.	D12.776.
Cytochrome c Group	D8.244.286	D12.776.	
Cytochromes c	D8.244.286.100	D12.776.	
Cytochromes c'	D8.244.286.150	D12.776.	
Cytochromes c1	D8.244.286.200	D12.776.	
Cytochromes c2	D8.244.286.300	D12.776.	
Cytochromes c6	D8.244.286.600	D12.776.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes Cytochromes Cytochrome d Group

Cytochrome d Group	D8.244.300	D12.776.	
Cytochrome P-450 Enzyme System	D8.244.453	D8.811.	D12.776.
Aryl Hydrocarbon Hydroxylases	D8.244.453.40	D8.811.	D12.776.
Aniline Hydroxylase	D8.244.453.40.50	D8.811.	D12.776.
Benzopyrene Hydroxylase	D8.244.453.40.110	D8.811.	D12.776.
Cytochrome P-450 CYP1A1	D8.244.453.40.555	D8.811.	D12.776.
Cytochrome P-450 CYP1A2	D8.244.453.40.777	D8.811.	D12.776.
Cytochrome P-450 CYP2B1	D8.244.453.40.888	D8.811.	D12.776.
Cytochrome P-450 CYP2D6	D8.244.453.40.944	D8.811.	D12.776.
Cytochrome P-450 CYP2E1	D8.244.453.40.972	D8.811.	D8.811.
Cytochrome P-450 CYP3A	D8.244.453.40.986	D8.811.	D8.811.
Camphor 5-Monooxygenase	D8.244.453.85	D8.811.	D12.776.
Steroid Hydroxylases	D8.244.453.915	D8.811.	D8.811.
Aldosterone Synthase	D8.244.453.915.50	D8.811.	D8.811.
Aromatase	D8.244.453.915.99	D8.811.	D8.811.
Cholesterol 7-alpha-Hydroxylase	D8.244.453.915.200	D8.811.	D8.811.
Cholesterol Side-Chain Cleavage Enzyme	D8.244.453.915.212	D8.811.	D8.811.
Cytochrome P-450 CYP27A1	D8.244.453.915.250	D8.811.	D8.811.
25-Hydroxyvitamin D3 1-alpha-Hydroxylase	D8.244.453.915.400	D8.811.	D8.811.
Steroid 12-alpha-Hydroxylase	D8.244.453.915.730	D8.811.	D8.811.
Steroid 16-alpha-Hydroxylase	D8.244.453.915.737	D8.811.	D8.811.
Steroid 17-alpha-Hydroxylase	D8.244.453.915.748	D8.811.	D8.811.
Steroid 11-beta-Hydroxylase	D8.244.453.915.750	D8.811.	D8.811.
Steroid 21-Hydroxylase	D8.244.453.915.760	D8.811.	D8.811.
Trans-Cinnamate 4-Monooxygenase	D8.244.453.957	D8.811.	
Cytochromes f	D8.244.726	D8.811.	D12.776.
Enzyme Precursors	D8.622		
Chymotrypsinogen	D8.622.184		
Complement Factor B	D8.622.200	D8.811.	D12.776.
Pepsinogens	D8.622.509		
Pepsinogen A	D8.622.509.700		
Pepsinogen C	D8.622.509.725		
Plasminogen	D8.622.610	D12.776.	D12.776.
Angiostatins	D8.622.610.500	D12.776.	D12.776.
Protein C	D8.622.705	D12.776.	D12.776.
Prothrombin	D8.622.709	D23.113.	
Trypsinogen	D8.622.885	D12.776.	D23.119.
Enzymes	D8.811		
DNA Repair Enzymes	D8.811.74		
Deoxyribodipyrimidine Photo-Lyase	D8.811.74.124	D8.811.	
DNA Glycosylases	D8.811.74.249	D8.811.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

DNA Repair Enzymes

DNA Glycosylases

DNA-Formamidopyrimidine Glycosylase

DNA-Formamidopyrimidine Glycosylase

Thymine DNA Glycosylase

Uracil-DNA Glycosidase

DNA Ligases

DNA-(Apurinic or Apyrimidinic Site) Lyase

MutS DNA Mismatch-Binding Protein

MutS Homolog 2 Protein

Polynucleotide 5'-Hydroxyl-Kinase

DNA Restriction-Modification Enzymes

DNA Modification Methylases

DNA Restriction Enzymes

Deoxyribonucleases, Type I Site-Specific

Deoxyribonucleases, Type II Site-Specific

Deoxyribonuclease BamHI

Deoxyribonuclease EcoRI

Deoxyribonuclease HindIII

Deoxyribonuclease HpaII

Deoxyribonucleases, Type III Site-Specific

DNA, Catalytic

Enzymes, Immobilized

Holoenzymes

Apoenzymes

Hydrolases

Acid Anhydride Hydrolases

Adenosine Triphosphatases

Arsenite Transporting ATPases

Ca(2+) Mg(2+)-ATPase

Calcium-Transporting ATPases

Plasma Membrane Calcium-Transporting ATPases

Sarcoplasmic Reticulum Calcium-Transporting ATPases

DNA Helicases

DnaB Helicases

RecQ Helicases

Xeroderma Pigmentosum Group D Protein

Molecular Motor Proteins

Dynein ATPase

Kinesin

Myosins

Myosin Type I

Myosin Type II

Cardiac Myosins

Atrial Myosins

Ventricular Myosins

Nonmuscle Myosin Type IIA

Nonmuscle Myosin Type IIB

Skeletal Muscle Myosins

	D8.811.74.249.500	D8.811.	
	D8.811.74.249.750	D8.811.	
	D8.811.74.249.875		
	D8.811.74.500	D8.811.	
	D8.811.74.750	D8.811.	
	D8.811.74.781	D8.811.	D12.776.
		D12.776.	
	D8.811.74.812	D8.811.	D12.776.
		D12.776.	
	D8.811.74.875	D8.811.	
	D8.811.150		
	D8.811.150.240	D8.811.	
	D8.811.150.280	D8.811.	D8.811.
	D8.811.150.280.250	D8.811.	D8.811.
	D8.811.150.280.260	D8.811.	D8.811.
	D8.811.150.280.260.240	D8.811.	D8.811.
	D8.811.150.280.260.300	D8.811.	D8.811.
	D8.811.150.280.260.400	D8.811.	D8.811.
	D8.811.150.280.260.420	D8.811.	D8.811.
	D8.811.150.280.270	D8.811.	D8.811.
	D8.811.165	D8.811.	D13.444.
	D8.811.180		
	D8.811.255		
	D8.811.255.500		D12.776.
	D8.811.277		
	D8.811.277.40		
	D8.811.277.40.25		
	D8.811.277.40.25.47		D12.776. D12.776.
	D8.811.277.40.25.95		
	D8.811.277.40.25.125		D12.776. D12.776.
	D8.811.277.40.25.125.249		D12.776. D12.776.
	D8.811.277.40.25.125.500		D12.776. D12.776.
	D8.811.277.40.25.159	D8.811.	
	D8.811.277.40.25.159.124	D8.811.	
	D8.811.277.40.25.159.249	D8.811.	D8.811.
	D8.811.277.40.25.159.500	D8.811.	D12.776.
		D12.776.	
	D8.811.277.40.25.193	D5.500.	
	D8.811.277.40.25.193.249	D12.776.	D12.776.
	D8.811.277.40.25.193.500	D12.776.	D12.776.
	D8.811.277.40.25.193.750	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.500	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.124	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.124.249	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.124.500	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.374	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.500	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.750	D5.750.	D12.776.
		D12.776.	
	D8.811.277.40.25.193.750.750.750	D5.750.	D12.776.
		D12.776.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Acid Anhydride Hydrolases

Adenosine Triphosphatases

Molecular Motor Proteins

Smooth Muscle Myosins

D8.811.277.40.25.193.750.750.875

D5.750.

D12.776.

Myosin Type III

D8.811.277.40.25.193.750.812

D5.750.

D8.811.

Myosin Type IV

D8.811.277.40.25.193.750.843

D5.750.

D12.776.

Myosin Type V

D8.811.277.40.25.193.750.875

D5.750.

D12.776.

MutS DNA Mismatch-Binding Protein

D8.811.277.40.25.237

D8.811.

D12.776.

MutS Homolog 2 Protein

D8.811.277.40.25.281

D8.811.

D12.776.

N-Ethylmaleimide-Sensitive Proteins

D8.811.277.40.25.303

Proton-Translocating ATPases

D8.811.277.40.25.325

D8.811.

D12.776.

Bacterial Proton-Translocating ATPases

D8.811.277.40.25.325.249

D8.811.

D12.776.

Chloroplast Proton-Translocating ATPases

D8.811.277.40.25.325.500

D8.811.

D12.776.

H(+)-K(+)-Exchanging ATPase

D8.811.277.40.25.325.625

D12.776.

D12.776.

Mitochondrial Proton-Translocating ATPases

D8.811.277.40.25.325.750

D8.811.

D12.776.

Vacuolar Proton-Translocating ATPases

D8.811.277.40.25.325.875

D8.811.

D12.776.

RecQ Helicases

D8.811.277.40.25.800

D8.811.

D8.811.

Sodium-Potassium-Exchanging ATPase

D8.811.277.40.25.810

D12.776.

D12.776.

Apyrase

D8.811.277.40.50

GTP Phosphohydrolases

D8.811.277.40.330

Dynamins

D8.811.277.40.330.200

D12.776.

D12.776.

Dynamin I

D8.811.277.40.330.200.100

D12.776.

D12.776.

Dynamin II

D8.811.277.40.330.200.200

D12.776.

D12.776.

Dynamin III

D8.811.277.40.330.200.300

D12.776.

D12.776.

GTP-Binding Proteins

D8.811.277.40.330.300

D12.776.

GTP Phosphohydrolase-Linked Elongation Factors

D8.811.277.40.330.300.100

D12.776.

D12.776.

Peptide Elongation Factor 1

D8.811.277.40.330.300.100.101

D12.776.

D12.776.

Peptide Elongation Factor 2

D8.811.277.40.330.300.100.102

D12.776.

D12.776.

Peptide Elongation Factor G

D8.811.277.40.330.300.100.200

D12.776.

D12.776.

Peptide Elongation Factor Tu

D8.811.277.40.330.300.100.700

D12.776.

D12.776.

Heterotrimeric GTP-Binding Proteins

D8.811.277.40.330.300.200

D12.644.

D12.776.

GTP-Binding Protein alpha Subunits

D8.811.277.40.330.300.200.100

D12.644.

D12.776.

GTP-Binding Protein alpha Subunits, G12-G13

D8.811.277.40.330.300.200.100.100

D12.644.

D12.776.

GTP-Binding Protein alpha Subunits, Gi-Go

D8.811.277.40.330.300.200.100.200

D12.644.

D12.776.

GTP-Binding Protein alpha Subunit, Gi2

D8.811.277.40.330.300.200.100.200.500

D12.644.

D12.776.

GTP-Binding Protein alpha Subunits, Gq-G11

D8.811.277.40.330.300.200.100.300

D12.644.

D12.776.

GTP-Binding Protein alpha Subunits, Gs

D8.811.277.40.330.300.200.100.400

D12.644.

D12.776.

Transducin

D8.811.277.40.330.300.200.800

D12.644.

D12.776.

Monomeric GTP-Binding Proteins

D8.811.277.40.330.300.400

D12.644.

D12.776.

ADP-Ribosylation Factors

D8.811.277.40.330.300.400.100

D12.644.

D12.776.

ADP-Ribosylation Factor 1

D8.811.277.40.330.300.400.100.100

D12.644.

D12.776.

D12.776.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Acid Anhydride Hydrolases

GTP Phosphohydrolases

GTP-Binding Proteins

rab GTP-Binding Proteins	D8.811.277.40.330.300.400.400	D12.644. D12.776.	D12.776.
rab1 GTP-Binding Proteins	D8.811.277.40.330.300.400.400.25	D12.644. D12.776.	D12.776.
rab2 GTP-Binding Protein	D8.811.277.40.330.300.400.400.50	D12.644. D12.776.	D12.776.
rab3 GTP-Binding Proteins	D8.811.277.40.330.300.400.400.100	D12.644. D12.776.	D12.776.
rab3A GTP-Binding Protein	D8.811.277.40.330.300.400.400.100.500	D12.644. D12.776.	D12.776.
rab4 GTP-Binding Proteins	D8.811.277.40.330.300.400.400.150	D12.644. D12.776.	D12.776.
rab5 GTP-Binding Proteins	D8.811.277.40.330.300.400.400.200	D12.644. D12.776.	D12.776.
ral GTP-Binding Proteins	D8.811.277.40.330.300.400.450	D12.644. D12.776.	D12.776.
ran GTP-Binding Protein	D8.811.277.40.330.300.400.462	D12.644. D12.776. D12.776.	D12.776. D12.776.
rap GTP-Binding Proteins	D8.811.277.40.330.300.400.475	D12.644. D12.776.	D12.776.
rap1 GTP-Binding Proteins	D8.811.277.40.330.300.400.475.100	D12.644. D12.776.	D12.776.
ras Proteins	D8.811.277.40.330.300.400.500	D12.644. D12.776.	D12.776.
Oncogene Protein p21(ras)	D8.811.277.40.330.300.400.500.300	D12.644. D12.776. D12.776.	D12.776. D12.776.
Proto-Oncogene Proteins p21(ras)	D8.811.277.40.330.300.400.500.600	D12.644. D12.776. D12.776.	D12.776. D12.776.
rho GTP-Binding Proteins	D8.811.277.40.330.300.400.700	D12.644. D12.776.	D12.776.
cdc42 GTP-Binding Protein	D8.811.277.40.330.300.400.700.50	D12.644. D12.776.	D12.776.
cdc42 GTP-Binding Protein, Saccharomyces cerevisiae	D8.811.277.40.330.300.400.700.60	D12.644. D12.776.	D12.776.
rac GTP-Binding Proteins	D8.811.277.40.330.300.400.700.100	D12.644. D12.776.	D12.776.
rac1 GTP-Binding Protein	D8.811.277.40.330.300.400.700.100.500	D12.644. D12.776.	D12.776.
rhoA GTP-Binding Protein	D8.811.277.40.330.300.400.700.200	D12.644. D12.776.	D12.776.
rhoB GTP-Binding Protein	D8.811.277.40.330.300.400.700.300	D12.644. D12.776.	D12.776.
Nucleoside-Triphosphatase	D8.811.277.40.465		
Pyrophosphatases	D8.811.277.40.600		
Inorganic Pyrophosphatase	D8.811.277.40.600.399	D12.776.	D12.776.
Thiamine Pyrophosphatase	D8.811.277.40.600.800		
Thiamin-Triphosphatase	D8.811.277.40.850		
Adenosylhomocysteinase	D8.811.277.63		
Amidohydrolases	D8.811.277.87		
N-Acetylmuramoyl-L-alanine Amidase	D8.811.277.87.30		
Allophanate Hydrolase	D8.811.277.87.60		
Arylformamidase	D8.811.277.87.100		
Asparaginase	D8.811.277.87.116		
Aspartylglucosylaminase	D8.811.277.87.125		
beta-Lactamases	D8.811.277.87.180		
Cephalosporinase	D8.811.277.87.180.229		
Penicillinase	D8.811.277.87.180.697		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Amidohydrolases

Biotinidase

Biotinidase

D8.811.277.87.200

Dihydroorotase

D8.811.277.87.280

Glutaminase

D8.811.277.87.483

Histone Deacetylases

D8.811.277.87.520

Nicotinamidase

D8.811.277.87.610

Penicillin Amidase

D8.811.277.87.690

Peptide-N4-(N-acetyl-beta-glucosaminy) Asparagine Amidase

D8.811.277.87.725

Pyroglutamate Hydrolase

D8.811.277.87.760

Sirtuins

D8.811.277.87.831

D8.811.

Urease

D8.811.277.87.902

Aminohydrolases

GTP Cyclohydrolase

D8.811.277.151

Guanine Deaminase

D8.811.277.151.300

Methenyltetrahydrofolate Cyclohydrolase

D8.811.277.151.350

Nucleoside Deaminases

D8.811.277.151.418

Adenosine Deaminase

D8.811.277.151.486

Cytidine Deaminase

D8.811.277.151.486.75

Cytosine Deaminase

D8.811.277.151.486.250

Nucleotide Deaminases

D8.811.277.151.486.625

AMP Deaminase

D8.811.277.151.653

DCMP Deaminase

D8.811.277.151.653.60

D8.811.277.151.653.200

Complement Activating Enzymes

Complement C1r

D8.811.277.300

D12.776.

Complement C1s

D8.811.277.300.280

D12.776.

D12.776.

Complement Factor D

D8.811.277.300.290

D12.776.

D12.776.

Epoxide Hydrolases

Esterases

Carboxylic Ester Hydrolases

Acetylesterase

D8.811.277.340

Carboxylesterase

D8.811.277.352

Cholinesterases

D8.811.277.352.100.50

Acetylcholinesterase

D8.811.277.352.100.100

Butyrylcholinesterase

D8.811.277.352.100.170

Pseudocholinesterase

D8.811.277.352.100.170.176

Dehydroascorbate

D8.811.277.352.100.170.250

Lipase

D8.811.277.352.100.170.710

Pancrelipase

D8.811.277.352.100.220

Lipoprotein Lipase

D8.811.277.352.100.400

D20.777.

Monoacylglycerol Lipases

D8.811.277.352.100.400.745

Naphthol AS D Esterase

D8.811.277.352.100.430

Phospholipases

D8.811.277.352.100.500

Lysophospholipase

D8.811.277.352.100.550

D8.811.

Phospholipases A

Phospholipases A1

Phospholipases A2

1-Alkyl-2-acetyl-glycerophosphocholine Esterase

D8.811.277.352.100.680

D8.811.

Phospholipases A2, Calcium-Independent

D8.811.277.352.100.680.510

Group VI Phospholipases A2

D8.811.277.352.100.680.750

Peroxiredoxin VI

D8.811.277.352.100.680.750.875

Phospholipases A2, Cytosolic

D8.811.277.352.100.680.750.937

Group IV Phospholipases A2

D8.811.277.352.100.680.750.937.249

Peroxiredoxin VI

D8.811.277.352.100.680.750.937.300

Phospholipases A2, Secretory

D8.811.277.352.100.680.750.937.300.249

D8.811.

D8.811.

Group I Phospholipases A2

D8.811.277.352.100.680.750.937.625.249

D8.811.

D8.811.

