薬剤師教育に関する国際フォーラムディスカッション

International Forum Discussion for Pharmacist Education in Tokushima 2013

於　徳島大学　長井記念ホール

at Nagai Memorial Hall, The University of Tokushima

平成 25 年 2 月 11 日

February 11, 2013

徳島大学 薬学部

Faculty of Pharmaceutical Sciences, The University of Tokushima

目次

Contents

はじめに

日本に新しい薬学教育カリキュラムが導入されてから 7 年が経過しました。新たに加わった 2 年間で様々な実務関連教育・実習が導入され、臨床や調剤の現場ではこれを評価する声が上がる一方、教育の現場ではその実施内容や方法、質および実効性の向上に大変苦労している現状もあります。

本フォーラムディスカッションでは、ヨーロッパおよびアジアで薬学教育に携わる大学教員をお招きし、はじめにそれぞれの国における薬学部および薬剤師教育に関するカリキュラムについてご紹介頂きます。 続いてその問題点も含む最近の実情を率直に討論し、日々の薬剤師教育の内容と質を向上させるためのヒントを得たり、また連携協力による薬剤師教育の質向上の可能性を探ることをねらいとしています。

Introduction

The educational system (curriculum) for pharmacist in Japan had been changed in 2006. Students are now required 6 years rather than 4 years to study and take exam for pharmacist. During the additional two years, various practical and on-the-job trainings are carrying out, and we are now trying to improve the contents and quality of education much better. While these changes are welcomed by some pharmacists in hospital and pharmacy, teachers and supervisors are struggling to establish and improve the methods, contents, quality and effectiveness of pharmacist education, in fact.

To get ideas and hints for better curriculum and daily educational activities, we here planned to have an international forum discussion for pharmacist education, inviting 3 teachers concerning pharmacist education in Italy and India.

First, 5 teachers including the two working in Tokushima will introduce the curriculum and contents of each country/school’s pharmacist education.

Next we have a forum discussion of 5-6 topics concerning actualities, conditions of pharmacist education and ideas to solve each problem. We will also discuss the way and possibility to cooperate with multiple Universities for pharmacist education.

プログラム

13:00 – 13:15　開会宣言・概要説明
13:15 – 13:55　イタリアの薬剤師教育 (1)
エマヌエラ コルジーニ　博士（ミラノ大学）
13:55 – 14:35　イタリアの薬剤師教育 (2)
アンジェロ サラ　博士（ミラノ大学）
Break
14:45 – 15:25　インドの薬剤師教育
プロク クマル ムケルジー　博士（ジャダプール大学）
15:25 – 16:05　徳島大学の薬剤師教育
阿部 真治　博士（徳島大学）
16:05 – 16:30　四国の全薬学部の連携・共同による薬学教育改革　活動報告
土屋 浩一郎　博士（徳島大学）
Break
16:45 – 17:45　討論
17:45 – 18:00　閉会宣言　（懇親会は 19 時から・秋田町 相撲茶屋両國にて）

Program

13:00 – 13:15　Opening Remarks
13:15 – 13:55　Pharmacist Education in Italy (1)
Dr. Emanuela Corsini (Univ. Milan)
13:55 – 14:35　Pharmacist Education in Italy (2)
Dr. Angelo Sala (Univ. Milan)
Break
14:45 – 15:25　Pharmacist Education in India
Dr. Pulok Kumar Mukherjee (Jadavpur Univ.)
15:25 – 16:05　Pharmacist Education in The University of Tokushima
Dr. Shinji Abe (Univ. Tokushima)
16:05 – 16:30　Reform of pharmacy education through regional cooperation in Shikoku area
Dr. Koichiro Tsuchiya (Univ. Tokushima)
Break
16:45 – 17:45　Forum Discussion
17:45 – 18:00　Closing Remarks
19:00 – 20:30　Social at SUMO-JYAYA RYOUGOKU

講演

Lecture

講師の国および勤務校における、薬剤師養成カリキュラムとその実情について、ご講演いただきます。なお講演は、英語で行われます。

Lecturers will talk about the educational system (curriculum) for pharmacist in her/his country and University in English.

