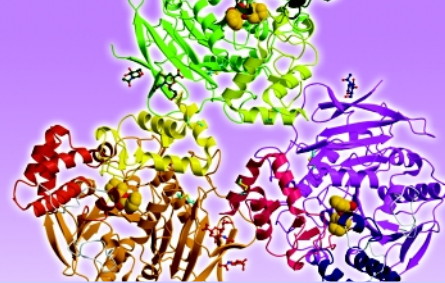


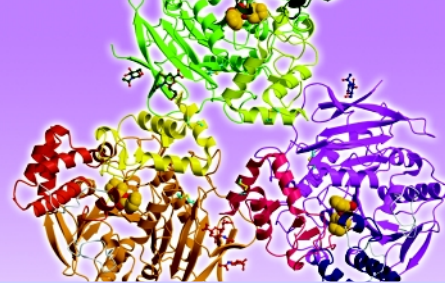
Research Enzymes & Coenzymes

With over 4 decades of experience in the manufacturing very high quality research enzymes, Sisco Research Laboratories (SRL) Research Enzymes are preferred by thousands of scientists and researchers worldwide for research, fermentation, bio-catalysis, bio-fuel and production applications. Due to the state-of-the art manufacturing facilities, we have been able to master enzyme manufacture from plant, animal, bacteria, fungal and recombinant sources and guarantee the claimed high activity, purity and thermal stability parameters.

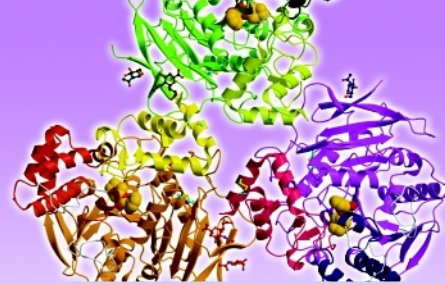
Sr.No.	Product Code	Product Name	Source	Activity	CAS Number	Pkg.
1	44597	Acyase 1 (ACY1)	ex. porcine kidney	Activity – min. 1000 U/mg material, lyophilized powder	9012-37-7	50mg, 250mg,1gm
2	90008	Alcohol Dehydrogenase (ALD) (300 U/mg)	ex. baker's yeast	Activity – 300-400 units/mg solids, approx 90% 1 unit will reduce 1.0 μ mole of ethanol to acetaldehyde per min. at pH 8.8, 25°C	9031-72-5	7500units
3	62492	Alcohol Dehydrogenase (ALD) (50 U/mg)	ex. baker's yeast	Activity – 50 units/mg solids, lyophilized powder 1 unit will reduce 1.0 μ mole of ethanol to acetaldehyde per min. at pH 8.8, 25°C	9031-72-5	7500units
4	12151	Alkaline Phosphatase (ALP) (highly purified for biochemistry)	ex. calf intestine mucosa	Activity – 1.5-2.0 unit/mg, lyophilized powder 1 unit will hydrolyse 1.0 μ mole of p-Nitrophenylphosphate per min. measured in 0.1M glycine buffer pH 10.4 containing 1mM MgCl ₂ & 0.1mM ZnCl ₂ at 25°C	9001-78-9	100mg
5	97534	Alkalophilic Proteinase	ex. Streptomyces sp.	Activity – min.20U/mg		100units, 200units
6	73583	L-Alpha Glycerophosphate Oxidase (GPO)	ex. microorganism	Activity – min. 15 U/mg material, lyophilized powder	9046-28-0	500units,1K.units
7	68384	D-Amino Acid Oxidase (DAA, DAO, DAMOX)	ex. porcine kidney	Activity – min. 6000 U/g material (approx 7000U/g protein), lyophilized powder	9000-88-8	50units,100units