Group IA Phospholipases A2

D8.811.277.352.100.680.750.937.625.624

Group IB Phospholipases A2

D8.811.277.352.100.680.750.937.750

Group II Phospholipases A2

D8.811.277.352.100.680.750.937.750.100

Group III Phospholipases A2

D8.811.277.352.100.680.750.937.750.100.500

D8.811.277.352.100.680.750.937.750.100.750

D8.811.277.352.100.680.750.937.750.550

D8.811.277.352.100.680.750.937.750.662

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Esterases

Carboxylic Ester Hydrolases

Phospholipases

Group V Phospholipases A2

D8.811.277.352.100.680.750.937.750.775

Group X Phospholipases A2

D8.811.277.352.100.680.750.937.750.887

Sterol Esterase

D8.811.277.352.100.700

Deoxyribonucleases

D8.811.277.352.335

Endodeoxyribonucleases

D8.811.277.352.335.350

D8.811.

Aspergillus Nuclease S1

D8.811.277.352.335.350.25

D8.811.

D8.811.

D8.811.

Deoxyribonuclease (Pyrimidine Dimer)

D8.811.277.352.335.350.137

Deoxyribonuclease I

D8.811.277.352.335.350.250

Streptodornase and Streptokinase

D8.811.277.352.335.350.250.900

D8.811.

D12.776.

Deoxyribonuclease IV (Phage T4-Induced)

D8.811.277.352.335.350.275

DNA Restriction Enzymes

D8.811.277.352.335.350.300

D8.811.

D8.811.

Deoxyribonucleases, Type I Site-Specific

D8.811.277.352.335.350.300.250

D8.811.

D8.811.

Deoxyribonucleases, Type II Site-Specific

D8.811.277.352.335.350.300.260

D8.811.

D8.811.

Deoxyribonuclease BamHI

D8.811.277.352.335.350.300.260.240

D8.811.

D8.811.

Deoxyribonuclease EcoRI

D8.811.277.352.335.350.300.260.250

D8.811.

D8.811.

Deoxyribonuclease HindIII

D8.811.277.352.335.350.300.260.260

D8.811.

D8.811.

Deoxyribonuclease HpaII

D8.811.277.352.335.350.300.260.300

D8.811.

D8.811.

Deoxyribonucleases, Type III Site-Specific

D8.811.277.352.335.350.300.270

D8.811.

D8.811.

Holliday Junction Resolvases

D8.811.277.352.335.350.400

D8.811.

D8.811.

Micrococcal Nuclease

D8.811.277.352.335.350.500

D8.811.

D8.811.

D8.811.

Exodeoxyribonucleases

D8.811.277.352.335.375

D8.811.

Exodeoxyribonuclease V

D8.811.277.352.335.375.750

Endonucleases

D8.811.277.352.355

Endodeoxyribonucleases

D8.811.277.352.355.325

D8.811.

Aspergillus Nuclease S1

D8.811.277.352.355.325.25

D8.811.

D8.811.

D8.811.

DNA Restriction Enzymes

D8.811.277.352.355.325.300

D8.811.

D8.811.

Deoxyribonucleases, Type I Site-Specific

D8.811.277.352.355.325.300.250

D8.811.

D8.811.

Deoxyribonucleases, Type II Site-Specific

D8.811.277.352.355.325.300.260

D8.811.

D8.811.

Deoxyribonuclease BamHI

D8.811.277.352.355.325.300.260.240

D8.811.

D8.811.

Deoxyribonuclease EcoRI

D8.811.277.352.355.325.300.260.250

D8.811.

D8.811.

Deoxyribonuclease HindIII

D8.811.277.352.355.325.300.260.260

D8.811.

D8.811.

Deoxyribonuclease HpaII

D8.811.277.352.355.325.300.260.300

D8.811.

D8.811.

Deoxyribonucleases, Type III Site-Specific

D8.811.277.352.355.325.300.270

D8.811.

D8.811.

Flap Endonucleases

D8.811.277.352.355.325.350

Holliday Junction Resolvases

D8.811.277.352.355.325.400

D8.811.

D8.811.

Micrococcal Nuclease

D8.811.277.352.355.325.500

D8.811.

D8.811.

D8.811.

Endoribonucleases

D8.811.277.352.355.350

D8.811.

Aspergillus Nuclease S1

D8.811.277.352.355.350.25

D8.811.

D8.811.

D8.811.

Micrococcal Nuclease

D8.811.277.352.355.350.500

D8.811.

D8.811.

D8.811.

Ribonuclease H

D8.811.277.352.355.350.700

D8.811.

Ribonuclease H, Human Immunodeficiency Virus

D8.811.277.352.355.350.700.500

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

Ribonuclease, Pancreatic

D8.811.277.352.355.350.715

D8.811.

Ribonuclease T1

D8.811.277.352.355.350.725

D8.811.

RNA-Induced Silencing Complex

D8.811.277.352.355.350.810

D8.811.

D12.776.

D12.776.

Exonucleases

D8.811.277.352.365

Exodeoxyribonucleases

D8.811.277.352.365.290

D8.811.

Exoribonucleases

D8.811.277.352.365.300

D8.811.

Phosphoric Diester Hydrolases

D8.811.277.352.640

Annexin A3

D8.811.277.352.640.50

D12.776.

3',5'-Cyclic-AMP Phosphodiesterases

D8.811.277.352.640.150

D12.644.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Esterases

Phosphoric Diester Hydrolases

3',5'-Cyclic-AMP Phosphodiesterases

Cyclic Nucleotide Phosphodiesterases, Type 1	D8.811.277.352.640.150.100	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 2	D8.811.277.352.640.150.200	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 3	D8.811.277.352.640.150.300	D12.644.	D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 4	D8.811.277.352.640.150.400	D12.644.	D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 5	D8.811.277.352.640.150.500	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 6	D8.811.277.352.640.150.600	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 7	D8.811.277.352.640.150.700	D12.644.	D12.776.
3',5'-Cyclic-GMP Phosphodiesterases	D8.811.277.352.640.155	D12.644.	D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 1	D8.811.277.352.640.155.100	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 2	D8.811.277.352.640.155.200	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 5	D8.811.277.352.640.155.500	D8.811. D12.644. D12.776.	D12.644. D12.776.
Cyclic Nucleotide Phosphodiesterases, Type 6	D8.811.277.352.640.155.750	D8.811. D12.644. D12.776.	D12.644. D12.776.

2',3'-Cyclic-Nucleotide Phosphodiesterases

Glycerophosphoinositol Inositolphosphodiesterase

Phosphodiesterase I

Phospholipases

Type C Phospholipases

Glycosylphosphatidylinositol Diacylglycerol-Lyase

Phosphatidylinositol Diacylglycerol-Lyase

Phosphoinositide Phospholipase C

Phospholipase C beta

Phospholipase C delta

Phospholipase C gamma

Phospholipase D

Sphingomyelin Phosphodiesterase

Phosphoric Monoester Hydrolases

Acid Phosphatase

Alkaline Phosphatase

Fructose-Bisphosphatase

Glucose-6-Phosphatase

Histidinol-Phosphatase

4-Nitrophenylphosphatase

Mitogen-Activated Protein Kinase Phosphatases

Dual Specificity Phosphatase 1

Dual Specificity Phosphatase 2

Dual Specificity Phosphatase 3

D8.811.277.352.640.160			
D8.811.277.352.640.295			
D8.811.277.352.640.430			
D8.811.277.352.640.700	D8.811.		
D8.811.277.352.640.700.700			
D8.811.277.352.640.700.700.249			
D8.811.277.352.640.700.700.500	D8.811.		
D8.811.277.352.640.700.700.562	D12.644.	D12.776.	
D8.811.277.352.640.700.700.562.500	D12.644.	D12.776.	
D8.811.277.352.640.700.700.562.625	D12.644.	D12.776.	
D8.811.277.352.640.700.700.562.750	D12.644. D12.776.	D12.644. D12.776.	
D8.811.277.352.640.700.710			
D8.811.277.352.640.750			
D8.811.277.352.650			
D8.811.277.352.650.25			
D8.811.277.352.650.35			
D8.811.277.352.650.200			
D8.811.277.352.650.225			
D8.811.277.352.650.300			
D8.811.277.352.650.575			
D8.811.277.352.650.587		D12.644.	D12.776.
D8.811.277.352.650.587.200	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.
D8.811.277.352.650.587.250	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.
D8.811.277.352.650.587.300	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.	D8.811. D12.644. D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Esterases

Phosphoric Monoester Hydrolases

Mitogen-Activated Protein Kinase Phosphatases

Dual Specificity Phosphatase 6

D8.811.277.352.650.587.600

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Nucleotidases

D8.811.277.352.650.600

5'-Nucleotidase

D8.811.277.352.650.600.600

D23.50.

D23.101.

Phosphatidate Phosphatase

D8.811.277.352.650.620

Phosphofructokinase-2

D8.811.277.352.650.622

D8.811.

Phosphoprotein Phosphatases

D8.811.277.352.650.625

Calcineurin

D8.811.277.352.650.625.150

Dual-Specificity Phosphatases

D8.811.277.352.650.625.225

D8.811.
D12.776.

D12.644.

cdc25 Phosphatases

D8.811.277.352.650.625.225.100

D8.811.
D12.776.

D12.644.
D12.776.

Dual Specificity Phosphatase 1

D8.811.277.352.650.625.225.200

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 2

D8.811.277.352.650.625.225.250

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 3

D8.811.277.352.650.625.225.300

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 6

D8.811.277.352.650.625.225.600

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Glycogen-Synthase-D Phosphatase

D8.811.277.352.650.625.300

Myosin-Light-Chain Phosphatase

D8.811.277.352.650.625.475

Phosphorylase Phosphatase

D8.811.277.352.650.625.650

Protein Phosphatase 1

D8.811.277.352.650.625.687

Protein Phosphatase 2

D8.811.277.352.650.625.706

D12.644.

D12.776.

Pyruvate Dehydrogenase (Lipoamide)-Phosphatase

D8.811.277.352.650.625.725

6-Phytase

D8.811.277.352.650.700

Protein Tyrosine Phosphatases

D8.811.277.352.650.775

Dual-Specificity Phosphatases

D8.811.277.352.650.775.250

D8.811.
D12.776.

D12.644.

cdc25 Phosphatases

D8.811.277.352.650.775.250.100

D8.811.
D12.776.

D12.644.
D12.776.

Dual Specificity Phosphatase 1

D8.811.277.352.650.775.250.200

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 2

D8.811.277.352.650.775.250.250

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 3

D8.811.277.352.650.775.250.300

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Dual Specificity Phosphatase 6

D8.811.277.352.650.775.250.600

D8.811.
D12.644.
D12.776.

D8.811.
D12.644.
D12.776.

Protein Tyrosine Phosphatases, Non-Receptor

D8.811.277.352.650.775.300

Protein Tyrosine Phosphatase, Non-Receptor Type 1

D8.811.277.352.650.775.300.100

D12.644.

D12.776.

Protein Tyrosine Phosphatase, Non-Receptor Type 2

D8.811.277.352.650.775.300.200

D12.644.

D12.776.

Protein Tyrosine Phosphatase, Non-Receptor Type 3

D8.811.277.352.650.775.300.300

D12.644.

D12.776.

Protein Tyrosine Phosphatase, Non-Receptor Type 4

D8.811.277.352.650.775.300.400

D12.644.

D12.776.

Protein Tyrosine Phosphatase, Non-Receptor Type 6

D8.811.277.352.650.775.300.600

D8.811.
D12.644.
D12.776.

D12.644.
D12.776.

Protein Tyrosine Phosphatase, Non-Receptor Type 11

D8.811.277.352.650.775.300.800

D8.811.

D12.644.

Protein Tyrosine Phosphatase, Non-Receptor Type 12

D8.811.277.352.650.775.300.850

D12.776.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Esterases

Phosphoric Monoester Hydrolases

Protein Tyrosine Phosphatases

Protein Tyrosine Phosphatase, Non-Receptor Type 13	D8.811.277.352.650.775.300.860	D12.644.	D12.776.
Protein Tyrosine Phosphatase, Non-Receptor Type 22	D8.811.277.352.650.775.300.930	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases	D8.811.277.352.650.775.400	D12.644.	D12.776.
		D12.776.	
Receptor-Like Protein Tyrosine Phosphatases, Class 1	D8.811.277.352.650.775.400.100	D12.644.	D12.776.
		D12.776.	
Antigens, CD45	D8.811.277.352.650.775.400.100.500	D12.644.	D12.776.
		D12.776.	D23.50.
		D23.101.	
Receptor-Like Protein Tyrosine Phosphatases, Class 2	D8.811.277.352.650.775.400.200	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases, Class 3	D8.811.277.352.650.775.400.300	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases, Class 4	D8.811.277.352.650.775.400.400	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases, Class 5	D8.811.277.352.650.775.400.500	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases, Class 7	D8.811.277.352.650.775.400.700	D12.644.	D12.776.
Receptor-Like Protein Tyrosine Phosphatases, Class 8	D8.811.277.352.650.775.400.800	D12.644.	D12.776.
SH2 Domain-Containing Protein Tyrosine Phosphatases	D8.811.277.352.650.775.700	D12.644.	D12.776.
Protein Tyrosine Phosphatase, Non-Receptor Type 6	D8.811.277.352.650.775.700.200	D8.811.	D12.644.
		D12.644.	D12.776.
		D12.776.	
Protein Tyrosine Phosphatase, Non-Receptor Type 11	D8.811.277.352.650.775.700.800	D8.811.	D12.644.
		D12.776.	D12.776.
		D12.776.	
PTEN Phosphohydrolase	D8.811.277.352.650.850	D12.776.	D12.776.
Phosphoric Triester Hydrolases	D8.811.277.352.660		
Aryldialkylphosphatase	D8.811.277.352.660.500		
Ribonucleases	D8.811.277.352.700		
Endoribonucleases	D8.811.277.352.700.350	D8.811.	
Aspergillus Nuclease S1	D8.811.277.352.700.350.25	D8.811.	D8.811.
		D8.811.	
Eosinophil Cationic Protein	D8.811.277.352.700.350.262	D12.776.	
Eosinophil-Derived Neurotoxin	D8.811.277.352.700.350.381	D12.776.	
Micrococcal Nuclease	D8.811.277.352.700.350.500	D8.811.	D8.811.
		D8.811.	
Ribonuclease H	D8.811.277.352.700.350.700	D8.811.	
Ribonuclease H, Human Immunodeficiency Virus	D8.811.277.352.700.350.700.500	D8.811.	D12.776.
		D12.776.	D12.776.
		D12.776.	
Ribonuclease III	D8.811.277.352.700.350.707		
Ribonuclease P	D8.811.277.352.700.350.711	D8.811.	D12.776.
		D12.776.	
Ribonuclease, Pancreatic	D8.811.277.352.700.350.715	D8.811.	
Ribonuclease T1	D8.811.277.352.700.350.725	D8.811.	
RNA-Induced Silencing Complex	D8.811.277.352.700.350.810	D8.811.	D12.776.
		D12.776.	
Exoribonucleases	D8.811.277.352.700.375	D8.811.	
Sulfatases	D8.811.277.352.827		
Arylsulfatases	D8.811.277.352.827.70		
N-Acetylgalactosamine-4-Sulfatase	D8.811.277.352.827.70.60	D8.811.	
Cerebroside-Sulfatase	D8.811.277.352.827.70.250		
Steryl-Sulfatase	D8.811.277.352.827.70.625		
Chondroitinases and Chondroitin Lyases	D8.811.277.352.827.180	D8.811.	
Chondroitinsulfatases	D8.811.277.352.827.180.175		
N-Acetylgalactosamine-4-Sulfatase	D8.811.277.352.827.180.175.60	D8.811.	
Chondro-4-Sulfatase	D8.811.277.352.827.180.175.275		
Iduronate Sulfatase	D8.811.277.352.827.500		
Thiolester Hydrolases	D8.811.277.352.897		
Acetyl-CoA Hydrolase	D8.811.277.352.897.75		
Palmitoyl-CoA Hydrolase	D8.811.277.352.897.700		
Ubiquitin Thiolesterase	D8.811.277.352.897.850		
Glycoside Hydrolases	D8.811.277.450		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Glycoside Hydrolases

alpha-L-Fucosidase

alpha-L-Fucosidase

Amylases

alpha-Amylase

beta-Amylase

beta-Fructofuranosidase

Chitinase

Dextranase

Disaccharidases

Sucrase

Sucrase-Isomaltase Complex

Trehalase

Galactosidases

alpha-Galactosidase

beta-Galactosidase

Lactase

Ceramide Trihexosidase

Galactosylceramidase

Glucosidases

alpha-Glucosidases

Cellulases

beta-Glucosidase

Cellulase

Cellulose 1,4-beta-Cellobiosidase

Endo-1,3(4)-beta-Glucanase

Glucan 1,3-beta-Glucosidase

Glucan 1,4-beta-Glucosidase

Glucan Endo-1,3-beta-D-Glucosidase

Glucan 1,4-alpha-Glucosidase

Glycogen Debranching Enzyme System

Glycosylceramidase

Glucosylceramidase

Glucuronidase

N-Glycosyl Hydrolases

DNA Glycosylases

DNA-Formamidopyrimidine Glycosylase

Thymine DNA Glycosylase

NAD⁺ Nucleosidase

ADP-ribosyl Cyclase

Antigens, CD38

Ribosome Inactivating Proteins

Ribosome Inactivating Proteins, Type 1

Ribosome Inactivating Proteins, Type 2

Abrin

Ricin

Shiga Toxins

Shiga Toxin 1

Shiga Toxin 2

Shiga Toxin

Hexosaminidases

alpha-N-Acetylgalactosaminidase

beta-N-Acetyl-Galactosaminidase

beta-N-Acetylhexosaminidases

Acetylglucosaminidase

Hexosaminidase A

	D8.811.277.450.50		
	D8.811.277.450.66		
	D8.811.277.450.66.50		
	D8.811.277.450.66.100		
	D8.811.277.450.114		
	D8.811.277.450.207		
	D8.811.277.450.283		
	D8.811.277.450.329		
	D8.811.277.450.329.738		
	D8.811.277.450.329.738.700	D5.500.	D8.811.
		D8.811.	
	D8.811.277.450.329.865		
	D8.811.277.450.410		
	D8.811.277.450.410.50		
	D8.811.277.450.410.100		
	D8.811.277.450.410.100.500		
	D8.811.277.450.410.150		
	D8.811.277.450.410.400		
	D8.811.277.450.420		
	D8.811.277.450.420.50		
	D8.811.277.450.420.200		
	D8.811.277.450.420.200.100		
	D8.811.277.450.420.200.200		
	D8.811.277.450.420.200.400		
	D8.811.277.450.420.200.450		
	D8.811.277.450.420.200.500		
	D8.811.277.450.420.200.550		
	D8.811.277.450.420.200.600		
	D8.811.277.450.420.375		
	D8.811.277.450.420.450	D8.811.	
	D8.811.277.450.420.475		
	D8.811.277.450.420.475.400		
	D8.811.277.450.426		
	D8.811.277.450.430		
	D8.811.277.450.430.99	D8.811.	
	D8.811.277.450.430.99.500	D8.811.	
	D8.811.277.450.430.99.750	D8.811.	
	D8.811.277.450.430.400	D8.811.	
	D8.811.277.450.430.400.60	D8.811.	
	D8.811.277.450.430.400.60.500	D23.50.	D23.101.
	D8.811.277.450.430.700	D12.776.	
	D8.811.277.450.430.700.500	D12.776.	
	D8.811.277.450.430.700.750	D12.776.	D12.776.
	D8.811.277.450.430.700.750.111	D12.776.	D12.776.
	D8.811.277.450.430.700.750.666	D12.776.	D12.776.
		D12.776.	
	D8.811.277.450.430.700.750.750	D23.946.	D23.946.
	D8.811.277.450.430.700.750.750.120	D12.776.	D23.946.
		D23.946.	
	D8.811.277.450.430.700.750.750.124	D12.776.	D23.946.
		D23.946.	
	D8.811.277.450.430.700.750.750.500	D23.946.	D23.946.
	D8.811.277.450.483		
	D8.811.277.450.483.44		
	D8.811.277.450.483.112		
	D8.811.277.450.483.180		
	D8.811.277.450.483.180.500		
	D8.811.277.450.483.180.750		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Glycoside Hydrolases

Hexosaminidases

beta-N-Acetylhexosaminidases

beta-Hexosaminidase alpha Chain

D8.811.277.450.483.180.750.500

beta-Hexosaminidase beta Chain

D8.811.277.450.483.180.750.750

D8.811.

