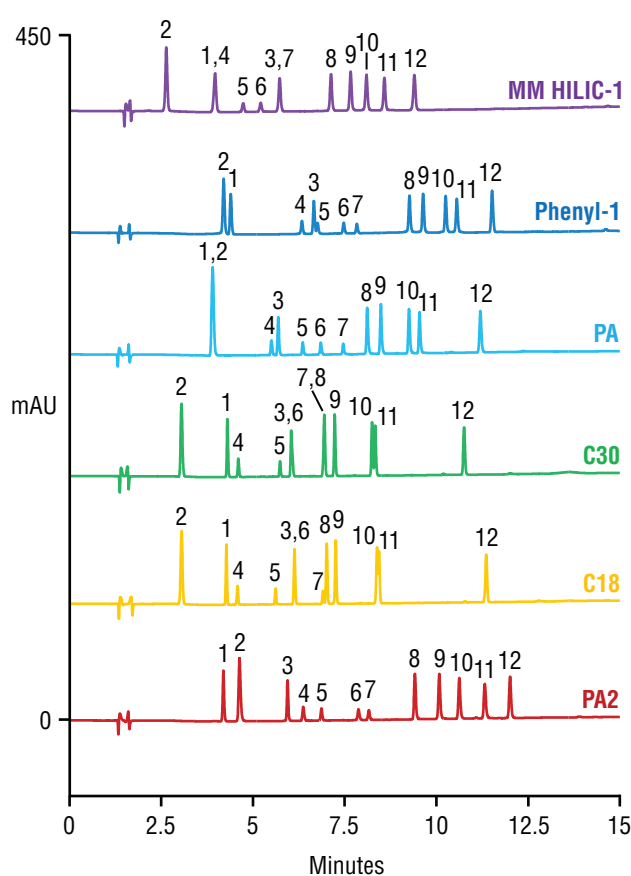


Comparison of Thermo Scientific™ Acclaim™ Stationary Phases for Separation of Catechins



Columns: Thermo Scientific™ Acclaim™ PolarAdvantage II (PA2),
3 µm, 3 × 150 mm

Acclaim 120 C18, 3 µm, 3 × 150 mm

Acclaim PolarAdvantage (PA), 3 µm, 3 × 150 mm

Acclaim Mixed-Mode HILIC-1, 3 µm, 3 × 150 mm

Acclaim C30, 3 µm, 3 × 150 mm

Acclaim Phenyl-1, 3 µm, 3 × 150 mm

HPLC System: Thermo Scientific™ Dionex™ UltiMate™ 3000 RSLC

Mobile Phases: A: Acetonitrile

B: 100 mM formic acid + 20 mM ammonium formate

C: Water

Gradient Times: -6 0 12 15

% A: 5 5 50 50

% B: 10 10 10 10

% C: 85 85 40 40

Flow Rate: 0.60 mL/min

Injection Vol.: 5 µL

Temperature: 30 °C

Detection: UV at 254 nm, 5 Hz, 1 s resp. time

Peaks:

1. theobromine	7. epicatechin
2. gallic acid	8. epigallocatechin gallate
3. caffeine	9. gallic catechin gallate
4. gallic catechin	10. epicatechin gallate
5. epigallocatechin	11. catechin gallate
6. catechin	12. 3,4,5-trihydroxy cinnamic acid

28825

Catechins are a class of polyphenolic flavanols found extensively in plants, notably tea and cacao. In this selectivity comparison, stationary phases with a mixture of polar and reversed-phase retention provide the best separation. The Acclaim PolarAdvantage II column is resistant to the acidic conditions usually favored for separating polyphenols, and is the preferred column type.