

Sigma Enzymes, Coenzymes & Enzyme Substrates FT-IR Spectral Library

Introduction

The Sigma Enzymes, Coenzymes & Enzyme Substrates Library consists of 485 FT-IR spectra of interest to those in the biochemical field. The spectra were originally acquired at 2 cm⁻¹ spectral resolution, and then mathematically deresolved when converted to Nicolet library format.

The spectra are listed in this document in alphabetical order by compound name. The index number of each spectrum appears to the left of the name. If you are using Nicolet's OMNIC spectroscopy software, the molecular formula, CAS (Chemical Abstracts Services) registry number, when known, and the location number of the printed spectrum in *The Sigma Library of FT-IR Spectra* are available on-line. The Sigma location number is in the form:

<volume number> - <page number> <spectrum letter>

For example, the spectrum with the location number 1-234B refers to the second (B) spectrum on page 234 of Volume 1.

Abbreviations Used in Compound Names

Since the compound names associated with the spectra are often long, in many cases it has become necessary to abbreviate the full name of the substance. The table below defines the abbreviations used in the name field. The sequential index in this manual or the associated data may be consulted for the full name.

<i>Abbreviation</i>	<i>Name</i>
T-BOC	t-Butoxycarbonyl
:BSA	Bovine Serum Albumin conjugate
CBZ	Carbobenzyloxy
CHA	Cyclohexylammonium
CLPH	Chlorophenyl
CNET	Cyanoethyl
DANSYL	5-Dimethylamino-1-naphthalenesulfonyl
DCHA	Dicyclohexylammonium
DDZ	3,5-Dimethoxy-a,a-dimethylbenzyloxycarbonyl
DMT	4,4'-Dimethoxytrityl
2,4-DNP	2,4-Dinitrophenyl
DNPYR	3,5-Dinitro-2-pyridyl
FMOC	9-Fluorenylmethoxycarbonyl
IPREN	Isopropylidene
MESYL	Methanesulfonyl

MSOC	2-(Methanesulfonyl)ethoxycarbonyl
MTH	Methylthiohydantoin
PTH	Phenylthiohydantoin
TFA	Trifluoroacet(ate/yl)
TOSYL	p-Toluenesulfonyl

In addition to the above abbreviations, occasionally atomic symbols are used in place of element names: e.g. CL = chloro- or chloride. Also, Greek letters (alpha, beta, gamma,...,omega) are given as their lower-case Roman equivalents (a, b, g,...,w), and the standard abbreviations are used for amino acids in polypeptide names.