Hexosaminidase B

D8.811.277.450.483.180.875

beta-Hexosaminidase beta Chain

D8.811.277.450.483.180.875.500

D8.811.

Mannosyl-Glycoprotein Endo-beta-N-Acetylglucosaminidase

D8.811.277.450.483.765

Hyaluronoglucosaminidase

D8.811.277.450.529

D8.811.

Iduronidase

D8.811.277.450.560

Isoamylase

D8.811.277.450.585

Mannosidases

D8.811.277.450.625

alpha-Mannosidase

D8.811.277.450.625.500

beta-Mannosidase

D8.811.277.450.625.750

Muramidase

D8.811.277.450.642

Neuraminidase

D8.811.277.450.692

Oligo-1,6-Glucosidase

D8.811.277.450.770

Sucrase-Isomaltase Complex

D8.811.277.450.770.800

D5.500.

D8.811.

D8.811.

Polygalacturonase

D8.811.277.450.800

Xylosidases

D8.811.277.450.950

Endo-1,4-beta Xylanases

D8.811.277.450.950.249

Xylan Endo-1,3-beta-Xylosidase

D8.811.277.450.950.500

Pancreatin

D8.811.277.610

D20.777.

Peptide Hydrolases

D8.811.277.656

ATP-Dependent Proteases

D8.811.277.656.149

Endopeptidase Clp

D8.811.277.656.149.200

D8.811.

Protease La

D8.811.277.656.149.500

D8.811.

Endopeptidases

D8.811.277.656.300

Amyloid Precursor Protein Secretases

D8.811.277.656.300.32

Aspartic Endopeptidases

D8.811.277.656.300.66

Cathepsin D

D8.811.277.656.300.66.180

D8.811.

Cathepsin E

D8.811.277.656.300.66.185

D8.811.

Chymosin

D8.811.277.656.300.66.200

HIV Protease

D8.811.277.656.300.66.340

D12.776.

Pepsin A

D8.811.277.656.300.66.700

Renin

D8.811.277.656.300.66.780

D8.811.

Brinolase

D8.811.277.656.300.99

Cathepsins

D8.811.277.656.300.133

Carboxypeptidase C

D8.811.277.656.300.133.62

D8.811.

Cathepsin B

D8.811.277.656.300.133.125

D8.811.

Cathepsin D

D8.811.277.656.300.133.187

D8.811.

Cathepsin E

D8.811.277.656.300.133.250

D8.811.

Dipeptidyl Peptidase I

D8.811.277.656.300.133.375

D8.811.

Coagulase

D8.811.277.656.300.174

D12.776.

Cysteine Endopeptidases

D8.811.277.656.300.215

Bromelains

D8.811.277.656.300.215.96

Calpain

D8.811.277.656.300.215.120

Caspases

D8.811.277.656.300.215.126

D12.644.

D12.776.

Caspases, Effector

D8.811.277.656.300.215.126.350

D12.644.

D12.776.

Caspase 3

D8.811.277.656.300.215.126.350.300

D12.644.

D12.776.

Caspase 6

D8.811.277.656.300.215.126.350.600

D12.644.

D12.776.

Caspase 7

D8.811.277.656.300.215.126.350.700

D12.644.

D12.776.

Caspase 14

D8.811.277.656.300.215.126.350.900

D12.644.

D12.776.

Caspases, Initiator

D8.811.277.656.300.215.126.550

D12.644.

D12.776.

Caspase 1

D8.811.277.656.300.215.126.550.100

D12.644.

D12.776.

Caspase 2

D8.811.277.656.300.215.126.550.200

D12.644.

D12.776.

Caspase 8

D8.811.277.656.300.215.126.550.800

D12.644.

D12.776.

Caspase 9

D8.811.277.656.300.215.126.550.900

D12.644.

D12.776.

Caspase 10

D8.811.277.656.300.215.126.550.910

D12.644.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Peptide Hydrolases

Endopeptidases

Cysteine Endopeptidases

Caspase 12	D8.811.277.656.300.215.126.550.920	D12.644.	D12.776.
Cathepsin B	D8.811.277.656.300.215.133	D8.811.	
Chymopapain	D8.811.277.656.300.215.160		
Ficin	D8.811.277.656.300.215.350		
Papain	D8.811.277.656.300.215.585		
Metalloendopeptidases	D8.811.277.656.300.480	D8.811.	
Collagenases	D8.811.277.656.300.480.205	D8.811.	
Matrix Metalloproteinase 1	D8.811.277.656.300.480.205.351	D8.811.	D8.811.
Matrix Metalloproteinase 2	D8.811.277.656.300.480.205.352	D8.811.	D8.811.
Matrix Metalloproteinase 8	D8.811.277.656.300.480.205.358	D8.811.	D8.811.
Matrix Metalloproteinase 9	D8.811.277.656.300.480.205.360	D8.811.	D8.811.
Matrix Metalloproteinase 13	D8.811.277.656.300.480.205.363	D8.811.	D8.811.
Microbial Collagenase	D8.811.277.656.300.480.205.500	D8.811.	
Gelatinases	D8.811.277.656.300.480.252	D8.811.	
Matrix Metalloproteinase 2	D8.811.277.656.300.480.252.420	D8.811.	D8.811.
Matrix Metalloproteinase 9	D8.811.277.656.300.480.252.445	D8.811.	D8.811.
Insulysin	D8.811.277.656.300.480.300	D8.811.	
Lysostaphin	D8.811.277.656.300.480.452	D8.811.	
Matrix Metalloproteinases	D8.811.277.656.300.480.525	D8.811.	
Matrix Metalloproteinases, Membrane-Associated	D8.811.277.656.300.480.525.300	D8.811.	D12.776.
Matrix Metalloproteinase 14	D8.811.277.656.300.480.525.300.500	D8.811.	
Matrix Metalloproteinase 15	D8.811.277.656.300.480.525.300.550	D8.811.	
Matrix Metalloproteinase 16	D8.811.277.656.300.480.525.300.600	D8.811.	
Matrix Metalloproteinase 17	D8.811.277.656.300.480.525.300.650	D8.811.	
Matrix Metalloproteinases, Secreted	D8.811.277.656.300.480.525.700	D8.811.	
Matrix Metalloproteinase 1	D8.811.277.656.300.480.525.700.100	D8.811.	D8.811.
Matrix Metalloproteinase 2	D8.811.277.656.300.480.525.700.150	D8.811.	D8.811.
Matrix Metalloproteinase 3	D8.811.277.656.300.480.525.700.200	D8.811.	
Matrix Metalloproteinase 7	D8.811.277.656.300.480.525.700.250	D8.811.	
Matrix Metalloproteinase 8	D8.811.277.656.300.480.525.700.300	D8.811.	D8.811.
Matrix Metalloproteinase 9	D8.811.277.656.300.480.525.700.350	D8.811.	D8.811.
Matrix Metalloproteinase 10	D8.811.277.656.300.480.525.700.400	D8.811.	
Matrix Metalloproteinase 11	D8.811.277.656.300.480.525.700.450	D8.811.	
Matrix Metalloproteinase 12	D8.811.277.656.300.480.525.700.500	D8.811.	
Matrix Metalloproteinase 13	D8.811.277.656.300.480.525.700.550	D8.811.	D8.811.
Matrix Metalloproteinase 20	D8.811.277.656.300.480.525.700.800	D8.811.	
Neprilysin	D8.811.277.656.300.480.600	D8.811.	D23.50.
		D23.50.	D23.101.
		D23.101.	
PHEX Phosphate Regulating Neutral Endopeptidase	D8.811.277.656.300.480.616	D8.811.	D12.776.
		D12.776.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Peptide Hydrolases

Endopeptidases

Metalloendopeptidases

Pregnancy-Associated Plasma Protein-A	D8.811.277.656.300.480.632	D8.811.	D12.776.
Procollagen N-Endopeptidase	D8.811.277.656.300.480.664	D8.811.	
Pronase	D8.811.277.656.300.480.680	D8.811.	D8.811.
Thermolysin	D8.811.277.656.300.480.827	D8.811.	
Serine Endopeptidases	D8.811.277.656.300.760		
Acrosin	D8.811.277.656.300.760.30		
Chymases	D8.811.277.656.300.760.103		
Chymotrypsin	D8.811.277.656.300.760.176		
Complement Factor B	D8.811.277.656.300.760.198	D8.622.	D12.776.
Complement Factor D	D8.811.277.656.300.760.200	D8.811.	D12.776.
Complement Factor I	D8.811.277.656.300.760.210	D12.776.	
Endopeptidase Clp	D8.811.277.656.300.760.228	D8.811.	
Endopeptidase K	D8.811.277.656.300.760.247		
Enteropeptidase	D8.811.277.656.300.760.284		
Factor VIIa	D8.811.277.656.300.760.300	D12.776.	D23.119.
Factor IXa	D8.811.277.656.300.760.310	D12.776.	D23.119.
Factor Xa	D8.811.277.656.300.760.315	D12.776.	D23.119.
Factor XIa	D8.811.277.656.300.760.320	D12.776.	D23.119.
Factor XIIa	D8.811.277.656.300.760.324	D12.776.	D23.119.
Furin	D8.811.277.656.300.760.353	D8.811.	
Granzymes	D8.811.277.656.300.760.397		
Kallikreins	D8.811.277.656.300.760.442	D12.776.	D23.119.
Plasma Kallikrein	D8.811.277.656.300.760.442.700		
Prekallikrein	D8.811.277.656.300.760.442.725	D12.776.	D23.119.
Prostate-Specific Antigen	D8.811.277.656.300.760.442.750	D12.776.	D23.50.
Tissue Kallikreins	D8.811.277.656.300.760.442.875	D23.101.	
Mannose-Binding Protein-Associated Serine Proteases	D8.811.277.656.300.760.501	D12.776.	
Myeloblastin	D8.811.277.656.300.760.530		
Pancreatic Elastase	D8.811.277.656.300.760.560		
Leukocyte Elastase	D8.811.277.656.300.760.560.500		
Plasmin	D8.811.277.656.300.760.625		
Plasminogen Activators	D8.811.277.656.300.760.635	D12.776.	
Anistreplase	D8.811.277.656.300.760.635.75	D8.811.	D12.776.
Pronase	D8.811.277.656.300.760.638	D8.811.	D8.811.
Proprotein Convertase 1	D8.811.277.656.300.760.640	D8.811.	
Proprotein Convertase 2	D8.811.277.656.300.760.646	D8.811.	
Proprotein Convertase 5	D8.811.277.656.300.760.648	D8.811.	
Protease La	D8.811.277.656.300.760.733	D8.811.	
Subtilisins	D8.811.277.656.300.760.787		
Subtilisin	D8.811.277.656.300.760.787.805		
Thrombin	D8.811.277.656.300.760.855	D12.776.	D23.119.
Tissue Plasminogen Activator	D8.811.277.656.300.760.875	D12.776.	D23.119.
Trypsin	D8.811.277.656.300.760.895		
Tryptases	D8.811.277.656.300.760.902		
Urinary Plasminogen Activator	D8.811.277.656.300.760.910	D12.776.	
Venombin A	D8.811.277.656.300.760.955		
Ancrod	D8.811.277.656.300.760.955.60	D20.888.	D23.946.
Batroxobin	D8.811.277.656.300.760.955.135	D20.888.	D23.946.
Streptokinase	D8.811.277.656.300.775	D12.776.	
Anistreplase	D8.811.277.656.300.775.75	D8.811.	D12.776.
Streptodornase and Streptokinase	D8.811.277.656.300.775.900	D8.811.	D12.776.
Exopeptidases	D8.811.277.656.350		
Aminopeptidases	D8.811.277.656.350.100		
Amino Acid Naphthylamidases	D8.811.277.656.350.100.150		
Leucyl-beta-Naphthylamidase	D8.811.277.656.350.100.150.400	D8.811.	D8.811.
		D8.811.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Peptide Hydrolases

Exopeptidases

Aminopeptidases

Antigens, CD13	D8.811.277.656.350.100.160	D8.811. D23.50. D23.101.	D8.811. D23.50. D23.101.
Cystinyl Amino peptidase	D8.811.277.656.350.100.235	D8.811.	D8.811.
Glutamyl Amino peptidase	D8.811.277.656.350.100.373	D8.811.	D8.811.
Leucyl Amino peptidase	D8.811.277.656.350.100.511	D8.811.	D8.811.
Leucyl-beta-Naphthylamidase	D8.811.277.656.350.100.511.400	D8.811.	D8.811.
Pyroglutamyl-Peptidase I	D8.811.277.656.350.100.755		
Carboxypeptidases	D8.811.277.656.350.245		
Carboxypeptidase B	D8.811.277.656.350.245.83	D8.811.	D8.811.
Carboxypeptidase C	D8.811.277.656.350.245.111	D8.811.	
Carboxypeptidase H	D8.811.277.656.350.245.167	D8.811.	D8.811.
Carboxypeptidase U	D8.811.277.656.350.245.224	D8.811.	D8.811.
Carboxypeptidases A	D8.811.277.656.350.245.250	D8.811.	D8.811.
gamma-Glutamyl Hydrolase	D8.811.277.656.350.245.280		
Glutamate Carboxypeptidase II	D8.811.277.656.350.245.400	D8.811.	D8.811.
Lysine Carboxypeptidase	D8.811.277.656.350.245.450	D8.811.	D8.811.
Muramoylpentapeptide Carboxypeptidase	D8.811.277.656.350.245.500		
Serine-Type D-Ala-D-Ala Carboxypeptidase	D8.811.277.656.350.245.800		
Dipeptidases	D8.811.277.656.350.297		
Dipeptidyl Peptidases	D8.811.277.656.350.350		
Antigens, CD26	D8.811.277.656.350.350.126	D23.50. D23.101.	D23.50. D23.101.
Dipeptidyl Peptidase I	D8.811.277.656.350.350.375	D8.811.	
Metalloexopeptidases	D8.811.277.656.350.555	D8.811.	
Antigens, CD13	D8.811.277.656.350.555.100	D8.811. D23.50. D23.101.	D8.811. D23.50. D23.101.
Carboxypeptidase B	D8.811.277.656.350.555.200	D8.811.	D8.811.
Carboxypeptidase H	D8.811.277.656.350.555.250	D8.811.	D8.811.
Carboxypeptidase U	D8.811.277.656.350.555.300	D8.811.	D8.811.
Carboxypeptidases A	D8.811.277.656.350.555.350	D8.811.	D8.811.
Cystinyl Amino peptidase	D8.811.277.656.350.555.400	D8.811.	D8.811.
Glutamate Carboxypeptidase II	D8.811.277.656.350.555.500	D8.811.	D8.811.
Glutamyl Amino peptidase	D8.811.277.656.350.555.600	D8.811.	D8.811.
Leucyl Amino peptidase	D8.811.277.656.350.555.700	D8.811.	D8.811.
Leucyl-beta-Naphthylamidase	D8.811.277.656.350.555.700.400	D8.811.	D8.811.
Lysine Carboxypeptidase	D8.811.277.656.350.555.750	D8.811.	D8.811.
Peptidyl-Dipeptidase A	D8.811.277.656.350.700	D23.50.	D23.101.
Metalloproteases	D8.811.277.656.675		
Metalloendopeptidases	D8.811.277.656.675.374	D8.811.	
ADAM Proteins	D8.811.277.656.675.374.102	D9.400.	D12.776.
Collagenases	D8.811.277.656.675.374.205	D8.811.	
Matrix Metalloproteinase 1	D8.811.277.656.675.374.205.351	D8.811.	D8.811.
Matrix Metalloproteinase 2	D8.811.277.656.675.374.205.352	D8.811.	D8.811.
Matrix Metalloproteinase 8	D8.811.277.656.675.374.205.358	D8.811.	D8.811.
Matrix Metalloproteinase 9	D8.811.277.656.675.374.205.360	D8.811.	D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Peptide Hydrolases

