Editorial

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Dear Colleagues,

This issue of JPC is the sixth in 2021 and contains ten original research papers. All publications have been authored by leading scientists in the field of high-performance thin-layer chromatography (HPTLC) and thin-layer chromatography (TLC). Nine topics are from the field of phytochemistry and one publication deals with the analysis of synthetic drugs.

The first paper is entitled “**High-performance thin-layer chromatographic quantification of four active compounds in total flavonoids of *Ziziphora clinopodioides* Lam. and TLC–DPPH test for screening antioxidant components**” and is from the group of *Hongbing Liu*. The four active flavonoids, cynaroside, apiin, diosmin and linarin, are separated on polyamide plate, which is rarely used in HPTLC. The TLC–DPPH (2,2-diphenyl-1-picrylhydrazyl) screening by this radical scavenger assay showed that the first three flavonoids exhibited strong antioxidant activity, whereas linarin showed only weak antioxidant activity.

The following publication by the group of *Awanish Kumar* and *Prashant Kumar Gupta* is entitled “**High-performance thin-layer chromatographic standardization and quantification of marker compounds in an Ayurvedic polyherbal formulation: *Krishnadi Churna***.” The major bioactive compounds, gallic acid, piperine, resveratrol, quercetin and β -sitosterol, were quantified using HPTLC.

The next paper entitled “**High-performance thin-layer chromatographic analysis of three components in *Arnebia guttata* Bunge**” is by *Xiaocao Yan*, *Wenhuan Ding* and *Haiyan Xu*. In this study, β -acetoxyisovalerylalkannin, acetylshikonin and β , β' -dimethylacrylalkannin were successfully separated and subjected to qualitative and quantitative analyses by HPTLC.

The following text is by *Pinak Patel et al.* and is entitled “**Herbal standardization of formulation containing**

curcuminoids, piperine and ascorbic acid by dual detection mode densitometric analysis”. An HPTLC method was developed for the simultaneous determination of curcumin, piperine and ascorbic acid from a marketed formulation. Quantitative analysis was performed in absorbance mode at 254 nm for ascorbic acid and in fluorescence mode at 366 nm for curcumin and piperine. Piperine, the major alkaloid present in *Piper nigrum*, is also quantified in a paper by the group of *Pulok K. Mukherjee et al.* The title is “**Quantification of piperine in different varieties of *Piper nigrum* by a validated high-performance thin-layer chromatography–densitometry method**.”

The paper “**Simultaneous determination of betulinic acid, β -sitosterol and lupeol in fruits, leaves, root and stem bark of *Dillenia pentagyna* Roxb. by a validated high-performance thin-layer chromatography method**” is by *Hari Om Saxena et al.* and describes a simple and effective HPTLC method, validated for the simultaneous determination of the biologically active phytoconstituents betulinic acid, β -sitosterol and lupeol in fruits, leaves, root and stem bark of *Dillenia pentagyna* Roxb.

The work of *Ruchira R. Mokal* and *Aruna P. Jadhav* with the title “**Forced degradation studies of mangiferin and berberine by high-performance thin-layer chromatography**” shows how the quality of a herbal drug changes over time under the influence of various environmental factors.

The text by *Usmangani K. Chhalotiya et al.* entitled “**Simultaneous quantification of brexpiprazole and sertraline HCl in synthetic mixture by thin-layer chromatography method**” is the only paper in this issue dealing with synthetic drugs, the quantification of brexpiprazole and sertraline HCl by HPTLC.

The last two articles in this issue are short communications. The paper by *Wilmer H. Perera*, *Débora Arruda Frommenwiler*, *Maged H. M. Sharaf* and *Eike Reich* with the title “**An improved high-performance thin-layer chromatographic method to unambiguously assess *Ginkgo biloba* finished products**” describes the use of a new mobile phase to verify that the content of quercetin and rutin meets the requirements of the United States Pharmacopeia (USP)

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monographs on ginkgo and its extract. To improve the separation of quercetin from co-migrating substances, the selectivity of the chromatographic system had to be changed to the developing solvent mixture *n*-butyl acetate–methanol–water–formic acid (7.5:2:1:1, V/V).

The last paper in this issue is by *Verónica Taco et al.* and is entitled “**Optimized high-performance thin-layer chromatography–bioautography screening of Ecuadorian *Chenopodium quinoa* Willd. leaf extracts for inhibition of α -amylase.**” This study, HPTLC–bioautography screening for α -amylase inhibition, presents an optimized screening method for the rapid localizing of α -amylase inhibitory compounds in complex plant matrices and colored extracts using quinoa leaves as an example.

All in all, ten interesting articles worth reading.

A handwritten signature in blue ink, reading "B. Spangenberg".

Bernd Spangenberg
(Editor-in-Chief)

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