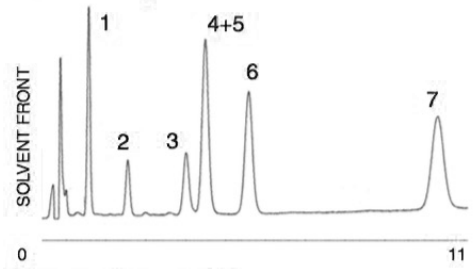
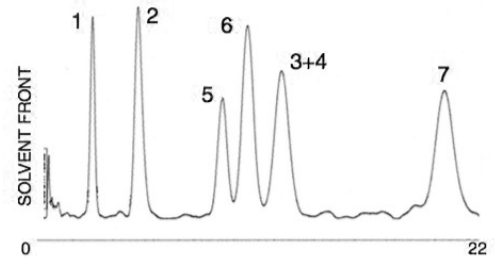
Diferent Solvent Selectivity Mechanism

Polarity or Shape Recognition

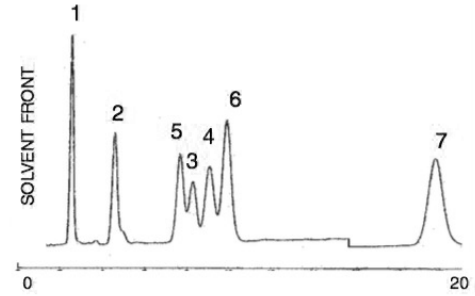
Chromatogram A:



Chromatogram B:



Chromatogram C:



Notes: Using a single UDC Cholesterol column with orthogonal selectivity, polarity in ACN and shape recognition in Methanol can lead to unique problem solving.

Method Conditions

Column: **Cogent UDC-Cholesterol™**, 4µm, 100Å

Catalog No.: 69069-75R

Dimensions: 4.6 x 75 mm

Mobile Phase: A. 60% Aqueous (0.1%TFA)/ 40% Acetonitrile (ACN)
B. 45% Aqueous (0.1%TFA)/ 55% MeOH
C. 56% Aqueous (0.1%TFA)/ 24% MeOH and 20% ACN

Temperature: 15°C

Flow rate: 1 mL/min

Detection: UV 240 nm

Peaks: 1. Prednisolone
2. Corticosterone
3. Estradiol
4. Ethinyl Estradiol
5. Estrone
6. Norgesterel
7. Progesterone

Discussion

An FDA requirement for Birth Control Product Analysis is the resolution of hormonal steroids ETES and ESTN.

•With Cogent Bidentate C18 and Cogent UDC- Cholesterol HPLC columns, peaks ETES and ESTN are resolved with polarity-based, Reverse Phase, ACN as the organic modifier.

• With other C18 columns, these same peaks are not resolved.

• When eluting with the shape recognition in Methanol on the Cogent UDC Cholesterol column, ETES and ESTN are extremely well resolved. However, in this test mix ETES now co-elutes with ESTD.

• By mixing the selectivity mechanisms, polarity (ACN) and shape recognition (MeOH), partial resolution was achieved on all compounds using the UDC Cholesterol column. Scaling up to a 250x4.6mm column resulted in baseline resolution of all peaks.

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