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EDITORIAL

Editorial

Bernd Spangenberg[1]

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Dear Colleagues,

The present issue of Journal of Planar Chromatography (JPC) is the sixth one in 2020 and contains a review on organic pesticides and 11 original research papers written by leading scientists in the field of high-performance thin-layer chromatography (HPTLC) and thin-layer chromatography (TLC).

The first paper in this issue is a review by *Q. Ullah, N. Fatema* and *A. Mohammad* entitled "**Detection reagents used for on-plate identification of organic pesticides in biological samples with preliminary separation by TLC/HPTLC**". This review comprises many specific and non-specific chromogenic spray reagents, used to detect organic pesticides on TLC and HPTLC plates. Beside this, the physical properties of organic pesticides reported so far are presented in short as well as reaction mechanism and example chromatograms.

Most papers on TLC and HPTLC are written not on environmental topics but on herbal analysis. TLC is a popular method for fingerprint characterization of herbal drug formulations. The combination of a chromatographic separation with the application of staining reagents results in a coloured band pattern, unique for different drugs or drug mixtures. The paper by *S. Sini* and *G. Satheesh* with the title "**HPTLC-based chromatographic studies in selected *Justicia* species for quality assessment**" is a typical example of this kind of qualitative and comparable analysis. Extracts of various parts like root, stem, and leaf of selected *Justicia* species show a remarkable difference in their chemical profiles. These profiles can be used for genuine raw drugs identification and authentication.

Planar chromatography is also a method suitable for the quantification of drug ingredients. The quantification of atropine, caffeic acid and chlorogenic acid is described in the publication "**Morphological, cytological and phytochemical studies in naturally occurring diploid and tetraploid populations of *Physochlaina praealta* from high altitudes of Trans-Himalaya**" by *Y. R. Tantray et al.* The present investigation was aimed to explore elite chemotypes of species with desirable chemical profiles for pharmaceutical and commercial purposes. However, the present study revealed novel variations in the content of phytoconstituents with respect to a definite ploidy level and different plant parts in *P. praealta.* This adds further evidences for the hypothesis that plant populations growing at high-altitude sites tend to accumulate higher amounts of metabolites than the genetically identical populations growing at lower altitudes.

The following papers: "**Qualitative and quantitative analyses of aloe-emodin, rhein, and emodin in qi yin granules by high-performance thin-layer chromatography**" by *X. Yan et al.*, "**A validated, rapid and cost-efficient HPTLC method for the quantification of plumbagin and its antioxidant activity from the different extracts of *Plumbago zeylanica* L.**" by *M. Mujeeb et al.*, "**Simultaneous quantification of vasicine and vasicinone in different parts of *Justicia adhatoda* using high-performance thin-layer chromatography–densitometry: Comparison of different extraction techniques and solvent systems**" by *S. Nayak et al.* and "**Densitometric high-performance thin-layer chromatography methods for the quantification of oleuropein in *Olea europaea* leaves and pharmaceutical preparation utilizing normal- and reversed-phase silica gel plates**" from *M. S. Abdel-Kader et al.* demonstrate the performance of HPTLC in drug analysis.

Aflatoxin B1 is a natural carcinogenic contaminant of agricultural product, regulated at parts per billion level. Thus, a validated method for aflatoxin quantification is extremely important. The publication "**Standardization and validation of a high-performance thin-layer chromatography method for the quantification of aflatoxin B1 and its application in surveillance of contamination level in marketed food commodities from the Mumbai region**" by *S. Pradhan* and *L. Ananthanarayan* is with 48

✉ Bernd Spangenberg
spangenberg@hs-offenburg.de

[1] Offenburg University of Applied Sciences, Offenburg, Germany

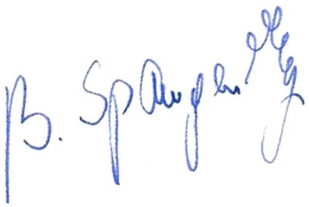
citations to the topic also a mini review of this important field of research.

The separation and quantification of chemical pharmaceuticals is standard in TLC and HPTLC. The papers "**Simultaneous estimation of azilsartan medoxomil and chlorthalidone by chromatography method using design of experiment and quality risk management based quality by design approach**" by *P. B. Prajapati et al.* and "**Development and validation of thin-layer chromatography and high-performance thin-layer chromatography methods for the simultaneous determination of linagliptin and empagliflozin in their co-formulated dosage form**" by *H. Y. Mohamed et al.* are suitable to be implemented in quality control laboratories for the routine analysis of drugs.

Seldom to be seen is the enantioseparation of drugs, presented in the paper "**Development of a thin-layer chromatographic method for the enantioresolution of sotalol using levofloxacin as chiral selector**". Responsible for this work are *V. K. Vashistha* and *A. Kumar.* In this work, the commercially available and chirally pure pharmaceutical compound levofloxacin was utilized as a chiral selector for the enantioresolution of sotalol, a β-blocker, used in the treatment of hypertension, angina pectoris and cardiac arrhythmia.

The final work of this JPC issue with the title "**Fate of tris(2-chloroethyl)amine in water and alkaline environment determined by thin-layer chromatography and gas chromatography–mass spectrometry**" is from *T. Rozsypal.* This is a more physicochemical work on mustards used as chemical warfare agents. The paper shows that there is an important kinetic difference between sulphur and nitrogen mustard hydrolysis in alkaline environment, a contribution to the decontamination practice of chemical warfare agents.

The current JPC issue gives an overview of the broad current HPTLC research and is absolutely worth to be read.



Bernd Spangenberg
(Editor-in-Chief)