

Abstract (600 word limits)**Separation of synthetic food dyes E 102, E 110, E 122, E 124, E 129, E 132 and E 133 by gel-electrophoresis and their follow identification and quantification by visual and spectrophotometric methods**

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Many synthetic food dyes being used for coloring of foodstuffs and medicines are allergens. Therefore, their quantity control in such objects is important issue of analytical chemistry. Generally gel-electrophoresis method is used for separation of large organic molecules like DNA; however, this method allows separating small anions of food dyes. Electrophoretic separation of food dyes was carried out in agar-agar gel. Agar-agar gel is cheap and simple in preparation, and it allows spectrophotometric observing of analytical effect direct in it. The electrophoresis conditions for dyes E 102, E 110, E 122, E 124, E 129, E 132 and E 133 were optimized in this work: concentration of agar-agar solution for gel preparation was 1 %, pH of phosphate buffer solution was 6, voltage was 200 V, amperage was 400 mA, time of electrophoresis was 2 h and time of analytical effect observation was 30 min. Besides spectrophotometric determination of dyes in gel after their separation the possibility of visual semi-quantitative determination of dyes direct in plate of agar-agar gel was showed in the research. Visual determinations were carried out by compare intensity of dye zone color with scale of standards (color scale), where dye concentration was changed in a geometric progression with coefficient 2. Quantification limits and linear ranges for spectrophotometric method as well as detection and quantification limits, relate width of unreliability intervals for visual semi-quantitative method were estimated at validation of dyes detection and determination techniques. The spectrophotometric quantification limits for food dyes belonged to the interval from 0.2 to 4 mmol/L and were about one order higher than visual semi-quantification limits, which were from 0.04 to 0.2 mmol/L. Proposed techniques were successfully approbated in analysis of soft and alcoholic drinks, they may be recommended for control of synthetic food dyes content in confectionery and medications.

Biography (200 word limit)

Dr. Olga Konovalova has completed her PhD in Analytical Chemistry by V.N. Karazin Kharkiv National University. She has worked as scientist in Analytical Chemistry at V.N. Karazin Kharkiv National University, Ukraine. Dr. Olga Konovalova works as associate professor of Chemical Metrology Department of Chemical Faculty at V.N. Karazin Kharkiv National University, Ukraine. She has published more than 20 papers and textbooks in reputed publishers

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