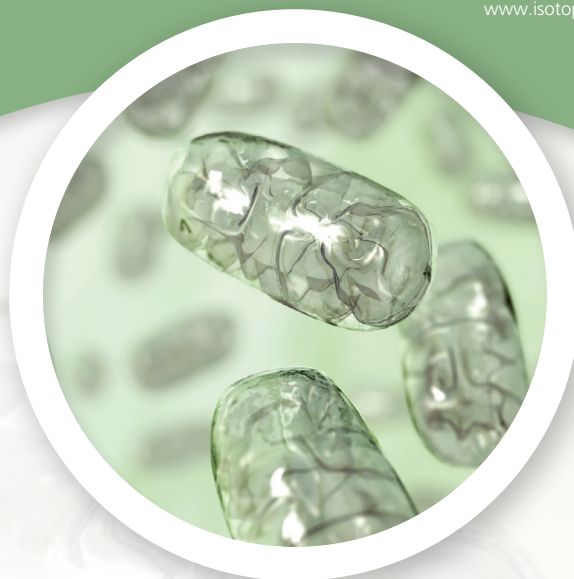


# Stable Isotope Products for Metabolomics

## Orders BENELUX

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Metabolomics, or the study of biochemical processes involving metabolites, is a relatively new, yet increasingly growing field of research. The combination of stable isotopes and mass spectrometry is a powerful method to study the metabolome in both targeted and untargeted approaches. The mass difference of the isotope-labeled metabolite from the endogenous analyte allows for effective identification and quantification of metabolites in a given biological sample. This information is invaluable to understanding the physiology of an organism in both normal and disease states and/or its response to a drug, a change in its environment or other external stimuli.

**New Product!**

## Metabolomics Amino Acid Mix Standard

Each mix contains a solution of 17 isotope-labeled amino acids, each at 2.5 mmol/L concentration in 0.1 M HCl. Available in 1.2 mL vials.

### Components

L-Alanine ( $^{13}\text{C}_3$ , 99%; $^{15}\text{N}$ , 99%)
L-Arginine-HCl ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}_4$ , 99%)
L-Aspartic acid ( $^{13}\text{C}_4$ , 99%; $^{15}\text{N}$ , 99%)
L-Cysteine ( $^{13}\text{C}_3$ , 99%; $^{15}\text{N}$ , 99%)
L-Glutamic acid ( $^{13}\text{C}_5$ , 99%; $^{15}\text{N}$ , 99%)
Glycine ( $^{13}\text{C}_2$ , 99%; $^{15}\text{N}$ , 99%)
L-Histidine-HCl·H <sub>2</sub> O ( $^{13}\text{C}_6$ , $^{15}\text{N}_3$ , 99%)
L-Isoleucine ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}$ , 99%)
L-Leucine ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}$ , 99%)
L-Lysine·2HCl ( $^{13}\text{C}_6$ , 99%; $^{15}\text{N}_2$ , 99%)

### Components

L-Methionine ( $^{13}\text{C}_5$ , 99%; $^{15}\text{N}$ , 99%)
L-Phenylalanine ( $^{13}\text{C}_9$ , 99%; $^{15}\text{N}$ , 99%)
L-Proline ( $^{13}\text{C}_5$ , 99%; $^{15}\text{N}$ , 99%)
L-Serine ( $^{13}\text{C}_3$ , 99%; $^{15}\text{N}$ , 99%)
L-Threonine ( $^{13}\text{C}_4$ , 99%; $^{15}\text{N}$ , 99%)
L-Tyrosine ( $^{13}\text{C}_9$ , 99%; $^{15}\text{N}$ , 99%)
L-Valine ( $^{13}\text{C}_5$ , 99%; $^{15}\text{N}$ , 99%)

### Unlabeled set also available

Other standard mixes coming soon! Please inquire.

(continued)

