

Hydrocortisone Extraction from Topical Cream using Verex™ Filter Vials by HPLC-UV using Luna® C18(2) Columns

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Overview

Samples are prepared by a variety of methods, all of which can influence chromatographic results by affecting the sample injected into the system. Ineffective sample preparation can lead to reduction in column life, reduction in chromatographic separation efficiency and reproducibility, and many other problems. Inappropriate choice of sample preparation devices could release extractable compounds into the sample, bind analytes of interest or introduce errors through sample loss, influencing the quality and reproducibility of the results observed.

In this application, hydrocortisone was extracted from a topical cream. Extracted samples were then filtered using Verex Filter Vials. Samples were then run by HPLC-UV to determine if there was a loss of sample by using the filter vials. When compared to the hydrocortisone extraction without a filtration device, the filtered hydrocortisone extraction using the Verex Filter Vials showed similar results. This indicates there was no adsorption to the membrane nor vial. Since there was so little hydrocortisone in the extracted samples, profiles were zoomed-in and there was still no difference between the unfiltered and filtered samples.

LC-UV Conditions

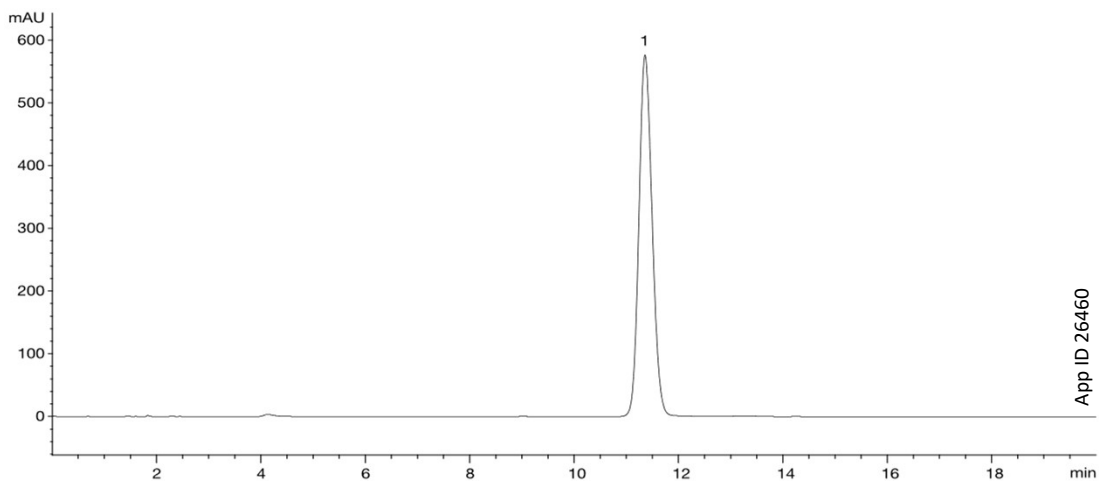
Column:	Luna 5 µm C18(2)
Dimension:	150 x 4.6 mm
Part No.:	00F-4252-E0
Pressure (bar):	284
Mobile Phase	Methanol/Water (50:50)
Flow Rate:	1 mL/min
Temperature:	35 °C
Detection:	UV @ 220 nm
Injection Volume:	10 µL
Instrument:	Agilent® 1290 with DAD

Sample Preparation

Dissolve:	1 g of hydrocortisone cream in 10 mL ethyl acetate.
Dilute:	2 mL of ethyl acetate cream sample with 8 mL methanol/water (1:1)
Load:	400 µL methanol/water (1:1) cream sample into Verex Filter Vial 0.45 µm, RC ARO-F203-12
Inject:	10 µL final eluate onto HPLC-UV

