

HPTLC Asia 2018

**International Symposium for
High-Performance
Thin-Layer Chromatography**



Book of Abstracts

Bangkok, Thailand

November 27-30, 2018

Edited by Siriluk Sintupachee, Sornkanok Vimolmangkang and Wanchai De-Eknamkul
Chulalongkorn University, Faculty of Pharmaceutical Sciences, Bangkok, Thailand

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HPTLC Asia 2018

1st Asia International Symposium for High-Performance Thin-Layer Chromatography

November 28-30, 2018, Bangkok, Thailand
www.hptlc.com



Welcome to Bangkok!

It is our pleasure to welcome you to the First International Symposium for High-Performance Thin-Layer Chromatography in Asia (HPTLC Asia 2018) which will take place in November 28-30, 2018, at Chulalongkorn University, Faculty of Pharmaceutical Sciences, Bangkok, Thailand.

HPTLC Asia 2018 represents a part of the traditional International HPTLC Symposium series that was first organized in 1980. The series has been held every three years since 2003 when Pierre Bernard-Savary organized the HPTLC 2003 in Lyon, followed by the ones in Berlin, Helsinki, Basel, Lyon and Berlin, respectively. The last one in Berlin was the 23rd HPTLC Symposium held in July 4-8, 2017. In that very successful event, however, some of our International Scientific Committee members expressed their concern about the small number of Asian participants involved in the meeting, despite a rapidly growing utilization of HPTLC-based techniques in Asia. The problems of long-distance travel and cost of participation were seen as an obstacle. Therefore, the HPTLC Asia symposium series was proposed in between the traditional European series, and the magnificent city of Bangkok was chosen as the first location of the ASIA series.

This First HPTLC Asia 2018 could attract more than 150 registrants with almost 90 abstract submissions. Among these, the problem-solving by HPTLC in the analytical field of “Botanicals and Traditional Medicines” was submitted about half of the total abstracts, and thus obviously the theme of this Symposium. The fields of “Effect-Directed Detection” and “HPTLC-MS for Compound Characterization” for have, interestingly, received considerable attentions from young researchers, based on the number of registrants (24 each). Certainly, we will enjoy seeing the views of academics, industries and student from various Asian countries in using HPTLC as powerful tools to solve their problems, from basic routine analytical work to advanced research problems.

We wish that all participants, especially those from Asia countries, will gain significant knowledge, techniques and applications of HPTLC from this Symposium, and will take them back to improve the quality of problem-solving of each group.

Finally, we also hope very much that this HPTLC-ASIA 2018 Symposium will cause expansion of the community of HPTLC users to a wider level, either through networking, mentoring or collaboration, which will speed up the innovation of HPTLC to wider fields with deep realization of its applications.

On behalf of the Scientific Committee and Organizing Committee of HPTLC Asia 2018,

Wanchai De-Eknamkul and Pierre Bernard-Savary

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The Series of International HPTLC Symposia

- 4-8 July 2017, **Berlin**
(23rd) International Symposium for High-Performance Thin-Layer Chromatography, HPTLC 2017
2-4 July 2014, **Lyon**
(22nd) International Symposium for High-Performance Thin-Layer Chromatography, HPTLC 2014
6-8 July 2011, **Basel**
(21st) International Symposium for High-Performance Thin-Layer Chromatography, HPTLC 2011
11-13 June 2008, **Helsinki**
(20th) International Symposium for Thin-Layer Chromatography, HPTLC 2008
9-11 October 2006, **Berlin**
(19th) International Symposium for Thin-Layer Chromatography, HPTLC 2006
29-31 May 2005, **Siofok**
(18th) Planar Chromatography 2005
23-25 May 2004, **Visegrad**
(17th) Planar Chromatography 2004
15-18 October 2003, **Lyon**
(16th) International Symposium for TLC
21-23 June 2003, **Budapest**
(15th) Planar Chromatography 2003 (in honor of Professor Tyihak)
4-6 October 2002, **Novo mesto**
(14th) Planar Chromatography Today 2002
11-13 May 2002, **Keszthely**
(13th) Planar Chromatography 2002 (in honor of Doctor Geiss)
23-25 June 2001, **Lillafüred**
(12th) Planar Chromatography 2001
11-13 May 2000, **Lillafüred**
(11th) Planar Chromatography 2000 (in honor of Professor Kaiser)
16-19 May 1998, **Visegrad**
(10th) International Symposium on Instrumental Planar Chromatography (60 years TLC + 10 years JPC)
9-11 April 1997, **Interlaken**
(9th) International Symposium on Instrumental Planar Chromatography
5-7 April 1995, **Interlaken**
(8th) International Symposium on Instrumental Planar Chromatography
23-26 March 1993, **Brighton**
(7th) International Symposium on Instrumental Planar Chromatography
23-26 April 1991, **Interlaken**
(6th) International Symposium on Instrumental Planar Chromatography
21-24 February 1989, **Brighton**
(Fifth) International Symposium on Instrumental High Performance Thin-Layer Chromatography
22-25 September 1987, **Selvino**
(Fourth) International Symposium on Instrumental High Performance Thin-Layer Chromatography
17-19 April 1985, **Würzburg**
(Third) International Symposium on Instrumental High-Performance Thin-Layer Chromatography
2-6 May 1982, **Interlaken**
(Second) International Symposium on Instrumental High-Performance Thin-Layer Chromatography
18-21 May 1980, **Bad Dürkheim**
(First) International Symposium on Instrumentalized High-Performance Thin-Layer Chromatography