Metalloproteases

Metalloendopeptidases

Matrix Metalloproteinase 13	D8.811.277.656.675.374.205.363	D8.811.	D8.811.
Microbial Collagenase	D8.811.277.656.675.374.205.500	D8.811.	
Gelatinases	D8.811.277.656.675.374.252	D8.811.	
Matrix Metalloproteinase 2	D8.811.277.656.675.374.252.420	D8.811.	D8.811.
		D8.811.	D8.811.
Matrix Metalloproteinase 9	D8.811.277.656.675.374.252.445	D8.811.	D8.811.
		D8.811.	D8.811.
Insulysin	D8.811.277.656.675.374.300	D8.811.	
Lysostaphin	D8.811.277.656.675.374.452	D8.811.	
Matrix Metalloproteinases	D8.811.277.656.675.374.525	D8.811.	
Matrix Metalloproteinases, Membrane-Associated	D8.811.277.656.675.374.525.300	D8.811.	D12.776.
Matrix Metalloproteinase 14	D8.811.277.656.675.374.525.300.500	D8.811.	
Matrix Metalloproteinase 15	D8.811.277.656.675.374.525.300.625	D8.811.	
Matrix Metalloproteinase 16	D8.811.277.656.675.374.525.300.750	D8.811.	
Matrix Metalloproteinase 17	D8.811.277.656.675.374.525.300.875	D8.811.	
Matrix Metalloproteinases, Secreted	D8.811.277.656.675.374.525.700	D8.811.	
Matrix Metalloproteinase 1	D8.811.277.656.675.374.525.700.100	D8.811.	D8.811.
		D8.811.	
Matrix Metalloproteinase 2	D8.811.277.656.675.374.525.700.150	D8.811.	D8.811.
		D8.811.	D8.811.
		D8.811.	
Matrix Metalloproteinase 3	D8.811.277.656.675.374.525.700.200	D8.811.	
Matrix Metalloproteinase 7	D8.811.277.656.675.374.525.700.250	D8.811.	
Matrix Metalloproteinase 8	D8.811.277.656.675.374.525.700.300	D8.811.	D8.811.
		D8.811.	
Matrix Metalloproteinase 9	D8.811.277.656.675.374.525.700.350	D8.811.	D8.811.
		D8.811.	D8.811.
		D8.811.	
Matrix Metalloproteinase 10	D8.811.277.656.675.374.525.700.400	D8.811.	
Matrix Metalloproteinase 11	D8.811.277.656.675.374.525.700.450	D8.811.	
Matrix Metalloproteinase 12	D8.811.277.656.675.374.525.700.500	D8.811.	
Matrix Metalloproteinase 13	D8.811.277.656.675.374.525.700.550	D8.811.	D8.811.
		D8.811.	
Matrix Metalloproteinase 20	D8.811.277.656.675.374.525.700.800	D8.811.	
Neprilysin	D8.811.277.656.675.374.600	D8.811.	D23.50.
		D23.50.	D23.101.
		D23.101.	
PHEX Phosphate Regulating Neutral Endopeptidase	D8.811.277.656.675.374.616	D8.811.	D12.776.
		D12.776.	
Pregnancy-Associated Plasma Protein-A	D8.811.277.656.675.374.632	D8.811.	D12.776.
Procollagen N-Endopeptidase	D8.811.277.656.675.374.664	D8.811.	
Pronase	D8.811.277.656.675.374.680	D8.811.	D8.811.
Thermolysin	D8.811.277.656.675.374.827	D8.811.	
Metalloexopeptidases	D8.811.277.656.675.555	D8.811.	
Antigens, CD13	D8.811.277.656.675.555.100	D8.811.	D8.811.
		D23.50.	D23.50.
		D23.101.	D23.101.
Carboxypeptidase B	D8.811.277.656.675.555.200	D8.811.	D8.811.
Carboxypeptidase H	D8.811.277.656.675.555.250	D8.811.	D8.811.
		D8.811.	
Carboxypeptidase U	D8.811.277.656.675.555.300	D8.811.	D8.811.
		D8.811.	
Carboxypeptidases A	D8.811.277.656.675.555.350	D8.811.	D8.811.
Cystinyl Aminopeptidase	D8.811.277.656.675.555.400	D8.811.	D8.811.
Glutamate Carboxypeptidase II	D8.811.277.656.675.555.500	D8.811.	D8.811.
Glutamyl Aminopeptidase	D8.811.277.656.675.555.600	D8.811.	D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Hydrolases

Peptide Hydrolases

Metalloproteases

Metalloexopeptidases

Leucyl Aminopeptidase

D8.811.277.656.675.555.700

D8.811.

D8.811.

Leucyl-beta-Naphthylamidase

D8.811.277.656.675.555.700.400

D8.811.

D8.811.

Lysine Carboxypeptidase

D8.811.277.656.675.555.750

D8.811.

D8.811.

Proprotein Convertases

D8.811.277.656.837

D8.811.

D8.811.

Carboxypeptidase H

D8.811.277.656.837.124

D8.811.

D8.811.

Carboxypeptidase U

D8.811.277.656.837.186

D8.811.

D8.811.

Furin

D8.811.277.656.837.249

D8.811.

Proprotein Convertase 1

D8.811.277.656.837.500

D8.811.

Proprotein Convertase 2

D8.811.277.656.837.562

D8.811.

Proprotein Convertase 5

D8.811.277.656.837.625

D8.811.

Renin

D8.811.277.656.837.750

D8.811.

Proteasome Endopeptidase Complex

D8.811.277.656.918

D5.500.

D8.811.

Ureohydrolases

D8.811.277.913

Arginase

D8.811.277.913.292

Isoenzymes

D8.811.348

D12.776.

Isomerases

D8.811.399

cis-trans-Isomerases

D8.811.399.325

Peptidylprolyl Isomerase

D8.811.399.325.500

Immunophilins

D8.811.399.325.500.400

D12.776.

D12.776.

Cyclophilins

D8.811.399.325.500.400.300

D12.776.

D12.776.

Cyclophilin A

D8.811.399.325.500.400.700

D12.776.

D12.776.

Tacrolimus Binding Proteins

D8.811.399.325.500.400.700.500

D12.776.

D12.776.

Tacrolimus Binding Protein 1A

D8.811.399.340

D8.811.

DNA Helicases

D8.811.399.340.124

D8.811.

DnaB Helicases

D8.811.399.340.249

D8.811.

D8.811.

RecQ Helicases

D8.811.399.340.500

D8.811.

D12.776.

Xeroderma Pigmentosum Group D Protein

D8.811.399.403

D12.776.

DNA Topoisomerases

D8.811.399.403.483

DNA Topoisomerases, Type I

D8.811.399.403.483.249

D12.776.

DNA Topoisomerases, Type I, Archaeal

D8.811.399.403.483.300

DNA Topoisomerases, Type I, Bacterial

D8.811.399.403.483.500

DNA Topoisomerases, Type I, Eukaryotic

D8.811.399.403.741

DNA Topoisomerases, Type II

D8.811.399.403.741.249

DNA Topoisomerases, Type II, Archaeal

D8.811.399.403.741.300

DNA Topoisomerases, Type II, Bacterial

D8.811.399.403.741.300.500

DNA Gyrase

D8.811.399.403.741.500

DNA Topoisomerase IV

D8.811.399.403.741.500

DNA Topoisomerases, Type II, Eukaryotic

D8.811.399.430

Intramolecular Lyases

Myo-Inositol-1-Phosphate Synthase

D8.811.399.475

Intramolecular Oxidoreductases

D8.811.399.475.200

Aldose-Ketose Isomerases

D8.811.399.475.200.174

D12.644.

D12.776.

Autocrine Motility Factor

D8.811.399.475.200.550

D12.776.

D23.101.

Glucose-6-Phosphate Isomerase

D8.811.399.475.200.662

D12.644.

D12.776.

Mannose-6-Phosphate Isomerase

D8.811.399.475.200.775

D23.529.

Neuroleukin

D8.811.399.475.200.775

D12.644.

D12.776.

Triose-Phosphate Isomerase

D8.811.399.475.400

Carbon-Carbon Double Bond Isomerases

D8.811.399.475.400.700

Steroid Isomerases

D8.811.399.475.800

Sulfur-Sulfur Bond Isomerases

D8.811.399.475.800.550

Protein Disulfide-Isomerase

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Isomerases

Intramolecular Oxidoreductases

Thromboxane-A Synthase

Thromboxane-A Synthase

D8.811.399.475.900

Intramolecular Transferases

D8.811.399.520

2-Acetolactate Mutase

D8.811.399.520.100

Chorismate Mutase

D8.811.399.520.250

Prephenate Dehydratase

D8.811.399.520.250.500

D8.811.

Prephenate Dehydrogenase

D8.811.399.520.250.750

D8.811.

Methylmalonyl-CoA Mutase

D8.811.399.520.625

Phosphotransferases (Phosphomutases)

D8.811.399.520.750

Bisphosphoglycerate Mutase

D8.811.399.520.750.250

Phosphoglucomutase

D8.811.399.520.750.625

Phosphoglycerate Mutase

D8.811.399.520.750.700

Racemases and Epimerases

D8.811.399.894

Amino Acid Isomerases

D8.811.399.894.200

Alanine Racemase

D8.811.399.894.200.200

Carbohydrate Epimerases

D8.811.399.894.500

UDPglucose 4-Epimerase

D8.811.399.894.500.700

Ligases

D8.811.464

Carbon-Carbon Ligases

D8.811.464.257

Acetyl-CoA Carboxylase

D8.811.464.257.50

Polyketide Synthases

D8.811.464.257.275

D8.811.

Pyruvate Carboxylase

D8.811.464.257.500

Carbon-Nitrogen Ligases

D8.811.464.259

Adenylosuccinate Synthase

D8.811.464.259.100

Amide Synthases

D8.811.464.259.200

Aspartate-Ammonia Ligase

D8.811.464.259.200.200

Glutamate-Ammonia Ligase

D8.811.464.259.200.600

Argininosuccinate Synthase

D8.811.464.259.300

Carbamoyl-Phosphate Synthase (Ammonia)

D8.811.464.259.350

Carbon-Nitrogen Ligases with Glutamine as Amide-N-Donor

D8.811.464.259.400

Carbamoyl-Phosphate Synthase (Glutamine-Hydrolyzing)

D8.811.464.259.400.300

Formate-Tetrahydrofolate Ligase

D8.811.464.259.550

Peptide Synthases

D8.811.464.259.850

Glutamate-Cysteine Ligase

D8.811.464.259.850.400

Glutathione Synthase

D8.811.464.259.850.500

Carbon-Oxygen Ligases

D8.811.464.263

Amino Acyl-tRNA Synthetases

D8.811.464.263.200

Alanine-tRNA Ligase

D8.811.464.263.200.50

Arginine-tRNA Ligase

D8.811.464.263.200.100

Aspartate-tRNA Ligase

D8.811.464.263.200.150

Glutamate-tRNA Ligase

D8.811.464.263.200.250

Glycine-tRNA Ligase

D8.811.464.263.200.350

Histidine-tRNA Ligase

D8.811.464.263.200.400

Isoleucine-tRNA Ligase

D8.811.464.263.200.450

Leucine-tRNA Ligase

D8.811.464.263.200.500

Lysine-tRNA Ligase

D8.811.464.263.200.550

Methionine-tRNA Ligase

D8.811.464.263.200.600

Phenylalanine-tRNA Ligase

D8.811.464.263.200.650

Serine-tRNA Ligase

D8.811.464.263.200.750

Threonine-tRNA Ligase

D8.811.464.263.200.800

Tryptophan-tRNA Ligase

D8.811.464.263.200.850

Tyrosine-tRNA Ligase

D8.811.464.263.200.900

Valine-tRNA Ligase

D8.811.464.263.200.950

Carbon-Sulfur Ligases

D8.811.464.267

Coenzyme A Ligases

D8.811.464.267.500

Acetate-CoA Ligase

D8.811.464.267.500.200

Succinate-CoA Ligases

D8.811.464.267.500.600

Polynucleotide Ligases

D8.811.464.754

DNA Ligases

D8.811.464.754.600

D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Ligases

Polynucleotide Ligases

RNA Ligase (ATP)

RNA Ligase (ATP)

Ubiquitin-Protein Ligase Complexes

Ubiquitin-Activating Enzymes

Ubiquitin-Conjugating Enzymes

Ubiquitin-Protein Ligases

Fanconi Anemia Complementation Group L Protein

Proto-Oncogene Proteins c-cbl

Proto-Oncogene Proteins c-mdm2

SKP Cullin F-Box Protein Ligases

Cullin Proteins

Von Hippel-Lindau Tumor Suppressor Protein

Lyases

Carbon-Carbon Lyases

Aldehyde-Lyases

Fructose-Bisphosphate Aldolase

Carboxy-Lyases

Adenosylmethionine Decarboxylase

Aromatic-L-Amino-Acid Decarboxylases

Dopa Decarboxylase

Glutamate Decarboxylase

Histidine Decarboxylase

Indole-3-Glycerol-Phosphate Synthase

Methylmalonyl-CoA Decarboxylase

Ornithine Decarboxylase

Orotidine-5'-Phosphate Decarboxylase

Phosphoenolpyruvate Carboxykinase (ATP)

Phosphoenolpyruvate Carboxykinase (GTP)

Phosphoenolpyruvate Carboxylase

Pyruvate Decarboxylase

Ribulose-Bisphosphate Carboxylase

Tyrosine Decarboxylase

Uroporphyrinogen Decarboxylase

Deoxyribodipyrimidine Photo-Lyase

Oxo-Acid-Lyases

Anthranilate Synthase

Isocitrate Lyase

Tryptophanase

Tyrosine Phenol-Lyase

Carbon-Nitrogen Lyases

Amidine-Lyases

Adenylosuccinate Lyase

Argininosuccinate Lyase

delta-Crystallins

Ammonia-Lyases

Aspartate Ammonia-Lyase

Ethanolamine Ammonia-Lyase

Histidine Ammonia-Lyase

L-Serine Dehydratase

Phenylalanine Ammonia-Lyase

Threonine Dehydratase

Carbon-Oxygen Lyases

DNA-(Apurinic or Apyrimidinic Site) Lyase

Hydro-Lyases

Aconitate Hydratase

Iron Regulatory Protein 1

D8.811.464.754.720

D8.811.464.938

D8.811.464.938.249

D8.811.464.938.500

D8.811.464.938.750

D8.811.464.938.750.186

D8.811.464.938.750.374

D8.811.464.938.750.562

D8.811.464.938.750.750

D8.811.464.938.750.750.500

D8.811.464.938.750.875

D8.811.520

D8.811.520.224

D8.811.520.224.62

D8.811.520.224.62.400

D8.811.520.224.125

D8.811.520.224.125.50

D8.811.520.224.125.100

D8.811.520.224.125.100.500

D8.811.520.224.125.250

D8.811.520.224.125.300

D8.811.520.224.125.350

D8.811.520.224.125.387

D8.811.520.224.125.425

D8.811.520.224.125.450

D8.811.520.224.125.500

D8.811.520.224.125.550

D8.811.520.224.125.650

D8.811.520.224.125.750

D8.811.520.224.125.800

D8.811.520.224.125.875

D8.811.520.224.125.900

D8.811.520.224.187

D8.811.520.224.600

D8.811.520.224.600.200

D8.811.520.224.600.700

D8.811.520.224.800

D8.811.520.224.900

D8.811.520.232

D8.811.520.232.300

D8.811.520.232.300.200

D8.811.520.232.300.400

D8.811.520.232.300.400.500

D8.811.520.232.400

D8.811.520.232.400.200

D8.811.520.232.400.350

D8.811.520.232.400.500

D8.811.520.232.400.600

D8.811.520.232.400.700

D8.811.520.232.400.850

D8.811.520.241

D8.811.520.241.225

D8.811.520.241.300

D8.811.520.241.300.50

D8.811.520.241.300.50.500

D12.776.

D12.776.

D12.776.

D12.776.

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D12.776.

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D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Lyases

Carbon-Oxygen Lyases

Hydro-Lyases

Aconitate Hydratase

Iron Regulatory Protein 2

D8.811.520.241.300.50.750

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

Carbonic Anhydrases

D8.811.520.241.300.150

Carbonic Anhydrase I

D8.811.520.241.300.150.100

Carbonic Anhydrase II

D8.811.520.241.300.150.200

Carbonic Anhydrase III

D8.811.520.241.300.150.300

Carbonic Anhydrase IV

D8.811.520.241.300.150.400

Carbonic Anhydrase V

D8.811.520.241.300.150.500

Cystathionine beta-Synthase

D8.811.520.241.300.200

Enoyl-CoA Hydratase

D8.811.520.241.300.250

Fumarate Hydratase

D8.811.520.241.300.300

Phosphopyruvate Hydratase

D8.811.520.241.300.500

tau-Crystallins

D8.811.520.241.300.500.500

D12.776.

Porphobilinogen Synthase

D8.811.520.241.300.550

Prephenate Dehydratase

D8.811.520.241.300.600

D8.811.

Propanediol Dehydratase

D8.811.520.241.300.650

Tryptophan Synthase

D8.811.520.241.300.850

D8.811.

Urocanate Hydratase

D8.811.520.241.300.900

Uroporphyrinogen III Synthetase

D8.811.520.241.300.950

Polysaccharide-Lyases

D8.811.520.241.700

Chondroitinases and Chondroitin Lyases

D8.811.520.241.700.350

D8.811.

Chondroitin Lyases

D8.811.520.241.700.350.500

Chondroitin ABC Lyase

D8.811.520.241.700.350.500.500

Heparin Lyase

D8.811.520.241.700.512

Hyaluronoglucosaminidase

D8.811.520.241.700.675

D8.811.

Carbon-Sulfur Lyases

D8.811.520.300

Cystathionine gamma-Lyase

D8.811.520.300.250

Lactoylglutathione Lyase

D8.811.520.300.500

Ferrochelatase

D8.811.520.500

Phosphorus-Oxygen Lyases

D8.811.520.650

Adenylate Cyclase

D8.811.520.650.200

D12.644.

D12.776.

Adenylate Cyclase Toxin

D8.811.520.650.200.40

D23.946.

D23.946.

Guanylate Cyclase

D8.811.520.650.600

D12.644.

D12.776.

Receptors, Guanylate Cyclase-Coupled

D8.811.520.650.600.500

D12.776.

Receptors, Atrial Natriuretic Factor

D8.811.520.650.600.500.500

D12.776.

D12.776.

D12.776.

D12.776.

Phosphatidylinositol Diacylglycerol-Lyase

D8.811.520.650.800

D8.811.

Multienzyme Complexes

D8.811.600

D5.500.

Anthranilate Phosphoribosyltransferase

D8.811.600.75

D8.811.

Anthranilate Synthase

D8.811.600.85

D8.811.

Aspartate Carbamoyltransferase

D8.811.600.116

D8.811.

Aspartokinase Homoserine Dehydrogenase

D8.811.600.130

D8.811.

D8.811.

Cholesterol Side-Chain Cleavage Enzyme

D8.811.600.200

D8.244.