エマヌエラ コルジーニ　博士

ミラノ大学・薬学部・毒性学（准教授）

ヨーロッパ毒性学会 EUROTOX 教育委員

世界毒性学会 IUTOX 執行理事

Abbreviated Curriculum Vitae of Dr. Emanuela Corsini

Emanuela Corsini is currently associate professor in toxicology at the School of Pharmacy at the Università degli Studi di Milano, Milan, Italy. She got her PhD in Food and Environmental Toxicology in 1993 at the Università degli Studi di Milano. She is currently head of the Laboratory of Immunotoxicology and Immunopharmacology, which is part of the Laboratories of Toxicology directed by Professor CL Galli.

Dr. Corsini's research program encompasses three distinct areas of immunotoxicology. At present, the primary focus of her laboratory centers on the refinement of alternative *in vitro* tests to identify and discriminate contact allergens from irritants and respiratory sensitizers, based on the use of DC-like cells and keratinocytes, and to classify allergens according to their potency. The other area of research centers on the understanding at the molecular level the mechanism of action of immunotoxic/immunomodulatory compounds (i.e. perfluorinated compounds, pesticides, vegetal extracts) on innate and adaptive immunity. Finally, immunosenescece represents the other area of interest of her laboratory. Specifically, studies are being conducted to define the role of RACK-1 and protein kinase C in the decline or remodeling of the immune responses associated with aging, and to identify compounds able to reverse such changes (i.e. DHEA, natural extracts). She is author of more than 110 publications in peer-reviewed journals and 20 book chapters.

She is active in numerous scientific and professional organizations, serves on several editorial boards of toxicology and in vitro journals. She is member of the Italian Society of Toxicology and the American Society of Toxicology. From 1999-2005 she served as Treasures of the Italian Association for *in vitro* Toxicology; from 2009 she is Member of EUROTOX Education Sub Committee, from 2005-2011 she was the Chair of the Immunotoxicology and Chemical Specialty Section at EUROTOX, and from 2010 she is one of the Director of the IUTOX Executive Committee.

She is the recipient of several awards and honors, including Award for the best paper published in Fundamental and Applied Toxicology (21: 71-81, 1993); Outstanding Young Investigator Award from the *Immunotoxicology Specialty Section* of the *SOT (2004)*; Recipient of the EUROTOX/P&G "Animal Alternatives Award 2008".

コルジーニ博士は 1993 年にミラノ大学にて食品環境毒性学の博士号を取得され、現在は同大学薬学部の免疫毒性学・免疫薬理学研究室のリーダーです。特に、アレルゲン等を同定・評価するための様々な動物実験代替試験法を研究・開発され、日本を含め世界中で高く評価されており、数々の受賞をされています。また 2010 年から、毒性学の世界組織である IUTOX の執行理事を務められています。

アンジェロ サラ　博士

ミラノ大学・薬学部・薬理学（准教授）

CNR (National Research Council) パレルモ研究所・リサーチアソシエート

コロラド大学・フルブライトスカラー

Curriculum Vitae of Dr. Angelo Sala

EMPLOYMENT AND RESEARCH EXPERIENCE

•11/2009-present: Research Associate, Institute of Biomedicine and Molecular Immunology of the C.N.R., Palermo

•3/2001-present: Associate Professor in Pharmacology, School of Drug Sciences, University of Milan

•2008: Recipient of a William Fulbright Research Scholarship

•7-8/2006: Visiting Professor at the Department of Medicinal Biochemistry and Biophysics, Karolinska Institute, Stockholm, Sweden, with a grant for the Internationalization of the University by the Italian Ministry of Education, University and Research

•7-9/2003: Visiting Professor at the National Jewish Medical and Research Center, Denver, CO, U.S.A., within the frame of the US-ITALY agreement on Pulmonary Research-Scientist Exchange Program grant

•2/1999-1/2004: Scientific Consultant for the Program Project Grant NIH PHS 398, Principal Investigator Prof. Peter Henson, National Jewish Medical and Research Center, Denver, Colorado, U.S.A.