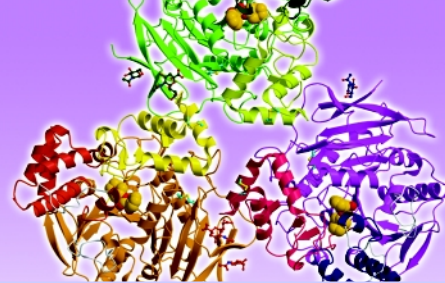
Sr.No.	Product Code	Product Name	Source	Activity	CAS Number	Pkg.
8	28588	α -Amylase	ex. porcine pancreas	Activity – α -Amylase 10-25 U/mg solid, (contains β -Amylase 2-10 U/mg) 1 unit will liberate 1.0mg of maltose from starch in 3 min. at pH 6.9	9000-90-2	100mg
9	57656	L-Ascorbate Oxidase (Type 1)	ex. cucumber	Activity – 150 units/mg protein	9029-44-1	5000units
10	60402	L-Ascorbate Oxidase (Type 2)	ex. Acremonium sp.	Activity - min.200U/mg solid	9029-44-1	250units, 500units
11	66915	Bilirubin Oxidase	ex. myrothecium	Activity - min.1.2 U/mg solid	80619-01-8	25units, 50units, 100units
12	59050	Butyrylcholine Esterase (Cholinesterase, BCHE, BuChe)	ex. horse serum	Activity – min. 45 U/mg material (approx. 200U/mg protein), lyophilized powder	9001-08-5	500units, 1K.units
13	42168	Catalase (CAT)	ex. bovine liver	Activity – min. 11700 U/mg material, (approx. 40000U/mg protein), lyophilized powder	9001-05-2	25mg,100mg
14	95382	Cellulase (Meicellase)	ex. aspergillus niger	Activity 20000 CMC units/g 1 unit will liberate 1.0 μ mole of glucose from cellulose in 1 hour at pH 5.0 at 37°C	9012-54-8	100mg, 1g, 5g
15	32970	Cellulase 'Onozuka' FA	ex. Trichoderma Viride	Activity – min.2500 U/g	9012-54-8	1g, 5g
16	24801	Cellulase 'Onozuka' R-10	ex. Trichoderma viride	Activity – min.10000 U/g Cell separating enzyme powder	9012-54-8	1g, 5g
17	65480	Cellulase 'Onozuka' RS	ex. Trichoderma Viride	Activity – min.16,000 U/g	9012-54-8	1g
18	51626	Cholesterol Esterase (CE)	ex. porcine pancreas	Activity – min.15 U/mg protein, lyophilized powder	9026-00-0	10mg,100mg
19	85091	Cholesterol Oxidase	ex. streptomyces sp.	Activity – 15 U/mg solid, lyophilized powder 1 unit will oxidise 1 μ mole of cholesterol per min. at pH 7.5 at 240nm	9028-76-6	500units, 2500units
