Analytical approaches to comparative metabolomics of selenized yeast

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The increased use of selenized-yeast as an efficient source of selenium for supplementation raise interest about the identity of selenium species present in preparations available on the market. The commercial products seem to vary considerably in this respect even if selenomethionine is the most frequently evoked species. Selenomethionine, incorporated into yeast selenized proteins, accounts rarely for more than 60% of total Se its content, but is often considered as a parameter confirming the “organic character” of a yeast.
The presentation is focused on the low molecular weight (less than 1000 Da) selenium species present in yeast representing usually between 10 and 20 %. The presence of more than 30 different species has been evoked so far by the literature (some of them are thought to have biological activity) and the list is by no means exhaustive. However, the difficulties in identifying the individual Se-containing species spur interest in methods allowing at least the distinction between selenometabomolomic profiles of samples of different origin. The feasibility of this approach will be discussed on the basis of a comparison of eight commercially available selenized yeast samples coming from the leading producers located in Europe, the US, Canada, Brazil, Mexico and China.