



## Editorial

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Dear Colleagues,

The present issue of Journal of Chromatography contains 12 publications written by leading scientists in the field of high performance thin-layer chromatography (HPTLC) and thin-layer chromatography (TLC). The issue comprises a variety of topics ranging from botanical fingerprinting analysis to quantification of pharmaceuticals.

The first paper of this issue, written by *Z. Turkmen* and *O. Kurada*, deals with the “Rapid HPTLC determination of patulin in fruit-based baby food in Turkey”. Baby food samples have been pre-treated by QUECHERS extraction, and patulin quantification was done by multi-wavelength scanning, performed in the range from 200 to 400 nm. Patulin was found above the acceptable limits in 12 of 58 fruit-based baby products.

The second publication of this JPC-issue “Validation and eco-scale assessment of stability-indicating HPTLC method for quantitative analysis of carbamazepine and its degradation product, iminostilbene, in pure forms, pharmaceutical preparations, and spiked human plasma” is from *F. Abdallah et al.* and describes a simultaneous analysis of carbamazepine and iminostilbene in raw materials and human plasma samples in the ranges from 0.1–1.4 µg/band to 0.1–1.2 µg/band for carbamazepine and iminostilbene, respectively.

The following paper with the title “Quality risk assessment and DoE based analytical quality by design approach to stability-indicating assay method for acidic degradation kinetic study of apremilast” is from the group of *P. Prajapati* and deals with the degradation kinetic study of apremilast in acidic condition by using a 3<sup>2</sup> full factorial design. The observed degradation follows first order kinetics as the graph of  $\ln C$  versus time was found to be linear.

The article “Evaluation of the lipophilicity of chalcones by RP-TLC and computational methods” by *V. Dobričić et al.*

describes an RP-TLC method using three binary combinations of water and organic solvents (acetonitrile–water, ethanol–water and acetone–water) for the testing of the retention behaviour of twenty-one newly synthesized chalcones. The most suitable RP-TLC system (acetonitrile–water) and the calculated chromatography parameter ( $C_0$ ) for lipophilicity prediction were selected according to the highest correlations with the calculated values. The negative  $C_0$  value was calculated by using the  $R_m$  value of the Soczewinski–Wachtmeister equation, divided by the slope of the regression function.

The paper “Development and validation of a simple and rapid thin-layer chromatography–UV densitometry method for the determination of triazophos in human whole blood for forensic toxicological applications” from the group of *K. Sreeramulu* describes a method for the determination of triazophos using liquid-liquid extraction in combination with TLC–UV densitometry. Chromatography was performed on silica gel TLC plates using the mobile phase *n*-hexane–acetone (8:2, v/v) and UV–densitometric detection at 248 nm.

*H. Aygun* and his group are responsible for the work “The interaction methylene blue and glutathione-S-transferase purified from human erythrocytes”. This study aimed to examine the interaction of methylene blue with human erythrocyte glutathione-S-transferase. A TLC separation revealed a new third band showing the presence of a complex that most likely comes from the interaction of glutathione-S-transferase with methylene blue.

The work “Thin-layer chromatographic separation of a number of bile acids with mobile phases based on surfactants” is from *O. Konovalova et al.* and describes the effect of surfactant type and concentration, the pH of the mobile phase, the type and amount of the mobile phase modifier, as well as the effect of temperature and type of silica gel TLC layers on the investigated separation of cholic, ursodeoxycholic, chenodeoxycholic, deoxycholic and lithocholic bile acids.

Paper no. 8 in this JPC issue is by *S. Haldar et al.* and has the title “The role of thin-layer chromatography to ensure the manifestation of individual ingredients in herbal formulation”. They established a simple, precise, specific and economical

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HPTLC densitometric method for the quantification of piperine as bioactive marker in a poly-herbal formulation containing the fruit of *Piper nigrum* Linn.

The next paper is also a work dealing with a herbal formulation. The title is “Validated simultaneous high-performance thin-layer chromatography method for bioactive compounds from *Psoralea corylifolia*”. Responsible for this work are I. A. Basera and M. B. Shah. They developed a reliable HPTLC method for the simultaneous estimation of bavachin, bakuchiol and psoralen in *Psoralea corylifolia* seeds.

The paper “Development and validation of an HPTLC–DPPH assay and its application to the analysis of honey” from C. Locher *et al.* uses honey as a model sample for the visualisation of constituents that contribute to the antioxidant activity of a complex natural product. It is possible to quantify their individual antioxidant effects (expressed as gallic acid equivalents) even if their chemical identity is unknown.

In the section “Short Communications”, two publications deal with herbal topics. The work from an international group (with members from Jordan, India, UK, Malaysia and Australia) has the title “Development of a novel HPTLC fingerprint method for the simultaneous estimation of berberine and rutin in medicinal plants and their pharmaceutical preparations followed by their application in antioxidant assay” and deals with the validated determination of berberine and rutin in *Tinospora cordifolia* extract and formulations. Responsible for this publication is M. Mehta.

The last paper of this JPC issue is from W. Li *et al.* and has the title “Simultaneous quantification of two active compounds in raw and honey-processed Radix Astragali by high-performance thin-layer chromatography”. The paper describes a rapid and sensitive HPTLC method for the analysis of astragaloside IV and calycosin-7-O- $\beta$ -glucoside from raw and honey-processed Radix Astragali.

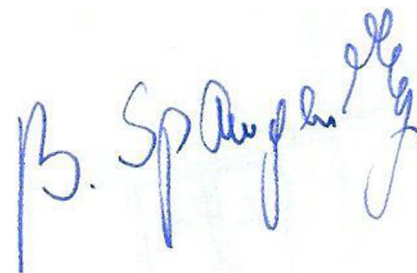
The present issue shows the importance of planar chromatography for pharmaceutical analysis, and this is the reason why JPC is planning a special issue on “counterfeit drugs”. Faked medications or counterfeit drugs are packaged substances from their appearance pretending to be the genuine medicine. They are sold on purpose in a deceptive manner and in increasing number via the internet. The use of faked drugs is of course dangerous if they do not contain any active ingredient or even dangerous substitutes which can cause

serious side effects. The most popular faked drugs sold are those for chronic medications thus not all kinds of drugs appear as fake drugs to the same extent.

The special JPC issue on “counterfeit drugs” should deal with the following topics:

- fast and reliable analytical decision whether it is a genuine medicine or a fake;
- quantification methods for checking if the labelled content is correctly given;
- research on simplified methods which can be performed using a minimum of equipment;
- comparison between spectral information, staining reaction and  $R_F$  value as a tool of compound identification;
- use of libraries for substance identification.

All submissions are welcome which meet these categories. Submission deadline is the end of the year 2020.



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Editor-in-Chief

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