International Scientific Committee

committee@hptlc.com

Co-Chair: Prof. Dr. Colin Poole, USA and Prof. Dr. Gertrud Morlock, Germany
Pierre Bernard-Savary, France
Dr. Vicente Cebolla, Spain
Prof. Dr. Wanchai De-Eknamkul, Thailand
Prof. Dr. Imre Klebovich, Hungary
Prof. Dr. Tadeusz Dzido, Poland
Prof. Dr. Lothar Kroh, Germany
Prof. Dr. Ilkka Ojanperä, Finland
Dr. Eike Reich, Switzerland
Prof. Dr. Joseph Sherma, USA
Prof. Dr. Mario Vega, Chile
Dr. Irena Vovk, Slovenia
Prof. Dr. Zheng-Tao Wang, China

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Assist. Prof. Dr. Supakarn Chamni, Thailand
Dr. Chaisak Chansriniyom
Dr. Rossarin Tansawat, Thailand
Dr. Wanatchaporn Arunmanee, Thailand
Dr. Worathat Thitikornpong, Thailand
Jeerapat DOUNGCHAWEE, Thailand

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Dr. Eike Reich, Switzerland
Prof. Dr. Jentaie Shiea, Taiwan
Prof. Dr. Zheng-Tao Wang, China
Dr. Irena Vovk, Slovenia

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Program-at-a-Glance

Short Courses November 27, 2018

Location: Chulalongkorn University, Faculty of Pharmaceutical Sciences,
7th Floor, Pharmaceutical Innovation Building, Pathumwan Road,
Bangkok 10330

Contact Person: A/Prof. Dr. Sornkanok (Aom) Vimomlmangkang
Email: Sornkanok.v@pharm.chula.ac.th
Mobile: +66(0)98-607-6446

8:45 Meet all together at Room 703 for Introduction

9:00 Start the Short Courses

Room 702: Herbal Standardization

Room 703: HPTLC for Research

Room 710: Quantitative Analysis

	Information	Room 702 (Herbal Standardization)	Room 703 (HPTLC for Research)	Room 710 (Lipid Characterization and Quantification)
	Course Code	SC-1	SC-5	SC-3
9:00-12:00	Topic	HPTLC method development	HPTLC-direct Bioautography	Quantitation and Validation in HPTLC
	No. of participants	17	24	5
	Lecturer (s)	Dr. Saikat Mallick	Prof. Dr. Gertrud Morlock	Pierre Bernard-Savary Dr. Jean-Marc Roussel
	Format	Lecture and Demonstration	Lecture and Demonstration	Lecture and Demonstration
	Lab Assistant	Ms. Khwanlada Kobtrakul	Dr.Siriluk Sintupachee	Ms. Sukanya Numsawad
	12:00-13:00	Lunch (9th floor of the building)		
	Course Code	SC-2	SC-6	SC-4
13:00-16:00	Topic	Analysis of Botanicals in Compliance with USP and Pheur	HPTLC – MS for Characterization of Compounds	Lipid Characterization and Quantification
	No. of participants	17	22	6
	Instructor (s)	Dr. Eike Reich	Dr. Michaela Oberle Ivan Ng	Dr. Vicente L. Cebolla Pierre Bernard-Savary
	Format	Lecture and Demonstration	Lecture and Demonstration	Lecture and Demonstration
	Lab Assistant	Ms. Khwanlada Kobtrakul	Dr.Siriluk Sintupachee	Ms. Sukanya Numsawad
	18:00-20:00	Cocktail Dinner at Pathumwan Princes Hotel (Vista Bar, 8th Floor)		

Symposium Program at a Glance

Location: Pharmacy Innovation Building, 10th Floor, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Phayathai Road, Pathumwan, Bangkok 10330

Wednesday, November 28, 2018

- 08:00 Registration – mounting of all posters
09:00 Opening
09:30-10:45 **Plenary Lecture (PL-1) of Session 1: Botanicals and Traditional Medicines**
10:45-12:15 6 Oral Presentations (OP-1 – OP-6)
12:15 Poster session with lunch (PP-1-PP-45)
13:30-14:15 **Plenary Lecture (PL-2) of Session 2: Effect-Directed Detection**
14:15-15:15 4 Oral Presentations (OP-7 – OP-10)
15:30-16:00 Manufacturer's Presentations (MP-1 – MP-2)
16:00-17:30 Poster Presentations (PP-1 – PP-45)

Thursday, November 29, 2018

- 09:00-09:45 **Plenary Lecture (PL-3) of Session 3: Pharm. and Toxicol. Analysis**
09:45-10:45 4 Oral Presentations (OP-11 – OP-14)
11:00-11:45 **Plenary Lecture (PL-4) of Session 4: Food, Dietary Supplements, Cosmetics and Biosamples**
11:45-12:30 3 Oral Presentations (OP-15 – OP-17)
12:30 Poster session with Lunch (PP-1-PP-45)
13:30-14:15 **Plenary Lecture (PL-5) of Session 5: HPTLC –MS for Compound Characterization**
14:15-15:15 4 Oral Presentations (OP-18 – OP-21)
15:30-16:00 Association/Manufacturer's Presentations (MP-3 and MP-4)
16:00-17:30 Poster Presentations (PP-1 – PP-45) and Poster Demounting

Friday, November 30, 2018

- 09:00-09:45 **Plenary Lecture (PL-6) Session 6: Strong Features of HPTLC**
09:45-10:15 2 Oral Presentations (OP-22 – OP-23)
10:30-10:45 Highlight Summary and Closing
11:15- 20:00 **Start Bangkok Tour** (with lunch box in the coach) to Grand Palace, a cruise to Icon-Siam, and Gala Dinner along Chaopraya River