## Amino Acids

Catalog No.	Description
NSK-A	Labeled Amino Acids Standard Set A
CLM-8906	S-Adenosyl-L-homocysteine (adenosine- <sup>13</sup> C <sub>10</sub> , 98%)
DLM-7476	ADMA·HCl·H <sub>2</sub> O (asymmetric dimethylarginine) (2,3,3,4,4,5,5-D <sub>7</sub> , 98%)
CLM-116	L-Alanine (1- <sup>13</sup> C, 99%)
CLM-2016	L-Alanine (2- <sup>13</sup> C, 99%)
CLM-117	L-Alanine (3- <sup>13</sup> C, 99%)
CLM-2734	L-Alanine (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2184-H	L-Alanine ( <sup>13</sup> C <sub>3</sub> , 99%)
DLM-250	L-Alanine (2,3,3,3-D <sub>4</sub> , 98%)
NLM-454	L-Alanine ( <sup>15</sup> N, 98%)
CNLM-534-H	L-Alanine ( <sup>13</sup> C <sub>3</sub> , 99%; <sup>15</sup> N, 99%)
CLM-8755	β-Alanine (3- <sup>13</sup> C, 99%)
CLM-8756	β-Alanine ( <sup>13</sup> C <sub>3</sub> , 99%)
CLM-2070	L-Arginine·HCl (guanido- <sup>13</sup> C, 99%)
CLM-2051	L-Arginine·HCl (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2265-H	L-Arginine·HCl ( <sup>13</sup> C <sub>6</sub> , 99%)
NLM-396	L-Arginine·HCl ( <sup>15</sup> N <sub>4</sub> , 98%)
CNLM-539-H	L-Arginine·HCl ( <sup>13</sup> C <sub>6</sub> , 99%; <sup>15</sup> N <sub>4</sub> , 99%)
CLM-8699-H	L-Asparagine·H <sub>2</sub> O ( <sup>13</sup> C <sub>4</sub> , 99%)
DLM-6844	L-Asparagine·H <sub>2</sub> O (2,3,3-D <sub>3</sub> , 94%)
NLM-2293	L-Asparagine (α- <sup>15</sup> N, 99%)
NLM-3286	L-Asparagine·H <sub>2</sub> O ( <sup>15</sup> N <sub>2</sub> , 98%)
CLM-518	DL-Aspartic acid (4- <sup>13</sup> C, 99%)
CLM-4455	L-Aspartic acid (1,4- <sup>13</sup> C <sub>2</sub> , 99%)
DLM-546	L-Aspartic acid (2,3,3-D <sub>3</sub> , 97-98%)
NLM-718	L-Aspartic acid ( <sup>15</sup> N, 98%)
DLM-407	Betaine (D <sub>11</sub> , 98%)
CLM-4899	L-Citrulline (ureido- <sup>13</sup> C, 99%)
CLM-898	DL-Cysteine (3- <sup>13</sup> C, 99%)
CLM-3852	L-Cysteine (1- <sup>13</sup> C, 99%)
CLM-1868	L-Cysteine (3- <sup>13</sup> C, 99%)
NLM-2295	L-Cysteine ( <sup>15</sup> N, 98%)
CLM-520	L-Cystine (3,3'- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-3721	DL-Glutamic acid·H <sub>2</sub> O (1- <sup>13</sup> C, 99%)
CLM-3632	DL-Glutamic acid (3- <sup>13</sup> C, 99%)
CLM-674	L-Glutamic acid (1- <sup>13</sup> C, 99%)
CLM-4742	L-Glutamic acid (3- <sup>13</sup> C, 99%)
CLM-613	L-Glutamic acid (5- <sup>13</sup> C, 99%)
CLM-2024	L-Glutamic acid (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-3646	L-Glutamic acid (3,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1800-H	L-Glutamic acid ( <sup>13</sup> C <sub>5</sub> , 99%)
DLM-3725	L-Glutamic acid (2,4,4-D <sub>3</sub> , 97-98%)
DLM-556	L-Glutamic acid (2,3,3,4,4-D <sub>5</sub> , 97-98%)
NLM-135	L-Glutamic acid ( <sup>15</sup> N, 98%)
CLM-3612	L-Glutamine (1- <sup>13</sup> C, 99%)
CLM-1166	L-Glutamine (5- <sup>13</sup> C, 99%)
CLM-2001	L-Glutamine (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1822-H	L-Glutamine ( <sup>13</sup> C <sub>5</sub> , 99%)
DLM-1826	L-Glutamine (2,3,3,4,4-D <sub>5</sub> , 97%)
NLM-1016	L-Glutamine (α- <sup>15</sup> N, 98%)
NLM-557	L-Glutamine (amide- <sup>15</sup> N, 98%)
NLM-1328	L-Glutamine ( <sup>15</sup> N <sub>2</sub> , 98%)
CLM-422	Glycine (1- <sup>13</sup> C, 99%)
CLM-136	Glycine (2- <sup>13</sup> C, 99%)
CLM-1017	Glycine ( <sup>13</sup> C <sub>2</sub> , 97-99%)
NLM-202	Glycine ( <sup>15</sup> N, 98%)

Catalog No.	Description
CLM-4793	L-Histidine (carbonyl- <sup>13</sup> C, 99%)
CLM-1512	L-Histidine·HCl·H <sub>2</sub> O (<5% D) (ring-2- <sup>13</sup> C, 99%)
CLM-2264	L-Histidine·HCl·H <sub>2</sub> O (<5% D) ( <sup>13</sup> C <sub>6</sub> , 97-99%)
DLM-8691	π-methyl-L-Histidine (methyl-D <sub>3</sub> , 98%)
DLM-2949	τ-methyl-L-Histidine (methyl-D <sub>3</sub> , 98%)
DLM-8259	DL-Homocysteine (3,3,4,4-D <sub>4</sub> , 98%)
NLM-2466	L-Homoserine ( <sup>15</sup> N, 95-99%)
CLM-1026	L-Isoleucine (1- <sup>13</sup> C, 99%)
CLM-2248-H	L-Isoleucine ( <sup>13</sup> C <sub>6</sub> , 99%)
CLM-468	L-Leucine (1- <sup>13</sup> C, 99%)
CLM-2014	L-Leucine (2- <sup>13</sup> C, 99%)
CLM-3524	L-Leucine (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2262-H	L-Leucine ( <sup>13</sup> C <sub>6</sub> , 99%)
NLM-142	L-Leucine ( <sup>15</sup> N, 98%)
CLM-749	DL-Lysine·2HCl (1- <sup>13</sup> C, 99%)
CLM-653	L-Lysine·2HCl (1- <sup>13</sup> C, 99%)
CLM-632	L-Lysine·2HCl (6- <sup>13</sup> C, 99%)
CLM-2247-H	L-Lysine·2HCl ( <sup>13</sup> C <sub>6</sub> , 99%)
DLM-2640	L-Lysine·2HCl (4,4,5,5-D <sub>4</sub> , 96-98%)
NLM-1554	L-Lysine·2HCl ( <sup>15</sup> N <sub>2</sub> , 98%+)
CNLM-7821	L-Lysine·2HCl (1- <sup>13</sup> C, 99%; α- <sup>15</sup> N, 98%)
CNLM-291-H	L-Lysine·2HCl ( <sup>13</sup> C <sub>6</sub> , 99%; <sup>15</sup> N <sub>2</sub> , 99%)
CLM-7356	D-Methionine (1- <sup>13</sup> C, 99%)
CLM-206	L-Methionine (methyl- <sup>13</sup> C, 99%)
CLM-3267	L-Methionine (1- <sup>13</sup> C, 99%)
CLM-893-H	L-Methionine ( <sup>13</sup> C <sub>5</sub> , 99%)
NLM-752	L-Methionine ( <sup>15</sup> N, 96-98%)
CLM-2176	DL-Ornithine·HCl (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-3588	L-Ornithine·HCl (1- <sup>13</sup> C, 99%)
CLM-1036	L-Ornithine·HCl (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-4724-H	L-Ornithine·HCl ( <sup>13</sup> C <sub>5</sub> , 99%)
NLM-3610	L-Ornithine·HCl ( <sup>15</sup> N <sub>2</sub> , 98%)
CLM-3268	DL-Phenylalanine (3- <sup>13</sup> C, 99%)
CLM-762	L-Phenylalanine (1- <sup>13</sup> C, 99%)
CLM-1631	L-Phenylalanine (2- <sup>13</sup> C, 99%) CP 97%
CLM-1053	L-Phenylalanine (3- <sup>13</sup> C, 99%)
CLM-1055	L-Phenylalanine (ring- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-2250-H	L-Phenylalanine ( <sup>13</sup> C <sub>9</sub> , 99%)
DLM-372	L-Phenylalanine (D <sub>8</sub> , 98%)
NLM-108	L-Phenylalanine ( <sup>15</sup> N, 98%)
CLM-2479	DL-Proline (1- <sup>13</sup> C, 99%)
CLM-510	L-Proline (1- <sup>13</sup> C, 99%)
CLM-2260-H	L-Proline ( <sup>13</sup> C <sub>5</sub> , 99%)
NLM-835	L-Proline ( <sup>15</sup> N, 98%)
CLM-496	DL-Serine (2- <sup>13</sup> C, 99%)
CLM-497	DL-Serine (3- <sup>13</sup> C, 99%)
CLM-1573	L-Serine (1- <sup>13</sup> C, 99%)
CLM-2013	L-Serine (2- <sup>13</sup> C, 99%)
CLM-1572	L-Serine (3- <sup>13</sup> C, 99%)
CLM-1574-H	L-Serine ( <sup>13</sup> C <sub>3</sub> , 99%)
DLM-582	L-Serine (2,3,3-D <sub>3</sub> , 98%)
NLM-2036	L-Serine ( <sup>15</sup> N, 98%)
CLM-447	L-Threonine (1- <sup>13</sup> C, 99%)
CLM-2261	L-Threonine ( <sup>13</sup> C <sub>4</sub> , 97-99%)
NLM-742	L-Threonine ( <sup>15</sup> N, 98%)
CNLM-587	L-Threonine ( <sup>13</sup> C <sub>4</sub> , 97-99%; <sup>15</sup> N, 97-99%)
CLM-778	L-Tryptophan (1- <sup>13</sup> C, 99%)

