



A Practical Approach to CZE

# What is CElixir™?

CElixir™ is a patented<sup>1</sup>, dynamic coating system that will make your CZE more reproducible and quantifiable. Two ionic solutions are applied to a fused silica capillary producing a very stable polymeric coating on the wall. An abundance of charge is exposed throughout the lumen of the capillary and from the wall. This high-density of charge produces a very fast (even at acidic pH) and reproducible EOF. A precise and reproducible CZE method from run to run, capillary to capillary or instrument to instrument is now possible with CElixir™.

### How does it work?

Two solutions in CElixir™ are placed in two vials on your HPCE instrument and are automatically applied to the capillary before and between runs. The CE practitioner is no longer relying on the fused silica capillary as the main component of the separation mechanism and EOF. The ionic polymers in CElixir™ now provide this separation mechanism, making it "portable", controllable and reproducible. The solutions are always the same on any capillary you use and on any HPCE instrument that you use and therefore the EOF and CZE conditions are always the same anywhere any time.

### Acidic pH, High Flow Rate

Even at very low pH (as low as 2.5), CElixir™ has a very fast and reproducible EOF. If you change the pH from run to run, the resulting change in EOF speed will be negligible. This allows you to use pH as a solubility tool, a selectivity tool or as a sample matrix option to retain the biological activity of your samples. Since you re-apply the coating before each run and the wall adsorption effects are minimized the inherent capillary inconsistencies experienced at low pH are eliminated. Precision, speed and reproducibility are increased over normal CZE.

### Average Migration Time of Heroin Powder Using CElixir™

Cap No.	Peak 1	Peak 2	Peak 3	Peak 4	Peak 5	Peak 6
1	2.910	2.954	3.029	4.072	4.217	4.705
2	2.916	2.961	3.304	4.083	4.231	4.721
3	2.908	2.954	3.029	4.072	4.222	4.718
4	2.858	2.903	2.979	3.972	4.112	4.576
5	2.894	2.942	3.017	4.074	4.223	4.691
6	2.894	2.942	3.018	4.057	4.202	4.686
7	2.881	2.928	3.003	4.029	4.175	4.659
%CV	0.638	0.0622	0.596	0.894	0.931	0.995

This chart shows the results using seven different Capillaries with CElixir™ at pH 6.6 and run six times each. This shows how stable the EOF and migration times are using CElixir™.

### Features of CElixir:

Increases Precision of your EOF  
 Increases Reproducibility of your HPCE  
 Can be automated  
 pH Independent

Shifts Adsorption Equilibria  
 Increases EOF Speed  
 Lower Cost v. HPLC  
 No Buffer Preparation Needed  
 No Organics or Hazardous Material Used

### Benefits of CElixir:

Makes Quantification of Peaks Easy and Reliable  
 Gives you the confidence needed  
 Easy to use, anyone in the lab can use it  
 Use pH to control ionization of your sample for selectivity or to maintain biological activity.  
 Minimize Sample loss and increase reproducibility  
 Shorter Analysis time, Increase lab throughput  
 Save Money buying solvents and disposal costs  
 Save Time and Increase Repeatability of Method  
 Solutions are stable and safe and easily disposed of.

<sup>1</sup> Analis Patent No. 5,611,903



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