20	35085	α -Chymotrypsin (3 \times crystallized)	ex. bovine pancreas	Activity – min 1000 NF U/mg (7500 ATEE U/mg) lyophilized powder, salt free 1ATEE unit = Decrease in absorbance of 0.001 per min. under the assay conditions at 237 nm at 25°C using ATEE as substrate	9004-07-3	250mg, 500mg, 1g, 5g
21	87063	-Chymotrypsinogen A (5 \times Cryst)	ex. Bovine Pancreas	Intrinsic activity — 0.25 u/mg chymotrypsin, Activates to at least 45 units per mg protein dialyzed, lyophilized powder	9035-75-0	100mg, 250mg, 1g, 5g
22	25074	Creatininase	ex. recombinant E. coli	Activity – min. 500 U/mg, lyophilized powder	9025-13-2	2K.units,5K.units
23	62000	Creatinine Deiminase	ex. microorganism	Activity – 10 U/mg solid, lyophilized powder 1 unit will hydrolyze 1.0 μ mole of creatinine to N-methylhydantoin and NH ₃ per min. at pH 7.5, at 37°C	37289-15-9	250units
24	61824	Deoxyribonuclease I (DNase1)(2500K.unitz)	ex. bovine pancreas	Activity – 2500 Kunitz units/mg protein, for molecular biology, lyophilized powder	9003-98-9	10000units, 50000units
25	14658	Deoxyribonuclease I (DNase1)(400K.unitz)	ex. bovine pancreas	Activity – 400 Kunitz units/mg, lyophilized powder	9003-98-9	5000units, 50000units, 100000units
26	90405	Diaphorase	ex. clostridium sp.	Activity – 30 U/mg, lyophilized powder	9001-18-7	500units
27	51755	Elastase (ELA, PPE)	ex. porcine pancreas	Activity – 200 U/mg material, lyophilized powder	39445-21-1	5 mg
28	51594	D-Fructose Dehydrogenase	ex. gluconobacter sp.	Activity – 20 U/mg solid, lyophilized powder	37250-85-4	10000units
29	76052	β -Glucanase	ex. aspergillus niger	Activity – 60 U/gm, lyophilized powder 1 Unit corresponds to amount of enzyme which will release 1 μ mole of reducing sugar equivalents (expressed as glucose) per minute at pH 5.0 & 55°C using β -D-Glucan as substrate	9074-98-0	25g,100g,500g
30	28453	Glucoamylase	ex. rhizopus sp.	Activity – 30 U/mg solid, lyophilized powder, salt free 1 unit will liberate 1.0 mg of glucose from starch in 3 min. at pH 4.5 at 55°C	9032-08-0	1000units



