JPC – Journal of Planar Chromatography – Modern TLC (2022) 35:97–98
https://doi.org/10.1007/s00764-022-00181-5

EDITORIAL

Editorial

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Published online: 18 June 2022

Dear Colleagues,

In the second issue of Journal of Planar Chromatography (JPC) 2022, nine topics on high-performance thin-layer chromatography (HPTLC) and a single example of what planar chromatography can also provide are presented by leading scientists in the field of planar chromatography.

HPTLC as an advanced method of thin-layer chromatography (TLC) is strongly represented in phytoanalysis. The analysis and documentation of different samples on a single plate allows the comparison of complex zone patterns. In this way, HPTLC is used as the preferred method for identifying herbal preparations with complex ingredients. To confirm the authenticity of a sample, TLC is basically sufficient by comparing the specific stains between the tested samples and referenced herbs or standards. For quantification, sophisticated equipment is required, so this type of planar chromatography is referred to as HPTLC. The first two articles focus on this topic. The paper "**Exploration and practice on systematic identification strategy of traditional Chinese medicine prescriptions by high-performance thin-layer chromatography—with *Daqinjiao* decoction as an example**" is by *R. Chen, S. Liang, S. Wang* and *Y. Xie,* and proposes a rapid identification of a formulation consisting of 16 herbs. Using one sample preparation procedure and three different mobile phases, nine of the 16 herbs were identified in this study. In the second paper, the four bioactive compounds gallic acid, piperine, quercetin, and resveratrol were identified in the methanolic extract of *Drakshavaleha* by HPTLC. The title of this work from the group of *A. Kumar* and *P. K. Gupta* is "**High-performance thin-layer chromatography-based quantification of therapeutic phytochemicals in the methanolic extract of Ayurvedic formulation *Drakshavaleha*".**

The combination of HPTLC and effect-directed analysis (EDA) is a versatile tool to identify bioactive compounds in plant extracts. The next two articles deal with this topic. The third paper in the present issue is by *Burak Temiz* and *Hale Gamze Agalar* and compares the total phenolic and flavonoid content with the radical scavenging activities and the tyrosinase inhibition properties of separated zones. The bioactive zones were isolated from HPTLC plates and analyzed by mass spectrometry. In citrus fruits, the compound naringin is responsible for the antityrosinase activity, while hesperidin and neoeriocitrin are responsible for the antioxidant activity. The title of the work is "**Evaluation of radical scavenging and anti-tyrosinase activity of some Citrus fruits cultivated in Turkey via in vitro methods and high-performance thin-layer chromatography–effect-directed analysis**". The fourth paper is by *S. Srivastava* et al. and describes the quantification of the bioactive compound diosgenin. The title is "**Identification of potential source of quality raw material of *Costus speciosus* from Western coast of Malabar**".

Quantification of glucuronic acid in various gum samples of *Sterculia urens* is the subject of the paper by *H. O. Saxena* et al. entitled "**High-performance thin-layer chromatography method development and validation for quantification of glucuronic acid in gum samples of *Sterculia urens* Roxb.**". The paper "**High-performance thin-layer chromatography (HPTLC) method development and validation for the quantification of catechin in the hydroalcoholic extract of *Parkia roxburghii* seed**" is by *P. K. Bhardwaj* et al. and describes the quantification of catechin from the hydroalcoholic extract of *P. roxburghii* seed. In the work of *J. R. Tulsi* and *A. Vidhu,* "**Marker-based standardization of *Terminalia arjuna* bark for the detection of probable adulterants by quantitative high-performance thin-layer chromatography**", the major constituents arjunetin and arjungenin were quantified as marker compounds in representative plant bark besides detection of probable adulterants. The following work describes the qualitative and quantitative analysis of the active ingredients gallic acid and gallic acid ethyl ester by HPTLC from secondary residues

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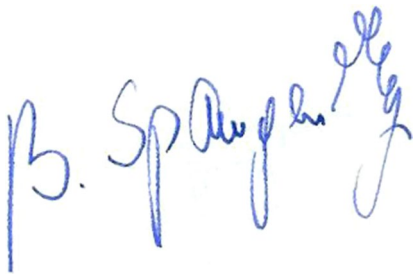
of Turkish gall. The title is "**Qualitative and quantitative analysis of active ingredients in secondary residue of Turkish gall treated with simulated gastrointestinal environment in vitro**". *S. Jiang, L. Wang* and *S. Tian* are responsible for this work.

The rapid and sensitive detection of steroidal estrogens such as estrone (E1), 17β-estradiol (E2) and 17α-ethinyl estradiol (EE2) is an enduring topic in environmental and clinical analysis. The planar yeast estrogen screen (pYES) test combines chromatographic separation on silica gel thin-layer plates with the performance of the YES test on the planar surface of such a plate. A standardization of the method according to DIN is in progress and will consider only environmentally friendly solvents, which I present in this paper entitled "**New solvent systems to separate some estrogenically active compounds by high-performance thin-layer chromatography (HPTLC)**".

The final paper in this issue presents a rapid immunochromatographic lateral flow test strip using the gold-conjugated polyclonal antibody (pAb) to specifically and rapidly determine the residues of E2 as a growth-promoting steroid hormone in sheep serum. *S. E. Fana, M. Malekaneh* and *M. J. Rasaee* are responsible for this work. The title is "**Development and evaluation of a rapid lateral flow immunochromatographic strip assay for detection of 17β-estradiol in sheep sera**".

All papers are worth reading.



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Funding Open Access funding enabled and organized by Projekt DEAL.