Manufacturer / Association Presentations

Wed, Nov 28

Chair: Pierre Bernard-Savary

15:30	MP-1	Monika Bäumle	Merck, Germany	TLC/ HPTLC plates -Recent developments and applications
15:45	MP-2	Pia Altenhofer	Biostep, Germany	Development of a universal set of system suitability testing (SST) standards for HPTLC

Thu, Nov 29

Chair: Wanchai De-Eknamkul

15:30	MP-3	Eike Reich	HPTLC- Association Switzerland	Shaping the future of HPTLC: The international association for advancement of HPTLC
15:45	MP-4	Ivan Ng	Waters, Singapore	WATERS' MS units for HPTLC-MS applications

Social Program

Tue, Nov 27

18:00-20:30	Welcome Cocktail Dinner	Pathumwan Princess Hotel, Vista Bar, 8th Floor	All Participants, including of Short Courses	Meet at the Place
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Wed, Nov 28

18:30-20:30	Speakers' Dinner	SaSa International House	PL and PO Speakers and Accompany Persons	Meet at 18:00, on 2nd Floor of Hotel Lobby
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Thu, Nov 29

17.30-19.00	Indian Get- Together Light Dinner	Room 902, 9th Floor, Pharmacy Innovation Building	All Indian Participants	Meet at the Room 902
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Friday, Nov 30

11:15-20:00	Bangkok Tour, River Cruise and Gala Dinner	From the Symposium Venue to the Grand Palace by Coach, to Icon Siam by Boat and River Cruise Dinner	All Participants	Take a Bus Right after the Symposium Closing
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HPTLC Asia 2018: Full Program

Short Course Program

November 27-30, 2018

Venue: Pharmacy Innovation Building, 7th Floor, Faculty of Pharmaceutical Sciences, Chulalongkorn University

Tuesday, November 27, 2018

- ROOM 1** **HERBAL STANDARDIZATION (SC-1, SC-2)**
- 9:00-12:00 **SC-1:** HPTLC METHOD DEVELOPMENT
Saikat Mallick
Chief Chemist, ANCHROM Lab, Mumbai, India
- 13:00-16:00 **SC-2:** ANALYSIS OF BOTANICALS IN COMPLIANCE WITH USP AND PHEUR
Eike Reich
Director, CAMAG Laboratory, Muttenz Switzerland; President, HPTLC ASSOCIATION, Rheinfelden, Switzerland
- ROOM 2** **QUANTITATIVE ANALYSIS OF HPTLC (SC-3, SC-4)**
- 9:00-12:00 **SC-3:** QUANTIFICATION AND VALIDATION IN HPTLC
Pierre Bernard-Savary
Chairman of Chromacim and French Club for Thin-Layer Chromatography, Moirans, France
- Jean-Marc Roussel**
Universities of Aix-Marseille and Bordeaux I, Analytical Methods Development and Validation Consulting, Co-Designer, NeoLiCy Software for Statistical Assessment of Analytical Method's Life Cycle, Mâcon, France
- 13:00-16:00 **SC-4:** LIPID CHARACTERIZATION AND QUANTIFICATION
Vicente L. Cebolla
Instituto de Carboquímica (ICB), Spanish National Research Council (CSIC), Zaragoza, Spain
- Pierre Bernard-Savary**
Chairman of Chromacim and French Club for Thin-Layer Chromatography, Moirans, France
- ROOM 3** **HPTLC FOR RESEARCH (SC-5, SC-6)**
- 9:00-12:00 **SC-5:** HPTLC-DIRECT BIOAUTOGRAPHY
Gertrud Morlock
Chair of Food Science, Justus Liebig University Giessen, Giessen, Germany

- 13:00-16:00 **SC-6: HPTLC – MS FOR CHARACTERIZATION OF COMPOUNDS**
Michaela Oberle
TLC Specialist and Project Leader R&D, Merck KGaA, Darmstadt, Germany
- Ivan Ng**
Manager, System Solutions Business Development, Southeast Asia, Waters Pacific Pte. Ltd., Singapore
- 18:30-20:30 **Welcome Cocktail Dinner for All Symposium and Short-Course Participants (Pathumwan Princess Hotel, 8th Floor)**

International Symposium Program

Venue: Pharmacy Innovation Building, 10th Floor, Faculty of Pharmaceutical Sciences, Chulalongkorn University

Wednesday, November 28, 2018

- 8:00 Registration
9:00 Opening

SESSION 1: BOTANICALS AND TRADITIONAL MEDICINES

Chair: Prof. Dr. Wanchai De-Eknamkul

9:30-10:15 **Plenary Lecture (PL-1)**

PL-1: APPLICATION OF HPTLC TECHNIQUE FOR HERBAL QUALITY CONTROL

Prof. Dr. De-an Guo

*Chair Professor of Shanghai Institute of Materia Medica, Chinese Academy of Sciences;
Director of National Engineering Laboratory for TCM Standardization Technology;
Director of Shanghai Research Center for Modernization of Traditional Chinese
Medicine, PR China*

10:15-10:45 Coffee break

10:45-12:15 **6 Oral Presentations (OP-1 – OP-6)**

OP-1: COMPREHENSIVE HPLC FINGERPRINTING OFFERS ALTERNATIVES TO THE MARKER APPROACH FOR QUALITY CONTROL OF HERBAL MATERIALS

