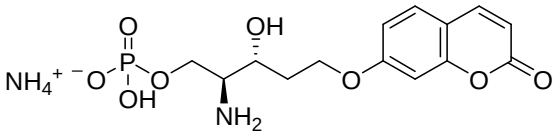
Echelon Biosciences Inc.
675 Arapeen Drive, Suite 302
Salt Lake City, UT 84108
Telephone 866-588-0455
Fax 801-588-0497
echelon@echelon-inc.com
www.echelon-inc.com

Technical Data Sheet

For research use only
Not intended or approved for diagnostic or therapeutic use.

Product Name: S1P Lyase Substrate

Product Number: **S-200U**



Molecular Formula: $C_{14}H_{21}N_2O_8P$ Mol. Wt.: 376.3 CAS: 1166838-84-1

Solubility: water, DMSO >1 mg/mL.

Storage: S1P Lyase substrate is stable for at least one year when stored as a solid, protected from moisture, and light at -20℃. Reconstitute with water or DMSO, dilute wit h water or neutral pH, buffered salt solutions as needed. Storage in basic (pH > 9) or acidic (pH < 4) buffers will result in slow decomposition of the product. After reconstitution, solutions should be frozen and stored at -20℃ between uses. The compound is stable for at least three months when handled in this way. Do not store solutions at 4℃ for more t han 2-3 days.

Field of Interest: Sphingosine-1-phosphate lyase (S1PL) is an enzyme that breaks sphingosine-1-phosphate into hexadecenal and phosphoethanolamine. S1PL has been proposed as a target for autoimmune disorder treatment[1] and in cancer therapy[2]. S1PL fluorogenic substrate is intended for monitoring S1PL activity releasing fluorescent 7-hydroxycoumarin in the presence of active enzyme.[3]

Protocol: The following protocol is suggested for measuring S1P lyase activity in cell lysate.

1. Prepare cell lysate in 0.05 M potassium phosphate buffer, pH 7.2
2. Add 30 µL of cell lysate to a black 384-well plate (adjust accordingly for 96-well plate)
3. Add 10 µL of substrate/cofactor mixture (500 µM S-200U, 100 µM Na_2VO_4 & 1 mM pyridoxal 5-phosphate)
4. Incubate at 37°C for 6+ hours
5. Stop reaction with 20 µL MeOH
6. Read fluorescence at 370 nm excitation, 460 nm emission and 455 nm cutoff

References:

1. Billich, A., et al. (**2013**). "Partial deficiency of sphingosine-1-phosphate lyase confers protection in experimental autoimmune encephalomyelitis." PLoS One **8**(3): e59630.
2. Engel, N., et al. (**2012**). "Metabolic profiling reveals sphingosine-1-phosphate kinase 2 and lyase as key targets of (phyto-) estrogen action in the breast cancer cell line MCF-7 and not in MCF-12A." PLoS One **7**(10): e47833.
3. Bedia, C., et al. (**2009**). "Synthesis of a fluorogenic analogue of sphingosine-1-phosphate and its use to determine sphingosine-1-phosphate lyase activity." Chembiochem **10**(5): 820-2.

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. S1PL substrate is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

Warranty and Disclaimer: Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.