Catalog No.	Description
CLM-1543	L-Tryptophan (indole-2- <sup>13</sup> C, 98%)
CLM-716	L-Tryptophan (indole-3- <sup>13</sup> C, 95-99%)
CLM-1301	L-Tryptophan (ring- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-4290-H	L-Tryptophan ( <sup>13</sup> C <sub>11</sub> , 99%)
DLM-1092	L-Tryptophan (indole-D <sub>5</sub> , 98%)
NLM-800	L-Tryptophan ( <sup>15</sup> N <sub>2</sub> , 98%)
CLM-448	DL-Tyrosine (1- <sup>13</sup> C, 99%)
CLM-776	L-Tyrosine (1- <sup>13</sup> C, 99%)
CLM-437	L-Tyrosine (2- <sup>13</sup> C, 99%)
CLM-3378	L-Tyrosine (3- <sup>13</sup> C, 99%)
CLM-622	L-Tyrosine (phenol-4- <sup>13</sup> C, 95-99%)
CLM-623	L-Tyrosine (phenol-3,5- <sup>13</sup> C <sub>2</sub> , 95-99%)
CLM-1542	L-Tyrosine (ring- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-2263-H	L-Tyrosine ( <sup>13</sup> C <sub>6</sub> , 99%)
NLM-590	L-Tyrosine ( <sup>15</sup> N, 98%)
CLM-166	DL-Valine (1- <sup>13</sup> C, 99%)
CLM-3277	DL-Valine (2- <sup>13</sup> C, 99%)
CLM-470	L-Valine (1- <sup>13</sup> C, 99%)
CLM-3050	L-Valine (2- <sup>13</sup> C, 99%)
CLM-2249-H	L-Valine ( <sup>13</sup> C <sub>5</sub> , 99%)
DLM-488	L-Valine (D <sub>5</sub> , 98%)
NLM-316	L-Valine ( <sup>15</sup> N, 98%)

## Bile Acids

Catalog No.	Description
CLM-2709	Chenodeoxycholic acid (24- <sup>13</sup> C, 99%)
DLM-2807	Chenodeoxycholic acid (11,12-D <sub>2</sub> , 94%)
DLM-6780	Chenodeoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9327	Chenodeoxycholic acid (2,2,3,4,4-D <sub>5</sub> , 98%)
DLM-9541	Chenodeoxycholic acid (2,2,3,4,4,6,7,8-D <sub>8</sub> , 98%)
CLM-2710	Cholic acid (24- <sup>13</sup> C, 99%)
DLM-9544	Cholic acid (2,2,4,4-D <sub>4</sub> , 98%)
CLM-3364	Deoxycholic acid (24- <sup>13</sup> C, 99%)
DLM-9547	Deoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9546	Deoxycholic acid (2,2,4,4,11,11-D <sub>6</sub> , 98%)
DLM-9549	Glycochenodeoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9550	Glycochenodeoxycholic acid (2,2,3,4,4,6,7,8-D <sub>8</sub> , 98%)
CLM-191	Glycocholic acid (glycine-1- <sup>13</sup> C, 99%)
CLM-405	Glycocholic acid (glycine-1,2- <sup>13</sup> C <sub>2</sub> , 90%)
DLM-9554	Glycodeoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9553	Glycodeoxycholic acid (2,2,4,4,11,11-D <sub>6</sub> , 98%)
DLM-9556	Glycolithocholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9558	Glycoursodeoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9560	Lithocholic acid (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9562	Taurochenodeoxycholic acid, sodium salt (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9563	Taurochenodeoxycholic acid, sodium salt (2,2,3,4,4,6,6,7,8-D <sub>9</sub> , 98%)
DLM-9565	Taurocholic acid, sodium salt (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9568	Taurodeoxycholic acid, sodium salt (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9567	Taurodeoxycholic acid, sodium salt (2,2,4,4,11,11-D <sub>6</sub> , 98%)
DLM-9570	Taurolithocholic acid, sodium salt (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9572	Tauroursodeoxycholic acid, sodium salt (2,2,4,4-D <sub>4</sub> , 98%)
DLM-9574	Ursodeoxycholic acid (2,2,4,4-D <sub>4</sub> , 98%)

