

第9回システム生物医学(LSBM)研究会

日時:平成23年2月17日(木)~2月18日(金)
会場:箱根湯本富士屋ホテル(小田急箱根湯本駅前)
レインボープラザ館 2階グランドコンベンションホール
〒250-0392 神奈川県足柄下郡箱根町湯本 256-1
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東京大学先端科学技術研究センター
システム生物医学ラボラトリー(LSBM)

参加者へのご案内とお願い

1. 13:00の開始に間に合うように会場にお越しください(現地集合です)。
2. LSBMの方は各自名札を持参してください。外部の方には当日お渡しいたします。
3. ポスターを各自ご準備ください。
4. プログラムはPDFファイルでお送りしますので、必要に応じて各自印刷してお持ちください。
5. 会場内では携帯電話の着信音はお切りください。

口頭発表演者

- ・ 発表用のコンピューターは、ご持参頂きたいお願いいたします。
(マックなど特別なコネクターもお忘れなきようお願いいたします)。
- ・ レーザーポインタはこちらで用意します。
- ・ 次演者用のいすを用意しますので、発表の5分前までにそちらで待機してください。
- ・ 質疑応答が終わったら、速やかに自分のファイルを閉じて、次の演者と交代してください。

ポスター発表者

- ・ ポスターは、縦90cm、横90cmを目安に作成してください。
- ・ Introduction talks(16:30-18:00)の終了後、各自の演題番号を確認しポスターを貼ってください。
- ・ 奇数番号の方は前半(19:00-19:30)、偶数番号の方は後半(19:30頃~20:00)の時間帯にポスターの前に待機し、発表・討論を行ってください。
- ・ ポスターは部屋に戻る際に持ち帰ってください。

-第1日プログラム-

第1日 2月17日(木)

13:00~16:00

第9回 システム生物医学(LSBM)研究会(グランドコンベンションホール・西)

座長: 金田 篤志

稲垣 毅

1. 和田 洋一郎 : A wave of nascent transcription on activated big genes in human endothelial cells
2. 金田 篤志 : Epigenotypes and oncogene mutations in cancer.
3. 米沢 理人 : Regulation of p53 activity by the Jumonji-C domain-containing protein KDM7A
4. 永江 玄太 : DNAメチル化で見る癌の多様性とその意義
5. 穴井 元暢 : EZH2 inhibitor discovery for cancer therapy
6. 飯嶋 麻里子 : 癌特異抗原 colon carcinoma antigen (CCA) 1 の解析
7. 稲垣 毅 : Metabolic regulation by the histone demethylase Jmjd1a
8. 谷村 恭子 : Jmjd1a 蛋白の精製 ~抗体作成・結晶解析に向けて~
9. 馬郡 健太 : Wnt シグナルの下流で 3T3-L1 細胞の脂肪分化を抑制する OSR1 の機能解析
10. 太期 健二 : 内在性 HNF4 α のプロテオミクス解析
<発表時間 13 分+質疑 5 分>

16:30~18:00

<会場1> Introduction talks (in English)(グランドコンベンションホール・東)

座長: 井原 茂男

油谷 浩幸

1. 油谷 浩幸 : high throughput biology
2. 藤谷 秀章 : Supercomputer reveals protein thermodynamics
3. 小笹 徹 : Dynamics of GPCR Signaling System
4. 酒井 寿郎 : epigenome and metabolic syndrome
5. 川村 猛 : Mass spectrometry@LSBM: cutting-edge technologies
6. 神吉 康晴 : Functional Roles of GATA2 in Vascular Endothelial Cells
7. 田中 十志也 : CD300a/MAIR-1 is a novel PPAR δ target gene that protects against intestinal inflammation induced by fat diet feeding

<発表時間 10分+質疑 3分>

18:30~

<ホール> ポスターセッション

-第2日プログラム-

2月18日(金)10:00~15:00

<会場1> 国際シンポジウム (グランドコンベンションホール東)

<Structure Biology of Cell Signaling> 細胞シグナル伝達の構造生物学

最先端研究開発支援プログラム研究者会議及びシステム生物医学研究会による共同開催

Session 1

座長: 酒井寿郎 浜窪隆雄

10:00 - 10:10 Opening Remark
清水孝雄(東京大学医学部長)