D8.811.

D8.811.

D12.776.

Electron Transport Chain Complex Proteins

D8.811.600.250

Electron-Transferring Flavoproteins

D8.811.600.250.500

D12.776.

Electron Transport Complex I

D8.811.600.250.500.500

D5.500.

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

Electron Transport Complex II

D8.811.600.250.500.750

D5.500.

D8.811.

D8.811.

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

Succinate Dehydrogenase

D8.811.600.250.500.750.500

D5.500.

D8.811.

D8.811.

D8.811.

D8.811.

D12.776.

D12.776.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Multienzyme Complexes

Electron Transport Chain Complex Proteins

Electron Transport Complex IV

Electron Transport Complex IV

D8.811.600.250.687

D5.500.

D8.811.

D12.776.

D12.776.

Succinate Cytochrome c Oxidoreductase

D8.811.600.250.875

D5.500.

D8.811.

Electron Transport Complex II

D8.811.600.250.875.249

D5.500.

D8.811.

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

Succinate Dehydrogenase

D8.811.600.250.875.249.500

D5.500.

D8.811.

D8.811.

D8.811.

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D5.500.

Electron Transport Complex III

D8.811.600.250.875.500

D5.500.

D8.811.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

D5.500.

Fatty Acid Synthetase Complex

D8.811.600.317

D5.500.

Fatty Acid Synthetase Complex, Type I

D8.811.600.317.249

Fatty Acid Synthetase Complex, Type II

D8.811.600.317.500

D5.500.

Glycine Decarboxylase Complex

D8.811.600.391

D5.500.

D8.811.

Aminomethyltransferase

D8.811.600.391.100

D5.500.

D8.811.

Dihydrolipoamide Dehydrogenase

D8.811.600.391.150

D5.500.

D5.500.

D5.500.

D8.811.

D8.811.

D8.811.

D8.811.

D12.776.

Glycine Decarboxylase Complex H-Protein

D8.811.600.391.175

D5.500.

Glycine Dehydrogenase (Decarboxylating)

D8.811.600.391.200

D5.500.

D8.811.

Ketoglutarate Dehydrogenase Complex

D8.811.600.465

D5.500.

D8.811.

Dihydrolipoamide Dehydrogenase

D8.811.600.465.500

D5.500.

D5.500.

D5.500.

D8.811.

D8.811.

D8.811.

D8.811.

D12.776.

Lactose Synthase

D8.811.600.541

D8.811.

Phosphoenolpyruvate Sugar Phosphotransferase System

D8.811.600.700

D5.500.

D8.811.

Photosynthetic Reaction Center Complex Proteins

D8.811.600.710

D12.776.

Cytochrome b6f Complex

D8.811.600.710.374

D5.500.

D12.776.

D12.776.

Cytochromes b6

D8.811.600.710.374.500

D8.244.

D12.776.

D12.776.

D12.776.

Cytochromes f

D8.811.600.710.374.750

D8.244.

D12.776.

D12.776.

D12.776.

D12.776.

D12.776.

Plastoquinol-Plastocyanin Reductase

D8.811.600.710.374.875

D5.500.

D8.811.

D12.776.

D12.776.

Light-Harvesting Protein Complexes

D8.811.600.710.490

D5.500.

D12.776.

D12.776.

D12.776.

Photosystem I Protein Complex

D8.811.600.710.500

D5.500.

D12.776.

D12.776.

D12.776.

Photosystem II Protein Complex

D8.811.600.710.750

D5.500.

D12.776.

Polyketide Synthases

D8.811.600.715

D8.811.

Prostaglandin-Endoperoxide Synthases

D8.811.600.720

D8.811.

Cyclooxygenase 1

D8.811.600.720.500

Cyclooxygenase 2

D8.811.600.720.750

Proteasome Endopeptidase Complex

D8.811.600.730

D5.500.

D8.811.

Pyruvate Dehydrogenase Complex

D8.811.600.741

D5.500.

Dihydrolipoamide Dehydrogenase

D8.811.600.741.525

D5.500.

D5.500.

D5.500.

D8.811.

D8.811.

D8.811.

D8.811.

D12.776.

Dihydrolipoyllysine-Residue Acetyltransferase

D8.811.600.741.625

D5.500.

D8.811.

Pyruvate Dehydrogenase (Lipoamide)

D8.811.600.741.725

D5.500.

D8.811.

Sucrase-Isomaltase Complex

D8.811.600.850

D5.500.

D8.811.

D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Multienzyme Complexes

Tryptophan Synthase

Tryptophan Synthase	D8.811.600.896	D8.811.	
Oxidoreductases	D8.811.682		
Alcohol Oxidoreductases	D8.811.682.47		
Acetoin Dehydrogenase	D8.811.682.47.50		
Alcohol Dehydrogenase	D8.811.682.47.70		
Carbohydrate Dehydrogenases	D8.811.682.47.150		
Fructuronate Reductase	D8.811.682.47.150.225		
Galactose Dehydrogenases	D8.811.682.47.150.250		
Glucose Dehydrogenases	D8.811.682.47.150.270		
Glucose 1-Dehydrogenase	D8.811.682.47.150.270.500		
Glucosephosphate Dehydrogenase	D8.811.682.47.150.300		
Phosphogluconate Dehydrogenase	D8.811.682.47.150.600		
Phosphoglycerate Dehydrogenase	D8.811.682.47.150.650		
Sugar Alcohol Dehydrogenases	D8.811.682.47.150.700		
Aldehyde Reductase	D8.811.682.47.150.700.75		
D-Xylulose Reductase	D8.811.682.47.150.700.237		
Glycerolphosphate Dehydrogenase	D8.811.682.47.150.700.400		
Glycerol-3-Phosphate Dehydrogenase (NAD ⁺)	D8.811.682.47.150.700.400.500		
L-Gulonolactone Oxidase	D8.811.682.47.150.700.437		
L-Iditol 2-Dehydrogenase	D8.811.682.47.150.700.475		
Mannitol Dehydrogenases	D8.811.682.47.150.700.649		
Uridine Diphosphate Glucose Dehydrogenase	D8.811.682.47.150.900		
Choline Dehydrogenase	D8.811.682.47.180		
Galactose Oxidase	D8.811.682.47.210		
Glucose Oxidase	D8.811.682.47.239		
Homoserine Dehydrogenase	D8.811.682.47.370		
Aspartokinase Homoserine Dehydrogenase	D8.811.682.47.370.60	D8.811.	D8.811.
3-Hydroxyacyl CoA Dehydrogenases	D8.811.682.47.385		
Hydroxymethylglutaryl CoA Reductases	D8.811.682.47.385.415		
Hydroxymethylglutaryl-CoA Reductases, NAD-Dependent	D8.811.682.47.385.415.250		
Hydroxymethylglutaryl-CoA-Reductases, NADP-dependent	D8.811.682.47.385.415.750		
Hydroxybutyrate Dehydrogenase	D8.811.682.47.393		
Hydroxyprostaglandin Dehydrogenases	D8.811.682.47.428		
Hydroxypyruvate Reductase	D8.811.682.47.432		
Hydroxysteroid Dehydrogenases	D8.811.682.47.436		
11-beta-Hydroxysteroid Dehydrogenases	D8.811.682.47.436.174		
11-beta-Hydroxysteroid Dehydrogenase Type 1	D8.811.682.47.436.174.300		
11-beta-Hydroxysteroid Dehydrogenase Type 2	D8.811.682.47.436.174.600		
3-Hydroxysteroid Dehydrogenases	D8.811.682.47.436.350		
3-alpha-Hydroxysteroid Dehydrogenase (B-Specific)	D8.811.682.47.436.350.100		
Cholesterol Oxidase	D8.811.682.47.436.350.150		
Progesterone Reductase	D8.811.682.47.436.350.700		
17-Hydroxysteroid Dehydrogenases	D8.811.682.47.436.375		
Estradiol Dehydrogenases	D8.811.682.47.436.375.280		
20-Hydroxysteroid Dehydrogenases	D8.811.682.47.436.400		
20-alpha-Hydroxysteroid Dehydrogenase	D8.811.682.47.436.400.74		
Cortisone Reductase	D8.811.682.47.436.400.150		
IMP Dehydrogenase	D8.811.682.47.485		
Isocitrate Dehydrogenase	D8.811.682.47.497		
3-Isopropylmalate Dehydrogenase	D8.811.682.47.500		
Ketol-Acid Reductoisomerase	D8.811.682.47.524		
Lactate Dehydrogenases	D8.811.682.47.551		
epsilon-Crystallins	D8.811.682.47.551.249	D12.776.	
L-Lactate Dehydrogenase	D8.811.682.47.551.400		
L-Lactate Dehydrogenase (Cytochrome)	D8.811.682.47.551.500		
Malate Dehydrogenase	D8.811.682.47.605		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Alcohol Oxidoreductases

Malate Dehydrogenase (NADP+)

Malate Dehydrogenase (NADP+)

Xanthine Dehydrogenase

Xanthine Oxidase

Arsenate Reductases

Ascorbate Oxidase

Ceruloplasmin

Electron Transport Complex IV

Hydrogenase

Laccase

Luciferases

5,10-Methylenetetrahydrofolate Reductase (FADH2)

NADH, NADPH Oxidoreductases

Apoptosis Inducing Factor

Cytochrome Reductases

Cytochrome-B(5) Reductase

NADPH-Ferrihemoprotein Reductase

Electron Transport Complex I

NADH Dehydrogenase

NADH Tetrazolium Reductase

NADP Transhydrogenase

NADPH Dehydrogenase

NADPH Oxidase

Quinone Reductases

NAD(P)H Dehydrogenase (Quinone)

zeta-Crystallins

Nitrogenase

Dinitrogenase Reductase

Molybdoferredoxin

Nitroreductases

GMP Reductase

Nitrate Reductases

Nitrate Reductase

Nitrate Reductase (NADH)

Nitrate Reductase (NAD(P)H)

Nitrate Reductase (NADPH)

Nitrite Reductases

Ferredoxin-Nitrite Reductase

Nitrite Reductase (NAD(P)H)

Oxidoreductases Acting on Aldehyde or Oxo Group Donors

Aldehyde Oxidoreductases

Aldehyde Dehydrogenase

omega-Crystallins

Aldehyde Oxidase

Aminomuconate-Semialdehyde Dehydrogenase

Aspartate-Semialdehyde Dehydrogenase

Benzaldehyde Dehydrogenase (NADP+)

Betaine-Aldehyde Dehydrogenase

Glutamate-5-Semialdehyde Dehydrogenase

	D8.811.682.47.748		
	D8.811.682.47.892		
	D8.811.682.47.928		
	D8.811.682.113		
	D8.811.682.180		
	D8.811.682.226	D12.776.	D12.776.
		D12.776.	D12.776.
		D12.776.	
	D8.811.682.285	D5.500.	D8.811.
		D12.776.	D12.776.
	D8.811.682.400		
	D8.811.682.494		
	D8.811.682.517	D12.776.	
	D8.811.682.550		
	D8.811.682.608		
	D8.811.682.608.47	D12.644.	D12.776.
		D12.776.	
	D8.811.682.608.191		
	D8.811.682.608.191.237	D12.776.	
	D8.811.682.608.191.500		
	D8.811.682.608.504	D5.500.	D8.811.
		D12.776.	D12.776.
		D12.776.	D12.776.
		D12.776.	
	D8.811.682.608.504.500	D12.776.	D12.776.
		D12.776.	
	D8.811.682.608.530		
	D8.811.682.608.540		
	D8.811.682.608.550		
	D8.811.682.608.575	D12.776.	
	D8.811.682.608.800		
	D8.811.682.608.800.500		
	D8.811.682.608.800.500.500	D12.776.	
	D8.811.682.647		
	D8.811.682.647.200		
	D8.811.682.647.550	D12.776.	D12.776.
		D12.776.	
	D8.811.682.655		
	D8.811.682.655.249		
	D8.811.682.655.500		
	D8.811.682.655.500.124		
	D8.811.682.655.500.200	D12.776.	
	D8.811.682.655.500.249	D12.776.	D12.776.
		D12.776.	
	D8.811.682.655.500.374	D12.776.	D12.776.
		D12.776.	
	D8.811.682.655.750		
	D8.811.682.655.750.249	D12.776.	D12.776.
	D8.811.682.655.750.500		
	D8.811.682.657		
	D8.811.682.657.163		
	D8.811.682.657.163.249		
	D8.811.682.657.163.249.750	D12.776.	
	D8.811.682.657.163.311		
	D8.811.682.657.163.342		
	D8.811.682.657.163.374		
	D8.811.682.657.163.468		
	D8.811.682.657.163.515		
	D8.811.682.657.163.562		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Oxidoreductases Acting on Aldehyde or Oxo Group Donors

Aldehyde Oxidoreductases

Glyceraldehyde-3-Phosphate Dehydrogenases

Glyceraldehyde-3-Phosphate Dehydrogenases

Glyceraldehyde 3-Phosphate Dehydrogenase (NADP+) D8.811.682.657.163.750.250

Glyceraldehyde-3-Phosphate Dehydrogenase (NADP+)(Phosphorylating) D8.811.682.657.163.750.300

Glyceraldehyde-3-Phosphate Dehydrogenase (Phosphorylating) D8.811.682.657.163.750.350

Glycolaldehyde Dehydrogenase D8.811.682.657.163.781

L-Aminoadipate-Semialdehyde Dehydrogenase D8.811.682.657.163.796

Malonate-Semialdehyde Dehydrogenase (Acetylating) D8.811.682.657.163.812

Methylmalonate-Semialdehyde Dehydrogenase (Acylating) D8.811.682.657.163.827

Retinal Dehydrogenase D8.811.682.657.163.835 D12.776. D12.776.

Succinate-Semialdehyde Dehydrogenase D8.811.682.657.163.843

Succinate-Semialdehyde Dehydrogenase (NADP+) D8.811.682.657.163.875

Formate Dehydrogenases D8.811.682.657.180

Ketone Oxidoreductases D8.811.682.657.350

Ketoglutarate Dehydrogenase Complex D8.811.682.657.350.750 D5.500. D8.811.

Dihydrolipoamide Dehydrogenase D8.811.682.657.350.750.500 D5.500. D5.500.

D8.811. D8.811.

D8.811. D12.776.

3-Methyl-2-Oxobutanoate Dehydrogenase (Lipoamide) D8.811.682.657.350.760

2-Oxoisovalerate Dehydrogenase (Acylating) D8.811.682.657.350.825

Pyruvate Dehydrogenase (Lipoamide) D8.811.682.657.350.875 D5.500. D8.811.

Pyruvate Oxidase D8.811.682.657.350.937

Pyruvate Synthase D8.811.682.657.350.968

Oxidoreductases Acting on CH-CH Group Donors D8.811.682.660

Acyl-CoA Dehydrogenases D8.811.682.660.150

Acyl-CoA Dehydrogenase D8.811.682.660.150.100 D12.776.

Acyl-CoA Dehydrogenase, Long-Chain D8.811.682.660.150.150 D12.776.

Acyl-CoA Oxidase D8.811.682.660.150.200 D12.776.

Butyryl-CoA Dehydrogenase D8.811.682.660.150.300 D12.776.

Cholestenone 5 alpha-Reductase D8.811.682.660.200

Coproporphyrinogen Oxidase D8.811.682.660.250

Dihydrodipicolinate Reductase D8.811.682.660.275

Dihydroorotate Oxidase D8.811.682.660.300

Dihydrouracil Dehydrogenase (NAD+) D8.811.682.660.325

Dihydrouracil Dehydrogenase (NADP) D8.811.682.660.350

Electron Transport Complex II D8.811.682.660.385 D5.500. D8.811.

D8.811. D8.811.

D12.776. D12.776.

D12.776. D12.776.

Succinate Dehydrogenase D8.811.682.660.385.500 D5.500. D8.811.

D8.811. D8.811.

D8.811. D12.776.

D12.776. D12.776.

Enoyl-(Acyl-Carrier-Protein) Reductase (NADH) D8.811.682.660.387

Enoyl-(Acyl-Carrier Protein) Reductase (NADPH, B-Specific) D8.811.682.660.390

Glutaryl-CoA Dehydrogenase D8.811.682.660.425

Isovaleryl-CoA Dehydrogenase D8.811.682.660.462

15-Oxoprostaglandin 13-Reductase D8.811.682.660.490

Prephenate Dehydrogenase D8.811.682.660.500 D8.811.

Protoporphyrinogen Oxidase D8.811.682.660.600 D12.776.

Succinate Dehydrogenase D8.811.682.660.750 D5.500. D8.811.

D8.811. D8.811.

D8.811. D12.776.

D12.776. D12.776.

