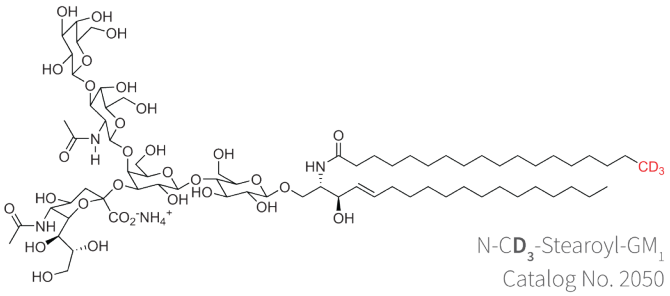
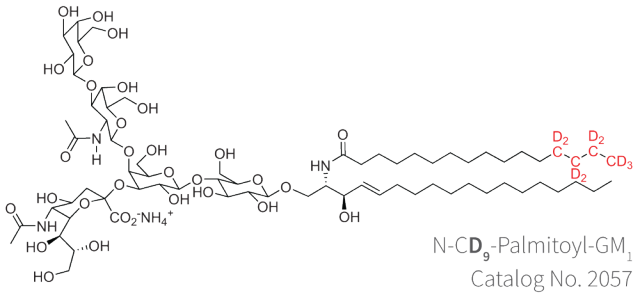
# Deuterated Gangliosides for Mass Spectrometry

MATREYA LLC
Lipids and Biochemicals
A Cayman Chemical Company



N-C**D**$_3$-Stearoyl-GM$_1$
Catalog No. 2050



N-C**D**$_9$-Palmitoyl-GM$_1$
Catalog No. 2057

Deuterated gangliosides are ideal for the identification and quantification of gangliosides in samples and biological systems using mass spectrometry. In addition to Matreya's collection of $D_3$-labeled gangliosides, our scientists have synthesized a new set of high-purity $D_9$-labeled gangliosides that enable improved separation of the labeled *m/z* from the naturally occurring material and its abundant isotopes. With a better means for separation, this improves the quantitation of these compounds in biological samples by LC-MS/MS methods.

## Advantages of $D_9$-Labeled Gangliosides

Natural gangliosides have a large molecular weight and a high $^{13}C$ isotopic abundance up to the M+5 isotope. For example, the $GM_1$ M+3 isotope is very significant but has approximately the same mass as its $D_3$-labeled standard. This natural M+3 isotope can contribute to variability in the deuterated internal standard response as $GM_1$ levels vary from sample to sample and can negatively impact quantification of $GM_1$. A $D_9$-labeled standard overcomes this problem because the natural abundance of $GM_1$ with nine $^{13}C$ atoms is effectively zero. That is, the natural isotopes will not interfere with the $GM_1$-$D_9$ signal.

View a comparison of the mass spectra of C16-$D_0$-$GM_1$, C16-$D_3$-$GM_1$, and C16-$D_9$-$GM_1$ on the next page

## $D_9$-Labeled Gangliosides

| Catalog No. | Product Name | Formula Weight | Purity |
|---|---|---|---|
| 2057 | N-Hexadecanoyl-**D**$_9$ (13,13,14,14,15,15,16,16,16)-monosialoganglioside $GM_1$ ($NH_4^+$ salt) | 1528 + $NH_3$ | 98+% |
| 2058 | N-Hexadecanoyl-**D**$_9$ (13,13,14,14,15,15,16,16,16)-monosialoganglioside $GM_2$ ($NH_4^+$ salt) | 1366 + $NH_3$ | 98+% |
| 2059 | N-Hexadecanoyl-**D**$_9$ (13,13,14,14,15,15,16,16,16)-monosialoganglioside $GM_3$ ($NH_4^+$ salt) | 1163 + $NH_3$ | 98+% |

## $D_3$-Labeled Gangliosides

| Catalog No. | Product Name | Formula Weight | Purity |
|---|---|---|---|
| 2050 | N-*omega*-C**D**$_3$-Octadecanoyl monosialoganglioside $GM_1$ ($NH_4^+$ salt) | 1550 + $NH_3$ | 98+% |
| 2051 | N-*omega*-C**D**$_3$-Octadecanoyl monosialoganglioside $GM_2$ ($NH_4^+$ salt) | 1388 + $NH_3$ | 98+% |
| 2052 | N-*omega*-C**D**$_3$-Octadecanoyl monosialoganglioside $GM_3$ ($NH_4^+$ salt) | 1185 + $NH_3$ | 98+% |
| 2054 | N-*omega*-C**D**$_3$-Octadecanoyl disialoganglioside $GD_3$ | 1476 | 98+% |

