

We all have pains,  
irreproducible  
chromatography should  
not be one of them



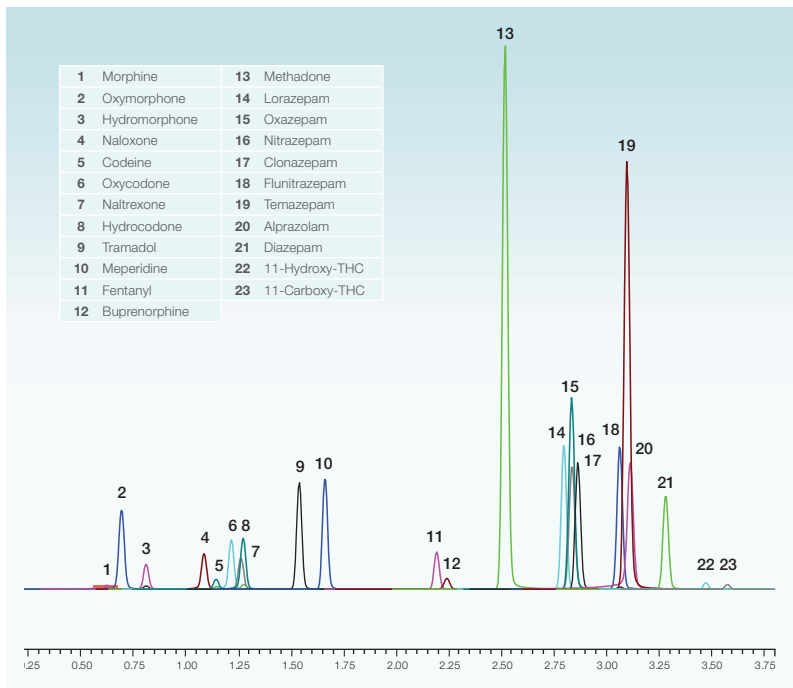
## Thermo Scientific Accucore Biphenyl columns are designed for robust and reliable separations with unrivaled performance

Generally C18 columns offer the ability to resolve a wide variety of analytes without issues. However, there are times when alternative chemistry is required for the separation of aromatic and moderately polar analytes. Biphenyl chemistry offers complementary selectivity to a C18 column, and the ability to resolve isomeric compounds, such as drugs of abuse and steroids.

Based on solid-core technology, the Thermo Scientific™ Accucore™ Biphenyl column offers an optimized packing procedure for excellent durability in a variety of matrices. These columns provide fast, high-resolution separations without elevated backpressures and optimal separation in methanol gradients.

In addition, you will experience:

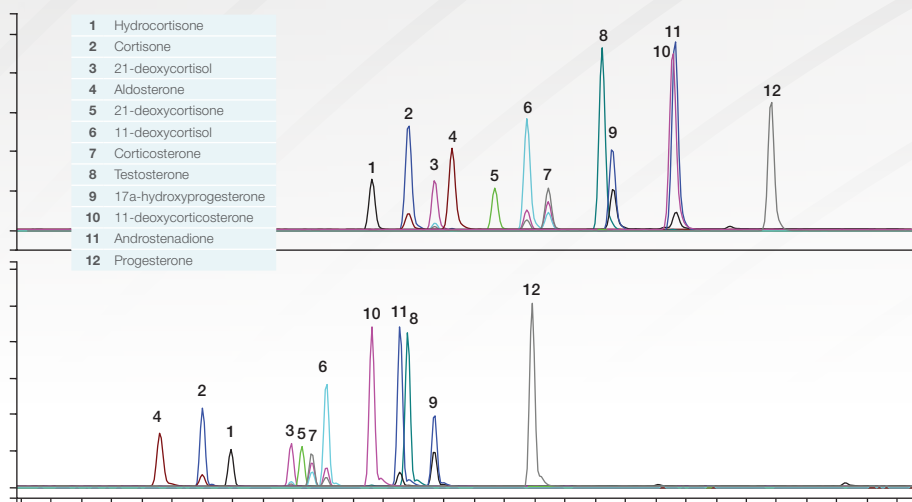
- Compatibility with 100% aqueous conditions
- Lower backpressures (UHPLC is not required)
- Great column lifetime stability
- Excellent lot-to-lot reproducibility
- A rugged column suitable for a variety of matrices



Drugs of abuse (pain panel) separations are no longer a pain point. Here the separation of common pain killers (opioids) is demonstrated on an Accucore Biphenyl 2.1 × 50 mm column.