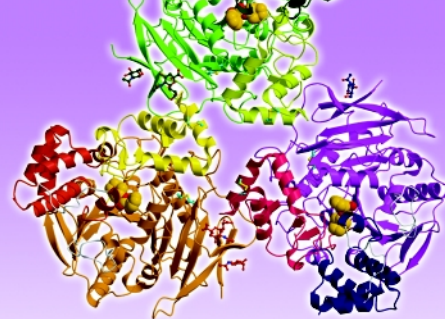
Sr.No.	Product Code	Product Name	Source	Activity	CAS Number	Pkg.
31	14810	Glucose Dehydrogenase	ex. microorganism	Activity – 250 U/mg solid, lyophilized powder	37250-50-3	5000units,10000units
32	88884	β-Glucosidase ex. Sweet Almonds (Type 1)		Activity – min.1000U/mg solids, lyophilized powder	9001-22-3	25K.units, 100K.units
33	61788	Glucose Oxidase (GOD)	ex. aspergillus niger	Activity – min 100 units/mg protein, lyophilized powder containing 75% protein 1 unit will oxidize 1.0 μmole of D-Glucose to D-Gluconolactone and H ₂ O ₂ per min. at pH 7.0 at 25°C	9001-37-0	10000units, 25000units, 100000units
34	74262	Glucose-6-Phosphate- Dehydrogenase	ex. leuconostoc mesenteroides	Activity – 400 units/mg solid (~600U/mg protein) lyophilized powder 1 unit will oxidize 1.0 micro mole of D-Glucose- 6-phosphate to 6-phospho-D-gluconate per min. in presence of NADP at pH 7.4 at 25°C	9001-40-5	1000units, 2500units
35	11997	r-Glucose-6-Phosphate Dehydrogenase	ex. Leuconostoc Mesenteroides	min.400U/mg solids (approx. 600U/mg protein), lyophilized powder	9001-40-5	5K.units, 10K.units
36	75551	α-Glucosidase (Maltase)	ex. yeast	Activity – 100-150 units/mg solid, lyophilized powder 1 unit will liberate 1 micro mole of D-Glucose from p-nitrophenyl-alpha-D-glucoside per min. at pH 6.8 at 37°C	9001-42-7	10mg,100mg
37	46242	β-Glucuronidase (BG, Ketodase)	ex. helix pomatia	Activity – 1000 U/mg solid (500U/mg material), lyophilized powder	9001-45-0	50Kunits,250K.units
38	74117	Glutamate Dehydrogenase (L-GLDH)	ex. bovine liver	Activity – min.10 U/mg material (approx. 40U/mg enzyme protein), lyophilized powder	9029-12-3	100mg,500mg
39	98087	Glutamic-Oxaloacetic Transaminase (GOT)	ex. porcine heart	Activity - min.180U/mg solid	9000-97-9	250units, 1K.units, 5K.units
40	62423	Glycerol Kinase (GK)	ex. microorganism	Activity – min.30 U/mg material, lyophilized powder	9030-66-4	1K.units
41	36324	Glycerol-3-Phosphate Dehydrogenase	ex. rabbit muscle	Activity – 15 U/mg solid, lyophilized powder 1 unit will oxidize 1 micro mole of glycerol to dihydroxyacetone per min at 25°C	9075-65-4	500units
42	69502	Hexokinase	ex. saccharomyces sp.	Activity – 150 U/mg solid, lyophilized powder 1 unit will phosphorylate 1.0 μmole of D-glucose per min. at pH 7.6 at 25°C	9001-51-8	5000units
43	12197	D-3-Hydroxybutyrate Dehydrogenase (3-HBDH)	ex. Pseudomonas sp.	Activity – min.100U/mg solid	9028-38-0	50units, 100units
44	82334	r-Lactate Dehydrogenase (r-LDH)(Thermostable)	ex. recombinant LDH host cell E. coli	Activity – 800 units/mg protein	9001-60-9	5000units,10000units
45	53110	D-Lactate Dehydrogenase (D-LDH) highly purified	ex. microorganism	Activity – 400 units/mg solid, lyophilized powder 1 unit will reduce 1.0 μmole of pyruvate to D-Lactate per min. at pH 7.5 at 25°C	9028-36-8	2500units, 5000units
46	49363	L-Lactate Dehydrogenase (L-LDH)	ex. rabbit muscle	Activity – 400-600 units/mg protein, lyophilized crystalline powder 1 unit will reduce 1.0 μmole of pyruvate to L-Lactate per min. at pH 7.5 at 25°C	9001-60-9	5000units,10000units
47	40528	Leucine Dehydrogenase	ex. bacillus sp.	Activity - min.20U/mg solid	9082-71-7	100units, 200units
48	60770	Lipase Crude (steapsin)	ex. microorganism	Activity – 40-70 U/mg protein 1 unit will hydrolyze 1.0 μ equivalent of fatty acid from triglycerides in 1 hour at pH 7.4 at 37°C	9001-62-1	25gm, 100gm, 500gm
49	15471	Lipoprotein Lipase (LPL)	ex. pseudomonas sp.	Activity – min. 20 U/mg material, lyophilized powder	9004-02-8	10mg, 50mg