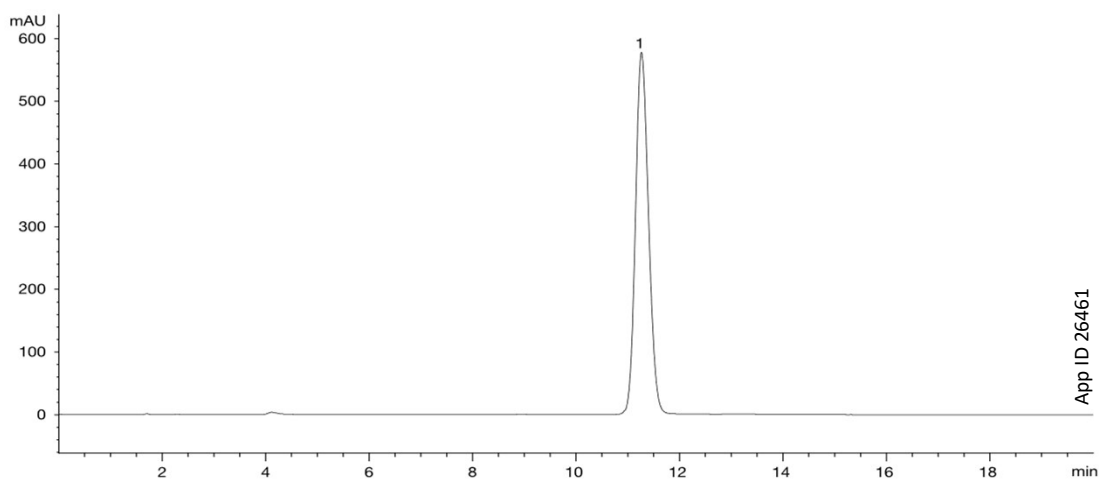


Hydrocortisone standard, unfiltered



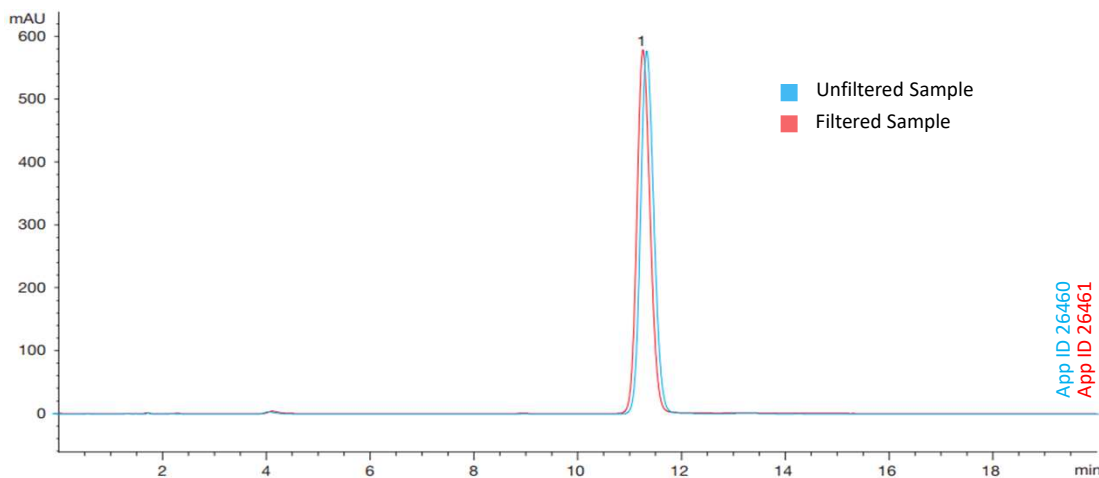
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Hydrocortisone standard, filtered with Verex™ Filter Vials



App ID 26461

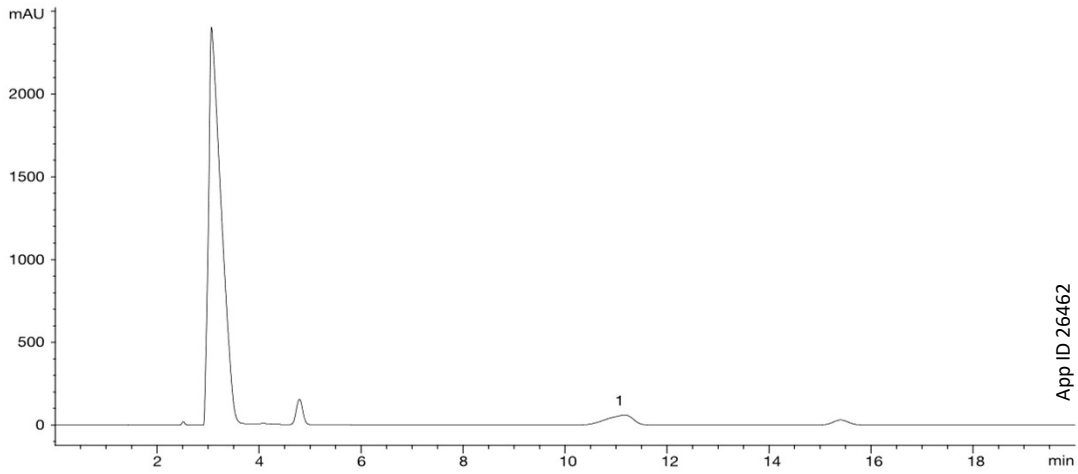
Hydrocortisone standard, overlay of filtered vs. unfiltered sample