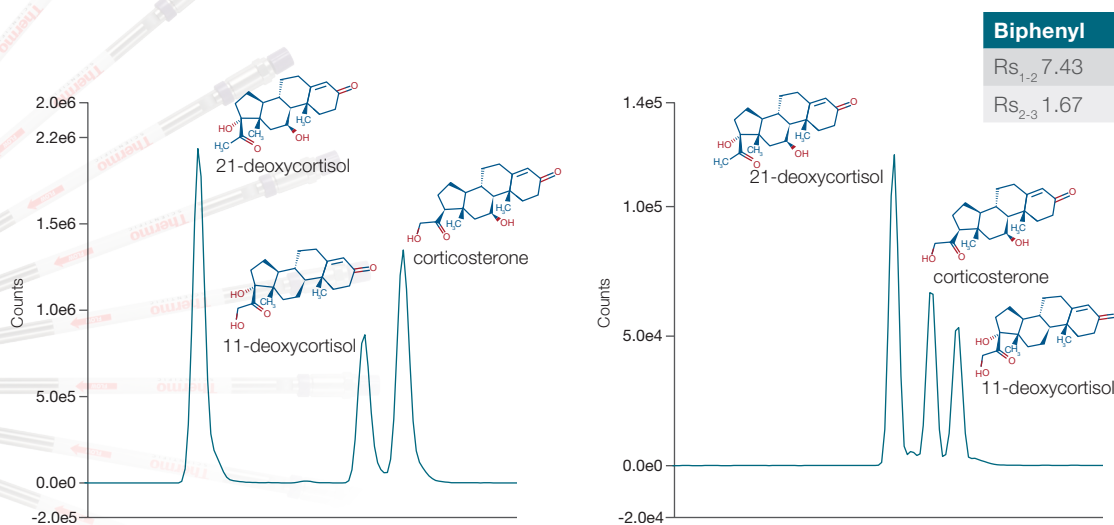
# Showing ultimate strength, resolving difficult separations with ease

The Accucore Biphenyl chemistry retains steroids better than a C18 or aQ phase, helping you resolve structural isomers and analytes of interest from matrix background. This allows you to divert the matrix ions away from your mass spectrometer and minimizes interferences in signal caused by background ions.



Comparison separation on a panel of steroids showing Accucore Biphenyl (top) and Accucore C18 (bottom) demonstrating the enhanced retention properties a biphenyl column offers for steroids versus a traditional C18 column running the same gradient conditions.

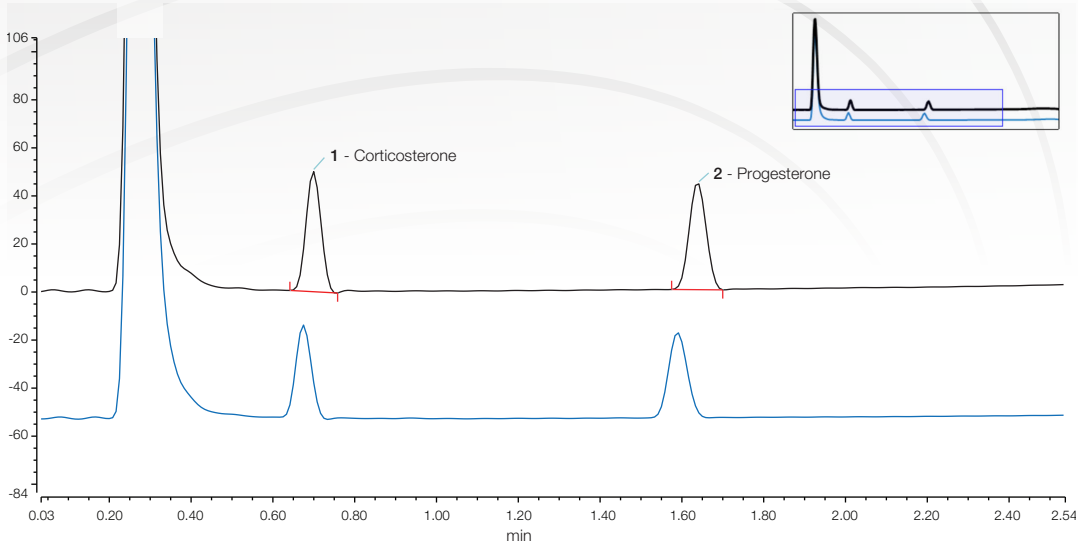
Along with increased retention of steroid compounds, the biphenyl chemistry shows elution order differences and increased resolution between critical pairs of isomers. This orthogonal selectivity is a useful tool for chromatographers to resolve co-eluting peaks, such as isobaric compounds.