## Carbohydrates

Catalog No.	Description
CLM-715	D-Arabinose (1- <sup>13</sup> C, 99%)
CLM-1288	D-Arabinose (2- <sup>13</sup> C, 98%)
CLM-1824	2-Deoxy-D-Glucose (1- <sup>13</sup> C, 99%)
CLM-2122	2-Deoxy-D-Glucose (6- <sup>13</sup> C, 99%)
CLM-1201	D-Fructose (1- <sup>13</sup> C, 99%)
CLM-1527	D-Fructose (2- <sup>13</sup> C, 99%)
CLM-1553	D-Fructose (U- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-744	D-Galactose (1- <sup>13</sup> C, 99%)
CLM-1570	D-Galactose (U- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-420	D-Glucose (1- <sup>13</sup> C, 98-99%)
CLM-746	D-Glucose (2- <sup>13</sup> C, 99%)
CLM-1393	D-Glucose (3- <sup>13</sup> C, 99%)
CLM-1394	D-Glucose (4- <sup>13</sup> C, 99%)
CLM-1395	D-Glucose (5- <sup>13</sup> C, 98%)
CLM-481	D-Glucose (6- <sup>13</sup> C, 99%)
CLM-504	D-Glucose (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-8942	D-Glucose (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-6750	D-Glucose (3,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2717	D-Glucose (1- <sup>13</sup> C, 99%; 6- <sup>13</sup> C, 97%+)
CLM-8770	D-Glucose (4,5,6- <sup>13</sup> C <sub>3</sub> , 98%)
CLM-1396	D-Glucose (U- <sup>13</sup> C <sub>6</sub> , 99%)
DLM-1150	D-Glucose (1-D, 98%)
DLM-1271	D-Glucose (2-D, 98%)
DLM-349	D-Glucose (6,6-D <sub>2</sub> , 99%)
DLM-2062	D-Glucose (1,2,3,4,5,6,6-D <sub>7</sub> , 98%)
CDLM-3813	D-Glucose (U- <sup>13</sup> C <sub>6</sub> , 99%; 1,2,3,4,5,6,6-D <sub>7</sub> , 97-98%)
DLM-2725	<i>myo</i> -Inositol (1,2,3,4,5,6-D <sub>6</sub> , 98%)
CLM-2642	D-Maltose-H <sub>2</sub> O (U- <sup>13</sup> C <sub>12</sub> , 99%)

**“Although label-free metabolomics provides a snapshot of small-molecule concentrations within a biological system, metabolism is dynamic and challenging to analyze with only static measurements. A snapshot of metabolite concentrations is insufficient for reconstructing pathway connectivities, for interrogating metabolic regulation and ultimately for understanding biochemical mechanism. Stable isotopes are a powerful tool for temporal studies and offer a solution to these challenges. With mass spectrometry and NMR, pathway fluxes can be determined by measuring the kinetics of isotope incorporation in downstream products and/or the structural patterns in which the isotopes appear within the molecule. Using untargeted mass spectrometry-based technologies, it is also now possible to introduce a stable isotope into a biological system and track its metabolism without bias to discover novel biochemical transformations. Together, these isotope-based metabolomic approaches are transforming our canonical picture of metabolism by providing flux information and by revealing new metabolic connectivities that had not been previously recognized.”**

– Gary Patti, PhD  
 Assistant Professor, Department of Chemistry  
 Department of Genetics, Department of Medicine  
 Washington University in St. Louis  
 St. Louis, MO USA

(continued)

## Carbohydrates (continued)

Catalog No.	Description
CLM-1189	D-Mannitol (1- <sup>13</sup> C, 98%)
CLM-358	D-Mannose (1- <sup>13</sup> C, 99%)
CLM-768	D-Ribose (1- <sup>13</sup> C, 99%)
CLM-1069	D-Ribose (2- <sup>13</sup> C, 99%)
CLM-1066	D-Ribose (5- <sup>13</sup> C, 99%)
CLM-3652	D-Ribose (U- <sup>13</sup> C <sub>5</sub> , 98%)
CLM-1565	D-Sorbitol (1- <sup>13</sup> C, 99%) (monohydrate or semihydrate)
CLM-8529	D-Sorbitol (U- <sup>13</sup> C <sub>6</sub> , 98%+)
CLM-1140	D-Xylose (1- <sup>13</sup> C, 99%)
CLM-1524	D-Xylose (2- <sup>13</sup> C, 99%)
CLM-8593	D-Xylose (3- <sup>13</sup> C, 99%)
CLM-9083	D-Xylose (4- <sup>13</sup> C, 99%)
CLM-1219	D-Xylose (5- <sup>13</sup> C, 99%)
CLM-2456	D-Xylose (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-6140	D-Xylose (U- <sup>13</sup> C <sub>5</sub> , 99%)

## Carnitines

Catalog No.	Description
NSK-B	Labeled Carnitine Standards Set B
NSK-AB	Labeled Standards Sets A & B
NSK-B-G	Labeled Carnitine Standards (supplement to NSK-B)
NSK-T	Labeled Succinylacetone Standard-1 (Set T)
DLM-3555	L-Carnitine (trimethyl-D <sub>9</sub> , 98%)
DLM-3821	L-Carnitine-HCl, O-acetyl (N,N-dimethyl-D <sub>6</sub> , 98%) CP 97%
DLM-1263	L-Carnitine-HCl, O-palmitoyl (N-methyl-D <sub>3</sub> , 98%)
DLM-3973	L-Carnitine-HCl, O-propionyl (N-methyl-D <sub>3</sub> , 98%)
DLM-755	L-Carnitine-HCl, O-octanoyl (N-methyl-D <sub>3</sub> , 98%)