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App ID 26461

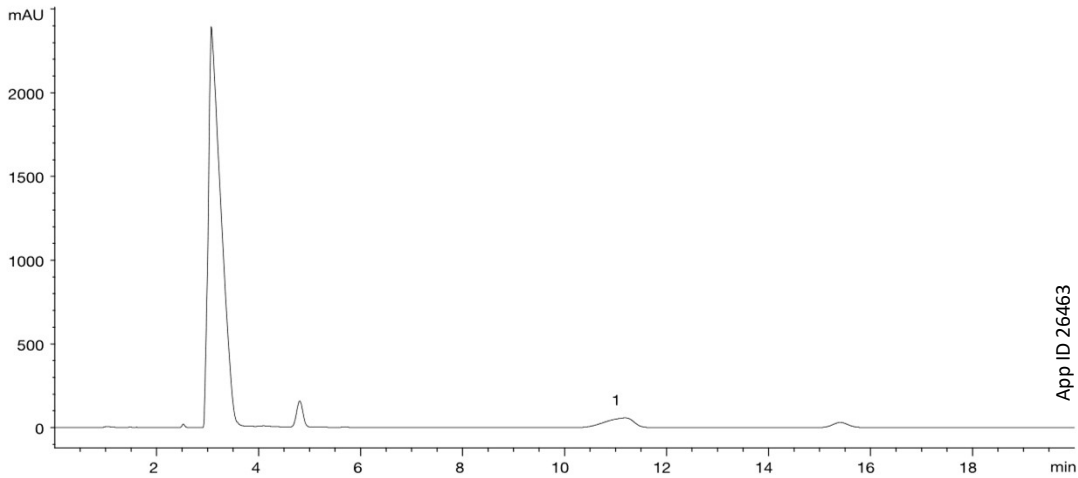


Hydrocortisone extraction, unfiltered



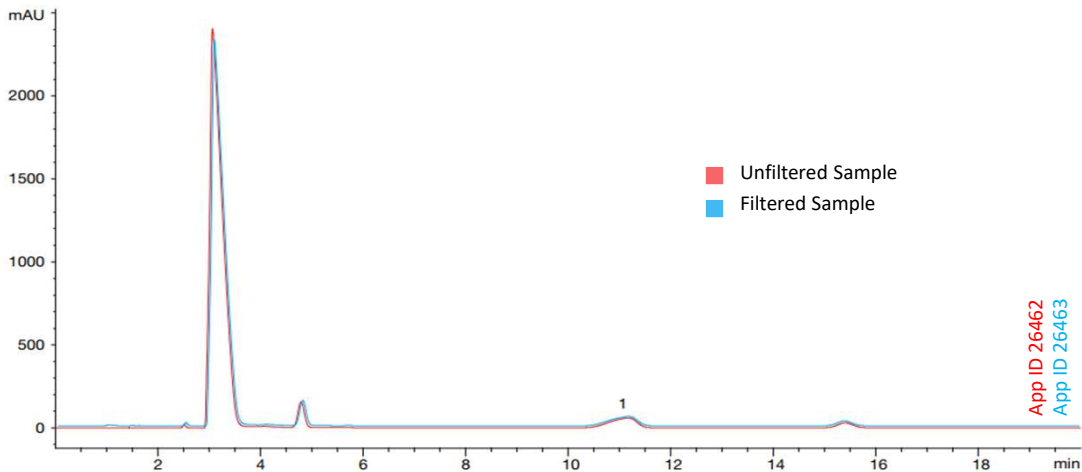
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Hydrocortisone extraction, filtered with Verex™ Filter Vials