Sr.No.	Product Code	Product Name	Source	Activity	CAS Number	Pkg.
50	92661	Lipoxidase	ex. soyabean	Activity – 100000 U/mg material	9029-60-1	100mg, 250mg, 1g
51	45822	Lysozyme (3 × crystallized) (Muramidase)	ex. egg white	Activity – 15,000 U/mg, lyophilized powder 1 unit will produce a change in absorbance of 0.001 per min. at 450nm at pH 6.24 at 25°C using suspension of Micrococcus lysodeikticus as substrate	12650-88-3	1g, 5g, 25g
52	81889	Macerozyme “R-10”	ex. rhizopus sp.	Activity – 3000 Units/g Cell separating Enzyme powder	9032-75-1	500mg, 1gm, 5gm
53	66638	Macerozyme “R-10”	ex. trichoderma & aspergillus niger	Activity – 10000 unit/g, Cell separating Enzyme powder	9032-75-1	500mg, 1gm
54	40169	Malate Dehydrogenase (MDH)	ex. microorganism	Activity – 40 units/mg solid, lyophilized powder	9001-64-3	1000units
55	87448	r-Malate Dehydrogenase (r-MDH)	ex. recombinant MDH host cell E. coli	Activity – 400 units/mg protein		5000units, 10000units
56	41598	Mutarotase (MUT)	ex. porcine kidney	Activity – min.1500 U/mg material (approx. 5000U/mg protein), lyophilized powder	9031-76-9	10mg, 25mg
57	37740	Pancreatin 3 ×		Amlase Activity – min. 100 units/mg Lipase Activity – min. 8 units/mg Protease Activity – min. 100 units/mg	8049-47-6	100gm, 500gm
58	95907	Papain	ex. papaya latex	Activity – min. 1 anson unit/g 1 Anson unit is amount of enzyme which under standard conditions of Anson hydrolyzes Haemoglobin at such an initial rate the amount of hydrolysis product formed per min has the same extinction on reaction with phenol reagent as 1 mmole of tyrosine	9001-73-4	100gm, 500gm
59	90464	Pectinase	ex. aspergillus niger	Activity – 3.5 U/mg protein(Lowry), lyophilised powder	9032-75-1	1000units
60	12647	Pepsin 1:3000	ex. porcine stomach mucosa	Activity – min. 0.8 anson unit/mg, (Activity – min. 1:3000) (egg albumin digesting power) 1 g pepsin will hydrolyze 3000 g coagulated egg albumin at pH 2.0	9001-75-6	25gm, 100gm, 500gm
61	48062	Pepsin 1:10000	ex. porcine stomach mucosa	Activity – min. 2.5 anson unit/mg, (Activity – 1:10000) (egg albumin digesting powder) 1 g pepsin will hydrolyze 3000 g coagulated egg albumin at pH 2.0	9001-75-6	25gm, 100gm,500gm
62	63364	Pepsin 2 × crystallized	ex. porcine stomach mucosa	Activity – 2500 units/mg	9001-75-6	100mg, 250mg, 1gm, 5gm, 25gm
63	28498	Peroxidase (RZ 3.0) (Type1) (highly purified enzyme for ELISA) (HRP type 1)	ex. horseradish	Activity – min 250 Purpurogallin Units/mg (salt free) One unit will form 1.0mg Purpurogallin from Pyrogallol in 20 seconds at pH 6.0 at 20°C	9003-99-0	1250units, 5000units, 25000units
64	73292	Peroxidase (RZ 2.0) (HRP type 2)	ex. Horseradish	Activity - min.110 Pupurogallin U/mg solid	9003-99-0	5K.units, 25K.units, 50K.units, 100K.units
65	87913	Peroxidase (RZ 2.0) (HRP type 3)	ex. Horseradish	Activity - min.180 Pupurogallin U/mg solid	9003-99-0	5K.units, 25K.units, 50K.units
66	34978	Phosphoenolpyruvate Carboxylase (PEPC)	ex. maize leaves	Activity – min.1U/mg material (~ 7U/mg protein), lyophilized powder	9067-77-0	100mg,250mg
67	69400	Phospholipase D	ex. streptomyces chromofuscus	Activity – min.40U/mg solid	9001-87-0	200units, 400units
68	65312	Phosphorylase B	ex. Rabbit Muscle	Activity – 60U/mg protein, Lyophilized powder	9012-69-5	10mg, 25mg
69	16680	Proline Specific Endopeptidase	ex. flavobacterium sp.	Activity – min.5U/mg solid		50units, 250units



