

What can Cause Changing Analyte Recovery in HPLC - FAQ

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Question: I am doing a sunscreen analysis which requires that the sample solution is filtered. My diluent is 95:5 methanol / DI water and I am using AQ™ brand 0.45um nylon, syringe filters. One day I observe consistent peak areas but the next day, when using the same solution, the peak areas are higher. What has happened?

Answer: The syringe filters do not seem to be a causative factor in the changing ~~recovery~~ since the results are consistent for intra-day analyses but different for inter-day.

Although there are many possible explanations as to what could cause this, the difference with respect to multiple days suggests that a stability issue with the sample solution may be at fault. Analytes may not be stable indefinitely in solution. Depending on the ~~analyte~~ and the sample matrix, a variety of chemical processes can occur such as hydrolysis, oxidation, etc. Physical processes such as precipitation can also occur. All of these can lead to changes in quantitation.

Aside from this, you may want to investigate adsorption from vials or the ~~precision~~ of the HPLC system. The instrument should be recently qualified in terms of detector response, injector precision/accuracy, and so on.

Click [HERE](#) for ordering information and pictures of syringe filters

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