Separation of structural isomers 21-deoxycortisol, 11-deoxycortisol, and corticosterone on the Accucore Biphenyl column (left) and the Accucore C18 column (right). All peaks have a molar mass 346.467 g/mol, the Accucore Biphenyl column demonstrates enhanced resolution and a change in selectivity over the Accucore C18 column.

## Robustness and high quality

Accucore Biphenyl columns are extremely rugged, ensuring laboratory productivity and confidence in quantitative results. When faced with over 5000 injections of urine, the Accucore Biphenyl column provided quality results. Outperforming competitor columns for lifetime, our biphenyl chemistry was able to deliver outstanding peak shape and performance for over 6000 injections. The robustness provided by the Accucore Biphenyl column delivers better productivity and reduced cost per sample.

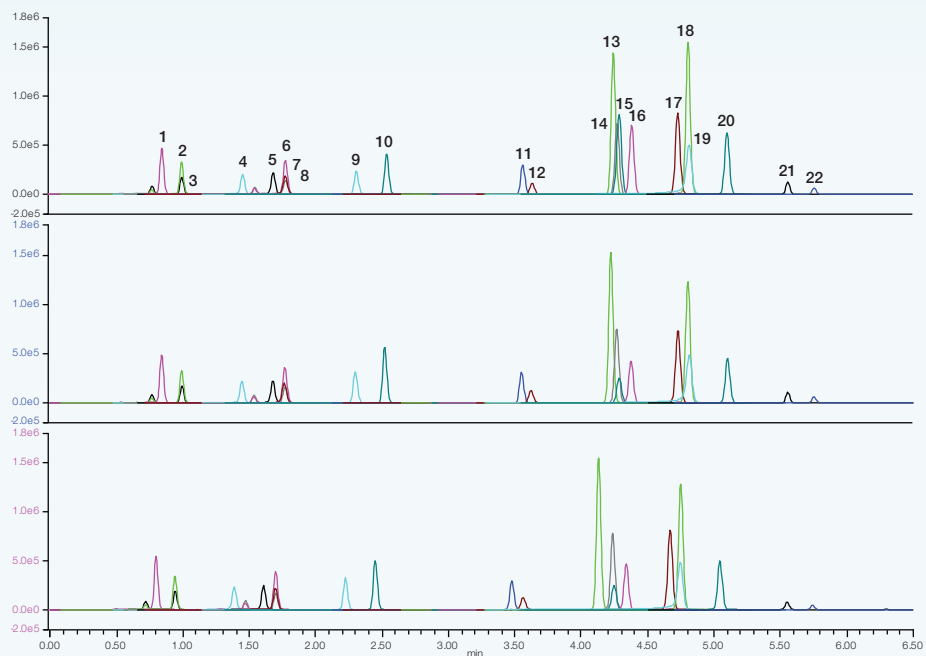


In the evaluation of steroids in a prepared urine matrix, the Accucore Biphenyl 2.1 × 50 mm column demonstrated long-term stability with over 6000 injections. The top trace (black, injection 1) versus the signal offset comparison bottom trace (blue, injection 6050) shows that resolution was maintained between corticosterone and progesterone without sacrifice to peak symmetry.

## Lot-to-lot consistency

A comparison of three different lots of Accucore Biphenyl columns show excellent lot-to-lot reproducibility. Reliability you can count on, as you advance your method development into a routine workflow.

Three separate lots of Accucore Biphenyl columns demonstrate excellent reproducibility when comparing the separation of common drugs of abuse.



1	Oxymorphone
2	Hydromorphone
3	Morphine
4	Naloxone
5	Oxycodone
6	Hydrocodone
7	Naltrexone
8	Codeine
9	Tramadol
10	Meperidine
11	Fentanyl
12	Buprenorphine
13	Methadone
14	Lorazepam
15	Nitrazepam
16	Clonazepam
17	Flunitrazepam
18	Temazepam
19	Alprazolam
20	Diazepam
21	11-Carboxy-THC
22	11-Hydroxy-THC

## Specifications

Specification	Value
pH range	2–8
Pore size	80Å
Particle size	2.6 µm
Carbon load	6%
USP classification	L11
Endcapped	Yes
Surface area	130 m <sup>2</sup> /g
Temperature	70 °C
USP type	L11
Pressure limit	600 bar, 2.1 × 50 mm 800 bar, 2.1 × 100 mm
Stationary phase	Biphenyl

## Ordering information

Catalog Number	Description	Manufacturer Part Number
15914427	Accucore Biphenyl 2.1 × 50 mm Column	17826-052130
15924427	Accucore Biphenyl 2.1 × 100 mm Column	17826-102130
15904427	Accucore Biphenyl Defender Guards, 2.1 × 10 mm, 4/pk	17826-012105
10776714	Guard Cartridge Holder	852-00



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