Testosterone 5-alpha-Reductase D8.811.682.660.900

Oxidoreductases Acting on CH-NH Group Donors D8.811.682.662

Dihydropteridine Reductase D8.811.682.662.162 D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Oxidoreductases Acting on CH-NH Group Donors

FMN Reductase

FMN Reductase	D8.811.682.662.171		
Methylenetetrahydrofolate Dehydrogenase (NAD ⁺)	D8.811.682.662.217		
Methylenetetrahydrofolate Dehydrogenase (NADP)	D8.811.682.662.253		
Methylenetetrahydrofolate Reductase (NADPH ₂)	D8.811.682.662.290	D12.776.	
Oxidoreductases, N-Demethylating	D8.811.682.662.582		
Aminopyrine N-Demethylase	D8.811.682.662.582.276		
Cytochrome P-450 CYP2E1	D8.811.682.662.582.338	D8.244.	D8.811.
		D12.776.	
Cytochrome P-450 CYP3A	D8.811.682.662.582.353	D8.244.	D8.811.
		D12.776.	
Dihydropteridine Reductase	D8.811.682.662.582.361	D8.811.	
Dimethylglycine Dehydrogenase	D8.811.682.662.582.369		
Ethylmorphine-N-Demethylase	D8.811.682.662.582.400		
Sarcosine Dehydrogenase	D8.811.682.662.582.550		
Sarcosine Oxidase	D8.811.682.662.582.700	D12.776.	
Proline Oxidase	D8.811.682.662.640	D8.811.	
Pyridoxaminephosphate Oxidase	D8.811.682.662.680		
1-Pyrroline-5-Carboxylate Dehydrogenase	D8.811.682.662.693		
Pyrroline Carboxylate Reductases	D8.811.682.662.695		
Saccharopine Dehydrogenases	D8.811.682.662.750		
Tetrahydrofolate Dehydrogenase	D8.811.682.662.825		
Oxidoreductases Acting on CH-NH ₂ Group Donors	D8.811.682.664		
Amine Oxidase (Copper-Containing)	D8.811.682.664.249		
Amino Acid Oxidoreductases	D8.811.682.664.500		
Alanine Dehydrogenase	D8.811.682.664.500.62		
D-Amino-Acid Oxidase	D8.811.682.664.500.125		
D-Aspartate Oxidase	D8.811.682.664.500.261		
Glutamate Dehydrogenase	D8.811.682.664.500.398		
Glutamate Dehydrogenase (NADP ⁺)	D8.811.682.664.500.410		
Glutamate Synthase	D8.811.682.664.500.470	D8.811.	
Glutamate Synthase (NADH)	D8.811.682.664.500.484	D12.776.	
Glycine Decarboxylase Complex	D8.811.682.664.500.498	D5.500.	D8.811.
Glycine Dehydrogenase (Decarboxylating)	D8.811.682.664.500.498.500	D5.500.	D8.811.
Glycine Dehydrogenase	D8.811.682.664.500.526		
L-Amino Acid Oxidase	D8.811.682.664.500.677		
Leucine Dehydrogenase	D8.811.682.664.500.724		
Nitric Oxide Synthase	D8.811.682.664.500.772		
Nitric Oxide Synthase Type I	D8.811.682.664.500.772.249		
Nitric Oxide Synthase Type II	D8.811.682.664.500.772.500		
Nitric Oxide Synthase Type III	D8.811.682.664.500.772.750		
Proline Oxidase	D8.811.682.664.500.810	D8.811.	
Protein-Lysine 6-Oxidase	D8.811.682.664.500.848		
Valine Dehydrogenase (NADP ⁺)	D8.811.682.664.500.924		
Monoamine Oxidase	D8.811.682.664.750		
Benzylamine Oxidase	D8.811.682.664.750.100		
Oxidoreductases Acting on Sulfur Group Donors	D8.811.682.667		
Dihydropolipoamide Dehydrogenase	D8.811.682.667.61	D5.500.	D5.500.
		D8.811.	D8.811.
		D8.811.	D8.811.
		D8.811.	D12.776.
Ferredoxin-NADP Reductase	D8.811.682.667.76		
Glutaredoxins	D8.811.682.667.84		
Glutathione Reductase	D8.811.682.667.92		
Hydrogensulfite Reductase	D8.811.682.667.124		
Protein Disulfide Reductase (Glutathione)	D8.811.682.667.186		
Sulfite Dehydrogenase	D8.811.682.667.217		
Sulfite Oxidase	D8.811.682.667.249		
Sulfite Reductase (Ferredoxin)	D8.811.682.667.374		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Oxidoreductases Acting on Sulfur Group Donors

Sulfite Reductase (NADPH)

Sulfite Reductase (NADPH)

D8.811.682.667.500

Thioredoxin-Disulfide Reductase

D8.811.682.667.750

D12.776.

Thioredoxin Reductase 1

D8.811.682.667.750.500

Thioredoxin Reductase 2

D8.811.682.667.750.750

Oxidoreductases, O-Demethylating

Nitroanisole O-Demethylase

D8.811.682.670

Oxygenases

Dioxygenases

D8.811.682.690

Catechol 1,2-Dioxygenase

D8.811.682.690.416

Catechol 2,3-Dioxygenase

D8.811.682.690.416.277

Cysteine Dioxygenase

D8.811.682.690.416.305

Homogentisate 1,2-Dioxygenase

D8.811.682.690.416.319

3-Hydroxyanthranilate 3,4-Dioxygenase

D8.811.682.690.416.326

4-Hydroxyphenylpyruvate Dioxygenase

D8.811.682.690.416.330

Indoleamine-Pyrrole 2,3,-Dioxygenase

D8.811.682.690.416.333

Lipoxygenase

D8.811.682.690.416.444

D12.776.

Arachidonate Lipoxygenases

D8.811.682.690.416.444.50

D12.776.

Arachidonate 5-Lipoxygenase

D8.811.682.690.416.444.50.55

D12.776.

Arachidonate 12-Lipoxygenase

D8.811.682.690.416.444.50.60

D12.776.

Arachidonate 15-Lipoxygenase

D8.811.682.690.416.444.50.65

D12.776.

Protocatechuate-3,4-Dioxygenase

D8.811.682.690.416.444.525

Tryptophan Oxygenase

D8.811.682.690.416.722

Inositol Oxygenase

D8.811.682.690.562

D12.776.

Mixed Function Oxygenases

D8.811.682.690.708

Benzoate 4-Monooxygenase

D8.811.682.690.708.62

Catechol Oxidase

D8.811.682.690.708.125

Monophenol Monooxygenase

D8.811.682.690.708.125.500

Cytochrome P-450 Enzyme System

D8.811.682.690.708.170

D8.244.

D12.776.

Alkane 1-Monooxygenase

D8.811.682.690.708.170.35

Aryl Hydrocarbon Hydroxylases

D8.811.682.690.708.170.40

D8.244.

D12.776.

7-Alkoxy coumarin O-Dealkylase

D8.811.682.690.708.170.40.24

Aniline Hydroxylase

D8.811.682.690.708.170.40.50

D8.244.

D12.776.

Benzopyrene Hydroxylase

D8.811.682.690.708.170.40.110

D8.244.

D12.776.

Cytochrome P-450 CYP1A1

D8.811.682.690.708.170.40.332

D8.244.

D12.776.

Cytochrome P-450 CYP1A2

D8.811.682.690.708.170.40.443

D8.244.

D12.776.

Cytochrome P-450 CYP2B1

D8.811.682.690.708.170.40.499

D8.244.

D12.776.

Cytochrome P-450 CYP2D6

D8.811.682.690.708.170.40.555

D8.244.

D12.776.

Cytochrome P-450 CYP2E1

D8.811.682.690.708.170.40.777

D8.244.

D8.811.

Cytochrome P-450 CYP3A

D8.811.682.690.708.170.40.888

D12.776.

D8.244.

D8.811.

Camphor 5-Monooxygenase

D8.811.682.690.708.170.85

D12.776.

D8.244.

D12.776.

Steroid Hydroxylases

D8.811.682.690.708.170.915

D8.244.

D8.811.

Aldosterone Synthase

D8.811.682.690.708.170.915.50

D12.776.

D8.244.

D8.811.

Aromatase

D8.811.682.690.708.170.915.99

D12.776.

D8.244.

D8.811.

Cholesterol 7-alpha-Hydroxylase

D8.811.682.690.708.170.915.200

D12.776.

D8.244.

D8.811.

Cholesterol Side-Chain Cleavage Enzyme

D8.811.682.690.708.170.915.212

D12.776.

D8.244.

D8.811.

Cytochrome P-450 CYP27A1

D8.811.682.690.708.170.915.250

D12.776.

D8.244.

D8.811.

25-Hydroxyvitamin D3 1-alpha-Hydroxylase

D8.811.682.690.708.170.915.400

D12.776.

D8.244.

D8.811.

Steroid 12-alpha-Hydroxylase

D8.811.682.690.708.170.915.730

D12.776.

D8.244.

D8.811.

D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Oxygenases

Mixed Function Oxygenases

Cytochrome P-450 Enzyme System

Steroid 16-alpha-Hydroxylase	D8.811.682.690.708.170.915.737	D8.244. D12.776.	D8.811.
Steroid 17-alpha-Hydroxylase	D8.811.682.690.708.170.915.748	D8.244. D12.776.	D8.811.
Steroid 11-beta-Hydroxylase	D8.811.682.690.708.170.915.750	D8.244. D12.776.	D8.811.
Steroid 21-Hydroxylase	D8.811.682.690.708.170.915.760	D8.244. D12.776.	D8.811.
Dopamine beta-Hydroxylase	D8.811.682.690.708.292		
Fatty Acid Desaturases	D8.811.682.690.708.392		
beta-Carotene 15,15'-Monooxygenase	D8.811.682.690.708.392.312		
Linoleoyl-CoA Desaturase	D8.811.682.690.708.392.468		
Stearoyl-CoA Desaturase	D8.811.682.690.708.392.625		
gamma-Butyrobetaine Dioxygenase	D8.811.682.690.708.401		
Heme Oxygenase (Decyclizing)	D8.811.682.690.708.410		
Heme Oxygenase-1	D8.811.682.690.708.410.500		
4-Hydroxybenzoate-3-Monooxygenase	D8.811.682.690.708.425		
Kynurenine 3-Monooxygenase	D8.811.682.690.708.557		
Phenylalanine Hydroxylase	D8.811.682.690.708.601		
Procollagen-Lysine, 2-Oxoglutarate 5-Dioxygenase	D8.811.682.690.708.660		
Procollagen-Proline Dioxygenase	D8.811.682.690.708.673		
Prostaglandin-Endoperoxide Synthases	D8.811.682.690.708.715	D8.811.	
Squalene Monooxygenase	D8.811.682.690.708.749		
Steroid Hydroxylases	D8.811.682.690.708.783	D8.244. D12.776.	D8.811.
Aldosterone Synthase	D8.811.682.690.708.783.50	D8.244. D12.776.	D8.811.
Aromatase	D8.811.682.690.708.783.99	D8.244. D12.776.	D8.811.
Cholesterol 7-alpha-Hydroxylase	D8.811.682.690.708.783.200	D8.244. D12.776.	D8.811.
Cholesterol Side-Chain Cleavage Enzyme	D8.811.682.690.708.783.212	D8.244. D8.811. D12.776.	D8.811. D12.776.
Cytochrome P-450 CYP27A1	D8.811.682.690.708.783.250	D8.244. D12.776.	D8.811.
25-Hydroxyvitamin D3 1-alpha-Hydroxylase	D8.811.682.690.708.783.400	D8.244. D12.776.	D8.811.
Steroid 12-alpha-Hydroxylase	D8.811.682.690.708.783.730	D8.244. D12.776.	D8.811.
Steroid 16-alpha-Hydroxylase	D8.811.682.690.708.783.737	D8.244. D12.776.	D8.811.
Steroid 17-alpha-Hydroxylase	D8.811.682.690.708.783.745	D8.244. D12.776.	D8.811.
Steroid 11-beta-Hydroxylase	D8.811.682.690.708.783.750	D8.244. D12.776.	D8.811.
Steroid 21-Hydroxylase	D8.811.682.690.708.783.760	D8.244. D12.776.	D8.811.
Trans-Cinnamate 4-Monooxygenase	D8.811.682.690.708.826	D8.244.	
Tryptophan Hydroxylase	D8.811.682.690.708.870		
Tyrosine 3-Monooxygenase	D8.811.682.690.708.923	D12.776.	
Peroxidases	D8.811.682.732		
Catalase	D8.811.682.732.332		
Chloride Peroxidase	D8.811.682.732.360		
Cytochrome-c Peroxidase	D8.811.682.732.380		
Eosinophil Peroxidase	D8.811.682.732.440	D12.776.	
Glutathione Peroxidase	D8.811.682.732.500		
Horseradish Peroxidase	D8.811.682.732.512		
Wheat Germ Agglutinin-Horseradish Peroxidase Conjugate	D8.811.682.732.512.900	D12.776.	D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Oxidoreductases

Peroxidases

Iodide Peroxidase

Iodide Peroxidase

Lactoperoxidase

Peroxidase

Peroxiredoxins

Peroxiredoxin VI

Plastoquinol-Plastocyanin Reductase

Ribonucleotide Reductases

Ribonucleoside Diphosphate Reductase

Selenoprotein R

Succinate Cytochrome c Oxidoreductase

Electron Transport Complex II

Succinate Dehydrogenase

Electron Transport Complex III

Superoxide Dismutase

Urate Oxidase

Penicillin-Binding Proteins

Recombinases

Holliday Junction Resolvases

Integrases

Transposases

HIV Integrase

Rec A Recombinases

Rad51 Recombinase

Transposon Resolvases

VDJ Recombinases

RNA, Catalytic

Ribonuclease P

RNA, Ribosomal, Self-Splicing

Transferases

Acyltransferases

Acetyl-CoA C-Acyltransferase

Acetyltransferases

Acetyl-CoA C-Acetyltransferase

Acyl-Carrier Protein S-Acetyltransferase

Amino-Acid N-Acetyltransferase

Carnitine O-Acetyltransferase

Chloramphenicol O-Acetyltransferase

Choline O-Acetyltransferase

Dihydrolipoyllysine-Residue Acetyltransferase

Glucosamine 6-Phosphate N-Acetyltransferase

Histone Acetyltransferases

p300-CBP Transcription Factors

CREB-Binding Protein

E1A-Associated p300 Protein

Phosphate Acetyltransferase

Serine O-Acetyltransferase

Acyl-Carrier Protein S-Malonyltransferase

1-Acylglycerol-3-Phosphate O-Acyltransferase

D8.811.682.732.525		
D8.811.682.732.550		
D8.811.682.732.700		
D8.811.682.732.850		
D8.811.682.732.850.500	D8.811.	D8.811.
D8.811.682.771	D5.500.	D8.811.
	D12.776.	D12.776.
D8.811.682.810		
D8.811.682.810.567		
D8.811.682.820	D12.776.	
D8.811.682.830	D5.500.	D8.811.
D8.811.682.830.249	D8.811.	D8.811.
	D12.776.	D12.776.
	D12.776.	D12.776.
D8.811.682.830.249.500	D5.500.	D8.811.
	D8.811.	D8.811.
	D12.776.	D12.776.
	D12.776.	D12.776.
D8.811.682.830.500	D5.500.	D8.811.
	D12.776.	D12.776.
	D12.776.	D12.776.
D8.811.682.881		
D8.811.682.943		
D8.811.710	D12.776.	
D8.811.739		
D8.811.739.250	D8.811.	D8.811.
D8.811.739.500		
D8.811.739.500.667	D8.811.	
D8.811.739.500.667.500	D8.811.	D12.776.
	D12.776.	D12.776.
D8.811.739.650	D8.811.	
D8.811.739.650.500	D12.776.	
D8.811.739.800	D8.811.	
D8.811.739.900	D8.811.	
D8.811.797	D13.444.	
D8.811.797.500	D8.811.	D12.776.
	D12.776.	
D8.811.797.750	D8.811.	D13.444.
D8.811.913		
D8.811.913.50		
D8.811.913.50.80		
D8.811.913.50.134		
D8.811.913.50.134.25		
D8.811.913.50.134.29		
D8.811.913.50.134.105		
D8.811.913.50.134.150	D8.811.	
D8.811.913.50.134.170		
D8.811.913.50.134.180		
D8.811.913.50.134.310	D5.500.	D8.811.
D8.811.913.50.134.375		
D8.811.913.50.134.407		
D8.811.913.50.134.440	D12.776.	
D8.811.913.50.134.440.249		
D8.811.913.50.134.440.600	D12.776.	
D8.811.913.50.134.700		
D8.811.913.50.134.850		
D8.811.913.50.170		
D8.811.913.50.173		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Acyltransferases

1-Acylglycerophosphocholine O-Acyltransferase

1-Acylglycerophosphocholine O-Acyltransferase	D8.811.913.50.175		
Aminoacyltransferases	D8.811.913.50.200		
gamma-Glutamylcyclotransferase	D8.811.913.50.200.400		
gamma-Glutamyltransferase	D8.811.913.50.200.500		
Peptidyl Transferases	D8.811.913.50.200.700		
Transglutaminases	D8.811.913.50.200.800		
Factor XIIIa	D8.811.913.50.200.800.300	D12.776.	D23.119.
5-Aminolevulinatase Synthetase	D8.811.913.50.276		
Arylalkylamine N-Acetyltransferase	D8.811.913.50.294		
Arylamine N-Acetyltransferase	D8.811.913.50.313		
ATP Citrate (pro-S)-Lyase	D8.811.913.50.331		
Carnitine Acyltransferases	D8.811.913.50.350		
Carnitine O-Acetyltransferase	D8.811.913.50.350.170	D8.811.	
Carnitine O-Palmitoyltransferase	D8.811.913.50.350.200		
Citrate (si)-Synthase	D8.811.913.50.368		
Diacylglycerol O-Acyltransferase	D8.811.913.50.387		
Glycerol-3-Phosphate O-Acyltransferase	D8.811.913.50.425		
Homoserine O-Succinyltransferase	D8.811.913.50.600		
Hydroxymethylglutaryl-CoA Synthase	D8.811.913.50.612		
2-Isopropylmalate Synthase	D8.811.913.50.614		
Malate Synthase	D8.811.913.50.618		
3-Oxoacyl-(Acyl-Carrier-Protein) Synthase	D8.811.913.50.622		
Phosphatidylcholine-Sterol O-Acyltransferase	D8.811.913.50.625		
Retinol O-Fatty-Acyltransferase	D8.811.913.50.646		
Serine C-Palmitoyltransferase	D8.811.913.50.668		
Sphingosine N-Acyltransferase	D8.811.913.50.712		
Sterol O-Acyltransferase	D8.811.913.50.799		
Aldehyde-Ketone Transferases	D8.811.913.200		
Acetolactate Synthase	D8.811.913.200.324		D12.776.
Transaldolase	D8.811.913.200.650		
Transketolase	D8.811.913.200.825		
Alkyl and Aryl Transferases	D8.811.913.225		
Cysteine Synthase	D8.811.913.225.224		
3-Deoxy-7-Phosphoheptulonate Synthase	D8.811.913.225.250		
Dihydropteroate Synthase	D8.811.913.225.300		
Dimethylallyltransferase	D8.811.913.225.400		
Farnesyl-Diphosphate Farnesyltransferase	D8.811.913.225.431		
Farnesyltransferase	D8.811.913.225.437		
Geranylgeranyl-Diphosphate Geranylgeranyltransferase	D8.811.913.225.443		
Geranyltransferase	D8.811.913.225.450		
Glutathione Transferase	D8.811.913.225.500		
Glutathione S-Transferase pi	D8.811.913.225.500.500		
Hydroxymethylbilane Synthase	D8.811.913.225.575		
Methionine Adenosyltransferase	D8.811.913.225.650		
3-Phosphoshikimate 1-Carboxyvinyltransferase	D8.811.913.225.735		
Riboflavin Synthase	D8.811.913.225.750		
Spermidine Synthase	D8.811.913.225.825		
Spermine Synthase	D8.811.913.225.912		
Glycosyltransferases	D8.811.913.400		
N-Acetylhexosaminyltransferases	D8.811.913.400.100		
N-Acetylgalactosaminyltransferases	D8.811.913.400.100.200		
Fucosyl Galactose alpha-N-Acetylgalactosaminyltransferase	D8.811.913.400.100.200.300		
N-Acetylglucosaminyltransferases	D8.811.913.400.100.250		
Hexosyltransferases	D8.811.913.400.450		
Fucosyltransferases	D8.811.913.400.450.300		
Galactosyltransferases	D8.811.913.400.450.400		
N-Acylsphingosine Galactosyltransferase	D8.811.913.400.450.400.100		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Glycosyltransferases

Hexosyltransferases

Galactosyltransferases

beta-N-Acetylglucosaminylglycopeptide beta-1,4-Galactosyltransferase

D8.811.913.400.450.400.450

Ganglioside Galactosyltransferase

D8.811.913.400.450.400.475

Lactose Synthase

D8.811.913.400.450.400.500

D8.811.

