



DETERMINATION OF METHIONINE HYDROXY ANALOGUE IN FODDER ADDITIVES

Lumex Method M 04-83-2014

INTRODUCTION

The method is used for the determination of the mass fraction of methionine hydroxy analogue (*DL*-2-hydroxy-4-(methylthio)butyric acid (HMTBa) and its calcium salt) in **fodder additives** by capillary electrophoresis.

Currently, fodder additives containing HMTBa or its calcium salt, are presented on the market under such brand names as MHA[®], Alimet[®], Rhodimet[®], and others.

For the determination of free methionine in fodder additives use the method M 04-63-2016 (Lumex Instruments set, order No 0300002780).

MEASUREMENT METHOD

The measurement method is based on capillary zone electrophoresis with direct UV detection at the wavelength of 200 nm.

MEASUREMENT RANGE

The measurement range for HMTBa is **60–100%**. If necessary, a result of analysis may be expressed as methionine or calcium salt of HMTBa.

ADVANTAGES OF CE METHOD

CE method for the determination of HMTBa has a lot of advantages compared with other analytical methods used for this purpose, such as HPLC, potentiometry, complexometry:

- The **HPLC column is not required**, so the **cost of the analysis drops dramatically** compared with HPLC.
- **Direct determination of the main analyte** (HMTBa) in contrast to the indirect determination of calcium (complexometry) and/ or total organic sulfur (potentiometry) content.
- **Analysis time** using CAPEL CE system is **less than 5 minutes**.

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.

Lumex Instruments set, order **No 0300001888**.

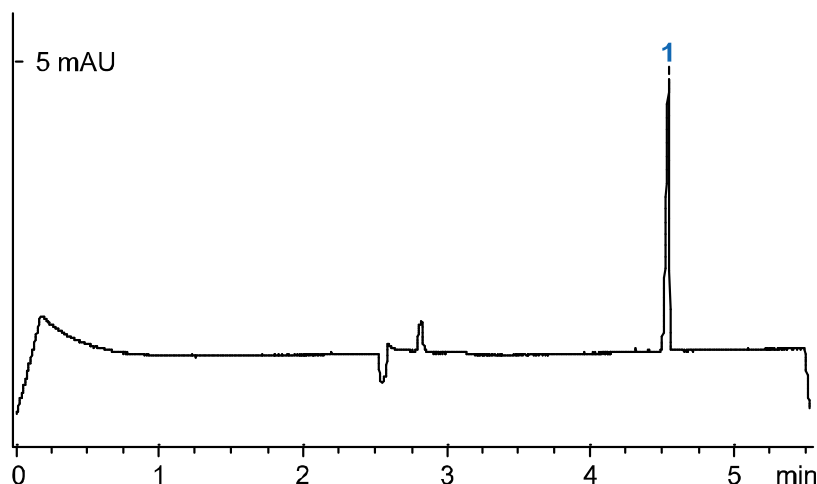
EXAMPLES OF REAL ANALYSES

BGE: borate
Capillary: $L_{\text{eff}}/L_{\text{tot}}$ 40/50 cm,
ID 50 μm
Injection: 150 mbar x sec
Voltage: + 20 kV
Temperature: + 30 $^{\circ}\text{C}$
Detection: 200 nm

Sample: fodder additive (methionine activity given in the certificate is 85.3%)

Measurement results:

1 – HMTBa (85.6%, expressed as methionine)



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To get more specific information, please contact the representative by sales@lumexinstruments.com