Eike Reich

Director, CAMAG Laboratory, Muttenz Switzerland; President, HPTLC Association, Rheinfelden, Switzerland

OP-2: HPTLC AUTHENTICATION OF MULTI-ORIGINATED CHINESE HERBAL MEDICINES

Zhengtao Wang

Institute of Chinese Materia Medica, Key Laboratory of Standardization of Chinese Medicines of Ministry of Education; Shanghai University of Traditional Chinese Medicine, Shanghai, China

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OP-3: HPTLC IMAGE ANALYSIS FOR ASSESSING THE FEASIBILITY OF THE EXTRACTIVE REFERENCE SUBSTANCE (ERS) OF CHINESE HERBAL MEDICINES IN QUALITY CONTROL

Longgang Guo

Guangdong Natural Medicine Engineering Technology Center and Guangzhou ImVin Pharmaceutical Co. Ltd., Guangzhou, China

OP-4: COMPARABILITY SPECTROSCOPIC AND CHROMATOGRAPHIC FINGERPRINT ANALYSIS OF GELSEMIUM ELEGANS

Mun Fei Yam

School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800, Pulau Pinang, Malaysia

OP-5: HPTLC FINGERPRINT-BASED RAPID CHEMOTAXONOMIC DISCRIMINATION OF DIFFERENT CLERODENDRUM SPECIES USING CHEMOMETRIC DATA ANALYSIS

Madhunita Srivastava

CSIR Central Institute of Medicinal and Aromatic Plants, Digras, India

OP-6: DEVELOPMENT OF SIMPLIFIED HPTLC SOLVENT SYSTEMS FOR THAI MEDICINAL PLANTS

Sornkanok Vimolmangkang

Head, Department of Pharmacognosy and Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand

12:15-13:30 Lunch

SESSION 2: EFFECT-DIRECTED DETECTION

Chair: Prof. Dr. Gertrud Morlock

13:30-14:15 **Plenary Lecture (PL-2)**

PL-2: EFFECT-DIRECTED ANALYSIS OF FUNCTIONAL FOOD INGREDIENTS

Prof. Dr. Gertrud Morlock

Chair of Food Science, Justus Liebig University Giessen, Giessen, Germany

14:15-15:15 **4 Oral Presentations (OP-7 – OP-10)**

OP-7: TLC SCREENING AND EFFECT DIRECTED ANALYSIS OF CHOSEN PLANTS USED IN DEMENTIA TREATMENT

Irena M. Choma

Faculty of Chemistry, Maria Curie-Skłodowska University, Lublin, Poland

OP-8: A NOVEL HPTLC-HYPHENATED BIOAUTOGRAPHIC METHOD FOR IDENTIFICATION OF CARBOHYDRATE DIGESTING ENZYME INHIBITORY METABOLITES

Sayed Ahmad

Bioactive Natural Product Laboratory, Faculty of Pharmacy, Jamia Hamdard, New Delhi, India

OP-9: EFFECT DIRECTED IDENTIFICATION OF ESTROGENIC SUBSTANCES IN FOOD CONTACT MATERIALS WITH HPTLC-BIOASSAYS AND HRMS

Alan Bergmann

Ecotox Center Eawag-EPFL, Dübendorf, Canton of Zürich, Switzerland

OP-10: HPTLC-EDA-UV/VIS/FLD-HESI-HRMS FOR TRACKING OF BIOACTIVE METABOLITES IN PRIMULA BOVEANA”

Ehab Mahran

Philipps University of Marburg, Marburg, and Justus Liebig University Giessen, Giessen, Germany

15:15-15:30

Coffee break

15:30-16:00

MANUFACTURER’S PRESENTATIONS (MP-1 – MP-2)

Chair: Pierre Bernard-Savary

MP-1: TLC/ HPTLC PLATES -RECENT DEVELOPMENTS AND APPLICATIONS

Monika Bäumle

Merck KGaA, Darmstadt, Sigma-Aldrich Chemie GmbH

MP-2: ARE THERE TRULY ESSENTIAL ROSE OILS IN COSMETICS AND FOOD?

Pia Altenhofer

Biostep GmbH, Glockenstr., Chemnitz, Germany

16:00-17:30

Poster Presentations (PP-1 – PP-45)

Thursday, November 29, 2018

SESSION 3: PHARMACEUTICAL AND TOXICOLOGICAL ANALYSIS

9:00-9:45

Plenary Lecture (PL-3)

PL-3

9:45-10:45

4 Oral Presentations (OP-11 – OP-14)

OP-11: WHY IS IT NECESSARY TO USE HPTLC IN API MANUFACTURING PROCESS? - A REVIEW OF CASE STUDIES

Pierre Bernard-Savary

Chairman of Chromacim and French Club for Thin-Layer Chromatography, Moirans, France

OP-12: HPTLC ASSAY METHODS VALIDATION: WILL ICH MEET FDA/EMA/ USP?

