Cogent UDA™

Undecanoic Acid (wcx)

Cogent Phase	Particle Size (µm)	Pore Size (Å)	Surface Area (m2/g)	Carbon Load (%)	Endcapped	Optimum pH Range	Recommended Max. Temp. (°C)	USP Code
UDA	4	100	390	14-15	No	2.0 – 8.0	80	L85
UDA 2.ō™	2.2	120	340	14-15	No	2.0 – 8.0	80	L85

For further details on 2.ō columns, please see page 25. For ordering information, see page 32.

Cogent UDA is a unique selectivity phase in which the silica-hydride surface is bonded, via a double attachment, to an eleven carbon chain terminating in a carboxylic acid (undecanoic acid). This gives the phase weak cation-exchange properties in addition to aqueous normal-phase.

The terminal carboxylic acid group contributes some additional selectivity to the phase which can be useful for closely related compounds. When the mobile phase pH is greater than 5.9, the acid group becomes 90% negatively charged and at pH 6.9 it is 99% charged, and so it may act as a cation-exchanger. Below pH 4.9 the group does not have significant ion-exchange properties. Cogent UDA is a good choice for scientists working with closely related compounds and with LC-MS. Precise methods are easily developed, even with complex sample matrices, with very little desalting required.

Figure 27.

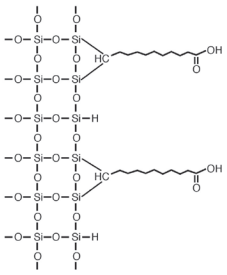
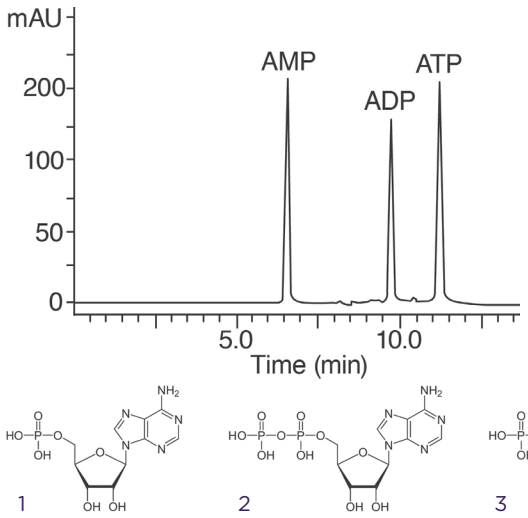


Figure 28.



Method Conditions

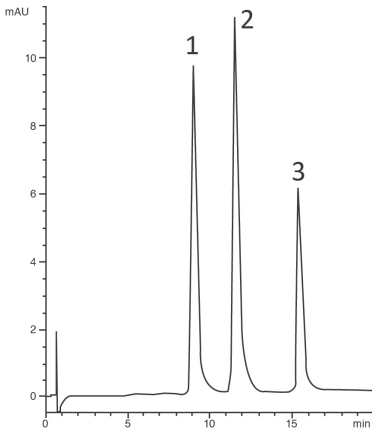
Column: Cogent UDA, 4µm, 100Å
Catalog No.: 40031-05P-2
Dimensions: 2.1 x 50mm
Mobile Phase: A: DI H_2O / 16.0mm ammonium acetate
B: 90% acetonitrile/10% DI H_2O / 16.0mm ammonium acetate
Gradient:

time (min.)	%B
0	95
0.5	95
10	70
15	30
20	30
20.1	95

Temperature: 25°C
Injection vol.: 1µL
Flow rate: 0.4mL/min
Detection: UV 254nm
Peaks:
1. AMP – adenosine 5'-monophosphate
2. ADP – adenosine 5'-diphosphate
3. ATP – adenosine 5'-triphosphate

Figure 28 shows the separation of adenine nucleotides. The analytes are eluted in the order of increasing polarity.

Figure 29.



Method Conditions

Column: Cogent UDA 2.ō, 2µm, 120Å
Catalog No.: 40231-05P-2
Dimensions: 2.1 x 50mm
Mobile Phase: A: 0.1% formic acid in water
B: CH_3CN – 10mm ammonium acetate (95/5)
Gradient:

time (min.)	%B
0	100
1	100
17	40
19	40
20	100

Injection vol.: 0.5µL
Flow rate: 0.3mL/min
Detection: UV, 254nm
Peaks: 1. 4-Amino-3-chloro-pyridine
2. Metformin
3. Cetylpyridinium chloride

Figure 29 shows the analysis of three amine containing compounds using an increasing pH gradient with 0.1% formic acid. Separation occurs via a combination of ANP and weak cation-exchange mechanisms.