

53 Days of Preventive Medicine

International Congress

24-27. September 2019.
Niš, Serbia



BOOK OF ABSTRACTS



Public Health Institute Niš



Faculty of Medicine,
University of Niš



Serbian Medical Society, Niš

Niš, 2019.

**PUBLIC HEALTH INSTITUTE NIŠ
FACULTY OF MEDICINE, UNIVERSITY OF NIŠ
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INTERNATIONAL CONGRESS**

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9. HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY ANALYSIS OF OF TRYPTOPHAN STABILITY IN AQUEOUS SOLUTIONS

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Objectives: Tryptophan is an essential amino acid which plays important role in synthesis of proteins and as precursor of many biologically active substances and coenzymes. Its metabolites are involved in the pathogenesis of several neurologic disorders. The human body cannot synthesize tryptophan and its synthesis is dependent on dietary intake. Because of nutritional and toxicological importance of tryptophan, analysis of its stability in aqueous solution is extremely important.

Materials and methods: Tryptophan dissolved in deionized water at the concentration level of 5 ppm was used throughout the study. These solutions were tested at ambient temperature, 8, 37 and 100°C during 15 min, 1 h and 3 days. The remaining tryptophan quantity was measured by high performance liquid chromatography (HPLC) with UV detector at 280 nm wavelength.

Results: The concentration of tryptophan in aqueous solution decreases at temperature of 37 °C and 100°C for from 5 ppm to 3.1 and 2.5 ppm respectively, for 1 h. Further analyses showed the smaller decrease at temperatures of 25 and acceptable stability at 4°C. The obtained results demonstrated continuously increase in the stability of tryptophan with decrease the temperature.

Conclusion: Our results obtained by HPLC method indicate that concentration of tryptophan in aqueous solutions decreases at ambient and much more at higher temperatures. Its storage in refrigerator with control of its concentration are mandatory for further experiments, which are underway.

Keywords: tryptophan, thermal stability, HPLC

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