•3/1993-2/2001: Assistant Professor in Chemistry, School of Pharmacy, University of Milan

EDUCATION AND TRAINING

•1994: PhD in Pharmacology and Toxicology, School of Medicine, University of Milan, with honors

•1988-1989: Research Fellow at the Department of Pharmacology, University of Colorado School of Medicine, Denver, CO

•1987: Post-doctoral Diploma in Experimental Pharmacology, School of Pharmacy, University of Milan, with honors

•1987: Research Fellow, Department of Pharmacology, Hadassah Medical School, The Hebrew University, Jerusalem, Israel,

•1985: Pharm D, School of Pharmacy, University of Milan

•1984: Doctoral Degree in Pharmaceutical Chemistry, School of Pharmacy, University of Milan

サラ博士は、1994 年にミラノ大学で薬理学・毒性学の博士号を取得され、イタリア国内のみならず、イスラエルのヘブライ大学、アメリカ合衆国（主としてコロラド州デンバーの NJMRC およびコロラド大学）や、スウェーデンのカロリンスカ研究所でも経験を積まれた、気鋭の薬理学者です。現職は 2001 年から、また研究テーマは主として炎症反応の病態生理・薬理機構であり、特にアラキドン酸と代謝物の関与について、詳細な研究を展開されています。

Abstract

UNIVERSITA' DEGLI STUDI DI MILANO: OBJECTIVES AND CAREER OPPORTUNITIES AT THE SCHOOL OF PHARMACY (SINCE THIS YEAR RENAMED SCHOOL OF DRUG SCIENCES)

Emanuela Corsini and Angelo Sala

Introduction

In Italy, the degree that allows the access to the Board of Pharmacists (through the State Exam for the Profession of Pharmacist) is granted by two separate (but quite similar) curriculum: the first is the degree in Pharmacy and the second is the degree in Pharmaceutical Chemistry. Both are a single-cycle degree programme, meaning that it do not draw a distinction between the initial three-year period of study and the subsequent two-year period of specialisation; the entire study cycle is structured over a single period of five years.

To be admitted to both single-cycle degree programmes a secondary school diploma or a suitable equivalent foreign qualification are required and the access is limited by an admission test. This test usually takes place at the beggining of September and consists of approximately 100 multiple choice questions on topics from math, science and logic. The number of students admitted depends upon the size of the Faculty, i.e. in Milan is app.ly 400 for Pharmacy and 200 for Pharmaceutical Chemistry, while in universities with smaller faculties, such as in Pavia, they can range between 100 to 200.

Objectives

The degree in Pharmacy provides theoretical and practical knowledge in the biological, chemical, pharmaceutical, technological, pathophysiological, pharmacological and toxicological fields, to enable graduates to deal with the entire sequence of the complex multidisciplinary process that brings a drug to the market: from the structural design, to the production, to the market and to a correct use and control of the drug, according to encoded rules. The course also provides an advanced scientific preparation in health aimed to train a professional expert of drugs and their use for therapeutic purposes. The pharmacist is a fundamental element of connection between patient, doctor and public health structures, collaborating on the monitoring of drug, therapy implementation, providing patient and the doctor with essential information on the correct use of medicines.

Upon completion of the curriculum, graduates will be equipped with the scientific basis, theoretical and practical training required to practice as a pharmacist and to act as experts in drugs and health products (i.e. medical devices, cosmetics, dietary supplements, herbal products, in vitro diagnostic). The differences between the Pharmacy and Pharmaceutical Chemistry curricula are quite limited, and the most relevant is that for the Pharmaceutical Chemistry degree an experimental thesis work is mandatory .

Career opportunities

The professional profile of a pharmacist is a healthcare provider, whom based on multidisciplinary scientific and technological skills, contributes to achieving the objectives set by the National Health Service, responding adequately to the changing needs of the society.