Jean-Marc Roussel

Universities of Aix-Marseille and Bordeaux I, Analytical Methods Development and Validation Consulting, Co-Designer, NeoLiCy Software for Statistical Assessment of Analytical Method’s Life Cycle, Mâcon, France

OP-13: USE OF BIOMARKERS AS QUALITY CONTROL INDICES FOR AYURVEDIC FORMULATIONS

Sunita Shailajan

Herbal Research Lab, Ramnarain Ruia College, Matunga (East), Mumbai, India

10:45-11:00 Coffee break

SESSION 4: FOOD, DIETARY SUPPLEMENTS, COSMETICS AND BIOSAMPLES

Chair: Dr. Vicente L. Cebolla

11:00-11:45 **Plenary Lecture (PL-4)**

PL-4: HPTLC OF LIPID-BASED MIXTURES IN DIFFERENT MATRICES: COMBINATION OF DENSITOMETRY AND MS FOR OBTAINING QUALITATIVE AND QUANTITATIVE SAMPLE INFORMATION

Dr. Vicente L. Cebolla

Instituto de Carboquímica (ICB), Spanish National Research Council (CSIC), Zaragoza, Spain

11:45-12:30 **3 Oral Presentations (OP-15 – OP-17)**

OP-15: HPTLC-FLD-SERS DETERMINATION OF FOLIC ACID WITH OZONE-INDUCED FLUORESCENCE

Yisheng Chen

The Key Laboratory of Food Science and Technology, School of Food Science and Technology, Collaborative Innovation Centre of Food Safety and Quality Control in Jiangsu Province, Jiangsu University, Wuxi, China

OP-16: HPTLC METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS EVALUATION OF PHENOLIC ACIDS AND FLAVONOIDS TO STUDY THE PROCESSING EFFECTS IN DIFFERENT MILLET GRAINS

Giridhar Goudar

TATA-NIN Center for Excellence in Nutrition, National Institute of Nutrition, Hyderabad, Telangana, India

OP-17: HIGH-PERFORMANCE THIN-LAYER CHROMATOGRAPHY: THE PERFECT ANALYTICAL TOOL FOR FOOD ANALYSIS

Mario Aranda

Department of Food Science, Nutrition and Dietetic, Faculty of Pharmacy, University of Concepcion, Concepcion, Chile

12:30-13:30 Lunch

SESSION 5: HPTLC –MS FOR COMPOUND CHARACTERIZATION

Chairs: Prof. Dr. Jentaie Shiea

13:30-14:15 **Plenary Lecture (PL-5)**

PL-5: HIGH PERFORMANCE THIN LAYER CHROMATOGRAPHY–MASS SPECTROMETRY (HPTLC-MS): A SIMPLE INTERFACE TO COMBINE HPTLC WITH ELECTROSPRAY IONIZATION MASS SPECTROMETRY

Prof. Dr. Jentaie Shiea

Department of Chemistry, National Sun Yat-Sen University, Kaohsiung, Taiwan

14:15-15:15

4 Oral Presentations (OP-18 – OP-21)

OP-18: HPTLC BASED METHOD DEVELOPMENT FOR CARDIOVASCULAR DISEASE CONTROLLING COMPOUNDS CONTAINING PLANT COLEUS FORSKOLII & COMPARISON OF SEPARATION EFFICIENCY OF TWO DIFFERENT HPTLC PLATES

Ajai Prakash Gupta

QC & QA, Indian Institute of Integrative Medicine, (CSIR-IIIM), Jammu, India

OP-19: SIMPLE INTERFACE FOR SCANNING CHEMICAL COMPOUNDS ON DEVELOPED THIN LAYER CHROMATOGRAPHY PLATES USING ELECTROSPRAY IONIZATION MASS SPECTROMETRY

Sychyi Cheng (will be presented by Suhail Muzaffar Bhat)

Department of Chemistry, National Sun Yat-Sen University, Kaohsiung, Taiwan.

OP-20: TARGET BASED METHOD DEVELOPMENT USING EFFECT DIRECTED TLC - A STRAIGHT WAY FOR COMPOUND PURIFICATION

Michaela Oberle

TLC Specialist and Project Leader R&D, Merck KGaA, Darmstadt, Germany

OP-21: HPTLC-MS IN API CLINICAL BATCHES MANUFACTURING

Amélie Havard (will be presented by Pierre Bernard-Savary)

Research Scientist, Oril Industrie, Servier, Bolbec, Le Havre Area, France

15:15-15:30

Coffee break

15:30-16:00

Association/Manufacturer's Presentations (MP-3 and MP-4)

Chair: Prof. Dr. Wanchai De-Eknamkul

MP-3: SHAPING THE FUTURE OF HPTLC: THE INTERNATIONAL ASSOCIATION FOR ADVANCEMENT OF HIGH PERFORMANCE THIN LAYER CHROMATOGRAPHY

Eike Reich

President, HPTLC Association, Rheinfelden, Switzerland

MP-4: MASS DETECTION FOR ROUTINE ANALYSIS

Ivan Ng

Manager, System Solutions Business Development, Southeast Asia, Waters Pacific Pte. Ltd., Singapore

16:00-17:30

Poster Presentations (PP-1 – PP-45)

Friday, November 30, 2018

SESSION 6:

STRONG FEATURES OF HPTLC

Chair: Dr. Irena Vovk

9:00-9:45

Plenary Lecture (PL-6)

PL-6: HPTLC – DO WE REALLY KNOW IT AND HOW TO MAKE IT MORE POPULAR

Dr. Irena Vovk

Head, Department of Food Chemistry, National Institute of Chemistry, Ljubljana, Slovenia

9:45-10:15

2 Oral Presentations (OP-22 – OP-23)

OP-22: DEVELOPMENT OF A UNIVERSAL SET OF SYSTEM SUITABILITY TESTING (SST) STANDARDS FOR HIGH-PERFORMANCE THIN-LAYER CHROMATOGRAPHY

