

# PRODUCT INFORMATION



## (±)9(10)-DiHOME MaxSpec® Standard

Item No. 31025

CAS Registry No.: 263399-34-4

Formal Name: (±)9,10-dihydroxy-12Z-octadecenoic acid

Synonym: Leukotoxin diol

MF: C<sub>18</sub>H<sub>34</sub>O<sub>4</sub>

FW: 314.5

Purity: ≥95%

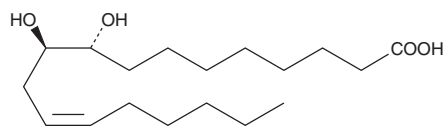
Supplied as: A solution in methyl acetate; in a deactivated glass ampule

Concentration: 100 µg/ml (nominal); see certificate of analysis for verified concentration

Storage: -20°C

Stability: ≥5 years; Stability testing is ongoing to ensure concentration accuracy. The certificate of analysis and product expiry date will be updated upon completion of testing.

Special Conditions: Store upright and unopened at -20°C. Warm to room temperature prior to opening. Light sensitive.



NOTE: Relative stereochemistry shown in chemical structure

### Description

(±)9(10)-DiHOME is the diol form of (±)9(10)-EpOME (Item No. 52400), a cytochrome P450-derived epoxide of linoleic acid (Item Nos. 90150 | 90150.1 | 21909) also known as leukotoxin.<sup>1</sup> It is formed from 9(10)-EpOME by soluble epoxide hydrolase (sEH) in neutrophils.<sup>2</sup> It is toxic to Sf21 cells expressing sEH and to *lacZ*-expressing control cells, unlike leukotoxin, which is only toxic to cells containing sEH.<sup>1,2</sup> A mixture of 9(10)- and 12(13)-DiHOME induces cell death in rabbit renal proximal tubule cells concomitant with mitochondrial respiration dysfunction and induces lung injury, respiratory distress, and mortality in mice.<sup>3,4</sup> 9(10)-DiHOME is a toxic lipid mediator involved in acute respiratory distress syndrome (ARDS), a common and often fatal complication in severe burn victims.<sup>2,3</sup> Levels of 9(10)-DiHOME are increased in bronchoalveolar lavage fluid (BALF) from women, but not men, with chronic obstructive pulmonary disease (COPD).<sup>5</sup> BALF levels are also increased in patients with allergic asthma following allergen exposure compared to patients without allergic asthma.<sup>6</sup> It has been used as a plasma biomarker for sEH activity *in vivo*.<sup>7</sup>

(±)9(10)-DiHOME MaxSpec® standard is a quantitative grade standard of (±)9(10)-DiHOME (Item No. 53400) that has been prepared specifically for mass spectrometry or any application where quantitative reproducibility is required. The solution has been prepared gravimetrically and is supplied in a deactivated glass ampule sealed under argon. The concentration was verified by comparison to an independently prepared calibration standard. The verified concentration is provided on the certificate of analysis. This (±)9(10)-DiHOME MaxSpec® standard is guaranteed to meet identity, purity, stability, and concentration specifications and is provided with a batch-specific certificate of analysis. Ongoing stability testing is performed to ensure the concentration remains accurate throughout the shelf life of the product. **Note:** The amount of solution added to the vial is in excess of the listed amount. Therefore, it is necessary to accurately measure volumes for preparation of calibration standards. Follow recommended storage and handling conditions to maintain product quality.

### References

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- Zheng, J., Plopper, C.G., Lakritz, J., et al. *Am. J. Respir. Cell Mol. Biol.* **25**(4), 434-438 (2001).
- Moran, J.H., Weise, R., Schnellmann, R.G., et al. *Toxicol. Appl. Pharmacol.* **146**(1), 53-59 (1997).
- Balgoma, D., Yang, M., Sjödin, M., et al. *Eur. Respir. J.* **47**(6), 1645-1656 (2016).
- Lundström, S.L., Yang, J., Källberg, H.J., et al. *PLoS One* **7**(3), e33780 (2012).
- Zhu, P., Peck, B., Licea-Perez, H., et al. *J. Chromatogr. B Analyt. Technol. Biomed. Life Sci.* **879**(25), 2487-2493 (2011).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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