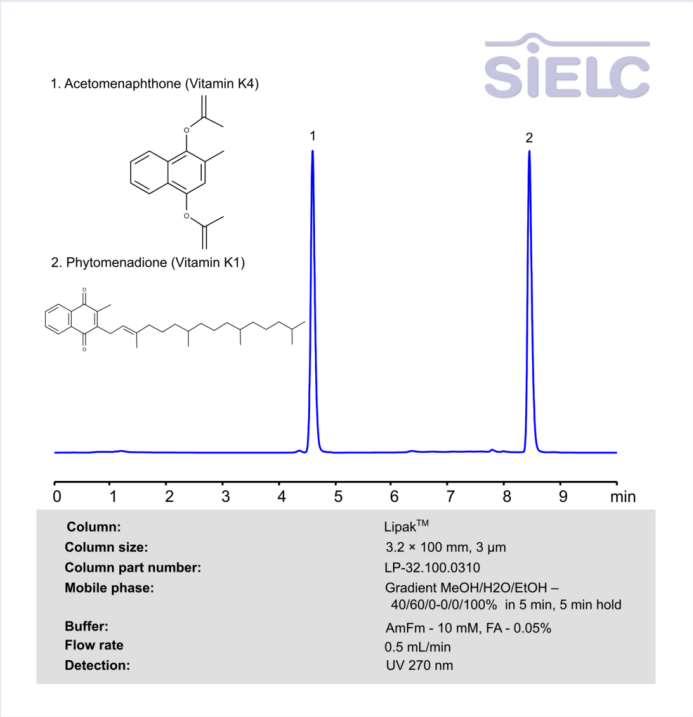
HPLC Method for Analysis of Vitamin K4 (Acetomenaphthone) and Vitamin K1 (Phytomenadione) on Lipak Column



Vitamin K1 (phylloquinone) and Vitamin K4 (menadiol or menadiol diacetate) are essential compounds involved in blood clotting and bone health. Vitamin K1, found in green leafy vegetables, is the natural form crucial for synthesizing clotting factors in the liver. Vitamin K4, a synthetic derivative, is used in supplements and treatments due to its stability and bioavailability. Both forms contribute to activating proteins necessary for calcium regulation, preventing vascular calcification, and supporting overall cardiovascular and skeletal health.

Vitamin K1 (Phytomenadione) , Vitamin K4 (Acetomenaphthone) can be retained, and analyzed using a Lipak mixed-mode stationary phase column. The analysis utilizes an gradient method with a mobile phase consisting of water, methanol (MeOH), ethanol (EtOH), ammonium formate and formic acid as a buffer. Detection is achieved using UV 270 nm.

Method Parameters

Column	Lipak, 3.2 x 100 mm, 3 µm, 100 Å, dual ended
Mobile Phase	Gradient MeOH/H2O/EtOH – 40/60/0-0/0/100% in 5 min, 5 min hold
Buffer	AmFm– 10 mM, FA – 0.05%
Flow Rate	0.5 mL/min
Detection	UV 270 nm

Quelle: https://sielc.com/hplc-method-for-analysis-vitamin-k4-vitamin-k1