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Index of Compounds

No.	Compound Description	No.	Compound Description
484	(E)-Vaccenoyl coenzyme A	429	a-Nicotinamide adenine dinucleotide phosphate, reduced, Na salt
483	(Z)-Vaccenoyl coenzyme A	423	a-Nicotinamide adenine dinucleotide, reduced, disodium salt
400	1,N6-Etheno acetyl coenzyme A, Li salt	459	a-Nicotinamide mononucleotide
401	1,N6-Etheno coenzyme A, Na + Li salt	367	Acetoacetyl coenzyme A, Na salt
321	2-(b-D-Galactosidoxy)naphthol AS-LC	369	Acetyl coenzyme A, Li salt
370	3-Acetylpyridine adenine dinucleotide	368	Acetyl coenzyme A, Na salt
372	3-Acetylpyridine adenine dinucleotide phosphate, Na salt	1	Allantoinase from peanut
371	3-Acetylpyridine adenine dinucleotide, reduced form	293	Amylopectin azure from potato
373	3-Acetylpyridine-hypoxanthine dinucleotide	4	Apotryptophanase from E coli
375	3-Aminopyridine adenine dinucleotide	5	Apyrase from potato
376	3-Aminopyridine adenine dinucleotide phosphate, Na salt	377	Arachidonoyl coenzyme A
257	3-Phosphoglyceric phosphokinase from bakers yeast	378	Arachidoyl coenzyme A
256	3-Phosphoglyceric phosphokinase from rabbit muscle	6	Arginase from bovine liver
474	3-Pyridinealdehyde adenine dinucleotide	7	Asparaginase from E. coli
475	3-Pyridinealdehyde hypoxanthine dinucleotide, Na salt	8	Avidin-peroxidase labeled with type VI
394	3'-Dephosphocoenzyme A	294	Avidin-rhodamine isothiocyanate powder
164	3a-Hydroxysteroid dehydrogenase	298	Azo soybean flour
301	5-Bromo-4-chloro-3-indolyl acetate	295	Azoalbumin
303	5-Bromo-4-chloro-3-indolyl b-D-galactopyranoside	296	Azocasein
304	5-Bromo-4-chloro-3-indolyl sulfate, K salt	297	Azocoll
302	5-Bromo-6-chloro-3-indolyl acetate	3	b-Amylase, sweet potato
305	5-Bromoindoxyl acetate	33	b-Chymotrypsin
212	5'-Nucleotidase	91	b-Glucosidase type I
299	6-Benzoyl-2-naphthyl phosphate, Na salt	92	b-Glucosidase type II
300	6-Benzoyl-2-naphthyl sulfate, K salt	96	b-Glucuronidase from abalone entrails
307	6-Bromo-2-naphthyl a-D-galactopyranoside	93	b-Glucuronidase from bacteria type VII
308	6-Bromo-2-naphthyl a-D-glucopyranoside	95	b-Glucuronidase from bacteria type X
306	6-Bromo-2-naphthyl acetate	104	b-Glucuronidase type B-10
309	6-Bromo-2-naphthyl sulfate, K salt	103	b-Glucuronidase type B-3
166	7a-Hydroxysteroid dehydrogenase from E.coli	102	b-Glucuronidase type B-i
167	7a-Hydroxysteroid dehydrogenase from E.coli	97	b-Glucuronidase type H-1 from helix pomatia
374	8-(6-Aminoethyl)aminonicotinamide adenine dinucleotide	99	b-Glucuronidase type H-5 from helix pomatia
395	11-Eicosaenoyl coenzyme A	98	b-Glucuronidase type ha-4 from helix aspersa
396	11,14-Eicosadienoyl coenzyme A	94	b-Glucuronidase type IX
397	11,14,17-Eicosatrienoyl coenzyme A	100	b-Glucuronidase type L-ii from limpets
330	a + b-Glycerophosphate, disodium salt .5H ₂ O	101	b-Glucuronidase type S-I from scallops
2	a-Amylase type XI-A bacterial	331	b-Glycerophosphate, Ca salt
30	a-Chymotrypsin type I-S from bovine pancreas	328	b-Glycerophosphate, disodium salt
31	a-Chymotrypsin type II	329	b-Glycerophosphate, disodium salt .5H ₂ O
32	a-Chymotrypsin type VI	159	b-Hydroxyacyl coa dehydrogenase type V from bovine liver
36	a-Chymotrypsinogen A type II from bovine pancreas	160	b-Hydroxybutyrate dehydrogenase type IV
88	a-Glucosidase type I from bakers yeast	165	b-Hydroxysteroid dehydrogenase from pseudomonas testosteroni
89	a-Glucosidase type IV from brewers yeast	417	b-Methylcrotonyl coenzyme A, Li salt
90	a-Glucosidase type VI from brewers yeast	337	b-Naphthyl acid phosphate, Na salt
133	a-Glycerophosphate dehydrogenase type X from rabbit muscle	339	b-Naphthyl phosphate, disodium salt
334	a-Naphthyl acid phosphate, Ca salt	431	b-Nicotinamide adenine dinucleotide
335	a-Naphthyl acid phosphate, K salt	434	b-Nicotinamide adenine dinucleotide
336	a-Naphthyl acid phosphate, Na salt	435	b-Nicotinamide adenine dinucleotide
338	a-Naphthyl phosphate, disodium salt	424	b-Nicotinamide adenine dinucleotide 2':3'-cyclic monophosphate
422	a-Nicotinamide adenine dinucleotide	426	b-Nicotinamide adenine dinucleotide 3'-phosphate, Na salt
428	a-Nicotinamide adenine dinucleotide phosphate, Na salt		