## Caffeine and Metabolites

Catalog No.	Description
CLM-728	Caffeine (3-methyl- <sup>13</sup> C, 99%)
CLM-514	Caffeine (trimethyl- <sup>13</sup> C <sub>3</sub> , 99%)
NLM-332	Caffeine (1,3- <sup>15</sup> N <sub>2</sub> , 99%)
CNLM-333	Caffeine (1,3- <sup>15</sup> N <sub>2</sub> , 98%+)
CNLM-9241	1,3-Dimethyluric acid ( <sup>13</sup> C <sub>4</sub> , 99%; <sup>15</sup> N <sub>3</sub> , 98%)
CNLM-9242	1,7-Dimethyluric acid ( <sup>13</sup> C <sub>4</sub> , 99%; <sup>15</sup> N <sub>3</sub> , 98%)
CNLM-9243	1,7-Dimethylxanthine (paraxanthine) (2,4,5,6- <sup>13</sup> C <sub>4</sub> , 99%; 1,3,9- <sup>15</sup> N <sub>3</sub> , 98%)
DLM-8565	Theobromine (dimethyl-D <sub>6</sub> , 98%)
CLM-6154	Theophylline (dimethyl- <sup>13</sup> C <sub>2</sub> , 99%)
NLM-160	Theophylline (1,3- <sup>15</sup> N <sub>2</sub> , 98%+)
CNLM-444	Theophylline (2- <sup>13</sup> C, 99%; 1,3- <sup>15</sup> N <sub>2</sub> , 98%+)
NLM-1697	Uric acid (1,3- <sup>15</sup> N <sub>2</sub> , 98%)

## Drugs and Drug Metabolites

Catalog No.	Description
CLM-2436	Acetaminophen (carbonyl- <sup>13</sup> C, 99%)
CLM-630	Aminopyrine (N,N-dimethyl- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-6585	Aspirin (acetyl-1- <sup>13</sup> C, 99%)
CLM-3655	AZT (methyl- <sup>13</sup> C, 99%) CP 96%
CLM-3672	Erythromycin (90-95% Erythromycin A) (N,N-dimethyl- <sup>13</sup> C <sub>2</sub> , ~90%)
CLM-165	Erythromycin lactobionate salt (N-methyl- <sup>13</sup> C, 99%)
CLM-3758	Erythromycin lactobionate salt (N,N-dimethyl- <sup>13</sup> C <sub>2</sub> , ~90%)
CLM-6943	Ibuprofen (propionic- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-7118	Ketoconazole (carbonyl- <sup>13</sup> C, 99%)
CLM-1280	Methacetin (methoxy- <sup>13</sup> C, 99%)
CLM-7522	Naproxen, sodium salt (O-methyl- <sup>13</sup> C, 98%)
CLM-3914	DL-Nicotine (3',4',5'- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-4892	DL-Nornicotine (3',4',5'- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-1296	Phenacetin (ethoxy-1- <sup>13</sup> C, 99%)
CLM-3045	Sulfamethazine (phenyl- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-7119	Temozolomide (methyl- <sup>13</sup> C, 99%)
CLM-7491	cis-(+/-)-Tramadol-HCl (methoxy- <sup>13</sup> C, 99%)
CLM-7988	Trimethoprim (pyrimidine-4,5,6- <sup>13</sup> C <sub>3</sub> , 99%)

## Fatty Acids and Lipids

Catalog No.	Description
CLM-1239	Arachidic acid (eicosanoic acid) (1- <sup>13</sup> C, 99%)
CLM-8274	Ethyl hexanoate (hexanoate- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-1397	Glycerol (2- <sup>13</sup> C, 99%)
CLM-1857	Glycerol (1,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1510	Glycerol ( <sup>13</sup> C <sub>3</sub> , 99%)
CLM-3519	Hexanoic acid (1- <sup>13</sup> C, 99%)
CLM-1586	Lauric acid (1- <sup>13</sup> C, 99%)
CLM-1844	Myristic acid (1- <sup>13</sup> C, 99%)
CLM-3665	Myristic acid (1,2,3- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-293	Octanoic acid (1- <sup>13</sup> C, 99%)
CLM-3827	Octanoic acid (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2721	Octanoic acid (1,2,3,4- <sup>13</sup> C <sub>4</sub> , 99%)
CLM-3981	Octanoic acid ( <sup>13</sup> C <sub>8</sub> , 99%)
DLM-619	Octanoic acid (D <sub>15</sub> , 98%)
CLM-3707	2-Octanoyl-1,3-distearin (octanoic-1- <sup>13</sup> C, 99%)
CLM-4258	2-Octanoyl-1,3-distearin (octanoyl-1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2492	Oleic acid (methyl- <sup>13</sup> C, 99%)
CLM-149	Oleic acid (1- <sup>13</sup> C, 99%)
CLM-460	Oleic acid (U- <sup>13</sup> C <sub>18</sub> , 98%) CP 95%
CLM-150	Palmitic acid (1- <sup>13</sup> C, 99%)
CLM-2120	Palmitic acid (2- <sup>13</sup> C, 99%)
CLM-214	Palmitic acid (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-7896	Palmitic acid (1,2,3,4- <sup>13</sup> C <sub>4</sub> , 99%)
CLM-409	Palmitic acid (U- <sup>13</sup> C <sub>16</sub> , 98%)
CLM-3876	Sodium octanoate (1,2,3,4- <sup>13</sup> C <sub>4</sub> , 99%)
CLM-490	Stearic acid (methyl- <sup>13</sup> C, 99%)
CLM-676	Stearic acid (1- <sup>13</sup> C, 99%)
CLM-6990	Stearic acid (U- <sup>13</sup> C <sub>18</sub> , 98%) CP 97%
DLM-379	Stearic acid (D <sub>35</sub> , 98%)
CLM-8731	Stearic acid, ethyl ester (stearate- <sup>13</sup> C <sub>18</sub> , 98%+)
DLM-7311	Stearoyl coenzyme A (stearoyl-methyl-D <sub>3</sub> , 98%) CP 90%