Manjusha Phanse

Anchrom Enterprises (India) Pvt. Ltd., Mumbai, India

OP-23: VALIDATED TLC DENSITOMETRIC METHOD FOR SIMULTANEOUS QUANTIFICATION OF SIX TERPENOIDS IN PUTRANJIVA ROXBURGHII-A PLANT USED IN INDIAN SYSTEM OF MEDICINE

Sonali Mishra

Analytical Chemistry Department, CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow-226015, India

10:15-10:30

Coffee break

10:30-10:45

Highlights (Prof. Dr. Gertrud Morlock)

10:45-11:15

Poster Presentation Awards and Closure (Prof. Dr. Wanchai De-Eknamkul and Pierre Bernard-Savary)

11:15- 20:00

Start Bangkok Tour (with lunch box in the coach) to Grand Palace, a cruise to Icon-Siam, and Gala Dinner along Chaopraya River

List of Plenary and Oral Presentations

Pharmacy Innovation Building, 10th Floor, Faculty of Pharmaceutical Sciences, Chulalongkorn University
Phayathai Road, Pathumwan, Bangkok 10330

Wed, 28th

SESSION 1: BOTANICALS AND TRADITIONAL MEDICINES

Chair: Prof. Dr. Wanchai De-Eknamkul

09:30	PL-1	De-an Guo	China	Comprehensive HPTLC fingerprinting offers alternatives to the marker approach for quality control of herbal materials
10:45	OP-1	Eike Reich	Switzerland	Comprehensive HPLC fingerprinting offers alternatives to the marker approach for quality control of herbal materials
10:50	OP-2	Zhengtao Wang	China	HPTLC authentication of multi-originated Chinese herbal medicines
11:05	OP-3	Longgang Guo	China	HPTLC Image analysis for assessing the feasibility of the extractive reference substance (ERS) of Chinese herbal medicines in quality control
11:20	OP-4	Mun Fei Yam	Malaysia	Comparability spectroscopic and chromatographic fingerprint analysis of <i>Gelsemium elegans</i>
11:35	OP-5	Madhunita Srivastava	India	HPTLC Fingerprint-based rapid chemotaxonomic discrimination of different <i>Clerodendrum</i> species using chemometric data analysis
11:50	OP-6	Sornkanok Vimolmangkang	Thailand	Development of simplified HPTLC solvent systems for Thai medicinal plants

SESSION 2: EFFECT-DIRECTED DETECTION

Chair: Prof. Dr. Gertrud Morlock

13:30	PL-2	De-an Guo	Germany	Effect-directed analysis of functional food ingredients
14:15	OP-7	Irena M. Choma	Poland	TLC Screening and effect directed analysis of chosen plants used in dementia treatment
14:30	OP-8	Sayeed Ahmad	India	A novel HPTLC-hyphenated bioautographic method for identification of carbohydrate digesting enzyme inhibitory metabolites
14:45	OP-9	Alan Bergmann	Switzerland	Effect directed identification of estrogenic substances in food contact materials with HPTLC-bioassays and HRMS
15:00	OP-10	Ehab Mahran	Germany	HPTLC-EDA-UV/VIS/FLD-HESI-HRMS for tracking of bioactive metabolites in <i>Primula boveana</i>

Thu, 29th

SESSION 3: PHARMACEUTICAL AND TOXICOLOGICAL ANALYSIS

09:00	PL-3			
09:45	OP-11	Pierre Bernard-Savary	France	Why is it necessary to use HPTLC in API manufacturing process? - A review of case studies
10:00	OP-12	Jean-Marc Roussel	France	A Novel HPTLC-hyphenated bioautographic method for identification of carbohydrate digesting enzyme inhibitory metabolites
10:15	OP-13	Sunita Shailajan	India	Effect directed identification of estrogenic substances in food contact materials with HPTLC-bioassays and hrms
10:30	OP-14			

SESSION 4: FOOD, DIETARY SUPPLEMENTS, COSMETICS AND BIOSAMPLES**Chair: Dr. Vicente L. Cebolla**

11:00	PL-4	Vicente L. Cebolla	Spain	HPTLC of lipid-based mixtures in different matrices: combination of densitometry and MS for obtaining qualitative and quantitative sample information
11:45	OP-15	Yisheng Chen	China	HPTLC-FLD-SERS determination of folic acid with ozone-induced fluorescence
12:00	OP-16	Giridhar Goudar	India	HPTLC method development and validation for simultaneous evaluation of phenolic acids and flavonoids to study the processing effects in different millet grains
12:15	OP-17	Mario Aranda	Chile	HPTLC: The perfect analytical tool for food analysis

SESSION 5: HPTLC –MS FOR COMPOUND CHARACTERIZATION**Chairs: Prof. Dr. Jentaie Shiea**

13:30	PL-5	Jentaie Shiea	Taiwan	HPTLC-MS: A simple interface to combine HPTLC with electrospray ionization mass spectrometry
14:15	OP-18	Ajai Prakash Gupta	India	Hptlc based method development for cardiovascular disease controlling compounds containing plant <i>coleus forskolii</i> & comparison of separation efficiency of two different hptlc plates
14:30	OP-19	Sychyi Cheng	Taiwan	Simple interface for scanning chemical compounds on developed TLC plates using electrospray ionization mass spectrometry
14:45	OP-20	Michaela Oberle	Germany	Target based method development using effect directed TLC – A straight way for compound purification
15:00	OP-21	Amélie Havard	France	HPTLC-MS in API clinical batches manufacturing