<u>No.</u>	<u>Compound Description</u>	<u>No.</u>	<u>Compound Description</u>
427	b-Nicotinamide adenine dinucleotide 3'-phosphate, reduced, Na salt	26	Cholinesterase butyryl type XI from horse serum
430	b-Nicotinamide adenine dinucleotide from yeast	22	Cholinesterase, acetyl type XII-S
433	b-Nicotinamide adenine dinucleotide from yeast	27	Choloylglycine hydrolase
443	b-Nicotinamide adenine dinucleotide phosphate	28	Choloylglycine hydrolase
444	b-Nicotinamide adenine dinucleotide phosphate, K salt	29	Chymopapain from papaya latex
441	b-Nicotinamide adenine dinucleotide phosphate, Na salt	384	Coenzyme A from yeast, Li salt
442	b-Nicotinamide adenine dinucleotide phosphate, Na salt	383	Coenzyme A glutathione disulfide, Na salt
446	b-Nicotinamide adenine dinucleotide phosphate, reduced, type I	386	Coenzyme A, Na salt
451	b-Nicotinamide adenine dinucleotide phosphate, reduced, type III	385	Coenzyme A, oxidized,, Li salt
448	b-Nicotinamide adenine dinucleotide phosphate, reduced, type IV	387	Coenzyme B12
449	b-Nicotinamide adenine dinucleotide phosphate, reduced, type V	391	Coenzyme Q10 from bovine heart
450	b-Nicotinamide adenine dinucleotide phosphate, reduced, type VI	388	Coenzyme Q6 from saccharomyces cerevisiae
447	b-Nicotinamide adenine dinucleotide phosphate, reduced, type X	389	Coenzyme Q7 from candida utilis
445	b-Nicotinamide adenine dinucleotide phosphate, tris salt	390	Coenzyme Q9 from candida utilis
432	b-Nicotinamide adenine dinucleotide, Li salt	319	Collagen type II, from bovine achilles tendon
436	b-Nicotinamide adenine dinucleotide, Na salt	320	Collagen type III, from calf skin
438	b-Nicotinamide adenine dinucleotide, reduced, dipotassium salt	37	Collagenase type VII
437	b-Nicotinamide adenine dinucleotide, reduced, disodium salt	39	Creatinase
440	b-Nicotinamide adenine dinucleotide, reduced, disodium salt	38	Creatinase from flavobacterium species
439	b-Nicotinamide adenine dinucleotide, reduced, tris salt	40	Creatine phosphokinase type I from rabbit muscle
425	b-Nicotinamide adenine dinucleotide-dextran	41	Creatine phosphokinase type III
460	b-Nicotinamide mononucleotide	42	Creatine phosphokinase type IV
461	b-Nicotinamide mononucleotide, reduced, Na salt	43	Creatinase from pseudomonas species
379	Behenoyl coenzyme A	44	Crotonase from bovine liver
380	Benzoyl coenzyme A, Li salt	392	Crotonoyl coenzyme A, Li salt
343	Bis-(p-nitrophenyl) phosphate	45	Cytochrome oxidase from bovine heart
344	Bis-(p-nitrophenyl) phosphate, Ca salt	35	d-Chymotrypsin