## Hormones and Neurotransmitters

Catalog No.	Description
CLM-548	Choline chloride (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
DLM-549	Choline chloride (trimethyl-D <sub>3</sub> , 98%)
CLM-7401	L-Dopa (1- <sup>13</sup> C, 99%)
CLM-3723	L-Dopa (alkyl-2,3- <sup>13</sup> C <sub>2</sub> , 98%)
CLM-1007	L-Dopa (ring- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-3368	Dopamine-HCl (1- <sup>13</sup> C, 99%)
CLM-3369	Dopamine-HCl (ring- <sup>13</sup> C <sub>6</sub> , 99%)
DLM-2181	Dopamine-HCl (ring-D <sub>3</sub> , 98%)
DLM-2498	Dopamine-HCl (1,1,2,2-D <sub>4</sub> , 97-98%)
DLM-2866	DL-Epinephrine (α,α,β-D <sub>3</sub> , 97%)
CNLM-7889	DL-Epinephrine (1,2- <sup>13</sup> C <sub>2</sub> , 99%; <sup>15</sup> N, 98%)
DLM-2911	Histamine-2HCl (α,α,β,β-D <sub>4</sub> , 98%)
DLM-2950	N-τ-methylhistamine-2HCl (N-methyl-D <sub>3</sub> , 98%)
CLM-6725	L-Thyroxine (tyrosine-ring- <sup>13</sup> C <sub>6</sub> , 99%) CP 90%
CLM-8931	L-Thyroxine (ring- <sup>13</sup> C <sub>12</sub> , 99%) CP 97%

## Nucleotides, Nucleosides and Nucleobases

Catalog No.	Description
CNLM-9240	5-Acetylaminio-6-amino-3-methyluracil (AAMU) ( <sup>13</sup> C <sub>4</sub> , 99%; <sup>15</sup> N <sub>3</sub> , 98%)
NLM-6924	Adenine-HCl ( <sup>15</sup> N <sub>5</sub> , 98%)
CLM-3678	Adenosine (ribose- <sup>13</sup> C <sub>5</sub> , 98%+) CP 97%
CNLM-3806-CA	Adenosine ( <sup>13</sup> C <sub>10</sub> , 98%; <sup>15</sup> N <sub>5</sub> , 96-98%)
CNLM-4265-CA	Adenosine 5'-triphosphate, ammonium salt ( <sup>13</sup> C; <sup>15</sup> N, 98-99%) CP >90% (in solution)
NLM-3797	Cytidine ( <sup>15</sup> N <sub>3</sub> , 96-98%)
CNLM-3807	Cytidine ( <sup>13</sup> C <sub>9</sub> , 98%; <sup>15</sup> N <sub>3</sub> , 96-98%)
CNLM-4267-CA	Cytidine 5'-triphosphate, ammonium salt ( <sup>13</sup> C; <sup>15</sup> N, 96-98%) CP >90% (in solution)
CNLM-6219-CA	2'-Deoxyadenosine 5'-triphosphate ( <sup>13</sup> C <sub>10</sub> , 98%; <sup>15</sup> N <sub>5</sub> , 97-98%) CP >90%
CNLM-6221-CA	2'-Deoxyguanosine 5'-triphosphate, ammonium salt (U- <sup>13</sup> C, 98%; U- <sup>15</sup> N, 96-98%) CP >90%
CNLM-8771-CA	2'-Deoxyuridine-H <sub>2</sub> O ( <sup>13</sup> C <sub>9</sub> , 98-99%; <sup>15</sup> N <sub>2</sub> , 98-99%)
NLM-3798	Guanosine (U- <sup>15</sup> N <sub>5</sub> , 96-98%)
CNLM-3808-CA	Guanosine•H <sub>2</sub> O (U- <sup>13</sup> C <sub>10</sub> , 98%; U- <sup>15</sup> N <sub>5</sub> , 96-98%)
NLM-4268-CA	Guanosine 5'-triphosphate, ammonium salt ( <sup>15</sup> N <sub>5</sub> , 98-99%) CP >90% (in solution)
CNLM-4269-CA	Guanosine 5'-triphosphate, ammonium salt (U- <sup>13</sup> C; U- <sup>15</sup> N, 98-99%); CP >90% (in solution)
NLM-4264	Inosine (U- <sup>15</sup> N <sub>4</sub> , 95%+)
NLM-8712-CA	Inosine 5'-monophosphate, ammonium salt (U- <sup>15</sup> N <sub>4</sub> , 98-99%) CP >90% (in solution)
CNLM-3902	Thymidine (U- <sup>13</sup> C <sub>10</sub> , 98%; U- <sup>15</sup> N <sub>2</sub> , 96-98%)
NLM-637	Uracil (1,3- <sup>15</sup> N <sub>2</sub> , 98%)
CNLM-4271-CA	Uridine 5'-triphosphate, ammonium salt (U- <sup>13</sup> C; U- <sup>15</sup> N, 98-99%) CP >90% (in solution)
CLM-8700-CA	Xanthosine-5'-monophosphate, ammonium salt (U- <sup>13</sup> C <sub>10</sub> , 98%) CP >90% (in solution)

