CHEMOMETRIC COMPARISON OF THE RETENTION BEHAVIOR OF TRIAZINE DERIVATIVES IN RP-UHPLC SYSTEM WITH C18 AND PHENYL COLUMNS AND AQUEOUS MOBILE PHASES WITH METHANOL AND ACETONITRILE AS MODIFIERS

Benjamin Salaković[1], Strahinja Kovačević[1], Milica Karadžić Banjac[1], Jasmina Anojčić[2], Lidija Jevrić[1], Sanja Podunavac-Kuzmanović[1]

[1]University of Novi Sad, Faculty of Technology Novi Sad, Department of Applied and Engineering Chemistry, Bulevar cara Lazara 1, 21000 Novi Sad, Serbia
[2]University of Novi Sad, Faculty of Sciences, Department of Chemistry, Biochemistry and Environmental Protection, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia
e-mail: strahko@uns.ac.rs

Abstract

Hierarchical cluster analysis (HCA), as a chemometric pattern recognition method, was applied on chromatographic data of triazine derivatives. The triazine derivatives (8 compounds) with cyclic and acyclic substituents were analyzed applying reversed-phase ultra high performance liquid chromatography (RP-UHPLC). The chromatographic analysis was carried out on C18 and phenyl columns with binary and ternary mobile phases (methanol/water, acetonitrile/water and methanol/acetonitrile/water) with variations in fractions of the modifiers (methanol and acetonitrile) in the mobile phase [1-3]. The retention behavior was described by log$k$, logk_0, C_0 and S parameters. Prior to HCA, the retention data were normalized by *min-max* normalization method. The HCA was carried out by using Python program based on Euclidean distances and Ward's algorithm. Based on the obtained dendrogram, it can be noticed that there is a clear separation of the triazine derivatives based on the presence of acyclic and cyclic substituents in their structure. This indicates statistically significant retention behavior of these two groups of triazine derivatives in the applied chromatographic systems.

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