Fri, 30th**SESSION 6: STRONG FEATURES OF HPTLC****Chair: Dr. Irena Vovk**

09:00	PL-6	Irena Vovk	Slovenia	HPTLC – Do we really know it and how to make it more popular?
09:45	OP-22	Manjusha Phanse	India	Development of a universal set of system suitability testing (SST) standards for HPTLC
10:00	OP-23	Sonali Mishra	India	Validated TLC densitometric method for simultaneous quantification of six terpenoids in <i>Putranjiva roxburghii</i> -a plant used in Indian system of medicine

List of Poster Presentations

POSTER GROUP 1: BOTANICALS AND TRADITIONAL MEDICINES

PP-1	Li Pan	China	Establishment of a unified TLC identification method for <i>Sinapis semen</i> , <i>Raphani semen</i> , <i>Descurainiae semen</i> , and <i>Lepidii semen</i> and separation of its main specific components
PP-2	Moo-Seob Kim	China	A harmonized HPTLC analysis method of Ginseng, American ginseng, and Notoginseng
PP-3	Rui Rong Zheng	China	Improvement of TLC authentication methods of four Chinese medicinal materials
PP-4	Xia Li	China	Comparison of chemical constituents between green and brown <i>Forsythiae fructus</i>
PP-5	Lihua Gu	India	A specific HPTLC method for authentication of <i>Swertia mileensis</i> and its allied spp.
PP-6	Sharad Srivastava	India	Role of HPTLC in industrial chemotaxonomy
PP-7	Longgang Guo	China	HPTLC image analysis for assessing the feasibility of the extractive reference substance (ERS) of Chinese herbal medicines in quality control
PP-8	Poachanee Norfun	Thailand	Phytochemical Screening and HPTLC Fingerprinting profile of extracts of <i>Annona squamosa</i> L
PP-9	Nattaporn Chanthasakda	Thailand	HPTLC fingerprint profile of insecticidal alkaloids from <i>Stemona phyllantha</i> Gagnep
PP-10	Hayford Ofori	Ghana	HPTLC: A tool for characterizing sandalwood oils
PP-11	Karuna Shanker	India	Validated TLC densitometric method for simultaneous quantification of six terpenoids in <i>Putranjiva roxburghii</i> - A plant used in Indian system of medicine
PP-12	Misra Ankita	India	Chemotaxonomic studies on <i>Gloriosa superba</i> L. from different phyto-geographical zones of India through HPTLC
PP-13	Ramachandran Shakila	India	Quantification of active principle from Nilavembu Kudineer Chooranam - An anti-dengue Siddha formulation by HPTLC method
PP-14	Suresh Kumar	India	Estimation of bioactive marker compounds of <i>Baptisia tinctoria</i> using HPTLC
PP-15	Suhina Bhosale	India	Application of HPTLC in quality assessment of an Ayurvedic drug - <i>Myrica esculenta</i> Buch.-Ham ex D. Don
PP-16	Mayuresh Joshi	India	Standardization of ethyl acetate extracts of <i>Avicennia marina</i> and <i>Sonneratia apetala</i> using a validated HPTLC method
PP-17	Kesri N. Sharma	India	Standardization of herbal drugs by HPTLC methods
PP-18	Binit Dwivedi	India	Importance of HPTLC in analysis of homeopathic drug <i>Datura ferox</i>
PP-19	Archana P. Raina	India	Quantification of L-3,4-dihydroxyphenylalanine - An anti-Parkinson's compound from seeds of <i>Mucuna</i> species by HPTLC
PP-20	Ajai Prakash Gupta	India	HPTLC -dual wavelength spectro-densitometric method for simultaneous quantification of active compounds rosmarinic acid and caffeic acid in homeopathic plants <i>Rosmarinus officinalis</i> and <i>Ocimum gratissimum</i> as per USP
PP-21	Kartini Kartini	Indonesia	HPTLC fingerprints of some Indonesian medicinal plants used in "Scientific Jamu"

POSTER GROUP 2: EFFECT-DIRECTED DETECTION

PP-22	X. L. Deng	China	TLC-bioautographic identification of new markers and modification of HPTLC authentication of <i>Curculiginis rhizome</i>
PP-23	Tanushree Goswami	India	HPTLC hyphenated with bioassay for the screening of bioactive constituents of spice <i>Zanthoxylum rhetsa</i>
PP-24	Tanushree Goswami	India	HPTLC-DPPH method for the detection of antioxidant compounds from <i>Zanthoxylum rhetsa</i>
PP-25	Alan Bergmann	Switzerland	Performance of measuring estrogenicity with planar-yeast estrogen screen compared to 96-well plate yeast estrogen screen
PP-26	Supakarn Chamni	Thailand	Determination of steroid 5 α -reductase activity of furano-naphthoquinones by non-radioactive and direct dihydrotestosterone detection using HPTLC