## Organic Acids

Catalog No.	Description
CLM-317	Acetic acid (1- <sup>13</sup> C, 99%)
CLM-318	Acetic acid (2- <sup>13</sup> C, 99%)
CLM-1159	Acetic anhydride (1,1'- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1160	Acetic anhydride (2,2'- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1813	Benzoic acid (ring- <sup>13</sup> C <sub>6</sub> , 99%)
DLM-122	Benzoic acid (ring-D <sub>5</sub> , 98%)
CLM-1339	Bromoacetic acid (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-147	Citric acid (2,3,4- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-9021	Citric acid ( <sup>13</sup> C <sub>6</sub> , 99%) CP 97%
DLM-3487	Citric acid (2,2,4,4-D <sub>4</sub> , 98%)
CLM-7933	Creatine (guanidino- <sup>13</sup> C, 99%)
DLM-1302	Creatine (methyl-D <sub>3</sub> , 98%)
DLM-3653	Creatinine (N-methyl-D <sub>3</sub> , 98%)
CLM-495	Diethyl malonate (2- <sup>13</sup> C, 99%)
CLM-3603	Diethyl malonate (1,2,3- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-522	Ethyl acetoacetate (1,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-523	Ethyl acetoacetate (2,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-3297	Ethyl acetoacetate (1,2,3,4- <sup>13</sup> C <sub>4</sub> , 99%)
CLM-1009	Ethyl bromoacetate (1- <sup>13</sup> C, 99%)
CLM-1011	Ethyl bromoacetate (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1284	Formic acid ( <sup>13</sup> C, 99%) (<5% H <sub>2</sub> O)
CLM-4454	Fumaric acid (1,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1529	Fumaric acid ( <sup>13</sup> C <sub>4</sub> , 99%)
DLM-1539	Fumaric acid (2,3-D <sub>2</sub> , 98%)
CDLM-6062	Fumaric acid (1- <sup>13</sup> C, 99%; 2,3-D <sub>2</sub> , 98%)
CDLM-8473	Fumaric acid (1,4- <sup>13</sup> C <sub>2</sub> , 99%; 2,3-D <sub>2</sub> , 98%)
CLM-3264	Iodoacetic acid (2- <sup>13</sup> C, 99%)
CLM-2093	α-Ketoglutaric acid, disodium salt (1- <sup>13</sup> C, 99%)
CLM-4442	α-Ketoglutaric acid, disodium salt (1,2,3,4- <sup>13</sup> C <sub>4</sub> , 99%) CP 97%
CLM-2411	α-Ketoglutaric acid (U- <sup>13</sup> C <sub>5</sub> , 99%)
DLM-1129	Maleic acid (2,3-D <sub>2</sub> , 98%)
CLM-310	Maleic anhydride (1,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-312	Maleic anhydride (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-6019	Maleic anhydride ( <sup>13</sup> C <sub>4</sub> , 99%)
CLM-6123	Malonic acid ( <sup>13</sup> C <sub>3</sub> , 99%)
DLM-205	Malonic acid (D <sub>4</sub> , 98%)
DLM-651	Methyl formate (formyl-D, 99%)
NLM-1048	Orotic acid-H <sub>2</sub> O (1,3- <sup>15</sup> N <sub>2</sub> , 98%+)
CLM-3551	Potassium phosphoenol pyruvate (2- <sup>13</sup> C, 99%)
CLM-2723	Potassium phosphoenol pyruvate (3- <sup>13</sup> C, 99%)
CLM-3398	Potassium phosphoenol pyruvate (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-646	Propionic acid (1- <sup>13</sup> C, 99%)
CLM-647	Propionic acid ( <sup>13</sup> C <sub>3</sub> , 99%)
DLM-1919	Propionic acid (D <sub>5</sub> , 98%)
CLM-8077	Pyruvic acid (1- <sup>13</sup> C, 99%)
CLM-8849	Pyruvic acid (2- <sup>13</sup> C, 99%) CP 95%
CLM-156	Sodium acetate (1- <sup>13</sup> C, 99%)
CLM-381	Sodium acetate (2- <sup>13</sup> C, 99%)
CLM-1256	Sodium butyrate (1- <sup>13</sup> C, 99%)
CLM-583	Sodium formate ( <sup>13</sup> C, 99%)
CLM-3706	Sodium D-3-hydroxybutyrate (2,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-3853	Sodium D-3-hydroxybutyrate ( <sup>13</sup> C <sub>4</sub> , 99%) CP 97%

(continued)



## Organic Acids (continued)

Catalog No.	Description
CLM-1577	Sodium L-lactate (1- <sup>13</sup> C, 99%) 20% w/w in H <sub>2</sub> O
CLM-1578	Sodium L-lactate (3- <sup>13</sup> C, 98%) 20% w/w in H <sub>2</sub> O
CLM-1579	Sodium L-lactate ( <sup>13</sup> C <sub>3</sub> , 98%) 20% w/w in H <sub>2</sub> O
DLM-3317	Sodium L-lactate (3,3,3-D <sub>3</sub> , 98%) 20% w/w in H <sub>2</sub> O
CLM-771	Sodium propionate (1- <sup>13</sup> C, 99%)
CLM-1082	Sodium pyruvate (1- <sup>13</sup> C, 99%)
CLM-1580	Sodium pyruvate (2- <sup>13</sup> C, 99%)
CLM-1575	Sodium pyruvate (3- <sup>13</sup> C, 99%)
CLM-3507	Sodium pyruvate (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-2440	Sodium pyruvate ( <sup>13</sup> C <sub>3</sub> , 99%)
CLM-1084	Succinic acid (1,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1199	Succinic acid (2,3- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-1571	Succinic acid ( <sup>13</sup> C <sub>4</sub> , 99%)
DLM-584	Succinic acid (D <sub>4</sub> , 98%)
DLM-831	Succinic acid (D <sub>6</sub> , 98%)
CDLM-7754	Succinic acid ( <sup>13</sup> C <sub>4</sub> , 99%; 2,2,3,3-D <sub>4</sub> , 98%)
CLM-6622	Taurine (1,2- <sup>13</sup> C <sub>2</sub> , 98%)
NLM-4472	Taurine ( <sup>15</sup> N, 98%+)

## Steroids

Catalog No.	Description
DLM-8438	Aldosterone (2,2,4,6,6,17,21,21-D <sub>8</sub> )
CLM-804	Cholesterol (3,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-9139	Cholesterol (2,3,4- <sup>13</sup> C <sub>3</sub> , 99%)
DLM-3057	Cholesterol (25,26,26,27,27,27-D <sub>7</sub> , 98%)
CLM-3361	Cholesterol-3-octanoate (octanoate-1- <sup>13</sup> C, 99%)
CLM-9146	5- $\alpha$ -Dihydrotestosterone (2,3,4- <sup>13</sup> C <sub>3</sub> , 99%) CP 97%
CLM-7936	DL-Estradiol (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-9147	Estradiol (16- $\alpha$ -Hydroxyestradiol) (2,3,4- <sup>13</sup> C <sub>3</sub> , 99%)
CLM-673	Estrone (3,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-8033	DL-Estrone 3-methyl ether (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8012	DL-2-Hydroxyestradiol (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8016	DL-2-Hydroxyestrone-3-methyl ether (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8013	DL-4-Hydroxyestrone (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8015	DL-2-Methoxyestradiol (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8014	DL-2-Methoxyestrone (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-8017	DL-4-Methoxyestrone (13,14,15,16,17,18- <sup>13</sup> C <sub>6</sub> , 99%)
CLM-2468	Norethindrone (ethynyl- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-457	Progesterone (3,4- <sup>13</sup> C <sub>2</sub> , 90%)
CLM-159	Testosterone (3,4- <sup>13</sup> C <sub>2</sub> , 99%)
CLM-9164	Testosterone (2,3,4- <sup>13</sup> C <sub>3</sub> , 99%)