N-Acetylglucosamine Synthase

D8.811.913.400.450.400.500.100

Glucosyltransferases

D8.811.913.400.450.460

1,4-alpha-Glucan Branching Enzyme

D8.811.913.400.450.460.100

Chitin Synthase

D8.811.913.400.450.460.200

Glycogen Debranching Enzyme System

D8.811.913.400.450.460.350

D8.811.

Glycogen Synthase

D8.811.913.400.450.460.375

Phosphorylases

D8.811.913.400.450.460.400

Glycogen Phosphorylase

D8.811.913.400.450.460.400.186

Glycogen Phosphorylase, Brain Form

D8.811.913.400.450.460.400.186.61

Glycogen Phosphorylase, Liver Form

D8.811.913.400.450.460.400.186.124

Glycogen Phosphorylase, Muscle Form

D8.811.913.400.450.460.400.186.312

Phosphorylase a

D8.811.913.400.450.460.400.280

Phosphorylase b

D8.811.913.400.450.460.400.327

Starch Phosphorylase

D8.811.913.400.450.460.400.374

Starch Synthase

D8.811.913.400.450.460.750

Glucuronosyltransferase

D8.811.913.400.450.480

Mannosyltransferases

D8.811.913.400.450.560

Peptidoglycan Glycosyltransferase

D8.811.913.400.450.780

Pentosyltransferases

D8.811.913.400.725

Adenine Phosphoribosyltransferase

D8.811.913.400.725.100

ADP Ribose Transferases

D8.811.913.400.725.115

Cholera Toxin

D8.811.913.400.725.115.180

D23.946.

D23.946.

Diphtheria Toxin

D8.811.913.400.725.115.220

D23.946.

NAD⁺ Nucleosidase

D8.811.913.400.725.115.660

D8.811.

ADP-ribosyl Cyclase

D8.811.913.400.725.115.660.60

D8.811.

Pertussis Toxin

D8.811.913.400.725.115.680

D23.946.

D23.946.

Poly(ADP-ribose) Polymerases

D8.811.913.400.725.115.690

Tankyrases

D8.811.913.400.725.115.690.840

Sirtuins

D8.811.913.400.725.115.845

D8.811.

Amidophosphoribosyltransferase

D8.811.913.400.725.130

Anthranilate Phosphoribosyltransferase

D8.811.913.400.725.160

D8.811.

ATP Phosphoribosyltransferase

D8.811.913.400.725.200

Hypoxanthine Phosphoribosyltransferase

D8.811.913.400.725.450

Nicotinamide Phosphoribosyltransferase

D8.811.913.400.725.575

Orotate Phosphoribosyltransferase

D8.811.913.400.725.700

Purine-Nucleoside Phosphorylase

D8.811.913.400.725.800

Thymidine Phosphorylase

D8.811.913.400.725.900

Uridine Phosphorylase

D8.811.913.400.725.950

Sialyltransferases

D8.811.913.400.800

Nitrogenous Group Transferases

D8.811.913.477

Transaminases

D8.811.913.477.700

Alanine Transaminase

D8.811.913.477.700.100

2-Aminoacidate Transaminase

D8.811.913.477.700.120

4-Aminobutyrate Transaminase

D8.811.913.477.700.200

Aspartate Aminotransferases

D8.811.913.477.700.225

Aspartate Aminotransferase, Cytoplasmic

D8.811.913.477.700.225.249

Aspartate Aminotransferase, Mitochondrial

D8.811.913.477.700.225.500

beta-Alanine-Pyruvate Transaminase

D8.811.913.477.700.286

D-Alanine Transaminase

D8.811.913.477.700.347

Glutamate Synthase

D8.811.913.477.700.470

D8.811.

Glutamine-Fructose-6-Phosphate Transaminase

(Isomerizing)

D8.811.913.477.700.500

Glycine Transaminase

D8.811.913.477.700.525

Leucine Transaminase

D8.811.913.477.700.535

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Nitrogenous Group Transferases

Transaminases

L-Lysine 6-Transaminase

L-Lysine 6-Transaminase

Ornithine-Oxo-Acid Transaminase

Succinyldiaminopimelate Transaminase

Tryptophan Transaminase

Tyrosine Transaminase

One-Carbon Group Transferases

Amidinotransferases

Carboxyl and Carbamoyl Transferases

Aspartate Carbamoyltransferase

Ornithine Carbamoyltransferase

Hydroxymethyl and Formyl Transferases

Aminomethyltransferase

Glutamate Formimidoyltransferase

Glycine Hydroxymethyltransferase

Phosphoribosylaminoimidazolecarboxamide

Formyltransferase

Phosphoribosylglycinamide Formyltransferase

Methyltransferases

Acetylserotonin O-Methyltransferase

Betaine-Homocysteine S-Methyltransferase

Catechol O-Methyltransferase

DNA Modification Methylases

DNA (Cytosine-5-)-Methyltransferase

Site-Specific DNA-Methyltransferase (Adenine-Specific)

Site-Specific DNA Methyltransferase (Cytosine-Specific)

Glycine N-Methyltransferase

Guanidinoacetate N-Methyltransferase

Histamine N-Methyltransferase

Homocysteine S-Methyltransferase

5-Methyltetrahydrofolate-Homocysteine S-

Methyltransferase

Nicotinamide N-Methyltransferase

Phenylethanolamine N-Methyltransferase

Phosphatidyl-N-Methylethanolamine N-Methyltransferase

Phosphatidylethanolamine N-Methyltransferase

Protein Methyltransferases

Histone-Lysine N-Methyltransferase

O(6)-Methylguanine-DNA Methyltransferase

Protein-Arginine N-Methyltransferase

Protein O-Methyltransferase

Protein D-Aspartate-L-Isoaspartate

Methyltransferase

Thymidylate Synthase

tRNA Methyltransferases

Phosphotransferases

Diphosphotransferases

GTP Pyrophosphokinase

Ribose-Phosphate Pyrophosphokinase

Thiamin Pyrophosphokinase

Myosin Type III

Nucleotidyltransferases

N-Acylneuraminate Cytidylyltransferase

Choline-Phosphate Cytidylyltransferase

DNA Nucleotidyltransferases

DNA-Directed DNA Polymerase

DNA Polymerase beta

DNA Polymerase I

	D8.811.913.477.700.550		
	D8.811.913.477.700.700		
	D8.811.913.477.700.800		
	D8.811.913.477.700.850		
	D8.811.913.477.700.900		
	D8.811.913.555		
	D8.811.913.555.150		
	D8.811.913.555.275		
	D8.811.913.555.275.200	D8.811.	
	D8.811.913.555.275.600		
	D8.811.913.555.400		
	D8.811.913.555.400.100	D5.500.	D8.811.
	D8.811.913.555.400.300		
	D8.811.913.555.400.500		
	D8.811.913.555.400.625		
	D8.811.913.555.400.750		
	D8.811.913.555.500		
	D8.811.913.555.500.100		
	D8.811.913.555.500.175		
	D8.811.913.555.500.250		
	D8.811.913.555.500.350	D8.811.	
	D8.811.913.555.500.350.500		
	D8.811.913.555.500.350.700		
	D8.811.913.555.500.350.850		
	D8.811.913.555.500.387		
	D8.811.913.555.500.425		
	D8.811.913.555.500.500		
	D8.811.913.555.500.625		
	D8.811.913.555.500.645		
	D8.811.913.555.500.650		
	D8.811.913.555.500.700		
	D8.811.913.555.500.710		
	D8.811.913.555.500.712		
	D8.811.913.555.500.800		
	D8.811.913.555.500.800.400		
	D8.811.913.555.500.800.650		
	D8.811.913.555.500.800.750		
	D8.811.913.555.500.800.800		
	D8.811.913.555.500.800.800.700		
	D8.811.913.555.500.862		
	D8.811.913.555.500.925		
	D8.811.913.696		
	D8.811.913.696.175		
	D8.811.913.696.175.300		
	D8.811.913.696.175.650		
	D8.811.913.696.175.825		
	D8.811.913.696.310	D5.750.	D8.811.
		D12.776.	
	D8.811.913.696.445		
	D8.811.913.696.445.35		
	D8.811.913.696.445.184		
	D8.811.913.696.445.308		
	D8.811.913.696.445.308.300		
	D8.811.913.696.445.308.300.112		
	D8.811.913.696.445.308.300.225		

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Nucleotidyltransferases

DNA Nucleotidyltransferases

DNA Polymerase II	D8.811.913.696.445.308.300.230		
DNA Polymerase III	D8.811.913.696.445.308.300.235		
RNA-Directed DNA Polymerase	D8.811.913.696.445.308.300.750	D12.776.	D12.776.
HIV Reverse Transcriptase	D8.811.913.696.445.308.300.750.187	D12.776.	D12.776.
		D12.776.	D12.776.
Telomerase	D8.811.913.696.445.308.300.750.750	D12.776.	D12.776.
Taq Polymerase	D8.811.913.696.445.308.300.875		
DNA Nucleotidylexotransferase	D8.811.913.696.445.308.325		
Glucose-1-Phosphate Adenylyltransferase	D8.811.913.696.445.400		
Nicotinamide-Nucleotide Adenylyltransferase	D8.811.913.696.445.600		
2',5'-Oligoadenylate Synthetase	D8.811.913.696.445.625		
Polynucleotide Adenylyltransferase	D8.811.913.696.445.650		
Rec A Recombinases	D8.811.913.696.445.692	D8.811.	
RNA Nucleotidyltransferases	D8.811.913.696.445.735		
DNA, Catalytic	D8.811.913.696.445.735.265	D8.811.	D13.444.
DNA-Directed RNA Polymerases	D8.811.913.696.445.735.270		
DNA Primase	D8.811.913.696.445.735.270.375		
RNA Polymerase I	D8.811.913.696.445.735.270.750		
RNA Polymerase II	D8.811.913.696.445.735.270.762		
RNA Polymerase III	D8.811.913.696.445.735.270.775		
RNA Polymerase Sigma 54	D8.811.913.696.445.735.270.887	D12.776.	
Polyribonucleotide Nucleotidyltransferase	D8.811.913.696.445.735.532		
Q beta Replicase	D8.811.913.696.445.735.630		
RNA Helicases	D8.811.913.696.445.735.720		
DEAD-box RNA Helicases	D8.811.913.696.445.735.720.249		
Eukaryotic Initiation Factor-4A	D8.811.913.696.445.735.720.500	D12.776.	
RNA Replicase	D8.811.913.696.445.735.780		
RNA, Ribosomal, Self-Splicing	D8.811.913.696.445.735.917	D8.811.	D13.444.
Sulfate Adenylyltransferase	D8.811.913.696.445.800		
Transposases	D8.811.913.696.445.825	D8.811.	
HIV Integrase	D8.811.913.696.445.825.500	D8.811.	D12.776.
		D12.776.	D12.776.
Transposon Resolvases	D8.811.913.696.445.837	D8.811.	
UDPglucose-Hexose-1-Phosphate Uridyltransferase	D8.811.913.696.445.850		
UTP-Glucose-1-Phosphate Uridyltransferase	D8.811.913.696.445.875		
UTP-Hexose-1-Phosphate Uridyltransferase	D8.811.913.696.445.900		
VDJ Recombinases	D8.811.913.696.445.950	D8.811.	
Phosphotransferases (Alcohol Group Acceptor)	D8.811.913.696.620		
Adenosine Kinase	D8.811.913.696.620.10		
Choline Kinase	D8.811.913.696.620.155		
Deoxycytidine Kinase	D8.811.913.696.620.175		
Diacylglycerol Kinase	D8.811.913.696.620.200		
Fructokinases	D8.811.913.696.620.225		
Phosphofructokinases	D8.811.913.696.620.225.850		
Phosphofructokinase-1	D8.811.913.696.620.225.850.500		
Phosphofructokinase-1, Liver Type	D8.811.913.696.620.225.850.500.249		
Phosphofructokinase-1, Muscle Type	D8.811.913.696.620.225.850.500.500		
Phosphofructokinase-1, Type C	D8.811.913.696.620.225.850.500.750		
Phosphofructokinase-2	D8.811.913.696.620.225.850.750	D8.811.	
Galactokinase	D8.811.913.696.620.240		
Glucokinase	D8.811.913.696.620.250		
Glycerol Kinase	D8.811.913.696.620.275		
Hexokinase	D8.811.913.696.620.300		
Kanamycin Kinase	D8.811.913.696.620.475		
1-Phosphatidylinositol 3-Kinase	D8.811.913.696.620.525		
1-Phosphatidylinositol 4-Kinase	D8.811.913.696.620.550		
Phosphoenolpyruvate Sugar Phosphotransferase System	D8.811.913.696.620.650	D5.500.	D8.811.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Polynucleotide 5'-Hydroxyl-Kinase

Polynucleotide 5'-Hydroxyl-Kinase

Protein Kinases

Phosphorylase Kinase

Protein-Serine-Threonine Kinases

Activin Receptors

Activin Receptors, Type I

Activin Receptors, Type II

Bone Morphogenetic Protein Receptors

Bone Morphogenetic Protein Receptors, Type I

Bone Morphogenetic Protein Receptors, Type II

Calcium-Calmodulin-Dependent Protein Kinases

Calcium-Calmodulin-Dependent Protein Kinase Kinase

Calcium-Calmodulin-Dependent Protein Kinase

Type 1

Calcium-Calmodulin-Dependent Protein Kinase

Type 2

Calcium-Calmodulin-Dependent Protein Kinase

Type 4

Elongation Factor 2 Kinase

Myosin-Light-Chain Kinase

Casein Kinases

Casein Kinase I

Casein Kinase Ialpha

Casein Kinase Idelta

Casein Kinase Iepsilon

Casein Kinase II

Cyclic Nucleotide-Regulated Protein Kinases

Cyclic AMP-Dependent Protein Kinases

Cyclic AMP-Dependent Protein Kinase Type I

Cyclic AMP-Dependent Protein Kinase

Catalytic Subunits

Cyclic AMP-Dependent Protein Kinase

RIalpha Subunit

Cyclic AMP-Dependent Protein Kinase

RIbeta Subunit

Cyclic AMP-Dependent Protein Kinase Type II

Cyclic AMP-Dependent Protein Kinase

Catalytic Subunits

Cyclic AMP-Dependent Protein Kinase

RIIalpha Subunit

Cyclic AMP-Dependent Protein Kinase

RIIbeta Subunit

Cyclic GMP-Dependent Protein Kinases

Protamine Kinase

Cyclin-Dependent Kinases

CDC2-CDC28 Kinases

CDC2 Protein Kinase

CDC28 Protein Kinase, S cerevisiae

	D8.811.913.696.620.680	D8.811.	
	D8.811.913.696.620.682		
	D8.811.913.696.620.682.650		
	D8.811.913.696.620.682.700		
	D8.811.913.696.620.682.700.62	D12.776.	
	D8.811.913.696.620.682.700.62.500	D12.776.	
	D8.811.913.696.620.682.700.62.750	D12.776.	
	D8.811.913.696.620.682.700.109	D12.776.	
	D8.811.913.696.620.682.700.109.500	D12.776.	
	D8.811.913.696.620.682.700.109.750	D12.776.	
	D8.811.913.696.620.682.700.125	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.49	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.100	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.200	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.350	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.425	D12.644.	D12.776.
	D8.811.913.696.620.682.700.125.500	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140.300	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140.300.100	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140.300.200	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140.300.300	D12.644.	D12.776.
	D8.811.913.696.620.682.700.140.600	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.750	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.750.500	D8.811.	D12.644.
		D12.644.	D12.776.
		D12.776.	
	D8.811.913.696.620.682.700.150.125.750.625	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.750.750	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.875	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.875.500	D8.811.	D12.644.
		D12.644.	D12.776.
		D12.776.	
	D8.811.913.696.620.682.700.150.125.875.750	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.125.875.875	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.150	D12.644.	D12.776.
	D8.811.913.696.620.682.700.150.575	D12.644.	D12.776.
	D8.811.913.696.620.682.700.200	D8.811.	D12.644.
		D12.776.	D12.776.
	D8.811.913.696.620.682.700.200.67	D8.811.	D12.644.
		D12.776.	D12.776.
	D8.811.913.696.620.682.700.200.67.249	D8.811.	D12.644.
		D12.644.	D12.776.
		D12.776.	D12.776.
		D12.776.	D12.776.
	D8.811.913.696.620.682.700.200.67.500	D12.644.	D12.776.
		D12.776.	D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Protein Kinases

