

CElixir-plus™ Solutions Storage.

DO NOT REFRIGERATE CElixir-plus Solutions.

CElixir-plus™ Solutions should be capped immediately after use and stored at room temperature (18°C to 26°C).

Support.

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Technical Information

Initiator Solution:	pH 4.2, in 4-aminopyridine
Accelerator Solution:	pH 4.2, in 4-aminopyridine
Separating Buffer:	pH 4.3, in Malic Acid(20mM) 4-aminopyridine, 18-crown
Conditioner Solution:	Lithium Hydroxide 0.1mol/L



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Operating and Instruction Manual



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CElixir-plus™

Kits for non UV absorbing Cations and Aliphatic Amines

Instructions for use.

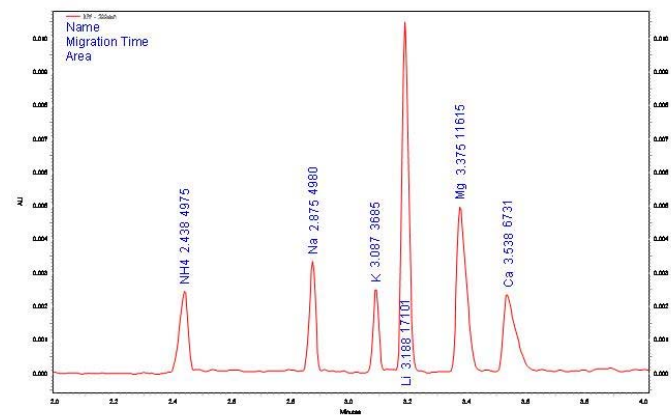
Background Information on Method

Indirect Detection:

Small, positively charged molecules (cations) such as metallic ions and aliphatic amines are not UV absorbing and therefore require an “indirect method of detection” when using UV detectors. The CElixir-plus™ buffers are UV absorbing and will absorb most of the UV. When a non absorbing analyte such as an aliphatic amine passes by the detection window, the detector senses a decrease in absorption and records the “peak”.

Dynamic Coating for Reproducibility:

CElixir-plus™ uses a dynamic coating principle which means for each run, the capillary wall is treated to produce a very precise EOF. If an analyte adsorbs to the wall, it is rinsed clean with LiOH between runs and a fresh coating is reapplied; the same EOF results.



Sample Electropherogram:

The individual vials can be reused until the volume is too low for the system to work or until the buffers are depleted. DO NOT REFILL The vials...dispose of used vials when reagents and buffers need replenishment.

Lithium Peaks:

Lithium migrates with the system peak. If you are analyzing for Lithium, use Sodium Hydroxide Solution 0.1N as the Conditioner instead of the supplied Conditioner.

Re-use of Capillary.

Do not use the capillary for any other separations other than CElixir-plus™ separations once you have coated it with CElixir-plus™ Initiator Solution.

Between runs rinse the capillary with Conditioner solution with at least one column volume (typically 0.5 minutes) then rinse it with CE Grade Water with the same column volume (typically 0.5 minutes), then start the separation as described in Generic Program listed on page 6.

Storage of the Capillary requires a rinse with CE Grade Water with a volume equivalent to 2 column volumes (2 times the capillary length, typically 1 minute at 20 psi).

DO NOT OVER-FILL the VIALS.

Load your CE instrument's autosampler with vials containing CELixir-plus, reagents and samples.

Reagent	Vial	Inlet Label	Outlet Label
Conditioner Solution	1 Vial	A1	
Initiator (A)	1 Vial	A2	
Accelerator (B)	1 Vial	A3	
CE Grade Water	4 Vials	B2, B4, B6,	B2
Separating Buffer	3 Vials	B3, B5	B5
Empty Vial	1 Vial		B6
Samples	Vials: Buffer Inlet	S1	

Method of Separation.

Follow a method specific for your CE instrument. Following is a sample separation method.

Temperature:	25°C
Detection Wavelength:	200 nm for CELixir-plus™
Detection Mode:	Indirect for CELixir-plus™
	For DAD at 200nm use 10nm Bandwidth
Polarity:	Cathodic (Normal)
Current:	30 kV

Generic Program for Coating/Injection and Separation after Capillary is Initiated. See previous section on New Capillaries.