With a degree in Pharmacy and the related national professional abilitation, graduates held, in accordance with Directive 85/432/EEC, the profession of pharmacist and is authorized to exercise the following professional activities: preparation of the pharmaceutical form of medicinal products, manufacturing and control of medicines, control of medicines in laboratory testing, storage, preservation and distribution of medicinal products at the wholesale stage, preparation, testing, storage and supply of medicinal products in pharmacies open to the public and hospital pharmacies, dissemination of information and advice in the field of medicines. From this point of view, although both curricula proveide equal access to all these opportunities, the Pharmaceutical Chemistry degree is regarded as a degree that should provide the best education for Pharmacists interested in research and in a career within the pharmaceutical industry.

The training will also consider other business activities in the European Union in the field of medicine, in order to afford equal employment opportunities in Europe.

ミラノ大学薬学部（薬科学校）の教育目標と就職機会（要約）

イタリアの薬剤師養成カリキュラムは 5 年間であり、初期（基礎）教育に相当する 3 年間と、より専門的な教育を受ける 2 年間から成ります。ミラノ大学では、薬学および薬化学の 2 つのコース（いずれも 5 年修了時に degree が得られる）が選択可能です。前者は定員 400 名、生物・化学・薬学・工学・病態生理学・薬理学・毒性学の領域からなる理論と実際的な知識を学び、くすりが市場に出るまでの多様で複雑な過程を理解します。このコースには更に、薬物療法のエキスパート養成のための先進的実習も含まれます。また後者は定員 200 名、前者と共通したカリキュラムが沢山含まれていますが、実験を行う研究論文作成を必須課題としていることが、前者との最大の違いです。いずれの卒業生も、調剤、製剤と管理、研究室の試薬管理、貯蔵管理、…薬品市場での様々な過程に関わり、また公衆や病院への薬物供給と管理、などなど、薬剤師が関わるあらゆる過程に関与できます。ただし後者（薬化学）の学位は、研究と製薬業界に興味を持ち、そこでキャリアを積みたい薬剤師に最高の教育を提供するコース、と位置づけられています。

プロク クマル ムケルジー　博士

ジャダプール大学・薬工学部・天然物研究所（研究所長・准教授）

アメリカ薬物情報協会・天然健康品特別委員会（委員長）

Brief Biography of Dr. Pulok Kumar Mukherjee

Dr. Pulok K. Mukherjee is working as Director, School of Natural Product Studies, Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India. He has been working on traditional medicine inspired drug discovery and development. His research work highlights on screening, evaluation, formulation and standardization of herbal drugs with their validation to ensure quality, safety and efficacy. He has made innovative, outstanding and original contributions both in education and research in the area of natural products. He worked as the Chairman of the Natural health product special committee of the Drug Information Association, USA.

Dr. Pulok Mukherjee is a pharmacist and completed his master and PhD in pharmacy from Jadavpur University and post doctoral research from Leiden/Amsterdam Center for Drug Research, The Netherlands. He has been admitted as Fellow of the Royal Society of chemistry [FRSC], UK.

His research career has been outstanding, including globally acclaimed contributions to development from natural resources including Ayurveda, ethnopharmacology, herbal drug technology. His pioneering work has led to many important national and international projects in the filed of Natural Health Products. Based on these works, he has to his credit above 140 publications in peer reviewed journals, several patents, 16 books and chapters on evaluation of botanicals. He has worked as visiting scientists in several renowned universities abroad including The School of Pharmacy, University of London; King's College, University of London; Leiden/Amsterdam Center for drug Research, Netherlands; School of Health science, Tokushima University, Japan; Medical Research Council, Cape Town, South Africa; School of Oriental Medicine, Korea and others.

For his excellent research career he has been awarded with so many laurels from Govt of India and abroad; to name a few, he has been awarded with the prestigious Commonwealth Academic Staff Fellowship from Association of Commonwealth Universities [ACU], UK; Out standing Service Award from Drug Information association [DIA], USA; Career Award for Young Teacher from All India Council for Technical Education (AICTE), Govt. of India; Overseas Award from Department of Biotechnology (DBT), BOYSCAST Fellowship from Department of Science & Technology (DST), Govt. of India; Young Pharmacy Teacher Award from Association of Pharmaceutical Teachers of India; IPA Fellowship Award from the Indian Pharmaceutical Association [IPA] and many others.

