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응용 자료

Oasis Prime HLB – The Fastest way to Clean Samples

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Abstract

Bioanalytical scientists aim to optimize the time and complexity of sample preparation required based on the expected sample throughput and levels of sensitivity required for their assays. For discovery bioanalytical laboratories, a broadly applicable, simple, fast sample preparation workflow that provides clean samples with adequate sensitivity that can be utilized across a wide range of programs, compound classes is preferred.

Oasis™ PRiME HLB solid phase extraction (SPE) adds phospholipid removal capabilities to the reversed-phase selectivity of the Oasis HLB sorbent. It simplifies SPE for a diverse set of analytes with fast, easy protocols. Cleaner samples also result in increased column longevity and reduced need to instrument maintenance and clean up.

Benefits

- Oasis PRiME HLB removes >95% phospholipids
- 2 step protocol for Oasis PRiME makes SPE even faster and easier
- Acceptable recoveries across a diverse set of analytes tested

- More robust assays with increased column life and cleaner instruments

Introduction

In this work, we propose a 2-step protocol which further simplifies the Oasis PRiME SPE process to get to clean samples faster.

Results and Discussion

Oasis PRiME HLB starting protocol is a 3-step process which involves loading pre-treated samples onto the sorbent, followed by a wash with 5:95% Methanol:Water, followed by elution in 90:10% Acetonitrile:Methanol. The eluate can either be injected directly onto the LC-MS system, or diluted 1:1 with water before injection. In cases where speed is of paramount importance, we have further simplified the Oasis PRiME 3-step protocol by removing the wash step and using a 2-step protocol which involves only a load & elute step as shown in Figure 1. This quick and easy protocol saves time and reduces solvent use, making laboratory workflows more efficient.

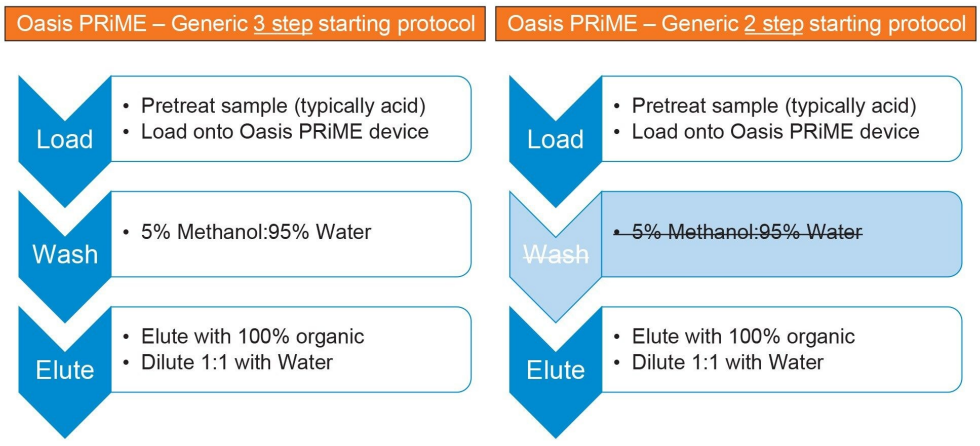

Figure 1. Overview of the Oasis PRiME HLB 3-step vs 2-step protocol.

For this study, we tested a diverse panel of 14 small molecule drugs. Extracted samples were analyzed on an ACQUITY™ Premier LC System with a ACQUITY Premier HSS T3 (2.1 x 50 mm) Column. A generic LC gradient (5–95%B over two minutes) was used for analysis (total run time three minutes). MRM transitions were developed using Intellistart™ on a Xevo™ TQ-Absolute Mass Spectrometer.

Using the conditions described above, we compared the % recoveries for all analytes extracted using both the 2-step and the 3-step protocol. As observed in Figure 2, percentage recoveries for all analytes was comparable between the 3-step and the 2-step protocol without the need for any method development or optimization.

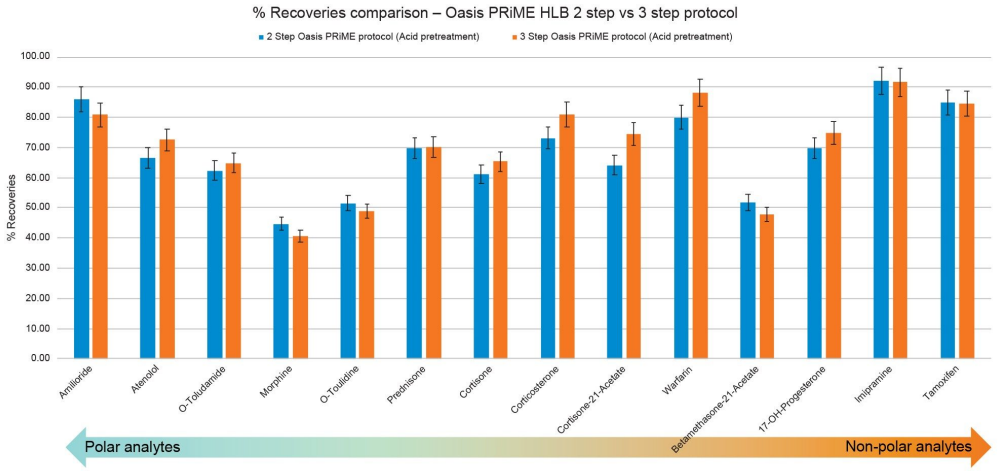

Figure 2. Precentage recoveries observed for analyte panel extracted using Oasis PRiME 3-step vs 2-step protocol.

Conclusion

As shown here, percentage recoveries observed for the Oasis PRiME 2 step protocol are comparable to the 3-step protocol. In assays where speed and simplicity is the ultimate goal, using Oasis PRiME HLB SPE with a 2-step protocol can provide adequate recoveries across a diverse set of small molecule analytes.

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