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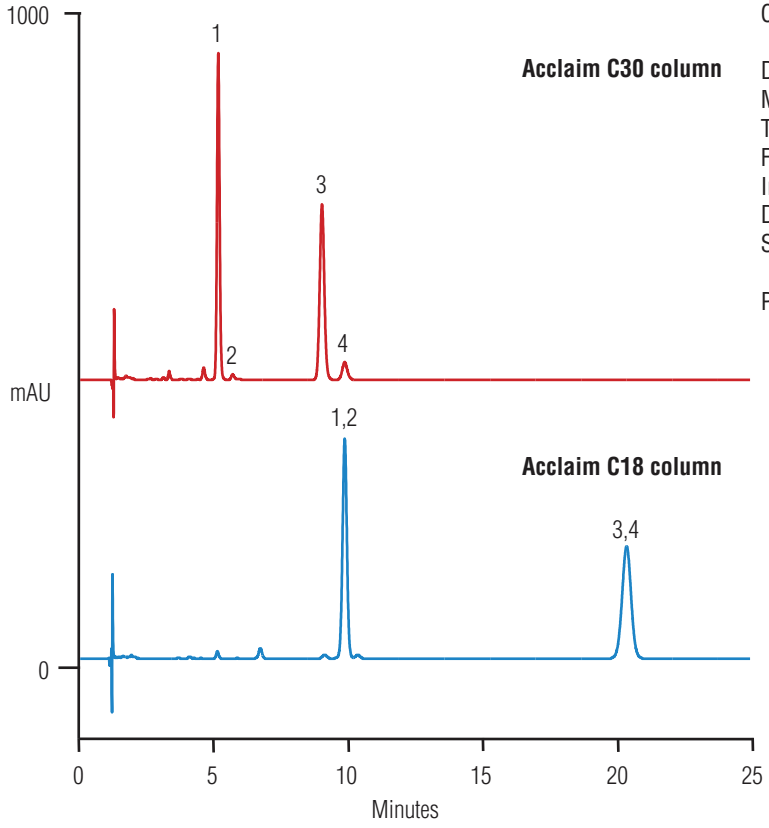
Vitamin K Isomers Separated Using a Thermo Scientific™ Acclaim™ C30 Column vs an Acclaim C18 Column



Column:	Thermo Scientific™ Acclaim™ C30, 3 µm Thermo Scientific™ Acclaim™ 120 C18, 3 µm
Dimensions:	3.0 × 150 mm
Mobile Phase:	98% Methanol/2% DI water
Temperature:	20 °C
Flow Rate:	0.65 mL/min
Inj. Volume:	2.5 µL
Detection:	DAD (UV at 250 nm shown)
Sample:	Vitamin K_1 and K_2 in acetonitrile, 0.5 mg/mL (exposed in UV light for 20 min)

Peaks:

1. Vitamin K_2
2. Isomer of Vitamin K_2
3. Vitamin K_1
4. Isomer of Vitamin K_1

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Vitamin K is a group of structurally similar, fat-soluble vitamins that are needed for the posttranslational modification of certain proteins, mostly required for blood coagulation but also involved in metabolic pathways in bone and other tissue. They are 2-methyl-1,4-naphthoquinone derivatives. This group of vitamins includes vitamin K_1 and vitamin K_2. Plants synthesize vitamin K_1 while bacteria can produce a range of vitamin K_2 forms, including the conversion of K_1 to K_2 by bacteria in the small intestines. Shown here, the Acclaim C30 column provides good resolution between both vitamin K_1 and vitamin K_2 and corresponding structural isomers, while the Acclaim C18 column fails to separate these isomers.