345	Bis-(p-nitrophenyl) phosphate, Na salt	322	D-Glucose 6-phosphate, Ba salt
381	Brassidoyl coenzyme A	323	D-Glucose 6-phosphate, dipotassium salt
9	Carbamate kinase from streptococcus faecalis	324	D-Glucose 6-phosphate, disodium salt
310	Carbamyl phosphate, diammonium salt	176	D-Lactic dehydrogenase from staphylococcus epidermis
311	Carbamyl phosphate, dilithium salt	286	D-Ribulose 1,5-diphosphate carboxylase
312	Carbamyl phosphate, disodium salt	287	D-Ribulose 5-phosphate 3-epimerase from bakers yeast
10	Carbonic anhydrase from bovine erythrocytes	47	Deoxyribonuclease I crude lyophilized
11	Carboxypeptidase p	46	Deoxyribonuclease I type I from bovine pancreas
313	Casein, fluorescein isothiocyanate type I	48	Deoxyribonuclease II type V from bovine spleen
314	Casein, fluorescein isothiocyanate type II	49	Deoxyribonuclease II type VII from bovine spleen
315	Casein, fluorescein isothiocyanate type III	50	Deoxyribonuclease II type VIII from porcine spleen
13	Catalase from bovine liver	51	Deoxyribonucleic acid polymerase from micrococcus I
12	Catalase purified from bovine liver	54	Dextranase crude
14	Catechol-O-methyltransferase from porcine liver	52	Dextranase from A penicillium species
15	Cellulase type VII from penicillium funiculosum	53	Dextranase from A penicillium species
316	Cellulose-azure type I	55	Diamine oxidase from porcine kidney
317	Cellulose-azure type II	56	Diaphorase type II-L from clostridium kluyveri
318	Chitin azure	407	DL-3-Hydroxy-3-methylglutaryl coenzyme A, Na salt
16	Chloroperoxidase from caldariomyces fumago	325	DL-a-Glycerophosphate, disodium salt
17	Cholesterol esterase from bovine pancreas	326	DL-a-Glycerophosphate, disodium salt
18	Cholesterol oxidase from schizophyllum commune	57	Dopamine b-hydroxylase, from bovine adrenals
19	Cholesterol oxidase from streptomyces species	58	Driselase
20	Choline acetyltransferase from bovine brain	398	Elaidyl coenzyme A
21	Choline oxidase from alcaligenes species	59	Elastase type III from porcine pancreas
23	Cholinesterase acetyl type XIII from human erythrocytes	60	Elastase type IV from porcine pancreas
24	Cholinesterase butyryl type IV-S	61	Enolase from bakers yeast
25	Cholinesterase butyryl type VII from human serum	62	Enterokinase from porcine intestine
		399	Erucoyl coenzyme A
		63	Ferredoxin-nadp plus reductase
		64	Ficin from fig tree latex lyophilized
		65	Formaldehyde dehydrogenase from pseudomonas putida
		66	Formimino-L-glutamic acid transferase from porcine liver
		67	Fructose-6-phosphate kinase, pyrophosphate dependent

