

# Endocrine

## Disruptors

**E**ndocrine Disruptor Compounds (EDCs) are chemicals that exhibit estrogen mimicry. EDCs “convince” certain receptors that they are estrogens. When this happens, fetal development can be impaired in many ways.

Unlike many compounds with related toxicity characteristics, EDCs have been shown to be structurally diverse, making it difficult to identify potential EDCs. They share common properties, among the most important of which is an affinity for the estrogen receptor protein. Some screening approaches such as radioligand binding assays and DNA-band shift assays show promise for identification of EDCs, but many questions remain.

Many of the synthetic chemicals suspected of being EDCs are ubiquitous in the modern world. Among classes of compounds believed to be EDCs are Pesticides (including Herbicides & Fungicides, etc.), Phthalate Esters (extensively used as plasticizers), Alkylphenol Ethoxylates (metabolic products of common surfactants), PCBs (used in transformers for decades), Dioxins and Furans. Many of these chemicals are being created at the rate of thousands of tons each year, while plasticizers are on the order of hundreds of thousands of tons each year.

Driven by the need for accurate low-level chlorinated dioxin measurements, Cambridge Isotope Laboratories, Inc. (CIL), in conjunction with our long-term collaborator Radian International, has spent over 17 years helping to establish GC/Mass Spectrometry using stable isotope labeled standards as the definitive method for ultra-trace analyses.

CIL has labeled standards in inventory for over 50 potential EDCs from the chemical classes listed above. These compounds have been targeted by organizations such as the US EPA, the World Wildlife Federation, and the Centers for Disease Control & Prevention.



**Cambridge Isotope Laboratories, Inc.**

50 Frontage Road, Andover, MA 01810-5413 USA  
PH: 800.322.1174 (USA) PH: 978.749.8000  
FAX: 978.749.2768 E-MAIL: [cilsales@isotope.com](mailto:cilsales@isotope.com)  
URL: <http://www.isotope.com>

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Specialists  
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# Endocrine Disruptor Compounds

