RIBOFLAVIN CONTENT IN SELECTED TRADITIONAL FOODS FROM BLACK SEA AREA COUNTRIES

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BACKGROUND

Riboflavin (vitamin B2) is an essential water-soluble vitamin present in a wide variety of foods, namely in milk, dairy products, cereal products, meat products and green leafy vegetables. The primary form of the vitamin is an integral component of the coenzymes flavin mononucleotide and flavin-adenine dinucleotide. It is in these bound coenzyme forms that riboflavin functions as a catalyst for redox reactions in numerous metabolic pathways and in energy production. The daily recommended allowance for riboflavin is 1.3 mg/day and 1.1 mg/day, for males and females, respectively [1]. Due to its unquestionable importance in human nutrition, riboflavin was determined in the selected traditional foods analysed in the frame of the European Project BaSeFood (Sustainable exploitation of bioactive components from the Black Sea Area traditional foods) [2].

MATERIALS AND METHODS

The quantitative determination of vitamin B2 was based on EN 14152:2003 method, an accredited method, by ISO/IEC17025 [3]. The laboratory also participates successfully in proficiency testing schemes. The samples were extracted after acid hydrolysis followed by dephosphorylation (with enzymatic treatment) and quantified by High Performance Liquid Chromatography with fluorescence detection.

Riboflavin determination

Sample extraction

Chromatographic conditions

RESULTS

Figure 2 shows the riboflavin content found in Traditional Foods from Black Sea Area countries. Roasted sunflower seeds presented the highest concentration of riboflavin (0.19 mg/100 g of edible portion) and approximately 42% of the analysed Traditional Foods had contents lower than the limit of quantification (<0.02 mg/100 g of edible portion). Chromatograms of (A) riboflavin standard solution and (B) Traditional food sample are illustrated in Figure 3.

CONCLUSION

Our results show that 58% of the analysed Traditional Foods from Black Sea Area countries give a contribution to riboflavin dietary intake, especially the groups of oilseeds or oilseed products (roasted sunflower seeds and halva) and cereals and cereal based foods (baked layers of pastry stuffed with pumpkin and sour rye bread).

REFERENCES


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