

## PRODUCT DATA SHEET

### N-Acetyl-D-*erythro*-sphingosine, (C14 sphingolipid base)

**Catalog number:** 1842

**Synonyms:** N-C2:0 Ceramide of D-*erythro*-C14-sphingosine

**Source:** synthetic

**Solubility:** chloroform, ethanol, DMSO, DMF  
 (up to 5mg/ml)

**CAS number:** N/A

**Molecular Formula:** C<sub>16</sub>H<sub>31</sub>NO<sub>2</sub>

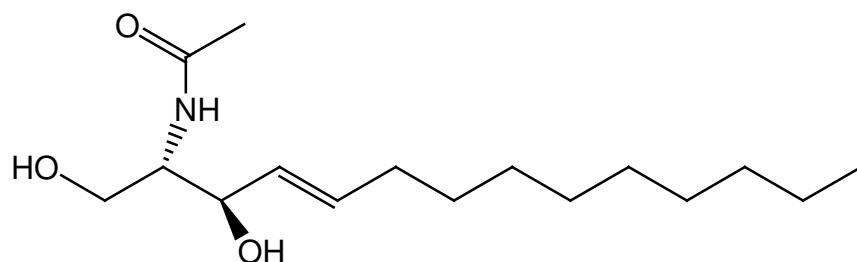
**Molecular Weight:** 285

**Storage:** -20°C

**Purity:** TLC: >98%, GC: >98%; identity confirmed by MS

**TLC System:** chloroform/methanol (90:10)

**Appearance:** solid



### **Application Notes:**

N-Acetyl-D-*erythro*-C14-sphingosine is a well-defined ceramide and is ideal for use as a standard and in biological studies. This product has the C14 sphingoid base, which is less prevalent than the C18 base in most plants and animals making it very useful in determining sphingosine metabolism and derivatives and as an internal standard. Natural long-chain ceramide functions as a precursor in the synthesis of sphingomyelin, glycosphingolipids, and of free sphingosine and fatty acids. It also exerts numerous biological effects, including induction of cell maturation, cell cycle arrest, terminal cell differentiation, cell senescence, and cell death.<sup>1</sup> N-Acetyl-D-*erythro*-C16-sphingosine enters easily into cells where it is biologically active and has been shown to induce downregulation of Bcl-2 protein, inhibiting cell proliferation and inducing apoptosis.<sup>2</sup> N-Acetyl-sphingosine demonstrates many of the biological activities associated with ceramides that contain long-chain fatty acids. However, it has also been found that N-acetyl-sphingosine may inhibit neutrophil superoxide release,<sup>3</sup> stimulation of DNA synthesis, and phospholipase D activity. N-acetyl-sphingosine is different from sphingosine as seen by its inability to inhibit protein kinase C or cause calcium release.

### **Selected References:**

1. N. S. Radin, "Killing tumours by ceramide-induced apoptosis: a critique of available drugs" *Biochemical Journal*, Vol. 371 pp. 243-256, 2003
2. N. Di Nardo et al. "Ceramide 2 (N-acetyl sphingosine) is associated with reduction in Bcl-2 protein levels by Western blotting and with apoptosis in cultured human keratinocytes" *British Journal of Dermatology*, Vol. 143 pp. 491-497, 2000
3. K. Wong, X. Li, N. Hunchuk "N-Acetylsphingosine (C<sub>2</sub>-ceramide) Inhibited Neutrophil Superoxide Formation and Calcium Influx" *Journal of Biological Chemistry*, Vol. 270 pp. 3056-3052, 1995

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