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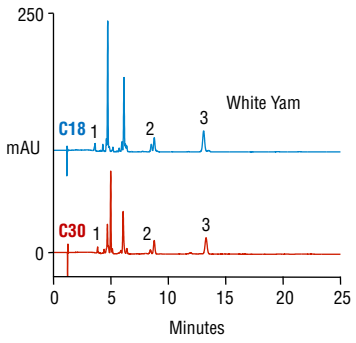
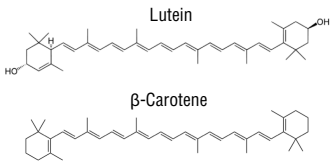
Comparison of Acclaim C30 vs C18 for Carotenoid Profiles





Columns:	Thermo Scientific™ Acclaim™ C30, 3 µm Acclaim 120 C18, 3 µm
Dimensions:	3.0 × 150 mm
LC System:	Thermo Scientific™ Dionex™ UltiMate™ 3000 RSLC system
Mobile Phases:	A) Acetonitrile B) Methanol:Ethyl acetate 1:1 (v/v) C) 10 mM Formic acid in water

Gradient Times (min):	-8.0	0.0	1.0	21.0	25.0
%A	95.0	95.0	95.0	54.5	54.5
%B	4.5	4.5	4.5	45.0	45.0
%C	0.5	0.5	0.5	0.5	0.5

Flow:	0.64 mL/min
Temperature:	30 °C
Injection:	8 µL
Detector:	DAD (260–800 nm); traces at 450 nm shown
Sample Preparation:	See reference 2.
Samples:	White yam, 6.0 g/mL
Peaks:	1. Lutein 2. α-Cryptoxanthin 3. β-Carotene 4. Lycopene

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The longer alkyl chains of C30-bonded silica give better shape selectivity for long-chain analytes than does C18-bonded silica. The carotenes and xanthophylls in white yam have the same molecular shapes, but differ in polarity due to the substituent groups, and therefore show little difference in selectivity between C18 and C30.

1. J. Hirschberg, M. Cohen, M. Harker, T. Lotan, V. Mann and I. Pecker, *Pure & Appl. Chem.*, Vol. 69, No. 10, pp. 2151-2158, 1997.
2. D.B.Rodriguez-Amaya and M. Kimura, “HarvestPlus Handbook for Carotenoid Analysis”, International Food Policy Research Institute, 2004.