<u>No.</u>	<u>Compound Description</u>	<u>No.</u>	<u>Compound Description</u>
68	Fructose-6-phosphate kinase, pyrophosphate dependent	333	Hide powder azure
34	g-Chymotrypsin type II	332	Hide powder slightly chromated
115	g-Glutamyltranspeptidase type I from bovine kidney	146	Histidase from pseudomonas fluorescens
116	g-Glutamyltranspeptidase type II from bovine kidney	147	Histidase from pseudomonas fluorescens
117	g-Glutamyltranspeptidase type IV from porcine kidney	151	Hyaluronidase type I-S
70	Gabase from pseudomonas fluorescens	152	Hyaluronidase type II lyophilized
71	Galactose oxidase type V from dactylium dendroides	153	Hyaluronidase type III lyophilized
72	Galactose-1-phosphate uridyl transferase type IV	155	Hyaluronidase type IV from bovine testes
73	Glucokinase from bacillus stearothermophilus	154	Hyaluronidase type IV-S from bovine testes
74	Glucose dehydrogenase from bacillus species	156	Hyaluronidase type V
75	Glucose dehydrogenase from calf liver	157	Hyaluronidase type VI-S
79	Glucose oxidase from aspergillus niger	158	Hyaluronidase type VIII from bovine testes
76	Glucose oxidase type II	162	Hydroxysteroid dehydrogenase
77	Glucose oxidase type VII from aspergillus niger	163	Hydroxysteroid dehydrogenase
78	Glucose oxidase type X from aspergillus niger	161	Hydroxysteroid dehydrogenase type I dried cells
80	Glucose oxidase-biotin labeled	168	Inorganic pyrophosphatase
81	Glucose-6-phosphatase from rabbit liver	170	Invertase from bakers yeast
83	Glucose-6-phosphate dehydrogenase type IX from yeast	171	Invertase from bakers yeast
84	Glucose-6-phosphate dehydrogenase type V from yeast	172	Invertase from candida utilis
85	Glucose-6-phosphate dehydrogenase type XII	408	Isobutyryl coenzyme A, Li salt
86	Glucose-6-phosphate dehydrogenase type XV from yeast	173	Isocitric dehydrogenase(nadp) type I from porcine heart
87	Glucose-6-phosphate dehydrogenase type XXIV	174	Isocitric dehydrogenase(nadp) type VI from porcine heart
82	Glucose-6-phosphate dehydrogenase type XXV	409	Isovaleryl coenzyme A
111	Glutamic-oxalacetic transaminase type II-A from porcine heart	410	Isovaleryl coenzyme A, Li salt
112	Glutamic-pyruvic transaminase lyophilized	175	Kallikrein from porcine pancreas
113	Glutaminase from E coli	327	L-a-Glycerophosphate, di(CHA) salt
402	Glutaryl coenzyme A, Li salt	69	L-Fucose dehydrogenase from porcine liver
118	Glutathione reductase type II from wheat germ	105	L-Glutamic decarboxylase type I
119	Glutathione reductase type VII from bovine intestinal mucosa	106	L-Glutamic decarboxylase type II
120	Glutathione S-transferase from bovine liver	107	L-Glutamic decarboxylase type III
121	Glutathione S-transferase from equine liver	108	L-Glutamic decarboxylase type IV
124	Glyceraldehyde-3-phosphate dehydrogenase from bakers yeast	109	L-Glutamic dehydrogenase type III from bovine liver
123	Glyceraldehyde-3-phosphate dehydrogenase from chicken muscle	110	L-Glutamic dehydrogenase type VI from bovine liver
122	Glyceraldehyde-3-phosphate dehydrogenase from human eryth.	114	L-Glutamine synthetase type III
125	Glyceraldehyde-3-phosphate dehydrogenase/3-phosphoglyceric phosphokinase	148	L-Histidine decarboxylase type I from C perfringens
126	Glycerokinase from candida utilis	149	L-Histidine decarboxylase type II from C perfringens
127	Glycerokinase from E coli	150	L-Histidine decarboxylase type III from lactobacillus
128	Glycerol dehydrogenase from cellulomonas sp	177	L-Lactic dehydrogenase type XI from rabbit muscle
129	Glycerol dehydrogenase from enterobacter aerogenes	187	L-Lysine decarboxylase from B cadaveris type I
130	Glycerol-3-phosphate oxidase from aerococcus viridans	188	L-Lysine decarboxylase type III
131	Glycerol-3-phosphate oxidase from pediococcus sp.	215	L-Ornithine decarboxylase
132	Glycerol-3-phosphate oxidase from streptococcus thermophilus	216	L-Ornithine decarboxylase from E. coli
134	Glycolate oxidase from spinach	240	L-Phenylalanine decarboxylase from streptococcus faecalis
135	Glyoxalase II from beef liver	178	Lactoperoxidase from bovine milk
136	Hemicellulase from aspergillus niger	179	Lactoperoxidase from bovine milk
403	Heneicosanoyl coenzyme A	180	Laminarinase from penicillium species
137	Heparinase from flavobacterium heparinum	411	Lauroyl coenzyme A
138	Hesperidinase from aspergillus niger	181	Leucine aminopeptidase cytosol type V
139	Hesperidinase from penicillium species	183	Leucine aminopeptidase microsomal type VI
145	Hexokinase type F-300	182	Leucine aminopeptidase microsomal type VI-S
140	Hexokinase type III from bakers yeast	412	Lignoceroyl coenzyme A
141	Hexokinase type IV from bakers yeast	413	Linolenoyl coenzyme A
142	Hexokinase type V from bakers yeast	415	Linoleoyl coenzyme A,
143	Hexokinase type VI from bakers yeast	414	Linoleoyl coenzyme A, Li salt
144	Hexokinase type VII from bakers yeast	184	Lipoamide dehydrogenase type V from torula yeast
		185	Lipoxidase type I
		186	Lipoxidase type I-S from soybean
		189	Lysing enzyme from rhizoctonia solani
		190	Lysostaphin from staphylococcus staphylolyticus
		193	Lysozyme chloride

