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Foreword: Special TLC Issue

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Foreword: Special TLC Issue

This is the 11th special issue on thin layer chromatography (TLC) that we have guest edited by invitation of the editor, Dr. Jack Cazes, beginning in 1999. The papers were submitted by recognized experts in TLC working in Japan, Bulgaria, Poland, Hungary, Switzerland, and the United States of America.

Literature searches via Chemical Abstracts and ISI Web of Science indicate continuing high research activity involving TLC and high performance TLC (HPTLC) on a worldwide basis, with more than 1,000 publications abstracted in 2008. The field continues to move toward HPTLC and is becoming more instrumentally based and quantitative.

The papers in this issue are examples of the most important current technique and application areas of TLC and HPTLC. Papers are included on the analysis of the following compounds and samples: vitamin B₁₂ in boiled and dried anchovy products (Nishioka et al.), fatty acid content in butter fat (Marekov et al.), oxyphenonium bromide and its degradation products in tablets (Hubicka et al.), amino acids in the urine of mice infected with trematodes (Vasta et al.), biologically active compounds in sage (Grygierczyk et al.), pesticides in water samples (Tuzimski and Sobczynski), components with antimicrobial activity in wines (Kiraly-Veghely et al.), illegal dyes in spices (Kandler et al.), and phospholipids in *Uta* lizards (Counihan et al.). Other papers report studies of the stability of the drug methyl nicotinate (Pyka and Klimmeczok), lipophilicity of acylanilide fungicides (Oros and Cserhati), the influence of perchlorate on the retention of fluoroquinolones in reversed phase (RP) TLC (Kaminska and Choma), lipophilicity determination using TLC and calculations (Kalasz et al.), and spontaneous in vitro oscillatory chiral conversion in aged profen solutions (Sajewicz et al.).

Most of the papers reported sample preparation by simple dissolving or traditional extraction, but one involved solid phase extraction with a variety of cartridges and another accelerated solvent extraction.

Precoated commercial TLC or HPTLC analytical layers with glass or aluminum backing were specified in all papers; most were plain silica gel, but cellulose, chemically bonded RP-18 and CN, and impregnated layers were also used. Preparative layer chromatography on thicker layers was specified for sample purification in some studies. Samples were applied manually with a microsyringe or by use of an instrument that can automatically produce sample bands or spots. Plate development was usually carried out by linear, capillary flow in a covered, large volume glass tank (N-chamber), but a twin-trough chamber, sandwich chamber, Chromdes DS horizontal chamber, continuous development in an open cylindrical tank, or overpressured layer chromatography (OPLC) instrument were also used. Most of the compounds were detected by their natural color or ultraviolet absorbance on layers containing a 254 nm fluorescent indicator (fluorescence quenching), but post-chromatographic derivatization with a detection reagent such as ninhydrin for amino acids and bioautography were also employed. A slit scanning or diode array densitometer was used for detection and quantification in many of the papers. Several studies reported use of column high performance liquid chromatography (HPLC) and gas chromatography as a complement to TLC.

The paper by Grygierczyk et al. is within one of the most active areas of TLC research today, i.e., the analysis of herbal nutritional supplements and medicines. This field was covered comprehensively in the 2008 book titled "Thin Layer Chromatography in Phytochemistry" and edited by Waksmundzka-Hajnos, Sherma, and Kowalska. This book is volume 99 in the Chromatographic Science Series edited by Dr. Jack Cazes for CRC/Taylor & Francis, which is essential reading for all scientists performing chromatography research or using any kind of chromatography for separations, qualitative and quantitative analysis, or purification in their scientific work.

We will begin to solicit papers in September, 2009, for our 2010 special TLC issue. We invite readers to send us comments on this and past special issues, as well as suggestions for topics and contributors for the next issue. We also encourage scientists to submit papers on TLC and HPTLC to Dr. Cazes for regular issues of this Journal, which is among the leading worldwide forums for review and research articles on liquid chromatography theory, instrumentation, methods, and applications.

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