Editorial

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Dear Colleagues,

This issue of Journal of Planar Chromatography (JPC) is the second in 2021 and includes ten original research papers. All publications are written by leading scientists in the field of high-performance thin-layer chromatography (HPTLC) and thin-layer chromatography (TLC).

The issue starts with the work **“Pressurized planar electrochromatography of DNS amino acids derivatives in silica gel and silanized silica gel systems with formic acid addition to the water mobile phase”** by A. Chomicki and T. H. Dzido. They observed differences in the separation selectivity between HPTLC and PPEC systems with silica gel 60 F_{254s} and RP-18W plates as stationary phase. In PPEC (pressurized planar electrochromatography), the electrophoretic effect is responsible for significant separation selectivity differences compared to HPTLC. This is an important point because the data obtained suggest that the combination of HPTLC and PPEC in a two-dimensional separation procedure should significantly improve the DNS amino acid separation.

The second paper, **“Comparison between thin-layer chromatography and overpressured-layer chromatography fingerprints of commercial essential oils and accelerated solvent extraction plant extracts”** by Enrico Serni *et al.*, shows how OPLC (overpressured layer chromatography) is both highly time- and solvent-saving compared to classical TLC. Thus, the use of OPLC with the single-component toluene as the mobile phase can be a valuable tool for the rapid and reliable high-throughput analysis of thyme, star anise and sweet fennel.

The third paper of the present issue deals with an **“Eco-friendly micellar HPTLC for the simultaneous analysis of coformulated antibiotic cefoperazone and sulbactam in pure form and vial pharmaceutical formulation”** and is from R. E. Saraya and E. A. Abdel Hameed. They present

a micellar HPTLC technique for the simultaneous analysis of cefoperazone and sulbactam in pure and vial pharmaceutical formulation. Silica gel 60 was used as the stationary phase, and the complex mixture of acetone, ethanol, ethyl acetate, 2% sodium dodecyl sulfate (in water) and glacial acetic acid (3:2:4:1:0.5, V/V) was used as the mobile phase. The authors were able to use the mobile phase for more than one plate, making the method environmentally friendly and cost-effective.

The work **“A validated high-performance thin-layer chromatography method for quantification of echioidin from *Andrographis echiioides* plant”** by B. Ghule *et al.* describes a rapid, high-throughput and cost-effective HPTLC method to separate and analyze the main flavone glucoside echioidin from false waterwillow (*Andrographis echiioides* L.).

The paper **“Quality evaluation and quantification of cucurbitacin E in different cultivars of *Cucumis sativus* L. fruit by a validated high-performance thin-layer chromatography method”** is from P. K. Mukherjee *et al.* and quantifies the compound cucurbitacin E in cucumbers.

The next two papers deal with the separation and quantification of berberine. I. A. Basera and M. B. Shah describe a **“A validated high-performance thin-layer chromatography method for the simultaneous estimation of berberine, berbamine, palmatine, magnolorine and jatrorrhizine from *Berberis aristata*”**, while K. Hazra's group extracts and quantifies berberine as the major bioactive alkaloid from *Tinospora cordifolia* L. The title of the paper is: **“Rationalisation of extractive protocol by high-performance thin-layer chromatographic–densitometric quantification of berberine in multiple hydroalcoholic extract of *Tinospora cordifolia* stem”**.

In the paper **“Simultaneous qualitative and quantitative analyses of ursolic acid and oleanolic acid in *Punica***

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***granatum* L. (Pomegranate) flowers by high-performance thin-layer chromatography**”, the group of *S. Tian* quantifies ursolic acid and oleanolic acid in *Punica granatum* L. flowers using HPTLC. The authors find that HPTLC requires less time and fewer reagents and provides good separation of ursolic acid and oleanolic acid compared to HPLC.

All publications presented so far quantify their analytes using sophisticated instrumentation, but HPTLC also enables the analysis of complex tasks by using the eyes as a detection system. The work “**Organ-based chemo-profiling of *Echinops echinatus* Roxb. using high-performance thin-layer chromatography technique**” by the group of *N. F. Bhatt* presents a rapid, simple, precise, accurate and specific HPTLC method, validated for the quantitative estimation of phytoconstituents present in the dried root, leaves and flower of *Echinops echinatus*. The scanner technique was used for quantification, but the method could also be performed (without a scanner) as a quality control standard.

The final paper of this issue, “**Development of high-performance thin-layer chromatographic detection of the synthetic pesticide carbosulfan in biological material**” by *R. K. Pardeshi et al.*, presents the detection and identification of carbosulfan in postmortem samples (in fatal poisoning cases involving carbosulfan). The proposed reagent is simple and can be used for routine analysis of the synthetic carbosulfan insecticide in forensic toxicology without sophisticated equipment.

The current JPC issue demonstrates the high performance of planar chromatographic methods specifically for the analysis of herbal drugs.

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(Editor-in-Chief)

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