10:10 - 10:30 MDADD プログラムの紹介
浜窪隆雄(東京大学先端科学技術研究センター教授)

10:30 - 11:10 Antibody-mediated crystallization of membrane proteins
岩田想(京都大学医学部教授)

11:10 - 11:50 Genome-wide approaches to understanding nuclear receptor function
Christopher Glass (カリフォルニア大学サンディエゴ校生化学)

11:50 - 13:20 昼食

Session 2

座長: 藤谷秀章 小笹徹

13:20 - 14:00 G proteins as Selective Conformational Filters on GPCRs
Roger Sunahara (ミシガン大学薬理学)

14:00 - 14:40 General regulation of Phospholipase C isozymes”
John Sondek (ノースカロライナ大学薬理学)

14:40 - 14:50 Concluding Remark
児玉龍彦 (東京大学先端科学技術研究センター教授)

Structure Biology of Cell Signaling

Session 1

Chair: Juro Sakai and Takao Hamakubo

10:00 – 10:10

Opening remark

Takao Shimizu

Dean, Faculty of Medicine

Professor, Department of Biochemistry and Molecular Biology

The University of Tokyo

10:10 – 10:30

Introduction of Molecular Dynamics and Antibody Drug Design project

Takao Hamakubo

Professor, Laboratory of Systems Biology and Medicine

Research Center for Advanced Science and Technology

The University of Tokyo

10:30 – 11:10

Antibody-mediated crystallization of membrane proteins

So Iwata

Professor, Department of Cell Biology

Faculty of Medicine, University of Kyoto

Brief Biography

1986 - 1991 Graduate Student, University of Tokyo, Graduate School of Agricultural Science; PhD

1992 - 1996 Postdoctoral fellow, Max Plank Institute for Biophysics, Germany

1996 - 2000 Lecturer, Uppsala University, Sweden

2000 Professor, Department of Life Science, Imperial College London, UK

2005 Director, Center for Structure Biology, Imperial College London, UK

2007-present Professor, Department of Cell Biology, Faculty of Medicine
Kyoto University, Japan

11:10 -11:50

Genome-wide approaches to understanding nuclear receptor function

Christopher Glass

Professor of Medicine and Cellular and Molecular Medicine
School of Medicine, University of California, San Diego

Abstract

Nuclear receptors comprise a family of ligand-dependent transcription factors that regulate diverse aspects of reproduction, development, homeostasis and immunity. We have utilized the macrophage, a cell that plays essential roles in immunity and tissue homeostasis, as a model system for exploring the molecular mechanisms by which nuclear hormone receptors positively and negatively regulate gene expression in response to natural and synthetic ligands. Our recent genome-wide studies have led to a model in which nuclear receptors act in a cell-restricted manner as a consequence of the actions of a small set of pioneering, lineage-determining factors, that establish most of the enhancer-like regions within the cell. These 'protoenhancers' that can subsequently be acted upon by a diverse set of signal-dependent transcription factors. In the macrophage, key lineage determining factors include PU.1, C/EBP α/β and AP-1 proteins. These transcription factors function in a collaborative manner to bind to macrophage-specific enhancer regions, initiate nucleosome remodeling and histone modifications, and establish 'open' regions of chromatin. These regions can then be acted upon by nuclear receptors to positively or negatively regulate vicinal genes.

Brief Biography

1973-1977 University of California, Berkeley; B.A. Biophysics
1977-1984 University of California, San Diego; M.D. Medicine
1980-1984 University of California, San Diego; Ph.D. Biology
Graduate student, Division of Metabolic Disease, Department of
Medicine, University of California, San Diego. Research

Advisors:

1986-1989 Daniel Steinberg and Ray Pittman
Postdoctoral fellow, Eukaryotic Regulatory Biology Program,
University
of California, San Diego. Research Advisor: Michael G.
Rosenfeld.
1991-1999 Assistant Professor, Associate Professor of Medicine,
Division of Endocrinology and Metabolism
Division of Cellular and Molecular Medicine
University of California, San Diego
1999-present Professor of Medicine and Cellular and Molecular Medicine
University of California, San Diego

Session 2

Chair: Tohru Kozasa and Hideaki Fujitani

13:20 – 14:00

G proteins as Selective Conformational Filters on GPCRs.

