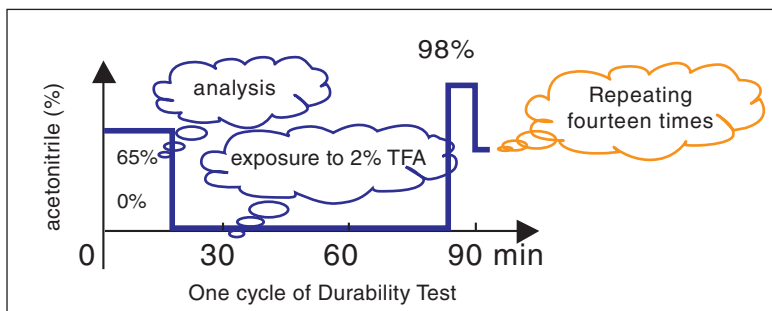


CAPCELL PAK C₁₈ ACR

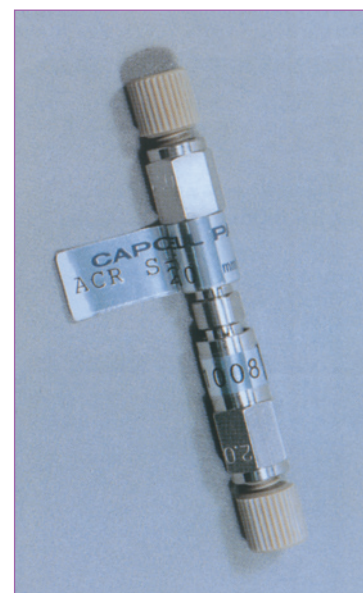
CAPCELL PAK C₁₈ ACR was synthesized through a modified polymer-coating technique, and intended to show an outstanding durability under an acidic mobile phase. Its performance was proven in the evaluation method originally designed for acidic resistance.

* ACR Capillary Columns are also available

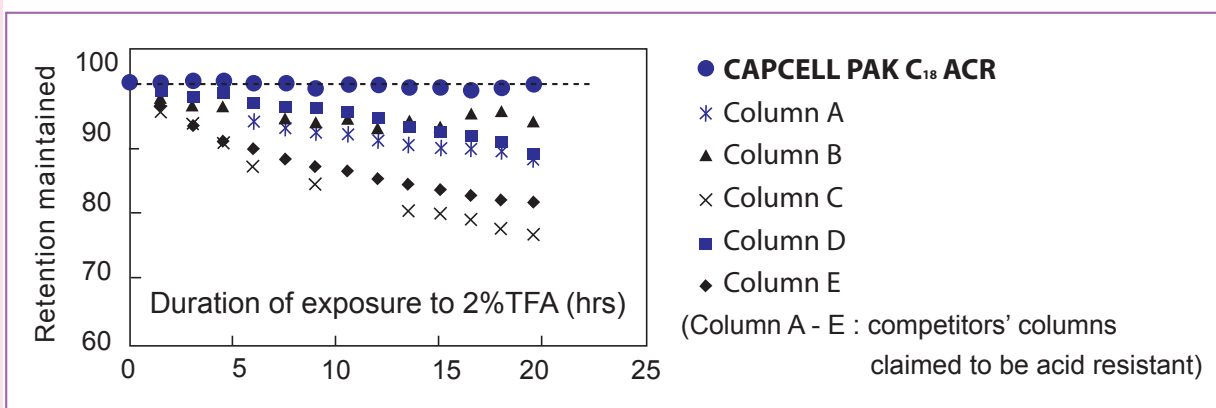
Acidic resistance test



HPLC conditions
 Column : C₁₈ ACR 4.6mm i.d.x150mm
 Mobile phase : A: 2vol% TFA in H₂O (pH1)
 B: 2vol% TFA in CH₃CN
 B: 65%(20min) - 0%(60min) - 98%(5min) - 65%(5min)
 Flow rate : 1.0mL/min
 Temperature : 60°C
 Detection : UV 254 nm
 Injection : 7μL
 Sample : uracil, amylbenzene



Comparison of Acidic Resistance



CAPCELL PAK C₁₈ ACR compared to other CAPCELL PAK C₁₈ phases

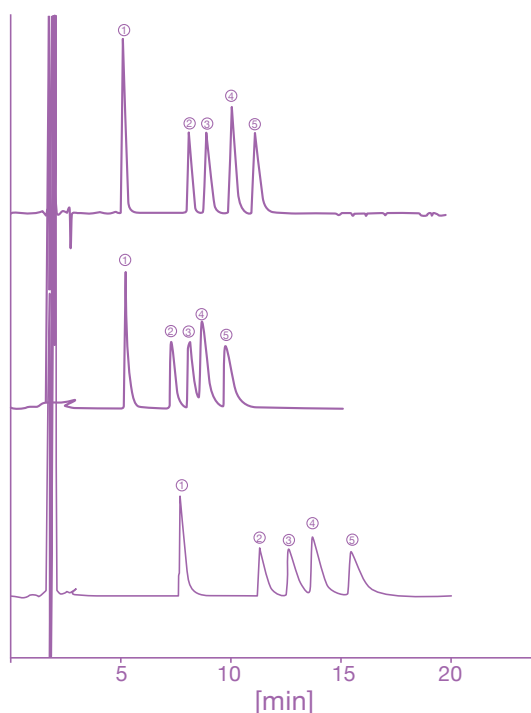
Type	Surface Area m ² /g	Pore Volume mL/g	Pore Size nm	Particle Diameter μm	Carbon Content %
ACR	340	0.8	8	5	18
MG	260	0.9	10	5	15
UG120	300	1.0	12	5	15
UG80	340	0.8	8	5	18



ACR Applications

Basic Compounds...Tricyclic antidepressants

Peaks of tricyclic antidepressants, highly basic compounds, are known to be easily affected by residual silanols of a stationary phase. The tendency is pronouncing under acidic mobile phases commonly used in LC-MS. The following comparison is performed between CAPCELL PAK C₁₈ ACR and Column F, one of the major commercial columns, using five typical antidepressants. The ACR column shows a good baseline separation for these compounds, while Column F shows a very unstable retention behavior, influenced by a slight change in organic content in a mobile phase. The inertness of the ACR column was explained by its completely polymer-coated surface structure.