Time	Function	Value	Duration	Inlet Vial	Outlet Vial	Comments
	Rinse	20.0 psi	0.30 min	Initiator (A2)	Empty (B6)	
	Rinse	20.0 psi	0.50 min	Accelerator(A3)	Empty (B6)	
	Rinse	20.0 psi	0.50 min	Sep Buffer (B3)	Empty (B6)	
	Wait		0.20 min	Water (B2)	Water (B2)	Wait Time
	Injection	0.5 psi **	5.0 sec	Sample (S1)	Water (B2)	
	Injection	0.1 psi	10.0 sec	Water (B4)	Water (B2)	Water Plug
0.0	Separation	30 kV	5.5 min*	Sep Buffer (B5)	Sep Buffer (B5)	1min Ramp
2.0	Auto Zero					
5.5*	Stop Run					
5.5*	Rinse	20.0 psi	0.50min	Conditioner (A1)	Empty (B6)	
6.00*	Rinse	20.0 psi	0.50min	Water (B6)	Empty (B6)	

* Time adapted to individual separation requirements. 1 psi = 0.06895 bar.

** For Beckman P/ACE MDQ, the water plug should occur at 0.1psi for 10 seconds

Introduction To CELixir-plus™

CELixir-plus™ enhances the analysis of small, positively charged molecules by CE. The CELixir-plus™ kits provide a dynamic coating when applied to the surface of the capillary wall produces a stable and highly reproducible EOF. The coated surface is propagated with negative charges creating a robust, reproducible EOF.

By following the simple instructions contained in this manual, it becomes very easy to separate cations and aliphatic amines.

Coating Definition.

The proprietary properties of the CELixir-plus™ dynamic coating system achieves its uniform EOF characteristics by a stable bond formed between the polycations in the Initiator Solution (A) and the capillary wall.

Run Buffer and Background Electrolyte.

No other buffers or Background Electrolytes (BGE) are needed. The Separating Buffer, included in the kit is the run buffer and the BGE. The Separating Buffer contains chromophores.

Matched Solutions.

Each CELixir-plus™ kit is supplied with 14ml of Initiator Solution (A) and 14ml of Accelerator Solution (B), 14ml of Conditioner Solution and 42ml of Separating Buffer. These solutions are provided with a Serial Number and must be used together as a matched set. Initiator Solutions of one kit cannot be used with the Accelerator Solutions of another kit. It is important that care is taken to use the correct matched set for reproducible results. This kit is designed to provide 200 tests.

Reagents and Materials.

Materials Needed to Separate Aliphatic Amines and Cations

CElixir-plus Initiator	Solution (A) Included
CElixir-plus Accelerator	Solution (B) Included
CElixir-plus Conditioner	Solution, Included
CElixir-plus Separating Buffer	Solution, Included
Capillary	Bare Fused Silica, typically 75µm ID by 60cm long. Not included
CE Grade Water	Not included
Vials	Not Included

Preparation

Sample Preparation.

Depending on the concentration of your analyte, the sample can be injected neat or diluted with CE Grade Water. Best results are obtained when pH of the sample is lower or equal to pH 4.2. Adjustment of the pH may be done by addition of LiOH to bring the pH higher or you can add HCL if want to lower the pH, avoid unnecessary dilution.

Hydrodynamic (Pressure) Injection Technique:

When using this technique, it may be optimal to dissolve your sample in CE Grade Water.

Electrokinetic (Current) Injection Technique:

When using this technique, it may be optimal to dissolve your sample in CE Grade Water. See below for Autosampler Vial filling procedure.

Run Buffer and CElixir-plus™ Solution.

The solutions provided in the CElixir-plus™ kits are ready to use and require no further preparation. CElixir-plus™ kits do not operate correctly with any other run buffer and should not be used.

Operation

Refer to your instrument manual for general operation and instructions on how to perform suitable separations.

Starting with a New Capillary.

When using a new capillary follow the recommended procedures of the manufacturer for cutting this capillary. A true perpendicular cut to the ends of the capillary are vital to the success of any CE separation. For cutting a MicroSolvCE capillary please refer to our website at www.MicroSolvTech.com; enter the Electrophoresis pages to find the Capillary Electrophoresis Primer. The direct URL is <http://www.microsolvtech.com/cutcap.htm>.

It is highly recommended to burn 2mm of the polyimide from each end of the capillary for injection ruggedness and reproducibility.

Capillaries should be dedicated to CElixir-plus™.

Initiate the Capillary.

1. Install the new capillary by following the CE instrument manufacturer's instructions.
2. Rinse the newly installed capillary with CElixir-plus™ Conditioning Solution for one (1) minute.
3. Rinse the capillary with CElixir-plus Initiator Solution (A) for (1.0) minute.
4. Rinse the capillary with CElixir-plus Accelerator Solution (B) for (2.0) minutes.
5. Rinse the capillary with CElixir-plus Initiator Solution (A) for (0.5) minute.
6. Rinse the capillary with CE Grade Water for (0.5) minute.
7. The capillary is ready to be used with the CElixir-plus™ system.

Example of Sample Vials (for Beckman P/ACE MDQ)

Using other CE instruments is easy. Please modify this method according to your instruments requirements.

Always use vials that are recommended by your CE instrument or their exact equivalent.