Dr Mukherjee was the organizing Secretary of the 12th International congress of the Society for Ethnopharmacology [ISE] 2012, for the first time in India on "Traditional Medicines and Globalization– The Future of Ancient Systems of Medicine". Dr Mukherjee is serving as Associate Editor of the Journal of Ethno pharmacology, Elsevier Science. He is the member of the editorial board of ten other Indian and international journals and associated as advisor to different organizations and administrative bodies of government of India and abroad.

ムケルジー博士は、インドのジャダプール大学にて 1997 年に薬学の博士号を取得後、インド、オランダ、アメリカ合衆国およびイギリスにて、主として生薬・伝承薬と、それを基盤にしたスクリーニング・安全性評価・および製剤と標準化に関する創薬研究をきわめて精力的に展開されています。また、アメリカ薬物情報協会において天然健康品特別委員会の委員長も務めておられます。これらの活動はインド国内のみならず、世界中で高く評価されており、各国で様々な受賞をされています。

Abstract

Pharmacy Education in India: A Changing Scenario

Pulok K. Mukherjee, PhD, FRSC
Director, School of Natural Product Studies,
Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India

In India, formal pharmacy education leading to a degree began with the introduction of three years bachelor of pharmacy (B. Pharm.) at Banaras Hindu University in 1937. Pharmacy education in India is regulated by two different organizations, the Pharmacy Council of India (PCI), under the Pharmacy Act of 1948, and the All India Council for Technical Education (AICTE), which was established under the AICTE Act of 1987. Besides the Pharmacy Act, pharmacy practice is also governed by the Drugs and Cosmetics Act of 1940, which stipulates the manufacture, distribution, and sale of drugs. AICTE is responsible for planning, formulating, and maintaining norms and standards in technical education, which include pharmacy. PCI controls the minimum standard of education required and to issue license permitting them to practice in an Indian state. D. Pharm. and B. Pharm. program are regulated by PCI, but it has no jurisdiction over M. Pharm. and other higher level degree programs.

A variety of programs in pharmacy courses are available in India, such as diploma in pharmacy (D. Pharm.), bachelor of pharmacy (B. Pharm.), master of pharmacy (M. Pharm.), doctor of pharmacy (Pharm. D.), and doctor of philosophy in pharmacy (Ph. D.). The entry point, for D. Pharm., B. Pharm., and Pharm. D. programs are twelve years of formal education in the sciences. The D. Pharm. program requires a minimum of two years of educational coursework followed by 500 hours of required practical training anticipated to be completed within 3 months in either a hospital or community setting. The B. Pharm. involves 4 years of study in colleges, in the final year of the course the student has to take up a project work at university or industrial training, depending on the curriculum of the particular university. Curriculum of the D. Pharm. and B. Pharm. degree comprises of various subjects in pharmacy such as pharmaceutics, pharmaceutical chemistry, pharmacology, pharmacognosy, pharmaceutical analysis etc. Students holding a B. Pharm. degree can earn an M. Pharm. degree in two years, of which the second year is usually devoted to research leading to a dissertation in any pharmaceutical discipline. Recently, M. Pharm. programs on phytochemistry, natural product research, pharmacy practice, industrial pharmacy, quality assurance, and pharmaceutical biotechnology specializations have been introduced. Students with an M. Pharm. degree in any discipline can work further to obtain PhD in pharmacy.

In this presentation, the changing face of the current status of pharmacy education of India and pharmacy profession at large would be discussed. The curriculum of Pharmacy education in India was always aimed to prepare pharmacy graduates to work as specialists in quality control and standardization of drugs for pharmaceuticals and their dispensing as well. The discussion may help in the critical analysis and planning, and will be of value in further adaptation of the pharmacy education to the desired educational outcomes.

