Avanti® Polar Lipids, Inc.

Characterize Protein-Lipid Interaction

SNOOPERS®

Snoopers® consist of various lipid-subtypes spotted individually on a nitrocellulose support. Snoopers® provide a protein-lipid interaction profile to identify cell signaling events, characterize lipid-binding antibodies, and identify novel lipid-interacting proteins of potential therapeutic value.

Inositol Snoopers®

Avanti Inositol Snoopers® consist of these 13 lipid species spotted individually on a solid support.

18:1 PI(3,5)P_2	18:1 PI(4,5)P_2	18:1 PI(3,4,5)P_3
DMPC	16:0 PI	18:1 PI
18:1 PI(3)P	18:1 PI(4)P	18:1 PI(3,4)P_2
Liver PI	Soy PI	Brain PI(4)P
Brain PI(4,5)P_2		

Oxidized PL Snoopers®

Avanti Ox-phospholipid Snoopers® consist of these 12 lipid species spotted individually on a solid support.

Liver PI	16:0 PI	oxPAPS
DMPS	oxPAPE	DMPE
oxPAPG	DMPG	oxPAPA
DMPA	oxPAPC	DMPC

BMP Snoopers®

Avanti Bis(Monoacylglycerol) Phosphate Snoopers® consist of these 9 lipid species spotted individually on a solid support.

14:0 Hemi BMP (*S,R*)	18:1 Hemi BMP (*S,R*)
Egg PE	18:1 BMP (*R,R*)
18:1 BDP (*S,S*)	Egg PC
14:0 BMP (*S,R*)	18:1 BMP (*S,R*)
18:1 BMP (*S,S*)	

Sphingolipid Snoopers®

Avanti Sphingolipid Snoopers® consist of these 14 lipid species spotted individually on a solid support.

Brain Sphingomyelin	Lyso SM(d18:1)
Brain Ceramide	Brain Cerebroside
Brain Sulfatide	Total Ganglioside
Brain Sphingosine	So1P Phyto
So Cer1P (d18:1/16:0)	Sphinganine (d18:0)
Sa1P DHCer (d18:0/16:0)	DHCer1P (d18:0/16:0)

Also available: Custom Snoopers®

Each spot contains 1 µg of the highest quality pure lipid and is ideal for investigating lipid-protein interactions.

continued overleaf

Characterize Protein-Lipid Interaction

Avanti Lipid Snoopers® offer a reliable methodology to identify known or unknown lipid ligands with which lipid binding proteins interact, to characterize lipid binding antibodies, and to supplement custom research applications. For most applications, the procedure is effective using only micrograms or less of protein and may be performed more quickly when compared with other methods used to identify protein-lipid interactions [1,2]. In summary, Avanti Lipid Snoopers™ are well-defined, consistent, reproducible lipid arrays which improve the study of the interaction of biomolecules and provide informative data in the continued quest to understand biological function.

Avanti Custom Snoopers® have been prepared for a variety of research applications from identifying and confirming novel protein-lipid interactions to monitoring lipid oxidation. Three examples include: First, increasing concentrations of Large Multilamellar Vesicles (LMVs) containing either an antioxidant or oxidized lipids were applied to snooper strips and probed with the E06 antibody to monitor lipid peroxidation [3]. The E06 antibody showed high reactivity against the sample containing oxidized lipids; however, no reactivity was observed for the antioxidant containing sample [3]. Second, ceramide and select glycolipid derivatives have been applied to snooper strips and probed with an HRP conjugated Shiga Toxin (STxB) (courtesy of Dr. Ludger Johnannes, Institut Curie; Paris, France) to examine the binding specificity of Shiga Toxin. The STxB showed high reactivity against the glycolipids, globotriaosylceramide (Gb3) and globotetraosylceramide (Gb4); however, no reactivity was observed for ceramide alone of lyso-Gb3, which agrees with previous observations [4]. Lastly, a study by Bruntz, et al., used Avanti Custom Snoopers® to compare the binding specificity of serine/threonine-specific protein kinase, Akt, to phosphatidic acid and other phospholipid species [5]. These three examples display a breadth of applications for which Avanti Custom Snoopers® can be used. Researchers are doing amazing things with Avanti Custom Snoopers®. What will you do? Let Avanti revolutionize your science!

References:

1. H. Cho, M. Wu, B. Bilgin, S.P. Walton, C. Chan, Latest developments in experimental and computational approaches to characterize protein-lipid interactions, *Proteomics,* 12 (2012) 3273-3285.
2. H. Zhao, P. Lappalainen, A simple guide to biochemical approaches for analyzing protein-lipid interactions, *Molecular biology of the cell,* 23 (2012) 2823-2830.
3. N. Jiménez-Rojo, A.R. Viguera, M.I. Collado, K.H. Sims, C. Constance, K. Hill, W.A. Shaw, F.M. Goñi, A. Alonso. Sphingosine induces the aggregation of imine-containing peroxidized vesicles, Biochim Biophys Acta. 2014 Aug;1838(8):2071-7
4. K. Gallegos, Conrady, D.G., Karve, S.S., Gunasekera, T.S., Herr, A.B., Weiss, A.A., Shiga Toxin Binding to Glycolipids and Glycans, *PloS one,* 7 (2012) e30368
5. R.C. Bruntz, Taylor, H.E., Lindsley, C.W., Brown, H.A., Phospholipase D2 mediates survival signaling through direct regulation of Akt in glioblastoma cells, *J Biol Chem,* 289 (2014) 600-616.

BIOSCIENCES +33 4 70 03 88 55 HotLine +33 4 70 03 73 06 interbiotech@interchim.com

interchim® 211 bis Av. J.F. Kennedy I BP 1140 03103 Montluçon I France www.interchim.com