Sr.No.	Product Code	Product Name	Source	Activity	CAS Number	Pkg.
70	49936	Proteinase K (Type A)	ex. <i>triturachium album</i>	Activity – 30 units/mg protein, lyophilized powder	39450-01-6	10mg, 25mg, 100mg, 500mg, 1g
71	26309	Proteinase K (Type B)	ex. <i>Tritirachium Album</i>	Activity – min.30units/mg protein (high activity)	39450-01-6	10mg, 25mg, 100mg, 500mg, 1g
72	10041	Proteinase K (Type C)	ex. <i>Tritirachium Album</i>	Activity – min.20units/mg protein, lyophilized powder	39450-01-6	10mg, 25mg, 100mg, 500mg, 1g
73	32753	Proteinase K (Type D) (Recombinant)(Endopeptidase k)	ex. <i>Pichia Pastoris</i>	Activity – min.30units/mg protein, lyophilized powder	39450-01-6	10mg, 25mg, 100mg, 500mg, 1g
74	36331	Proteinase K Solution (20 mg/ml)	ex. <i>triturachium album</i>	Activity – min. 500 units/ml, solution	39450-01-6	1ml, 1ml×5, 5ml×5
75	63884	Pyruvate Dehydrogenase	ex. <i>microorganism</i>	Activity – 2.0 u/mg solid, lyophilized powder 1 unit will convert 1 μmole of NAD to NADH per min. at pH 7.4 at 300°C in the presence of saturating levels of coenzyme A	9014-20-4	10units
76	29986	Pyruvate Kinase	ex. <i>rabbit muscle</i>	Activity – 100 units/mg solid, lyophilized powder 1 unit will convert 1.0 μmole of phosphoenolpyruvate to pyruvate per min. at pH 7.6 at 37°C	9001-59-6	2500units
77	58895	Ribonuclease (3× crystallized) (Rnase)	ex. <i>bovine pancreas</i>	Activity – 15 Kunitz units/mg, 1 unit causes the hydrolysis, of RNA at a rate such that the velocity constant (K) equals to 1 at 25°C, pH 5.0	9001-99-4	100mg, 250mg, 500mg, 1g
78	10147	Sarcosine Oxidase (SOX)	ex. <i>recombinant E. coli</i>	Activity – min. 20 U/mg material, lyophilized powder	9029-22-5	1K.units
79	31249	Superoxide Dismutase (SOD)	ex. <i>bovine erythrocytes</i>	Activity – min. 3000 U/mg material	9054-89-1	20K.units, 100K.units
80	52682	Trypsin (0.2 Anson units/g) Suitable for Vaccine preparation	ex. <i>bovine pancreas</i>	Activity – 2000 units/g 1 Anson unit is amount of enzyme which under standard conditions of Anson hydrolyzes Haemoglobin at such an initial rate the amount of hydrolysis product formed per min has the same extinction on reaction with phenol reagent as 1 mmole of tyrosine	9002-07-7	100g, 500g, 1kg
81	74055	Trypsin 1:250	ex. <i>bovine pancreas</i>	Activity – min 1000 BAAE units/mg 1 BAAE unit = change in absorbance of 0.001 per min. under the assay conditions at 253nm at 250°C using BAAE as substrate	9002-07-7	25g, 100g, 500g
82	60484	Trypsin 3× crystallized	ex. <i>bovine pancreas</i>	Activity – min 2500 NF units/mg (7500 BAAE units/mg), lyophilized electrophoretically 1 BAAE unit = change in absorbance of 0.001 per min. under the assay conditions at 253 nm at 25°C using BAAE as substrate	9002-07-7	250mg,1g,5g
83	64807	Urease	ex. <i>jack beans</i>	Activity – 200 u/mg solids 1 unit will liberate 1μmole of NH ₃ from urea per min. at pH 7.0 at 25°C	9002-13-5	3000units,10000units 25 K.units, 100K.units
84	64632	r-Urease (Thermostable)	ex. <i>recombinant from Bacteria</i> Host Cell: <i>E.coli</i>	Activity – min. 150 units/mg protein, lyophilized powder	9002-13-5	10000units
85	95410	r-Uricase (Thermostable)	ex. <i>yeast</i>	Activity – min. 3 units/mg material, lyophilized powder	9002-12-4	500units
86	39607	Xanthine Oxidase	ex. <i>butter milk</i>	Activity – 0.4-1.0 unit/mg protein, lyophilized powder	9002-17-9	5units
87	62965	Xanthine Oxidase	ex. <i>microorganism</i>	Activity – 15 u/mg solid, lyophilized powder 1 unit will convert 1.0 μ mole of xanthine to uric acid per min. at pH 7.5 at 25°C	9002-17-9	250units
88	13814	Xylanase Powder	ex. <i>Aspergillus niger</i>	Activity – min. 60 mu/g	37278-89-0	25g, 100g, 500g