インドの薬学教育：変化するシナリオ（要約）

インドの薬学教育は、1937 年にバラナシのヒンドゥー大学で導入された 3 年制の B.Pharm から始まり、D.Pharm, M.Pharm（修士）、Pharm.D および Ph.D.（博士）の学位があります。現在は PCI と AICTE という、2 つの異なる組織が薬学教育を管理しており、PCI は最小標準教育の管理とインド内での実務免許交付に携わり（B.及び D.Pharm、これ以上の学位には関与しない）、AICTE は薬局を含む技術教育の標準策定に関わります。D.Pharm は最低 2 年の座学と 500 時間（3 ヶ月以内）の病院または薬局実務教育が、B.Pharm は大学 4 年間の最終年度に大学毎のプロジェクトワークか社会実習があり、B.学位保持者はその先 2 年の M.に進むことが出来、通常 2 年目は研究をします。最近 M.に様々な領域が導入されました。M.保持者は PhD に進むことが出来ます。本講演では、インドの薬学教育の変革についての現状をお話しします。

阿部 真治　博士

徳島大学・大学院ヘルスバイオサイエンス研究部（薬科学教育部）

臨床薬学実務教育室（助教）

Curriculum Vitae of Dr. Shinji Abe

PROFESSIONAL EXPERIENCE

Apr 2011 – present: Assistant Professor in Central Office for Clinical Pharmacy Training, Institute of Health Biosciences, The University of Tokushima Graduate School

Aug 2009 – Mar 2011: Assistant Professor in Department of Pharmacy, Tokushima University Hospital

Apr 2006 – Jul 2009: Pharmacist in Department of Pharmacy, Tokushima University Hospital

Nov 2005 – Jan 2006: Fellowship of the Japan-USA Pharmacist Exchange Program, University of North Carolina, NC, U.S.A.

Jul 2004 – Mar 2006: Pharmacist in Clinical Trial Center for Developmental Therapeutics, Tokushima University Hospital

Apr 1998 – Jun 2004: Pharmacist in Department of Pharmacy, Tokushima University Hospital

EDUCATION AND TRAINING

2004: Ph.D. in Department of Pharmacology, Graduate School of Medical Science, The University of Tokushima School of Medicine

1998: M.S. in Department of Pharmacology, Graduate School of Pharmaceutical Sciences, The University of Tokushima

1996: B.S. in Faculty of Pharmaceutical Sciences, The University of Tokushima

阿部博士は、徳島大学大学院薬学研究科博士前期課程を修了後、1998 年より徳島大学病院で薬剤師として経験を積み、2004 年に徳島大学大学院医学研究科で博士号を取得しました。その後、米国ノースカロライナ大学で薬学教育および薬剤師教育の研修を受け、2011 年から現職で病院実務実習、実務実習事前学習の指導を行うとともに、がん免疫療法の研究を行っています。

Abstract

Pharmacist education in The University of Tokushima

Shinji Abe

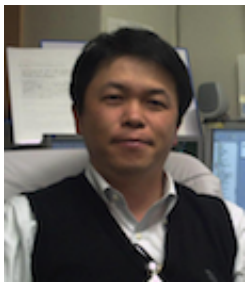
In Japan, the curriculum for pharmacists was then shifted from the 4-years system to the 6-year system in 2006. The new education system requires additional time devoted to advanced clinical pharmacy and practice experience to be qualified for the examination. Consequently, the current standard curriculum, which is named "Model Core Curriculum for Pharmaceutical Education", was introduced as a means of fulfilling the requirements. As the framework for practical training, another curriculum was also built, which is named "Model Core Curriculum for Practice Experience". In addition, to prove their proficiency before they start clinical practice training, there are two tests, CBT (Computer Based Test) and OSCE (Objective Structured Clinical Examination). Under the new education system, only students who passed these tests at the 4^{th} grade are able to proceed to the 5^{th} grade and attend to clinical practice training both in the hospital and the community pharmacy for 11 weeks each. After the clinical practice training, some students start for preparing examination for pharmacist, and some do the amount of research training. Finally, the students are able to obtain eligibility for the national examination and the graduation certificate.

