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Polar Bear photo provided by: Kyriakos Kaziras

¹Sukumaran, P., Lönnfors, M., Långvik, O., Pulli, I., Törnquist, K., Slotte, J.P. Complexation of C6-ceramide with cholesteryl phosphocholine – a potent solvent-free ceramide delivery formulation for cells in culture. PLoS One. 2013; 8(4): e61290.

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Huzzah®

Lipid Delivery
Across Disciplines

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the United States and Canada.

*MilliporeSigma is the exclusive supplier of Avanti® Polar Lipids to customers in Canada.

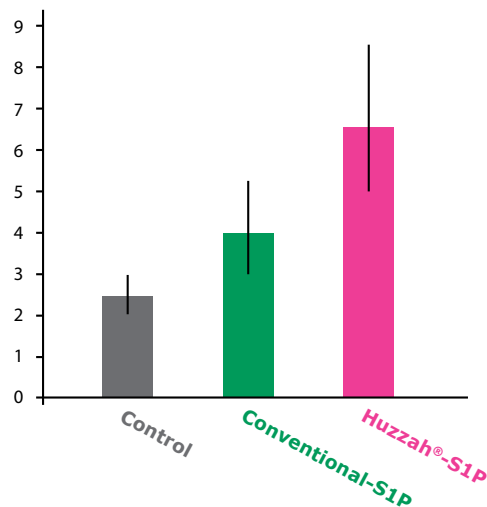
Ceramide Delivery System

The Huzzah® lipid delivery system is supplied as a lyophilized conjugate that can be directly and easily reconstituted in water or a buffer of choice and is ideal for studying the effects of poorly soluble bioactive molecules. This conjugate system eliminates the need for organic solvents, which are known to adversely affect viability and the phenotypic characteristics of cells. Ceramide forms stable, fluid bilayers with cholesteryl phosphocholine, and the Avanti® formulation has been shown to be more potent than solvent-delivered (DMSO) formulations of D-erythro-ceramide (C6 -Cer) in inhibiting proliferation, inducing apoptosis, and disturbing calcium homeostasis. It is thought that DMSO formulations of C6 -Cer are likely to precipitate into the cell culture medium, where the bioavailability of “crystalline” ceramide is limited. However, the formation of fluid bilayers, which are enriched in C6 -Cer, prevent crystallization and allow for the transfer of monomeric ceramide to cell membranes with enhanced bioavailability.



Inducing Astrocyte Migration With Huzzah® S1P

To show efficiency of induced migration, primary cultures of astrocytes (C57BL/6) were grown to confluency, and migration measured over 40 h in a scratch migration assay (width of scratch: 500 µm). Cells incubated with 1 µM S1P that was pre-associated with the Huzzah® system were significantly ($n = 3$, $P < 0.05$) faster (6.5 ± 1.8 µm/h) than control (2.5 ± 0.5 µm/h) cells. They were also faster than cells that were incubated with 1 µM S1P prepared by solution in bovine serum albumin-containing buffer, demonstrating that pre-associated S1P is more efficient in inducing migration than S1P prepared following conventional protocols.¹



Avanti® Huzzah® S1P 360492P:

The Huzzah® S1P kit contains 10 mg of C6 ceramide and 13.8 mg of cholesteryl phosphocholine, individually packaged and ready for use.

Pictured: Huzzah® S1P is shipped as a lyophilized powder. The photograph on the right shows the complex dissolved in water.



Huzzah® Products

Product	Description
360493P	Huzzah® C1P, Human Serum Albumin / Ceramide-1-Phosphate Complex, powder
360000P	Huzzah® Control, Human Serum Albumin Control, powder
360500	Huzzah® KLA, Human Serum Albumin / Kdo2 Lipid A Complex, powder
360130P	Huzzah® LPA, Human Serum Albumin / Lyso Phosphatidic Acid Complex, powder
360205P	Huzzah® NBD-So, Human Serum Albumin / NBD Sphingosine Complex, powder
360492P	Huzzah® S1P, Human Serum Albumin / Sphingosine-1-Phosphate Complex, powder

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