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SOLVENT MIXTURES TOOL FOR SEPARATION OF BIOLOGICAL ACTIVE COMPOUNDS

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Chromatographic mobile phase mixtures offer a great opportunity for better analytical separation in both qualitative TLC and quantitative HPLC methods. The chromatographic mobile phase preparation involves a numeric taxonomy procedure for mixture constituents selecting, based on solvent strengths, and a optimization of its composition based on a series of factorial analysis designed experiments [1,2].
A set of samples containing compounds with same biological activity were investigated using the previous described procedures. A mathematical model was build in order to apply the factorial analysis on given set of experiments.
Following classes were subject of the investigations: steroids, androstane isomers, hydrophilic vitamins, N-alkyl phenothiazine sulfones, and benzodiazepines.
Features of the developed application are underlined, such as chousing of the mathematical model type (with six of seven unknown parameters), chousing of the desired chromatographic parameter (retention time, resolution, information energy, etc.), chousing of behavior of the objective function (minimizing of, or maximizing of), and chousing the plot characteristics (colors, domain of interest, etc.).
The application is available online and it is freely to be use:

http://l.academicdirect.org/Engineering/hptlc/mobile_phase_opt/

The mobile phase optimization process proved to be able to provide accurate, precise and reproducible method on characterization and analysis of chromatographic parameters.

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References

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