## Vitamins

Catalog No.	Description
DLM-9105	1,25-Dihydroxyvitamin D <sub>2</sub> (6,19,19-D <sub>3</sub> , 99%) CP 95%
DLM-9107	1,25-Dihydroxyvitamin D <sub>3</sub> (6,19,19-D <sub>3</sub> , 97%) CP 95%
DLM-9111	3- <i>epi</i> -25-Hydroxyvitamin D <sub>3</sub> (6,19,19-D <sub>3</sub> , 98%)
CLM-9113	25-Hydroxyvitamin D <sub>2</sub> (25,26,27- <sup>13</sup> C <sub>3</sub> , 99%)
DLM-9114	25-Hydroxyvitamin D <sub>2</sub> (6,19,19-D <sub>3</sub> , 97%)
DLM-9116	25-Hydroxyvitamin D <sub>3</sub> (6,19,19-D <sub>3</sub> , 97%)
DLM-7708	25-Hydroxyvitamin D <sub>3</sub> (26,26,26,27,27,27-D <sub>6</sub> , 98%)
DLM-6883	Nicotinamide (D <sub>4</sub> , 98%)
DLM-9069	Pyridoxal-HCl (methyl-D <sub>3</sub> , 98%)
DLM-9119	Pyridoxamine-2HCl (vitamin B <sub>6</sub> ) (methyl-D <sub>3</sub> , 98%)
CLM-7563	Pyridoxine-HCl (vitamin B <sub>6</sub> ) (4,5- <i>bis</i> (hydroxymethyl)- <sup>13</sup> C <sub>4</sub> , 99%)
DLM-9121	Pyridoxine-HCl (vitamin B <sub>6</sub> ) (methyl-D <sub>3</sub> , 98%) CP 96%
CLM-8870	Vitamin A acetate (12,13,14,20- <sup>13</sup> C <sub>4</sub> , 99%)
CLM-4831	Vitamin A acetate (8,9,10,12,13,14,19,20- <sup>13</sup> C <sub>8</sub> , 99%)
CLM-7277	Vitamin A acetate (8,9,10,11,12,13,14,15,19,20- <sup>13</sup> C <sub>10</sub> , 99%)
DLM-2244	Vitamin A acetate 3-4% <i>cis</i> (10,19,19,19-D <sub>4</sub> , 96%)
DLM-3828	Vitamin A acetate 3-4% <i>cis</i> (19,19,19,20,20,20-D <sub>6</sub> , 96%)
DLM-4203	Vitamin A acetate 3-4% <i>cis</i> (10,14,19,19,19,20,20,20-D <sub>8</sub> , 90%)
CLM-7667	Vitamin B1 (thiamine chloride) (4,5,4-methyl- <sup>13</sup> C <sub>3</sub> , 99%)
CNLM-8851	Vitamin B2 (riboflavin) ( <sup>13</sup> C <sub>4</sub> , 99%; <sup>15</sup> N <sub>2</sub> , 98%) CP 97%
CNLM-7694	Vitamin B5 (pantothenic acid, calcium salt monohydrate) ( $\beta$ -alanyl- <sup>13</sup> C <sub>3</sub> , 99%; <sup>15</sup> N, 98%)
CLM-7861	Vitamin B <sub>9</sub> (folic acid) ( <sup>13</sup> C <sub>5</sub> , 95%+) contains ~10% H <sub>2</sub> O
DLM-8985	Vitamin D <sub>2</sub> (ergocalciferol) (6,19,19-D <sub>3</sub> , 97%)
CLM-7850	Vitamin D <sub>3</sub> (cholecalciferol) ( <sup>13</sup> C <sub>2</sub> , 99%) CP 90%
DLM-9126	Vitamin E ( $\alpha$ -tocopherol) (5-methyl-D <sub>3</sub> , 7-methyl-D <sub>3</sub> , 98%)
DLM-8847	Vitamin E acetate (tocopherol acetate) (acetyl-D <sub>3</sub> , 98%)
DLM-9128	Vitamin H (biotin) (2',2',3',3',4',4',5',5'-D <sub>8</sub> , 99%)
DLM-7702	Vitamin K <sub>1</sub> (phyloquinone) (ring-D <sub>4</sub> , 98%)
DLM-9130	Vitamin K <sub>1</sub> (phyloquinone) (D <sub>7</sub> , 99%) CP 97%
DLM-9132	Vitamin K <sub>3</sub> (menadione) (D <sub>8</sub> , 98%) CP 97%

## Other

Catalog No.	Description
CLM-173	Acetaldehyde (1,2- <sup>13</sup> C <sub>2</sub> , 99%)
NLM-467	Ammonium chloride ( <sup>15</sup> N, 99%)
NLM-713	Ammonium sulfate ( <sup>15</sup> N <sub>2</sub> , 99%)
DLM-4	Deuterium oxide (D, 99.9%)
CLM-359	Methanol ( <sup>13</sup> C, 99%)
DLM-4779	Trimethylamine <i>N</i> -oxide (D <sub>9</sub> , 98%)

Additional labeled and  
unlabeled standards are available.  
Please visit  
**isotope.com**  
for a complete listing.

### Questions, comments, suggestions?

As always, we appreciate your feedback and **truly value our interactions with you**. This is how we learn to better serve you. Please **contact us** with any questions, comments or suggestions. We are always interested to hear about your new research methods utilizing stable isotopes.

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