in Safe Convenient Quantitative Solutions

Compound (Isotope, Atom % Enrichment)	Catalog #	Size	Price
Acenaphthene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-1643	1.2 ml	\$750
Alachlor (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3727	1.2 ml	\$600
Aldrin ( <sup>13</sup> C <sub>12</sub> , 99%)	CLM-4725	1.2 ml	\$895
Aldrin (random- <sup>13</sup> C <sub>4</sub> , 99%)	CLM-3347	1.2 ml	\$600
Anthracene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-1333	1.2 ml	\$495
Atrazine (ring- <sup>13</sup> C <sub>3</sub> , 99%)	CLM-3737	1.2 ml	\$450
Benz[ <i>a</i> ]anthracene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3602	1.2 ml	\$750
Benzo[ <i>b</i> ]fluoranthene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3599	1.2 ml	\$575
Benzo[ <i>k</i> ]fluoranthene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3756	1.2 ml	\$575
Benzophenone (D <sub>10</sub> , 98%)	DLM-183	1.2 ml	\$295
Benzo[ <i>a</i> ]pyrene ( <sup>13</sup> C <sub>4</sub> , 99%)	CLM-2722	1.2 ml	\$850
Benzyl Butyl Phthalate (ring-D <sub>4</sub> , 98%)	DLM-1369	1.2 ml	\$290
α-BHC ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-2482	1.2 ml	\$490
β-BHC ( <sup>13</sup> C <sub>6</sub> , 99%) (50 ± 5 µg/ml in methanol)	CLM-3623	2 x 1.2 ml	\$490
γ-BHC ( <sup>13</sup> C <sub>6</sub> , 99%) (Lindane)	CLM-1282	1.2 ml	\$490
Bisphenol A (ring- <sup>13</sup> C <sub>12</sub> , 99%)	CLM-4325	1.2 ml	\$325
Bis (2-ethylhexyl) Adipate (adipate- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4675	1.2 ml	\$325
Bis (2-ethylhexyl) Phthalate (ring-D <sub>4</sub> , 98%)	DLM-1368	1.2 ml	\$320
n-Butylbenzene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4674	1.2 ml	\$350
Carbaryl ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4682	1.2 ml	\$350
<i>trans</i> -Chlordane ( <sup>13</sup> C <sub>10</sub> , 99%)	CLM-4792	1.2 ml	\$895
Chlordane (random- <sup>13</sup> C <sub>1</sub> , 99%)	CLM-889	1.2 ml	\$350
Chlorpyrifos (diethyl-D <sub>10</sub> , 99%)	DLM-4360	1.2 ml	\$350
Chrysene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3757	1.2 ml	\$575
4,4'-DDD (ring-D <sub>8</sub> , 98%)	DLM-3533	1.2 ml	\$350
4,4'-DDE (ring- <sup>13</sup> C <sub>12</sub> , 99%)	CLM-1627	1.2 ml	\$350
4,4'-DDT (ring- <sup>13</sup> C <sub>12</sub> , 99%)	CLM-1281	1.2 ml	\$350
Diazinon (diethyl-D <sub>10</sub> , 98%)	DLM-1148	1.2 ml	\$350
1,2-Dibromo-3-Chloropropane ( <sup>13</sup> C <sub>3</sub> , 99%)	CLM-4695	1.2 ml	\$ 395
Di-n-Butyl Phthalate (ring-D <sub>4</sub> , 98%)	DLM-1367	1.2 ml	\$320
2,4-Dichlorophenol ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-1305	1.2 ml	\$350
2,4-Dichlorophenoxyacetic Acid (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-1858	1.2 ml	\$375
Dicyclohexyl Phthalate (ring-1,2- <sup>13</sup> C <sub>2</sub> , dicarboxyl- <sup>13</sup> C <sub>2</sub> , 99%)	CLM-4670	1.2 ml	\$ 295
Dieldrin ( <sup>13</sup> C <sub>12</sub> , 99%)	CLM-4726	1.2 ml	\$950
Dieldrin (random- <sup>13</sup> C <sub>4</sub> , 98%)	CLM-3366	1.2 ml	\$475
Di-ethylhexyl Adipate (3,3',4,4'-D <sub>4</sub> , 98%)	CLM-4675	1.2 ml	\$325
Diethyl Phthalate (ring-D <sub>4</sub> , 98%)	DLM-1629	1.2 ml	\$255
Di-n-Hexyl Phthalate (ring-1,2- <sup>13</sup> C <sub>2</sub> , dicarboxyl- <sup>13</sup> C <sub>2</sub> , 99%)	CLM-4669	1.2 ml	\$295
7,12-Dimethylbenz[ <i>a</i> ]anthracene (D <sub>16</sub> , 97%)	DLM-3840	1.2 ml	\$375

All standard solutions are offered as 100 ± 10µg/ml in nonane unless otherwise noted.