Cyclin-Dependent Kinase 5	D8.811.913.696.620.682.700.200.67.875	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 9	D8.811.913.696.620.682.700.200.67.900	D12.644. D12.776.	D12.776. D12.776.
Cyclin-Dependent Kinase 2	D8.811.913.696.620.682.700.200.323	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 4	D8.811.913.696.620.682.700.200.451	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 6	D8.811.913.696.620.682.700.200.515	D8.811. D12.776.	D12.644. D12.776.
Maturation-Promoting Factor	D8.811.913.696.620.682.700.200.580	D12.644. D12.776.	D12.776. D12.776.
CDC2 Protein Kinase	D8.811.913.696.620.682.700.200.580.500	D8.811. D12.644. D12.776.	D12.644. D12.776. D12.776.
DNA-Activated Protein Kinase	D8.811.913.696.620.682.700.250		
eIF-2 Kinase	D8.811.913.696.620.682.700.300	D12.644.	D12.776.
G-Protein-Coupled Receptor Kinases	D8.811.913.696.620.682.700.364	D12.644.	D12.776.
beta-Adrenergic Receptor Kinases	D8.811.913.696.620.682.700.364.49	D12.644.	D12.776.
G-Protein-Coupled Receptor Kinase 2	D8.811.913.696.620.682.700.364.49.200	D12.644.	D12.776.
G-Protein-Coupled Receptor Kinase 3	D8.811.913.696.620.682.700.364.49.300	D12.644.	D12.776.
G-Protein-Coupled Receptor Kinase 1	D8.811.913.696.620.682.700.364.100	D12.644. D12.776.	D12.776. D12.776.
G-Protein-Coupled Receptor Kinase 4	D8.811.913.696.620.682.700.364.550	D12.644.	D12.776.
G-Protein-Coupled Receptor Kinase 5	D8.811.913.696.620.682.700.364.775	D12.644.	D12.776.
Glycogen Synthase Kinases	D8.811.913.696.620.682.700.429	D12.644.	D12.776.
Glycogen Synthase Kinase 3	D8.811.913.696.620.682.700.429.500	D8.811. D12.776.	D12.644. D12.776.
I-kappa B Kinase	D8.811.913.696.620.682.700.494	D12.644.	D12.776.
Interleukin-1 Receptor-Associated Kinases	D8.811.913.696.620.682.700.526	D12.644.	D12.776.
Lim Kinases	D8.811.913.696.620.682.700.542	D12.644.	D12.776.
MAP Kinase Kinase Kinases	D8.811.913.696.620.682.700.559	D12.644.	D12.776.
MAP Kinase Kinase Kinase 1	D8.811.913.696.620.682.700.559.100	D12.644.	D12.776.
MAP Kinase Kinase Kinase 2	D8.811.913.696.620.682.700.559.200	D12.644.	D12.776.
MAP Kinase Kinase Kinase 3	D8.811.913.696.620.682.700.559.300	D12.644.	D12.776.
MAP Kinase Kinase Kinase 4	D8.811.913.696.620.682.700.559.400	D12.644.	D12.776.
MAP Kinase Kinase Kinase 5	D8.811.913.696.620.682.700.559.500	D12.644.	D12.776.
Proto-Oncogene Proteins c-mos	D8.811.913.696.620.682.700.559.800	D12.644. D12.776.	D12.776. D12.776.
raf Kinases	D8.811.913.696.620.682.700.559.842	D12.644. D12.776.	D12.776. D12.776.
Oncogene Proteins v-raf	D8.811.913.696.620.682.700.559.842.249	D12.644. D12.776.	D12.776. D12.776.
Proto-Oncogene Proteins B-raf	D8.811.913.696.620.682.700.559.842.374	D12.644. D12.776.	D12.776. D12.776.
Proto-Oncogene Proteins c-raf	D8.811.913.696.620.682.700.559.842.500	D12.644. D12.776.	D12.776. D12.776.
Mitogen-Activated Protein Kinase Kinases	D8.811.913.696.620.682.700.565	D8.811. D12.776.	D12.644. D12.776.
MAP Kinase Kinase 1	D8.811.913.696.620.682.700.565.100	D8.811. D12.776.	D12.644. D12.776.
MAP Kinase Kinase 2	D8.811.913.696.620.682.700.565.200	D8.811. D12.776.	D12.644. D12.776.
MAP Kinase Kinase 3	D8.811.913.696.620.682.700.565.300	D8.811. D12.776.	D12.644. D12.776.
MAP Kinase Kinase 4	D8.811.913.696.620.682.700.565.400	D8.811. D12.776.	D12.644. D12.776.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Protein Kinases

MAP Kinase Kinase 5	D8.811.913.696.620.682.700.565.500	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 6	D8.811.913.696.620.682.700.565.600	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 7	D8.811.913.696.620.682.700.565.700	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.567	D8.811. D12.776.	D12.644.
Extracellular Signal-Regulated MAP Kinases	D8.811.913.696.620.682.700.567.342	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 1	D8.811.913.696.620.682.700.567.342.500	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 3	D8.811.913.696.620.682.700.567.342.750	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 6	D8.811.913.696.620.682.700.567.342.875	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 7	D8.811.913.696.620.682.700.567.342.937	D8.811. D12.776.	D12.644.
JNK Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.567.513	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 8	D8.811.913.696.620.682.700.567.513.500	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 9	D8.811.913.696.620.682.700.567.513.750	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 10	D8.811.913.696.620.682.700.567.513.800	D8.811. D12.776.	D12.644.
p38 Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.567.878	D8.811. D12.776.	D12.644.
Oncogene Protein v-akt	D8.811.913.696.620.682.700.586	D12.776.	
p21-Activated Kinases	D8.811.913.696.620.682.700.596	D12.644.	D12.776.
Phytochrome A	D8.811.913.696.620.682.700.606	D12.776.	D23.767.
Proline-Directed Protein Kinases	D8.811.913.696.620.682.700.646		
Cyclin-Dependent Kinases	D8.811.913.696.620.682.700.646.500	D8.811. D12.776.	D12.644. D12.776.
CDC2-CDC28 Kinases	D8.811.913.696.620.682.700.646.500.500	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 5	D8.811.913.696.620.682.700.646.500.500.500	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 2	D8.811.913.696.620.682.700.646.500.750	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 4	D8.811.913.696.620.682.700.646.500.875	D8.811. D12.776.	D12.644. D12.776.
Cyclin-Dependent Kinase 6	D8.811.913.696.620.682.700.646.500.937	D8.811. D12.776.	D12.644. D12.776.
Glycogen Synthase Kinase 3	D8.811.913.696.620.682.700.646.625	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.646.750	D8.811. D12.776.	D12.644.
Extracellular Signal-Regulated MAP Kinases	D8.811.913.696.620.682.700.646.750.249	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 1	D8.811.913.696.620.682.700.646.750.249.500	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 3	D8.811.913.696.620.682.700.646.750.249.750	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 6	D8.811.913.696.620.682.700.646.750.249.875	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 7	D8.811.913.696.620.682.700.646.750.249.937	D8.811. D12.776.	D12.644.
JNK Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.646.750.374	D8.811. D12.776.	D12.644.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Protein Kinases

Mitogen-Activated Protein Kinase 8	D8.811.913.696.620.682.700.646.750.374.500	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 9	D8.811.913.696.620.682.700.646.750.374.750	D8.811. D12.776.	D12.644.
Mitogen-Activated Protein Kinase 10	D8.811.913.696.620.682.700.646.750.374.800	D8.811. D12.776.	D12.644.
p38 Mitogen-Activated Protein Kinases	D8.811.913.696.620.682.700.646.750.843	D8.811. D12.776.	D12.644.
Protein Kinase C	D8.811.913.696.620.682.700.725		
Protein Kinase C-alpha	D8.811.913.696.620.682.700.725.100		
Protein Kinase C-delta	D8.811.913.696.620.682.700.725.400		
Protein Kinase C-epsilon	D8.811.913.696.620.682.700.725.750		
Proto-Oncogene Proteins c-akt	D8.811.913.696.620.682.700.755	D12.776.	D12.776.
Proto-Oncogene Proteins c-bcr	D8.811.913.696.620.682.700.759	D12.776.	
Proto-Oncogene Proteins c-pim-1	D8.811.913.696.620.682.700.776	D12.776.	
Receptor-Interacting Protein Serine-Threonine Kinases	D8.811.913.696.620.682.700.801	D12.644. D12.644. D12.776. D12.776.	D12.644. D12.776. D12.776. D12.776.
Receptor-Interacting Protein Serine-Threonine Kinase 2	D8.811.913.696.620.682.700.801.500	D12.644. D12.644. D12.776. D12.776.	D12.644. D12.776. D12.776. D12.776.
rho-Associated Kinases	D8.811.913.696.620.682.700.814	D12.644.	D12.776.
Ribosomal Protein S6 Kinases	D8.811.913.696.620.682.700.862	D12.644.	D12.776.
Ribosomal Protein S6 Kinases, 70-kDa	D8.811.913.696.620.682.700.862.249	D12.644.	D12.776.
Ribosomal Protein S6 Kinases, 90-kDa	D8.811.913.696.620.682.700.862.500	D12.644.	D12.776.
Protein-Tyrosine Kinases	D8.811.913.696.620.682.725		
Focal Adhesion Protein-Tyrosine Kinases	D8.811.913.696.620.682.725.49	D12.644.	D12.776.
Focal Adhesion Kinase 1	D8.811.913.696.620.682.725.49.500	D12.776.	
Focal Adhesion Kinase 2	D8.811.913.696.620.682.725.49.750		
Janus Kinases	D8.811.913.696.620.682.725.124	D12.776.	
Janus Kinase 1	D8.811.913.696.620.682.725.124.100	D12.776.	
Janus Kinase 2	D8.811.913.696.620.682.725.124.200	D12.776.	D12.776.
Janus Kinase 3	D8.811.913.696.620.682.725.124.300	D12.776.	
TYK2 Kinase	D8.811.913.696.620.682.725.124.650	D12.776.	
Mitogen-Activated Protein Kinase Kinases	D8.811.913.696.620.682.725.200	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 1	D8.811.913.696.620.682.725.200.100	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 2	D8.811.913.696.620.682.725.200.200	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 3	D8.811.913.696.620.682.725.200.300	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 4	D8.811.913.696.620.682.725.200.400	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 5	D8.811.913.696.620.682.725.200.500	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 6	D8.811.913.696.620.682.725.200.600	D8.811. D12.776.	D12.644.
MAP Kinase Kinase 7	D8.811.913.696.620.682.725.200.700	D8.811. D12.776.	D12.644.
Proto-Oncogene Proteins c-fes	D8.811.913.696.620.682.725.300	D12.776.	
Receptor Protein-Tyrosine Kinases	D8.811.913.696.620.682.725.400	D12.776.	
fms-Like Tyrosine Kinase 3	D8.811.913.696.620.682.725.400.20	D12.776. D23.50.	D12.776. D23.101.

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Protein Kinases

Proto-Oncogene Proteins c-kit	D8.811.913.696.620.682.725.400.50	D12.776. D12.776. D23.50.	D12.776. D12.776. D23.101.
Proto-Oncogene Proteins c-met	D8.811.913.696.620.682.725.400.75	D12.776. D12.776.	D12.776.
Proto-Oncogene Proteins c-ret	D8.811.913.696.620.682.725.400.87	D12.776.	D12.776.
Receptor, Epidermal Growth Factor	D8.811.913.696.620.682.725.400.100	D12.776. D12.776.	D12.776.
Receptor, erbB-2	D8.811.913.696.620.682.725.400.150	D12.776. D12.776.	D12.776.
Receptor, erbB-3	D8.811.913.696.620.682.725.400.175	D12.776. D12.776.	D23.101. D12.776.
Receptor, Fibroblast Growth Factor, Type 1	D8.811.913.696.620.682.725.400.177	D12.776.	D12.776.
Receptor, Fibroblast Growth Factor, Type 2	D8.811.913.696.620.682.725.400.178	D12.776.	D12.776.
Receptor, Fibroblast Growth Factor, Type 3	D8.811.913.696.620.682.725.400.179	D12.776. D12.776.	D12.776.
Receptor, Fibroblast Growth Factor, Type 4	D8.811.913.696.620.682.725.400.180	D12.776.	D12.776.
Receptor, IGF Type 1	D8.811.913.696.620.682.725.400.185	D12.776.	D12.776.
Receptor, Insulin	D8.811.913.696.620.682.725.400.200	D12.776.	D12.776.
Receptor, Macrophage Colony-Stimulating Factor	D8.811.913.696.620.682.725.400.500	D12.776. D12.776. D23.50.	D12.776. D12.776. D23.101.
Receptor, trkA	D8.811.913.696.620.682.725.400.660	D12.776.	D12.776.
Receptor, trkB	D8.811.913.696.620.682.725.400.700	D12.776.	D12.776.
Receptor, trkC	D8.811.913.696.620.682.725.400.800	D12.776.	D12.776.
Receptors, Eph Family	D8.811.913.696.620.682.725.400.850	D12.776.	D12.776.
Receptor, EphA1	D8.811.913.696.620.682.725.400.850.50	D12.776.	
Receptor, EphA2	D8.811.913.696.620.682.725.400.850.100	D12.776.	
Receptor, EphA3	D8.811.913.696.620.682.725.400.850.150	D12.776.	
Receptor, EphA4	D8.811.913.696.620.682.725.400.850.200	D12.776.	
Receptor, EphA5	D8.811.913.696.620.682.725.400.850.250	D12.776.	
Receptor, EphA6	D8.811.913.696.620.682.725.400.850.300	D12.776.	
Receptor, EphA7	D8.811.913.696.620.682.725.400.850.400	D12.776.	
Receptor, EphA8	D8.811.913.696.620.682.725.400.850.500	D12.776.	
Receptor, EphB1	D8.811.913.696.620.682.725.400.850.600	D12.776.	
Receptor, EphB2	D8.811.913.696.620.682.725.400.850.650	D12.776.	
Receptor, EphB3	D8.811.913.696.620.682.725.400.850.700	D12.776.	
Receptor, EphB4	D8.811.913.696.620.682.725.400.850.750	D12.776.	
Receptor, EphB5	D8.811.913.696.620.682.725.400.850.800	D12.776.	
Receptors, Platelet-Derived Growth Factor	D8.811.913.696.620.682.725.400.900	D12.776.	D12.776.
Receptor, Platelet-Derived Growth Factor alpha	D8.811.913.696.620.682.725.400.900.500	D12.776.	D12.776.
Receptor, Platelet-Derived Growth Factor beta	D8.811.913.696.620.682.725.400.900.750	D12.776.	D12.776.
Receptors, TIE	D8.811.913.696.620.682.725.400.925	D12.776.	
Receptor, TIE-1	D8.811.913.696.620.682.725.400.925.249	D12.776.	
Receptor, TIE-2	D8.811.913.696.620.682.725.400.925.500	D12.776.	
Receptors, Vascular Endothelial Growth Factor	D8.811.913.696.620.682.725.400.950	D12.776.	D12.776.
Vascular Endothelial Growth Factor Receptor-1	D8.811.913.696.620.682.725.400.950.100	D12.776.	D12.776.
Vascular Endothelial Growth Factor Receptor-2	D8.811.913.696.620.682.725.400.950.200	D12.776.	D12.776.
Vascular Endothelial Growth Factor Receptor-3	D8.811.913.696.620.682.725.400.950.300	D12.776.	D12.776.
Proto-Oncogene Proteins c-abl	D8.811.913.696.620.682.725.500	D12.776.	
src-Family Kinases	D8.811.913.696.620.682.725.800		
Lymphocyte Specific Protein Tyrosine Kinase			
p56(lck)	D8.811.913.696.620.682.725.800.315	D12.776.	
Oncogene Protein pp60(v-src)	D8.811.913.696.620.682.725.800.472	D12.776. D12.776.	D12.776.
Proto-Oncogene Proteins c-fyn	D8.811.913.696.620.682.725.800.551	D12.776.	D12.776.
Proto-Oncogene Proteins c-hck	D8.811.913.696.620.682.725.800.590	D12.776.	
Proto-Oncogene Proteins c-yes	D8.811.913.696.620.682.725.800.610	D12.776.	
Proto-Oncogene Proteins pp60(c-src)	D8.811.913.696.620.682.725.800.630	D12.776.	

D8 - ENZYMES AND COENZYMES

Enzymes and Coenzymes

Enzymes

Transferases

Phosphotransferases

Phosphotransferases (Alcohol Group Acceptor)

Protein Kinases

ZAP-70 Protein-Tyrosine Kinase

D8.811.913.696.620.682.725.900

Pyridoxal Kinase

D8.811.913.696.620.685

Pyruvate Kinase

D8.811.913.696.620.695

Thymidine Kinase

D8.811.913.696.620.750

Uridine Kinase

D8.811.913.696.620.800

Phosphotransferases (Carboxyl Group Acceptor)

D8.811.913.696.630

Acetate Kinase

D8.811.913.696.630.25

Aspartate Kinase

D8.811.913.696.630.50

Aspartokinase Homoserine Dehydrogenase

D8.811.913.696.630.50.50

D8.811.

D8.811.

Phosphoglycerate Kinase

D8.811.913.696.630.700

Phosphotransferases (Nitrogenous Group Acceptor)

D8.811.913.696.640

Arginine Kinase

D8.811.913.696.640.25

Creatine Kinase

D8.811.913.696.640.150

Creatine Kinase, BB Form

D8.811.913.696.640.150.500

Creatine Kinase, MB Form

D8.811.913.696.640.150.625

Creatine Kinase, Mitochondrial Form

D8.811.913.696.640.150.750

Creatine Kinase, MM Form

D8.811.913.696.640.150.875

Phosphotransferases (Paired Acceptors)

D8.811.913.696.645

Pyruvate, Orthophosphate Dikinase

D8.811.913.696.645.700

Phosphotransferases (Phosphate Group Acceptor)

D8.811.913.696.650

Adenylate Kinase

D8.811.913.696.650.25

ATP Synthetase Complexes

D8.811.913.696.650.150

Proton-Translocating ATPases

D8.811.913.696.650.150.500

D8.811.

D12.776.

D12.776.

Bacterial Proton-Translocating ATPases

D8.811.913.696.650.150.500.249

D8.811.

D12.776.

D12.776.

Chloroplast Proton-Translocating ATPases

D8.811.913.696.650.150.500.500

D8.811.

D12.776.

D12.776.

Mitochondrial Proton-Translocating ATPases

D8.811.913.696.650.150.500.750

D8.811.

D12.776.

D12.776.

Vacuolar Proton-Translocating ATPases

D8.811.913.696.650.150.500.875

D8.811.

D12.776.

D12.776.

Guanylate Kinase

D8.811.913.696.650.450

Nucleoside-Diphosphate Kinase

D8.811.913.696.650.550

NM23 Nucleoside Diphosphate Kinases

D8.811.913.696.650.550.200

Nucleoside-Phosphate Kinase

D8.811.913.696.650.575

Transferases (Other Substituted Phosphate Groups)

D8.811.913.696.900

CDP-Diacylglycerol-Inositol 3-Phosphatidyltransferase

D8.811.913.696.900.74

CDPdiacylglycerol-Serine O-Phosphatidyltransferase

D8.811.913.696.900.150

Diacylglycerol Cholinephosphotransferase

D8.811.913.696.900.200

Ethanolaminophosphotransferase

D8.811.913.696.900.250

Sulfur Group Transferases

D8.811.913.817

Coenzyme A-Transferases

D8.811.913.817.200

Sulfotransferases

D8.811.913.817.400

Arylsulfotransferase

D8.811.913.817.400.300

Sulfurtransferases

D8.811.913.817.500

Thiosulfate Sulfurtransferase

D8.811.913.817.500.500