Coenzymes

Sr.No.	Product Code	Product Name	Assay	CAS Number	Pkg.
1	26904	Acetyl Coenzyme A Trilithium Salt	min.90%	75520-41-1	5mg, 25mg, 100mg
2	40804	Coenzyme A Free Acid ex. yeast	min.90%	85-61-0	10mg, 25mg, 100mg, 500mg
3	64147	Coenzyme A Trilithium Salt ex. Yeast	~90%	18439-24-2	10mg, 25mg, 100mg, 500mg
4	15039	Coenzyme Q10	min.99%	303-98-0	100mg, 500mg, 1g, 5g
5	87939	Flavine Adenine Dinucleotide Sodium Salt (FAD)	min.95%	146-14-5	25mg, 100mg, 250mg, 500mg
6	26759	-Nicotinamide Adenine Dinucleotide (Oxidised) (-NAD, DPN)	min.98%	53-84-9	100mg, 1g, 5g, 25g
7	19628	-Nicotinamide Adenine Dinucleotide (Oxidised) ExiPlus™ (-NAD, DPN, NAD Free Acid) meets compendial specs of Ph.Eur	min.98%	53-84-9	1g, 5g, 25g
8	77268	-Nicotinamide Adenine Dinucleotide (Reduced) Disodium Salt (-NADH, DPNH)	min.98%	606-68-8	100mg, 500mg, 1g, 5g
9	44566	-Nicotinamide Adenine Dinucleotide Lithium Salt (Oxidised) (-NAD-Li)	min.95%	64417-72-7	500mg, 1g, 5g
10	82819	-Nicotinamide Adenine Dinucleotide Phosphate Monosodium Salt (-NADP, TPN)	min.98%	1184-16-3	25mg, 100mg, 500mg, 1g, 5g
11	99197	-Nicotinamide Adenine Dinucleotide Phosphate Reduce (-NADPH, TPNH)	min.98%	2646-71-1	25mg, 100mg, 1g
12	55615	-Nicotinamide Adenine Dinucleotide Phosphate Monopotassium Salt (Oxidised) (-NADP-K)	min.95% (anhydrous)	53-59-8	100mg, 500mg, 1g
13	88991	-Nicotinamide Adenine Dinucleotide Sodium Salt (NAD.Na)	min.95%	20111-18-6	500mg, 1g, 5g
14	95130	-Nicotinamide Mononucleotide (-NMN)	min.95%	1094-61-7	10mg, 25mg
15	57443	Riboflavin-5-Phosphate Disodium Salt (FMN, flavine mononucleotide)	min.93%	130-40-5	5g, 25g

Co-Factor/Co-Enzyme Kits

For investigative studies & biochemical characterization of novel oxidoreductases, development of biocatalysis cofactor recycling methodologies and routine biochemistry.

Sr.No.	Product Code	Product Name	Kit Contents	Unit
1	35410	Enzyme Co-Factor Kit Type 1 (EK100)	Contains 100mg each of: NAD, NADH, NADP, NADPH	1 kit
2	75058	Enzyme Co-Factor Kit Type 2 (EK500)	Contains 500mg each of: NAD, NADH, NADP, NADPH	1 kit
3	29865	Enzyme Co-Factor Kit Type 3 (EKS100)	Contains 100mg each of: NAD, NADH, NADP, NADPH, NAD-Li, NADP-K	1 kit
4	31537	Enzyme Co-Factor Kit Type 4 (EKS500)	Contains 500mg each of: NAD, NADH, NADP, NADPH, NAD-Li, NADP-K	1 kit

Note: All enzymes can be offered in bulk packs on request

Please contact:



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