POSTER GROUP 3: PHARMACEUTICAL AND TOXICOLOGICAL ANALYSIS

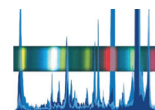
PP-27	Tom Sostaric	Australia	Quantification of tacrolimus ointment using HPTLC
PP-28	Samir Patel	India	Validated TLC densitometric method for stress degradation and accelerated stability study of asiaticoside from <i>Centella asiatica</i> and its marketed formulation
PP-29	Surender Sehrawat	India	Development of new solvent systems for the analysis of atorvastatin extracted from blood using HPTLC plate
PP-30	Manoj Shrawan Charde	India	Simultaneous estimation of drotaverine HCl and nimesulide in pharmaceuticals by HPTLC method
PP-31	Reena Mascarenhas	India	A validated HPTLC method for quantification of kaempferol from rat plasma and its application to pharmacokinetic study using sparse sampling method
PP-32	Archita Patel	India	Development and validation of stability-indicating HPTLC method for simultaneous estimation of ilaprazole and levosulpiride in capsules using design of experiment approach
PP-33	Pallavi Choudharyi	India	Simultaneous determination and method validation for opioids, cannabinal, and nicotine in postmortem whole blood using HPTLC-mass spectrometry
PP-34	Nishit Patel	India	Comparative evaluation of glass containers and laminated plastic pouches in maintaining chemical integrity of <i>Ashwagandhadi lehya</i>
PP-35	Sunita Shailajan	India	Pharmacokinetic evaluation of a polyherbal formulation using high-performance TLC technique
PP-36	Yogeshkumar Gavhane	India	Development of validated HPTLC method for the estimation of eugenol in marketed herbal formulation of muscle and joint hrx pain relieving oil

POSTER GROUP 4: FOOD, DIETARY SUPPLEMENTS, COSMETICS AND BIOSAMPLES

PP-37	Laksana Charoenchai	Thailand	HPTLC densitometry simultaneously determined sesamin and sesamol in cold pressed sesame oil
PP-38	Vesna Glavnik	Slovenia	Determination of anthraquinones in Japanese knotweed extract by HPTLC – mass spectrometry methods
PP-39	Vicente Luis Cebolla	Spain	A high-throughput combinatorial platform of fluorophores for obtaining fingerprints for analyte discrimination

POSTER GROUP 5: HPTLC - MS FOR COMPOUND CHARACTERIZATION

PP-40	Urška Jug	Slovenia	Isolation of bioactive compounds from Japanese knotweed rhizomes using HPTLC methods followed by NMR characterization
PP-41	Mario Aranda	Chile	Identification of bioactive compounds in <i>Aristotelia chilensis</i> by HPTLC-bioassay-mass spectrometry
PP-42	Mario Aranda	Chile	HPTLC-ESI-MS/MS determination of fining-related allergen proteins in Chilean wines
PP-43	Mario Aranda	Chile	Identification of acetylcholinesterase inhibitors compounds in <i>Annona cherimola</i> Mill. by HPTLC-bioassay-mass spectrometry
PP-44	Karem Henríquez-Aedo	Chile	Analysis of polyphenols in Chilean wine by planar chromatography-mass spectrometry-bioassay
PP-45	Darlene Peterssen Fonseca	Chile	Chemical and functional evaluation of fresh and black Chiloe's giant garlic (<i>Allium ampeloprasum</i> L.) by HPTLC -autography coupled to mass spectrometry



PP-21

High-performance thin-layer chromatography fingerprints of some Indonesian medicinal plants used in “Scientific Jamu”

Kartini Kartini

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The use of herbal medicine in Indonesia is still very popular. However, it has not been recognized by medical doctors as an alternative method of health care. Therefore, the government created a “Scientific Jamu” program, which is scientific proof of herbal medicine through health care-based research. To succeed this program supports from various aspects is needed, including ensuring the authenticity and quality of the raw materials. In this research, the high-performance thin-layer chromatography (HPTLC) fingerprint of seven medicinal plants (i.e.: *Orthosiphon stamineus*, *Centella asiatica*, *Phyllanthus niruri*, *Apium graveolens*, *Caesalpinia sappan*, *Stelechocarpus burahol*, and *Curcuma domestica*) used in “Scientific Jamu” was established. Optimization of the mobile phase was designed with the *mixture design* method to generate separation with the highest number of bands and the best separation. Validation methods included stability, precision (intraday and interday), and specificity. Each plant was sonicated using methanol and then proceeded for HPTLC analysis using the following condition. A Camag TLC system comprising Linomat 5 sample applicator, twin-through chamber, TLC visualizer 2, and visioncats software were used. Chromatography was performed on HPTLC plates (silica gel 60 F₂₅₄) with a 100- μ l Camag syringe. Samples were spotted under a flow of N₂ as 6 mm bands, 15 mm from the left edge, 10 mm from the bottom edge, and 10 mm of track distance. Development (80 mm) was carried out in a chamber previously equilibrated with a mobile phase which was optimized for each plant extract. The plates were dried under warm air and derivatized using a specific reagent. Fingerprints evaluation was carried out under TLC visualizer. The fingerprints of the seven plants are presented at Figure 1. Method validation exhibited that the method used meets the requirements of stability, precision, and specificity. It can be concluded that developed HPTLC fingerprint can be used to ensure the authenticity of plants used in “Scientific Jamu.”

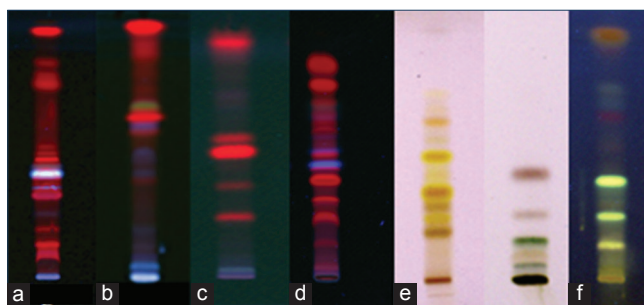


Figure 1: High-performance thin-layer chromatography fingerprint of seven plants used in Scientific Jamu: *Orthosiphon stamineus* (a), *Centella asiatica* (b), *Phyllanthus niruri* (c), *Apium graveolens* (d), *Caesalpinia sappan* (e), *Stelechocarpus burahol* (f), and *Curcuma domestica* (g)



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