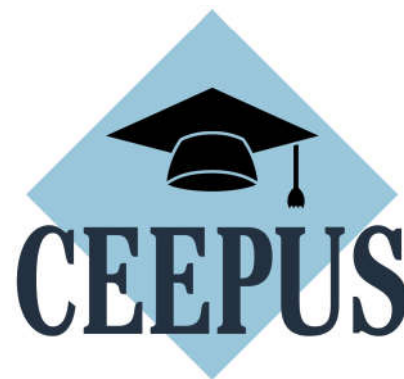




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Opening remarks

Dear participants, dear students, dear colleagues,

It is our great pleasure to welcome you to the 24th International Symposium and Summer School on Bioanalysis at the Faculty of Chemistry, University of Vienna.

Bioanalysis is a rapidly evolving and highly interdisciplinary field. Progress depends not only on innovative methods and technologies, but also on the exchange of ideas across disciplines and generations of scientists. This Summer School aims to provide exactly this environment: a place for the exchange of ideas, discussing recent developments, and learning from one another through oral presentations, poster sessions, seminars and workshops, as well as informal discussions.

The Book of Abstracts presents contributions covering a broad spectrum of topics, providing valuable insights into current research and reflecting the scientific diversity of this meeting.

Beyond the scientific program, we hope that the Summer School will offer an enjoyable atmosphere for sharing experiences, building new connections, and strengthening existing collaborations.

We wish you an inspiring and successful Summer School and hope that your time with us will be both scientifically rewarding and personally enriching.

A handwritten signature in black ink, reading "Peter Cichra-Bühl". The signature is written in a cursive, flowing style.

Chair of the Organizing Committee

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Selenium organic compounds and B-vitamins in red wine

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HPLC-ESI-MS/MS methods were developed for the determination of organic selenium compounds, specifically Se-methylselenocysteine (MeSeCys), selenomethionine (SeMet) and selenomethionine oxide (SeMetO), as well as B-vitamins specifically thiamine (B1), nicotinic acid (B3) and pantothenic acid (B5) in red wine. The chromatographic separation of organic selenium compounds was performed in isocratic mode by using a mobile phase of a methanol/water mixture (85/15, v/v). The separation of B-vitamins was performed by using a mobile phase of acetonitrile/formic acid (97/3, v/v) (HCOOH 8mM, pH 2.8) in gradient mode as follows: 0-3 min 80% B, 4-7 min 50% B, 9-13 min 70% B and 13-20 min 80% B.. The column for chromatographic separation in both methods was a ZIC-HILIC column (100 x 2.1 mm, 3.5 µm) and the injection volume was 5 µL. Both HPLC methods were optimized and validated through the determination of the slope, R^2 (correlation coefficient), LOD (limit of detection) and LOQ (limit of quantification). The results showed the presence of selenium compounds and B-vitamins in Kratošija wine and additionally, their changes were investigated in wines produced by two commercial yeasts used for alcoholic fermentation. The findings indicated that the content of selenium and B-vitamins compounds is related to the yeast, especially noted for SeMetO and nicotinic acid. These selenium species (Se-methylselenocysteine, selenomethionine and selenomethionine oxide) and B-vitamins (thiamine (B1), nicotinic acid (B3) and pantothenic acid (B5)) were determined for the first time in Macedonian red wine. This study provides a substantial basis for further research on the analysis of these antioxidant compounds in other red wine varieties and during winemaking.

Keywords: Organic selenium compounds, B-vitamins, HPLC-ESI-MS/MS, yeast, Kratošija wine

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