<u>No.</u>	<u>Compound Description</u>	<u>No.</u>	<u>Compound Description</u>
191	Lysozyme from chicken egg white	467	Palmitelaidoyl coenzyme A
192	Lysozyme from chicken egg white	468	Palmitoleoyl coenzyme A
194	Lysozyme from human milk	221	Pancreatin from porcine pancreas
195	Lyticase from arthrobacter luteus	222	Pancreatin from porcine pancreas
196	Lyticase from arthrobacter luteus	223	Pancreatin from porcine pancreas
197	Lyticase from arthrobacter luteus	225	Papain type I
198	Malic dehydrogenase from porcine heart	226	Papain type II
199	Malic dehydrogenase from thermus flavua	224	Papain type IV
416	Malonyl coenzyme A, Li salt	227	Pectinase from rhizopus sp.
418	Methylmalonyl coenzyme A, Li salt	228	Pectinesterase from orange peel
200	Mutanolysin	229	Pectinesterase from orange peel
169	Myo-inositol dehydrogenase	230	Pectinesterase from tomato
201	Myokinase from bacillus stearothermophilus	231	Pectolyase from aspergillus japonicus
420	Myristoleoyl coenzyme A	232	Penicillinase type I from bacillus cereus
419	Myristoyl coenzyme A	233	Penicillinase type II from bacillus cereus
382	N-Butyryl coenzyme A, Li salt	234	Penicillinase type IV from enterobacter cloacae
393	N-Decanoyl coenzyme A	235	Pepsin
404	N-Heptadecanoyl coenzyme A	236	Pepsinogen from porcine stomach
405	N-Heptanoyl coenzyme A	237	Peroxidase crude
406	N-Hexanoyl coenzyme A, Li salt	238	Peroxidase type I
463	N-Nonadecanoyl coenzyme A	239	Peroxidase-dapa-biotin
464	N-Nonanoyl coenzyme A	471	Petroselinoyl coenzyme A
465	N-Octanoyl coenzyme A	347	Phenolphthalein diphosphate
470	N-Pentadecanoyl coenzyme A	348	Phenolphthalein glucuronic acid
473	N-Propionyl coenzyme A, Li salt	349	Phenolphthalein glucuronic acid, cinchonidine salt
481	N-Tridecanoyl coenzyme A	350	Phenolphthalein glucuronic acid, Na salt
482	N-Undecanoyl coenzyme A	351	Phenolphthalein monophosphate di(CHA) salt
485	N-Valeryl coenzyme A, Li salt	352	Phenolphthalein monophosphate, disodium salt
203	NAD ⁺ kinase type IV from liver	353	Phenolphthalein monophosphate, pyridinium salt
202	Nadase from porcine brain	472	Phenylacetyl coenzyme A, Li salt
204	Naringinase from penicillium sp.	241	Phenylethanolamine N-methyltransferase
421	Nervonoyl coenzyme A	242	Phosphatase acid type I
205	Neuraminidase type V from clostridium perfringens	243	Phosphatase acid type II
206	Neuraminidase type VI	244	Phosphatase acid type IV-S
207	Neuraminidase type VIII	252	Phospho(enol)pyruvate carboxylase from E.coli
453	Nicotinamide 1,N6-etheno adenine dinucleotide phosphate, Na salt	354	Phospho(enol)pyruvate, Ba salt .H2O
454	Nicotinamide guanine dinucleotide	355	Phospho(enol)pyruvate, CHA salt
457	Nicotinamide hypoxanthine dinucleotide phosphate, disodium salt	356	Phospho(enol)pyruvate, K salt
458	Nicotinamide hypoxanthine dinucleotide phosphate, reduced, Na salt	357	Phospho(enol)pyruvate, tri(CHA) salt
455	Nicotinamide hypoxanthine dinucleotide, Na salt	358	Phospho(enol)pyruvate, trisodium salt .H2O
456	Nicotinamide hypoxanthine dinucleotide, reduced, Na salt	251	Phosphodiesterase 3':5'-cyclic nucleotide activator
452	Nicotinamide-1-N6-etheno adenine dinucleotide	250	Phosphodiesterase 3':5'-cyclic nucleotide(C-amp)
462	Nicotinic acid adenine dinucleotide, Na salt	245	Phosphodiesterase I type IV
208	Nuclease from mung bean sprouts	246	Phosphodiesterase I type V
209	Nuclease P-1 from penicillium citrinum	247	Phosphodiesterase I type VI
210	Nucleoside 5'-diphosphate kinase from yeast	249	Phosphodiesterase II type I from bovine spleen
211	Nucleoside monophosphate kinase	248	Phosphodiesterase II type I-S from bovine spleen
213	Octopine dehydrogenase	253	Phosphoglucose isomerase
466	Oleoyl coenzyme A	254	Phosphoglucose isomerase type X from yeast
214	Ornithine carbamyltransferase from streptococcus faecalis	255	Phosphoglucose isomerase, att.to polyacrylamide
217	Orotidine 5-monophosphate decarboxylase	258	Phospholipase A2 from bee venom
218	Orotidine-5-phosphate pyrophosphorylase & decarboxylase	259	Phospholipase A2 from naja mocambique
219	Oxalate decarboxylase from collybia velutipes	260	Phospholipase A2 from naja naja venom
220	Oxalate oxidase from barley seedlings	261	Phospholipase C type I from C perfringens
340	p-Nitrophenyl phosphate, di(CHA) salt	263	Phospholipase C type III from B. cereus
341	p-Nitrophenyl phosphate, di(tris) salt	262	Phospholipase C type IX from C perfringens
342	p-Nitrophenyl phosphate, Mg salt	264	Phospholipase D type I from cabbage
346	p-Nitrophenyl sulfate, K salt	265	Phospholipase D type II from peanut
		266	Phospholipase D type III from peanut
		267	Phospholipase D type IV from cabbage

<u>No.</u>	<u>Compound Description</u>
268	Phospholipase D type V from cabbage
269	Phosphoriboisomerase type I from spinach

<u>No.</u>	<u>Compound Description</u>
270	Phosphoriboisomerase type II from spinach