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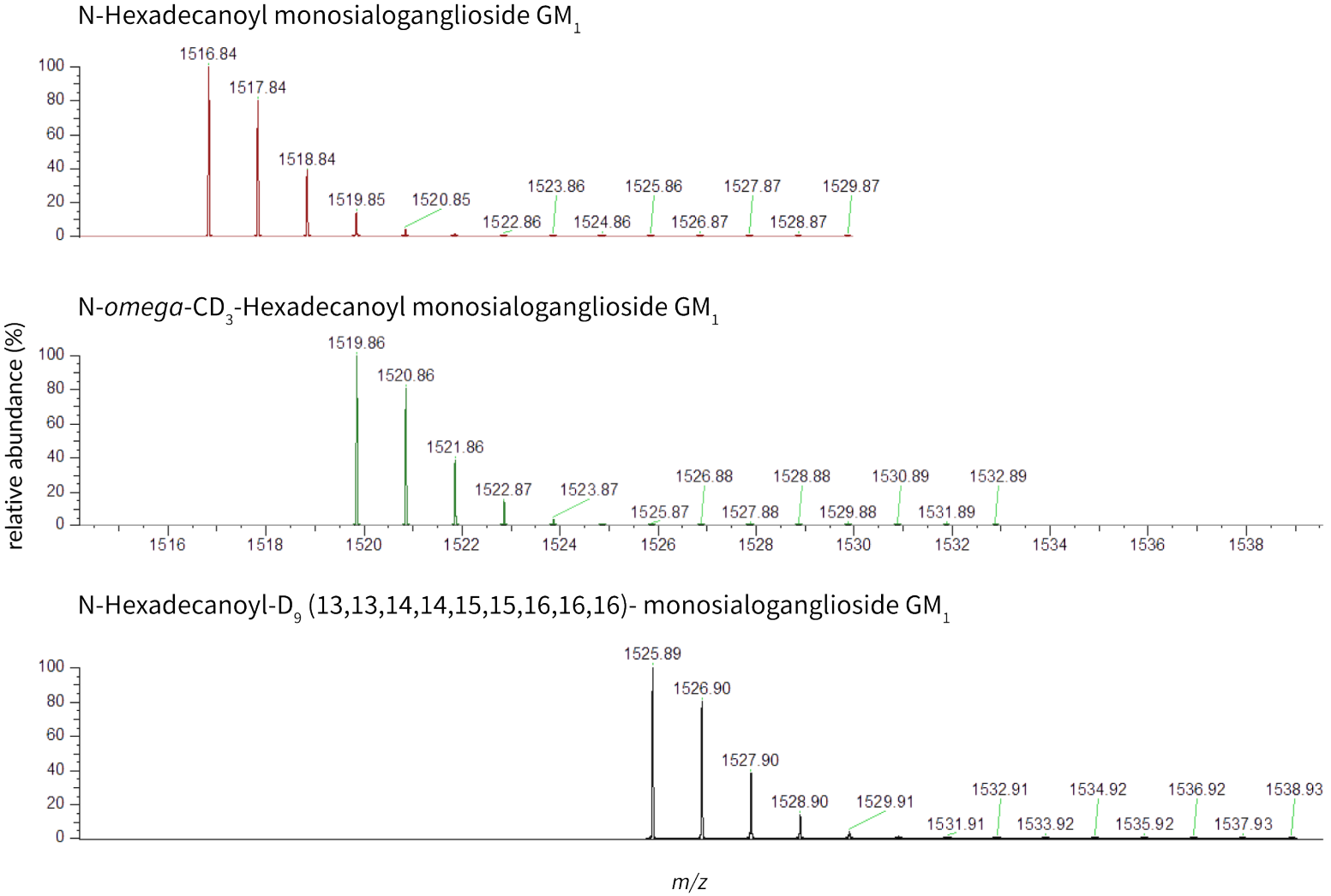


Natural isotopic abundance of $GM_1$ (top spectrum) compared to the $D_3$-labeled (middle spectrum) and $D_9$- labeled (bottom spectrum) versions.

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If you cannot find a particular Deuterated Ganglioside,
please contact our Technical Team for a custom synthesis estimate.

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