Our department has also implemented this system in 2006 in accordance with the new standard curriculum. We've established two separate courses for clinical pharmacists and pharmaceutical researchers, which takes 6 years and 4 years to complete respectively. In the current curriculum, the aim of pharmacist education in our University is to develop the professional of drug therapy realizing human-centered medicine, team medicine. Therefore, our department collaborates with other universities at mid-west Japan and established “Mid-West Japan Cancer Professional Education Consortium to cultivate Oncology Pharmacy Specialist”. We also established “Tokushima Pharmacist Network (TPN)” in 2005, and hold lectures or discussions for our students and community pharmacists. In addition, we started an international video conference between University of North Carolina and our department to open our student’s eyes to the diversity of the world since 2011. As described above, we keep trying to develop future leaders of pharmacists.

徳島大学の薬学教育

日本では 2006 年より薬学部 6 年制が開始され、「薬学教育モデル・コアカリキュラム」、「実務実習モデル・コアカリキュラム」が策定されました。6 年制の教育システムでは 4 年次に CBT および OSCE に合格した学生が、薬局および病院においてそれぞれ 11 週間の長期実務実習を行い、大学卒業資格と薬剤師国家試験受験資格を得ます。

徳島大学薬学部には、薬剤師養成のための 6 年制と薬学研究者養成のための 4 年制の、2 つのコースが設置されており、標準的なカリキュラムに則った教育が行われています。徳島大学における薬剤師教育の目的は、患者中心のチーム医療を実践できる薬物療法専門家の育成であり、中国・四国高度がんプロ養成基盤プログラムや、徳島大学臨床薬剤師交流ネットワーク（TPN）、米国ノースカロライナ大学とのビデオカンファレンスを通して、将来指導者となる薬剤師の養成に取り組んでいます。



土屋 浩一郎　博士

徳島大学・大学院ヘルスバイオサイエンス研究部（薬科学教育部）

機能分子生化学分野（教授）

Curriculum Vitae of Dr. Koichiro Tsuchiya

PROFESSIONAL POSITIONS

Apr 2007 – present: Professor, Department of Medical Pharmacology, Institute of Health Biosciences, The University of Tokushima Graduate School

July 2003 –Mar 2007: Associate professor, Department of Clinical Pharmacology, Faculty of Pharmacy, The University of Tokushima

Apr 1998 –Mar 2000: Visiting fellow at National Institute of the Environmental Health Sciences (NIEHS)/NIH, RTP, NC 27709 USA. Host: Dr. Ronald P. Mason.

Oct 1997 –June 2003: Assistant professor, Department of Pharmacology, Tokushima University School of Medicine

Apr 1992 –Oct 1997: Pharmacist, at Tokushima University Hospital

Feb 1991 –Mar 1992: Pharmacist, at drugstore

PROFESSIONAL LICENSURE & CERTIFICATIONS

May 1989: Received the certificate license of Pharmacist (# 267153)

EDUCATION

Feb 1997: Received the Degree of Doctor of Medicine

Apr 1993 –Mar 1997: Research assistant, Tokushima University School of Medicine

Apr 1992 – Mar 1993: Non-degree graduate course, Tokushima University School of Medicine

Mar 1991 – Feb 1992: Graduate school of Pharmacology, The University of Tokushima (Doctor course)

Mar 1991: Received the Degree of Master of Pharmacology

Apr 1989 – Mar 1991: Graduate school of Pharmacology, The University of Tokushima (Master course)

Apr 1984 – Mar 1989: Department of Pharmacology, The University of Tokushima

土屋博士は、徳島大学薬学部および大学院を卒業・修了し、また 1989 年に薬剤師登録、1997 年に博士号を取得し、その間にドラッグストアと徳島大学病院で薬剤師としての経験を積みました。徳島大学医学部助手着任後、1998 年から 2 年間米国 NIEHS に訪問研究員として滞在し、帰国後は本学薬学部助教授を経て、2007 年から現職です。薬理学と生化学に軸足を置いた様々な研究を展開するとともに、本学薬学部薬学科の屋台骨を支える諸業務を担当しています。

Abstract

Reform of pharmacy education through regional cooperation in Shikoku area

Koichiro Tsuchiya

[Background]

To maintain sustainable growth and development in this rapidly changing society, we are currently required to produce versatile human resources who can cope with diversified social problems with independent thinking abilities. For a qualitative reform of pharmacy education to answer the need, it has become quite important to reinforce the ties among local universities and provide a wide range of high-quality tertiary education making good use of gathered educational materials and different advantages.

