Key Benefits
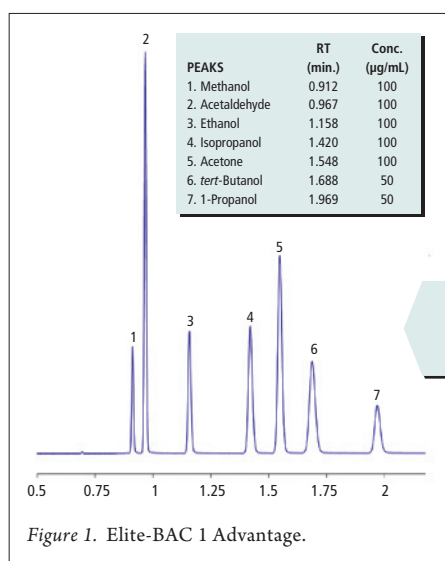
- Reduced tailing for better baseline resolution
- Greater separation of analytes
- Complete resolution of all peaks
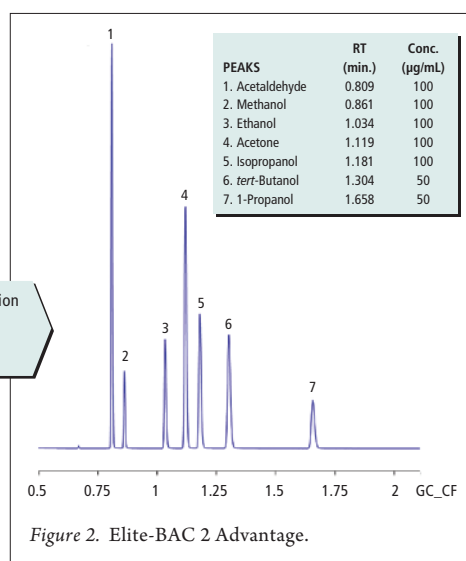
Elite-BAC Advantage Columns

Introduction

Blood testing is a technique used to determine the Blood Alcohol Content (BAC) in Driving Under the Influence (DUI) and Driving While Intoxicated (DWI) cases. In 2009 alone, there were an estimated 1.4 million DUI/DWI cases in the United States.[1] With the volume and severity of DUI/DWI cases, it is imperative to have high throughput and quality results. That's why we've developed a new line of Elite-BAC Advantage columns to help you meet those high demands.

Our new Elite-BAC columns eliminate co-elution of key alcohols with internal standards, and limits peak tailing while keeping run times under 2 minutes.

PEAKS	RT (min.)	Conc. (µg/mL)
1. Methanol	0.912	100
2. Acetaldehyde	0.967	100
3. Ethanol	1.158	100
4. Isopropanol	1.420	100
5. Acetone	1.548	100
6. *tert*-Butanol	1.688	50
7. 1-Propanol	1.969	50

Figure 1. Elite-BAC 1 Advantage.

- Clear baseline resolution
- Symmetrical peaks
- Run time under 2 min

PEAKS	RT (min.)	Conc. (µg/mL)
1. Acetaldehyde	0.809	100
2. Methanol	0.861	100
3. Ethanol	1.034	100
4. Acetone	1.119	100
5. Isopropanol	1.181	100
6. *tert*-Butanol	1.304	50
7. 1-Propanol	1.658	50

Figure 2. Elite-BAC 2 Advantage.

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Results

To demonstrate the capabilities of our Elite-BAC Advantage columns we tested them against the Agilent® DB-ALC 1 and Phenomenex® ZB- ALC 1 columns. In Figure 3, the first chromatogram DB-ALC 1 shows co-elution of acetone and t-butanol. t-butanol is an internal standard commonly used in BAC analysis which can co-elute with isopropyl alcohol metabolite acetone under poor chromatography conditions.

Also in Figure 3, the second chromatogram ZB-ALC 1 illustrates tailing of compounds, a common issue in BAC analysis. On the ZB-ALC 1 column, tailing occurs on all compounds when run under the same chromatographic conditions as the DB-ALC 1 and Elite-BAC Advantage columns.