CAPCELL PAK C₁₈ ACR
Mobile Phase
0.1vol% HCOOH, CH₃CN / H₂O = 25 / 75

Column F
Mobile Phase
0.1vol% HCOOH, CH₃CN / H₂O = 33 / 67

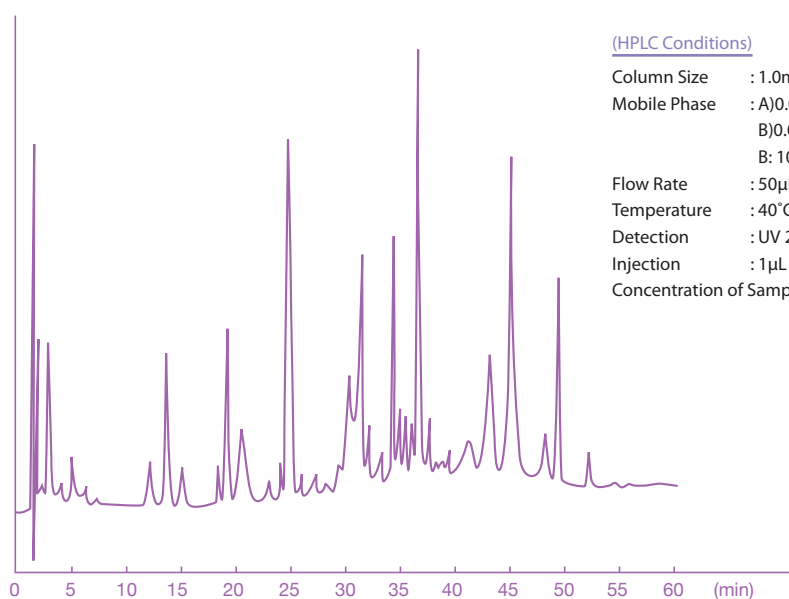
Column F
Mobile Phase
0.1vol% HCOOH, CH₃CN / H₂O = 32 / 68

(HPLC Conditions)

Column Size : 4.6mm i.d.x150mm
Flow Rate : 1.0mL/min
Temperature : 40°C
Detection : UV 210nm
Samples
① Doxepine
② Desipramine
③ Imipramine
④ Nortriptyline
⑤ Amitriptyline

Peptide Mapping

Tryptic digest of fetuin

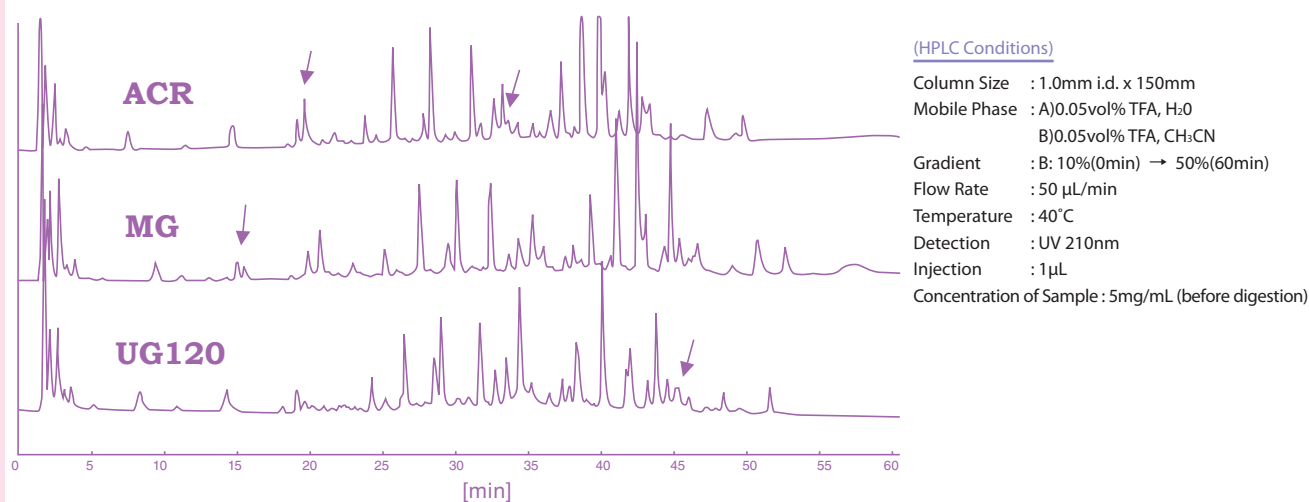


(HPLC Conditions)

Column Size : 1.0mm i.d. x 150mm
Mobile Phase : A)0.05%vol TFA, H₂O
B)0.05%vol TFA, CH₃CN
B: 10%(0min) → 50%(60min)
Flow Rate : 50μL/min
Temperature : 40°C
Detection : UV 210nm
Injection : 1μL
Concentration of Sample : 7.5mg/mL (before digestion)

Tryptic digest of casein

Profiles of tryptic digest of casein obtained with **CAPCELL PAK ACR, MG, and UG120** are compared as shown below. Acidic mobile phases are commonly used in peptide mapping based on reversed-phase chromatography.



Some selectivity differences (indicated with arrows) were observed among these columns.

Tryptic digest of cytochrome C