# Endocrine Disruptor Compounds

in Safe Convenient Quantitative Solutions

Compound (Isotope, Atom % Enrichment)	Catalog #	Size	Price
Di-n-Pentyl Phthalate (ring-1,2- <sup>13</sup> C <sub>2</sub> , dicarboxyl- <sup>13</sup> C <sub>2</sub> , 99%)	CLM-4668	1.2 ml	\$295
Di-n-Propyl Phthalate (ring-1,2- <sup>13</sup> C <sub>2</sub> , dicarboxyl- <sup>13</sup> C <sub>2</sub> , 99%)	CLM-4671	1.2 ml	\$295
2,6-Di(tert-butyl)-4-Methylphenol (BHT) (D <sub>21</sub> , 98%)	DLM-2943	1.2 ml	\$490
Endosulfan I (D <sub>4</sub> , 97%)	DLM-2862	1.2 ml	\$230
Endosulfan II (D <sub>4</sub> , 97%)	DLM-2863	1.2 ml	\$230
Endrin ( <sup>13</sup> C <sub>12</sub> , 99%)	CLM-4782	1.2 ml	\$950
Heptachlor ( <sup>13</sup> C <sub>10</sub> , 99%)	CLM-4759	1.2 ml	\$895
Heptachlor ( <sup>13</sup> C <sub>4</sub> , 99%)	CLM-3377	1.2 ml	\$675
Heptachlor Epoxide ( <sup>13</sup> C <sub>10</sub> , 99%)	CLM-4734	1.2 ml	\$895
Heptachlor Epoxide ( <sup>13</sup> C <sub>1</sub> , 99%)	CLM-1191	1.2 ml	\$375
Hexachlorobenzene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-351	1.2 ml	\$150
Indeno[1,2,3-cd]pyrene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3600	1.2 ml	\$600
Kepone ( <sup>13</sup> C <sub>8</sub> , 99%) (200 ± 20 µg/ml in toluene)	CLM-2287	1 ml	\$390
Malathion (D <sub>10</sub> , 99%)	DLM-4476	1.2 ml	\$350
Methoxychlor ( <sup>13</sup> C <sub>12</sub> , 99%)	CLM-4683	1.2 ml	\$325
Metolachlor (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3712	1.2 ml	\$650
Mirex ( <sup>13</sup> C <sub>8</sub> , 99%) (200 ± 20 µg/ml in toluene)	CLM-2078	1 ml	\$210
4-Nitrotoluene (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-3913	1 ml	\$405
<i>trans</i> -Nonachlor ( <sup>13</sup> C <sub>10</sub> , 99%)	CLM-4735	1.2 ml	\$950
p-Nonylphenol (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4306	1.2 ml	\$450
Oxychlorane ( <sup>13</sup> C <sub>10</sub> , 99%)	CLM-4729	1.2 ml	\$950
Parathion (diethyl-D <sub>0</sub> , 98%)	DLM-2970	1.2 ml	\$185
PCB-77 ( <sup>13</sup> C <sub>12</sub> , 99%) (3,3',4,4'-Tetrachlorobiphenyl) (40 ± 4 µg/ml in nonane)	EC-1404	3 ml	\$550
PCB-126 ( <sup>13</sup> C <sub>12</sub> , 99%) (3,3',4,4',5-Pentachlorobiphenyl) (40 ± 4 µg/ml in nonane)	EC-1425	3 ml	\$775
PCB-169 ( <sup>13</sup> C <sub>12</sub> , 99%) (3,3',4,4',5,5'-Hexachlorobiphenyl) (40 ± 4 µg/ml in nonane)	EC-1416	3 ml	\$775
Pentachloronitrobenzene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-1955	1.2 ml	\$175
Pentachlorophenol ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-661	1.2 ml	\$150
Permethrin ( <i>cis/trans</i> mix)(phenoxy- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4549	1.2 ml	\$350
Phenanthrene ( <sup>13</sup> C <sub>6</sub> , 99%)	CLM-2451	1.2 ml	\$495
Pyrene ( <sup>13</sup> C <sub>3</sub> , 99%)	CLM-3601	1.2 ml	\$750
Simazine (ring- <sup>13</sup> C <sub>3</sub> , 99%)	CLM-3739	1.2 ml	\$600
Styrene (D <sub>8</sub> , 98%)	DLM-380	1.2 ml	\$150
2,4,5-Trichlorophenoxyacetic Acid (ring- <sup>13</sup> C <sub>6</sub> , 99%)	CLM-4551	1.2 ml	\$375
Trifluralin (di-n-propyl-D <sub>14</sub> , 98%)	DLM-4479	1.2 ml	\$325

All standard solutions are offered as 100 ± 10 µg/ml in nonane unless otherwise noted.