[Objection]

In 2012, four pharmacy schools of our university and three other private universities (Tokushima Bunri University Faculty of Pharmaceutical Sciences, Tokushima Bunri University Kagawa School of Pharmaceutical Sciences, and Matsuyama University College of Pharmaceutical Sciences) in this area of Japan (Shikoku) were jointly awarded a national grant for the reform of pharmacy education through regional cooperation (2012 - 2016).

[Action items]

We are now planning to do following items during the period.

1. Cooperation in both educational and research fields
2. Introduction of faculty development
3. Foster clinical research coordination
4. Foster disaster support pharmacists
5. Prepare and establishment of university pharmacies
6. Regional partnership between universities and stakeholders

[Goal]

1. Improvement in staff's educational skills, 2. Foster of patient-oriented and research-oriented students,
3. Reform of educational programs, 4. Publicity of department (college) and graduate programs,
5. Collaboration with local stakeholders.

「四国の全薬学部の連携・共同による薬学教育改革」は、文部科学省・平成 24 年度大学間連携共同教育推進事業に選定された事業であり、5 年間の実施期間中に本事業は、四国の 1 国立・2 私立大学の 4 薬学部が戦略的連携関係を持ち、薬剤師養成教育・大学院教育と研究を共同して推進し、臨床薬学分野の研究を実施可能な高度な専門知識を有する臨床薬剤師(pharmacist-scientist)、および災害支援薬剤師の養成を目指します。

さらには地域のステークホルダーと密接に情報交換を行い、四国特有の課題に対応できる地域薬剤師の養成に協働して取り組みます。

見込まれる成果は、以下の 5 項目です。

1: 教員の教育力の向上

2: 多様性を持つ薬剤師・薬学教育者の養成

3: 学士課程・大学院課程の教育プログラムの改革

4: 社会に対する薬学教育の認識向上

5: 地域貢献

討論

Discussion

講演内容に対する質疑応答や、いくつかのトピックに関する討論を行います。日本語でも英語でも結構ですので、この機会に是非活発なご質問・ご討論をお願いいたします。オーガナイザーらは通訳を試みます。

Questions and answers for contents of the lectures are welcomed. We also have discussions with some topics prepared by organizers. Please do not hesitate to have questions not only in English but also in Japanese (the organizers will try to translate).

・講演内容に関する質疑応答　Question and answers for contents of the lectures

・実務教育内容の要求度　Quality and quantity of practical/ on-the-job training

・コミュニケーション教育の実情　Communication practice for pharmacist

・教育コストと支援制度　Economical issues and supporting system for education

・薬学生の就職状況　Carrier opportunities and actual jobs the graduates got

・国内外他校との連携教育の実情と可能性　Cooperative education: actuality and possibility

・教育人材の確保と養成　How to get, keep and train educational staff ?

・女性支援制度について　Supporting system for female staff

【MEMO】

薬剤師教育に関する国際フォーラムディスカッション
International Forum Discussion for Pharmacist Education in Tokushima 2013

お問い合わせ先：
〒770-8505 徳島市庄町 1-78-1
徳島大学 薬学部 薬学科
笠原 二郎（神経病態解析学分野・准教授）

Contact:
Jiro Kasahara, PhD, Associate Professor
Department of Neurobiology and Therapeutics
Faculty and Graduate School of Pharmaceutical Sciences
Institute of Health Bioscience
The University of Tokushima
1-78-1 Sho-machi, Tokushima 770-8505, JAPAN

E-mail: awajiro@tokushima-u.ac.jp
Tel&Fax: 088-633-7278 (from outside Japan, +81-88-633-7278)