App ID 26463

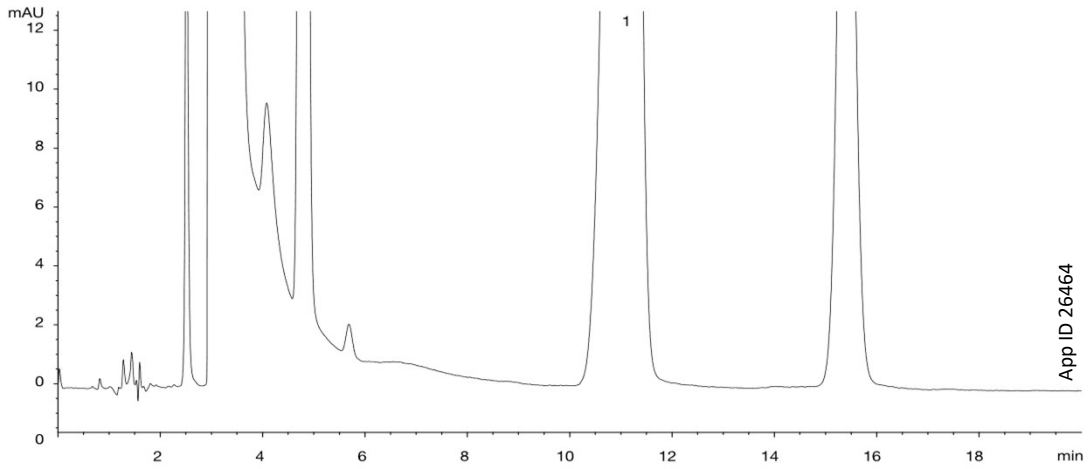
Hydrocortisone extraction, overlay of filtered vs. unfiltered sample



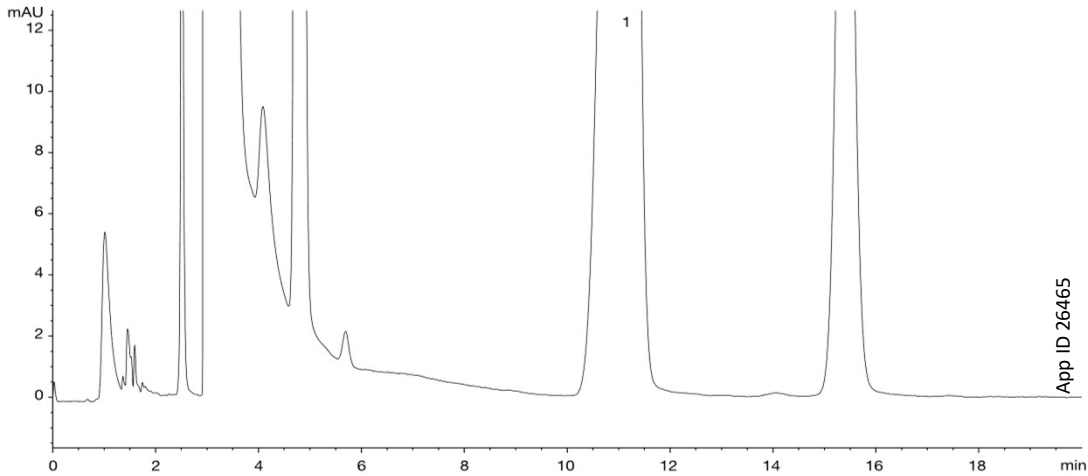
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App ID 26463



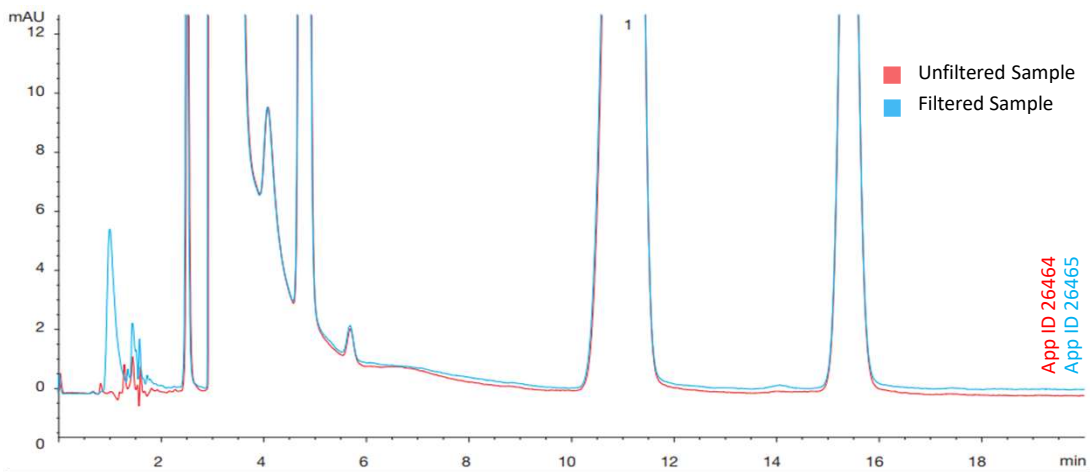
Hydrocortisone extraction, unfiltered, zoomed



Hydrocortisone extraction, filtered with Verex™ Filter Vials, zoomed



Hydrocortisone extraction, overlay of filtered vs. unfiltered sample, zoomed



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