



## ERYTHROPOIETIN CONCENTRATED SOLUTION. DETERMINATION OF ISOFORMS ACCORDING TO *PH. EUR. 1316*

### INTRODUCTION

CAPEL capillary electrophoresis system is a versatile analytical tool for pharmaceutical analysis of proteins, peptides and small molecules using capillary zone electrophoresis (CZE), capillary gel electrophoresis (CGE), capillary isoelectric focusing (CIEF) and micellar electrokinetic chromatography (MEKC). CAPEL is suitable for the analysis by capillary electrophoresis according to any monograph or general chapter from world pharmacopoeias.

The present method is used for the determination of erythropoietin (EPO) isoforms in **erythropoietin concentrated solutions** according to European Pharmacopoeia monograph 1316 (Identification, method B. Capillary zone electrophoresis) using CAPEL capillary electrophoresis system.

### MEASUREMENT METHOD

The measurement method is based on capillary zone electrophoresis with direct UV detection at the wavelength of 214 nm.

Sample preparation procedure (desalting, dilution) and analysis conditions in accordance with Ph. Eur. 1316.

### EQUIPMENT AND REAGENTS

The CAPEL capillary electrophoresis system is used in measurements. Data acquisition, collection, processing and output are performed using a personal computer running under WINDOWS® XP/7/8/10 operating system with installed dedicated software package ELFORUN.

All reagents according to Ph. Eur. 1316.

### EXAMPLES OF REAL ANALYSES

#### Ph. Eur. 1316

**BGE:** according to Ph. Eur. 1316

**Capillary:**  $L_{\text{eff}}/L_{\text{tot}} = 102/112$  cm,

ID= 50  $\mu\text{m}$

**Injection:** 1000 mbar x sec

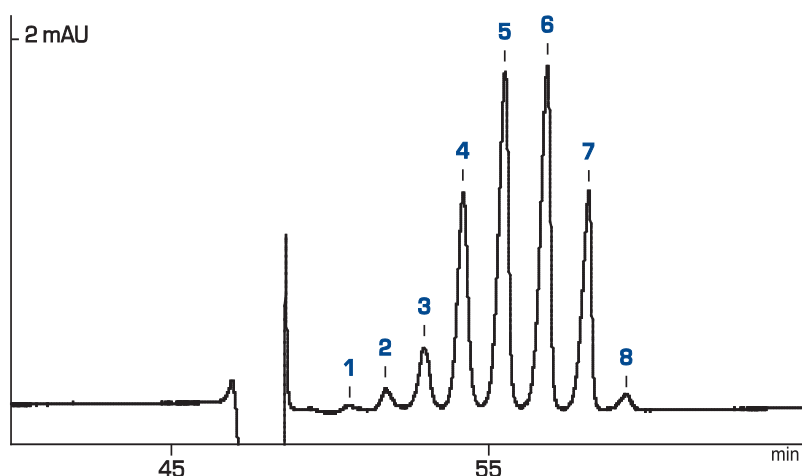
**Voltage:** +16 kV

**Temperature:** 35 °C

**Detection:** 214 nm

**Sample:** Erythropoietin for physicochemical tests CRS

1–8 – EPO isoforms





## CAPEL EXTENDED RANGE OF APPLICATIONS

Besides European Pharmacopoeia method Lumex Instruments specialists demonstrated that CAPEL capillary electrophoresis system can also be applied for express separation of EPO isoforms. This high-speed separation method can be used for screening purposes using the same reagents as for Ph. Eur. 1316. The analysis time as low as 10 minutes can be achieved with just slightly lower resolution.

## EXAMPLES OF REAL ANALYSES

### High-speed separation method

**BGE:** according to Ph. Eur. 1316

**Capillary:**  $L_{\text{eff}}/L_{\text{tot}} = 40/50$  cm,  
ID= 50  $\mu\text{m}$

**Injection:** 300 mbar x sec

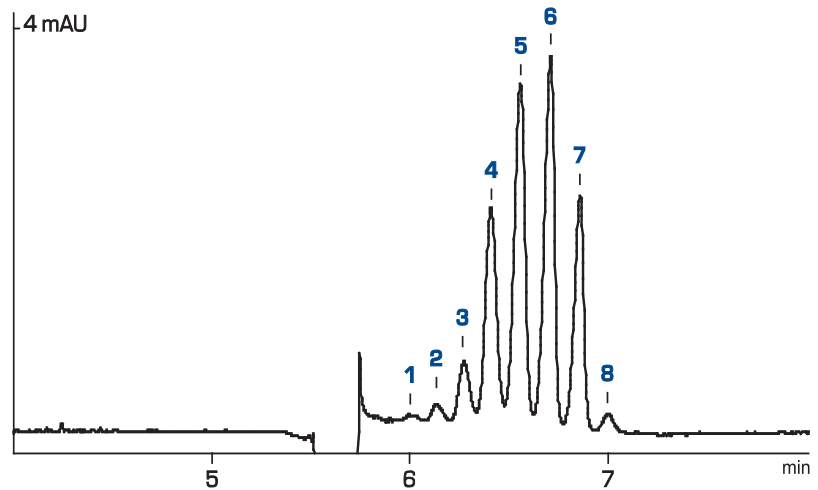
**Voltage:** +25 kV

**Temperature:** 35 °C

**Detection:** 214 nm

**Sample:** Erythropoietin for  
physicochemical tests CRS

1–8 – EPO isoforms



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To get more specific information, please contact the representative by [sales@lumexinstruments.com](mailto:sales@lumexinstruments.com)