The final chromatogram in Figure 3, the Elite-BAC 1 Advantage column, exhibits neither the peak tailing nor the co-elution, with all compounds eluting under 2 minutes.
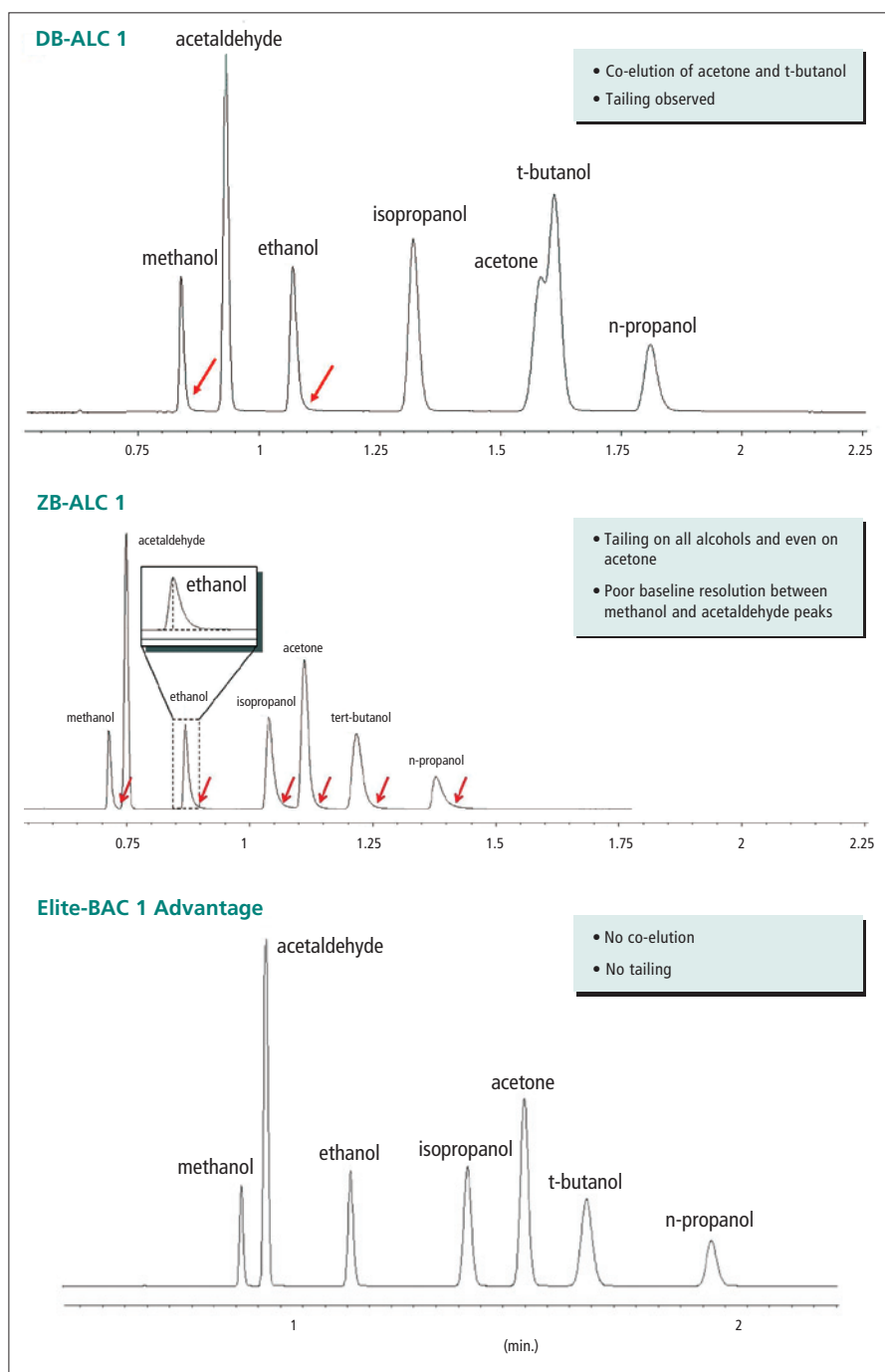

Figure 3. Elite-BAC Advantage column results on co-elution and tailings.

Ordering Information

Every Elite-BAC Advantage column is quality tested with target compounds to ensure performance. These new columns are exceptionally robust, ensuring longer column lifetime and highly reproducible data. For fast, consistent results, try Elite-BAC Advantage columns for analysis of blood alcohol content.

Table 1. Elite-BAC Advantage GC Columns				
Description	Inner Diameter (mm i.d.)	Length (m)	Film Thickness (um)	Part No.
Elite-BAC 1 Advantage	0.32	30	1.80	N9315071
Elite-BAC 1 Advantage	0.53	30	3.00	N9315072
Elite-BAC 1 Advantage	0.18	10	1.00	N9315075
Elite-BAC 2 Advantage	0.32	30	0.60	N9315073
Elite-BAC 2 Advantage	0.53	30	1.00	N9315074
Elite-BAC 2 Advantage	0.18	10	0.34	N9315076
Elite-BAC 3 Advantage	0.18	10	0.30	N9316575

Reference

1. U.S. Department of Justice Federal Bureau of Investigation, 2009. Estimated Number of Arrests United Sates, 2009. Retrieved from http://www2.fbi.gov/ucr/cius2009/data/table_29.html

If you're ready to experience the PerkinElmer Advantage, visit: www.perkinelmer.com/BAC

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