SPLASH™ LIPIDOMIX® Quantitative Mass Spec Internal Standard
Avanti Product Number 330707-1EA
Technical Data Sheet / Frequently Asked Questions

What is included in SPLASH™ Standard?

Avanti Product Number 330707-1EA includes a single sealed ampule of Avanti's SPLASH™ LIPIDOMIX® Quantitative Mass Spec Internal Standard. Each sealed ampule of SPLASH™ contains 1mL of methanol solution with 14 deuterated lipid internal standards at a concentrations relative to human plasma lipid ratios. The concentrations are verified and based on the isotopic purity of each individual compound.

SPLASH™ LIPIDOMIX® Quantitative Mass Spec Internal Standard was designed to complement human plasma lipid analysis using LC/MS/MS platforms. Using one internal standard per lipid class will allow you to correct for the differences in extraction efficiency and ionization efficiency between lipids classes. This ready-to-use standard mixture will save your lab both time and money when compared to purchasing 14 individual internal standards and preparing your own standard mixture.

How do I handle SPLASH™ properly?

Your SPLASH™ LIPIDOMIX® Quantitative Mass Spec Internal Standard should be stored in a -10°C to -25°C freezer until ready for use. It is designed to be a one-time use sample, and we do not recommend storing for long periods of time after opening.

Always make sure to warm bath sonicate the unopened ampule for approximately 2 minutes prior to opening the ampule. Lipids in solution may precipitate during shipping and storage conditions, and it may not be visible with a solution at extremely low concentrations such as this.

Direct transfer from ampule to experimental sample prep glass vial for immediate use is suggested. General handling guidelines for lipids should be followed. As outlined on our website.

SPLASH™ LIPIDOMIX® Quantitative Mass Spec Internal Standard / Avanti Product 330707-1EA

Mixture Component	Chemical Formula	Target Conc. µg/mL	Target Conc. µM	Exact Mass	M-H	M+H	M+NH_4	M+AcO
15:0-18:1(d7) PC	$C_{41}H_{73}D_7NO_8P$	160.7	213	752.6061	×	753.6134	×	811.6199
18:1(d7) Lyso PC	$C_{26}H_{45}D_7NO_7P$	25.5	48	528.3921	×	529.3994	×	587.4059
15:0-18:1(d7) PE	$C_{38}H_{67}D_7NO_8P$	5.7	8	710.5591	709.5519	711.5664	×	×
18:1(d7) Lyso PE	$C_{23}H_{39}D_7NO_7P$	5.3	11	486.3451	485.3379	487.3524	×	×
15:0-18:1(d7) PG	$C_{39}H_{68}D_7O_{10}P$	29.1	38	741.5537	740.5464	×	759.5875	×
15:0-18:1(d7) PI	$C_{42}H_{72}D_7O_{13}P$	9.1	11	829.5698	828.5625	×	847.6036	×
15:0-18:1(d7) PS	$C_{39}H_{67}D_7NO_{10}P$	4.2	5	754.5490	753.5417	755.5562	×	×
15:0-18:1(d7)-15:0 TAG	$C_{51}H_{89}D_7O_6$	57.3	71	811.7646	×	×	829.7985	×
15:0-18:1(d7) DAG	$C_{36}H_{61}D_7O_5$	9.4	16	587.5506	×	×	605.5844	×
18:1(d7) MAG	$C_{21}H_{33}D_7O_4$	2	6	363.3366	×	364.3429	381.3704	422.3504
18:1(d7) Chol Ester	$C_{45}H_{71}D_7O_2$	356.1	541	657.6441	×	×	675.6779	×
d18:1-18:1(d9) SM	$C_{41}H_{72}D_9N_2O_6P$	30.9	42	737.6397	×	738.6470	×	796.6536
15:0-18:1(d7) PA	$C_{36}H_{61}D_7NaO_8P$	7.4	11	667.5181	666.5097	×	×	×
Cholesterol-d7	$C_{27}H_{39}D_7O$	98.4	248	393.3988	×	394.4061	411.4326	

How do I prep my biological samples using SPLASH™ Internal Standards?

Extraction Protocol for Plasma

1. Use 13 x 100 mm new glass screw capped tubes. Do not use washed tubes as you may extract detergent residue.
2. Add 990 µl water to 10 µl plasma, then let sit on ice for 10 minutes.
3. Add 2.0 mL methanol.
4. Add 0.9 mL dichloromethane.
5. Vortex.
6. A singe phase should appear. If there are two distinct phases, add 50 µl methanol and vortex. If solution is still not a single phase, repeat addition of 50 µl methanol and vortex.
7. Add 10 µl SPLASH™ Internal Standard, vortex, and let mixture sit for 30 minutes at room temperature.
8. Add 1 mL water.
9. Add 0.9 mL dichloromethane.
10. Invert tube 10 times. DO NOT VORTEX, or you will form an emulsion.
11. Centrifuge at 1200 rpm for 10 minutes.
12. Collect lower layer and put into a new glass tube.
13. Add 2 mL dichloromethane to remains in extraction tube.
14. Mix, centrifuge, and collect lower layer. Add to first extract.
15. Evaporate solvent under a stream of nitrogen.
16. Re-suspend lipids in injection solvent.

Where can I find the Certificate of Analysis for my lot of SPLASH™?

The Certificate of Analysis for each lot of SPLASH™ can be found on the Avanti website. Please go to the product page for SPLASH™ (330707) and click on the downloads tab to view lot numbers available.

Why can I not see certain lipids in the standard using my instrument?

The lipid standards in SPLASH™ are at a wide range of concentrations. The low abundance lipids are at concentrations not always detectable using certain instruments, experimental parameters, or extraction methods. If you are not able to see certain lipids in the standard mixture, we suggest ordering an individual lipid standard for that class and determining the linearity and lower limit of detection for each lipid class of interest before proceeding. Each standard in SPLASH™ can be purchased individually for those requiring additional method development or single standard applications. Please contact us if you need additional help.

How do I order more SPLASH™?

To order more SPLASH™ please visit the Avanti website and search for product number 330707. Customers in the United States can order directly from Avanti, and customers outside the United States will be directed to our worldwide distribution partner for country specific ordering information and pricing.

Who do I contact if I have additional questions?

Please e-mail us at lipidomics@avantilipids.com if you have any additional questions about this standard or other Avanti products and services.

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