Roger Sunahara

Department of Pharmacology, University of Michigan Medical School

Abstract

G protein-coupled receptors (GPCRs) arguably remain the largest family of targets for therapeutics on the market today. However the molecular mechanism by which many of these ligands exert their therapeutic effect is not clear. Here we study the influence of agonists, inverse agonists and neutral antagonists on receptor conformation and determine how their binding may be modulated by G proteins. We utilize nanometer-scale phospholipid-containing particles, reconstituted High Density Lipoprotein (rHDL), as a platform to reconstitute purified preparations of the β_2 -adrenergic receptor. We take advantage of the contributions of phospholipids toward GPCR stability and G protein coupling in this integrated, homogeneous and monodispersed reconstitution approach. Moreover equal access to both sides of the bilayer, a property that plagues reconstituted vesicle preparations, allows efficient protein•receptor and ligand•receptor interactions. Here we provide pharmacological and biophysical evidence to suggest that G proteins exert a strong allosteric influence on ligand-directed receptor conformations. Of particular interest is the surprising modulatory role that G proteins apply to neutral antagonist binding, a characteristic that challenges their intrinsically “neutral” designation.

Brief Biography

- 1989-1993 Graduate Student, Department of Pharmacology, University of Toronto
Doctor of Philosophy (1989-1993) under the supervision of Dr. Philip Seeman, M.D.
- 1993- 1998 Postdoctoral fellow, Department of Pharmacology, University of Texas Southwestern Medical Center in the laboratory of Dr. Alfred G. Gilman, M.D., Ph.D.
- 1998-2001 Assistant Professor, Department of Pharmacology, University of Texas Southwestern Medical Center
- 2001-2008 Associate Professor, Department of Pharmacology, University of Michigan
- 2008- present Associate Professor, Department of Pharmacology, University of Michigan Medical School

14:10 – 14:50

General regulation of phospholipase C isozymes

John Sondek

Professor of Pharmacology, UNC at Chapel Hill Professor of Biochemistry and Biophysics, UNC at Chapel Hill

Abstract

Phospholipase C isozymes control numerous signaling cascades through the regulated hydrolysis of the phosphoinositide, PIP_2 . The set of thirteen PLCs in humans are activated by numerous and disparate inputs, including: elevated calcium, heterotrimeric G proteins, Ras-related GTPases, and tyrosine kinases. Despite the diverse array of inputs that activate auto-inhibited PLCs, general mechanisms govern both the auto-inhibition and activation of PLCs. This talk will introduce these unifying concepts and discuss in detail: i) the reciprocal regulation of PLC- β isozymes by heterotrimeric G proteins of the Gq/11 family and ii) the activation of PLC- γ isozymes by phosphorylation mediated by receptor tyrosine kinases.

Brief Biography

1992 Graduate Student, The Johns Hopkins University, PhD, Biochemistry
Balt

1992-1996 Postdoctoral fellow, Yale University Structural Biology in the
laboratory of

Dr. Paul Sigler

1996-2002 Assistant Professor, Department of Pharmacology, and Biochemistry
&

Biophysics, University of North Carolina at Chapel Hill

2002- 2006 Associate Professor, Department of Pharmacology, and
Biochemistry &

Biophysics, University of North Carolina at Chapel Hill

2006-present Professor, Department of Pharmacology, and Biochemistry and
Biophysics, University of North Carolina at Chapel Hill

14:50 – 15:00

Concluding Remark

Tatsuhiko Kodama

Director of MDADD Program

Professor, Department of Systems Biology and Medicine

Research Center for Advanced Science and Technology

The University of Tokyo

1	LSBM	Genome Science	堤 修一	Shuichi Tsutsumi
2	LSBM	Genome Science	永江 玄太	Genta Nagae
3	LSBM	Genome Science	辻 真吾	Shingo Tsuji
4	LSBM	Genome Science	砂河 孝行	Takayuki Isagawa
5	LSBM	Genome Science	野中 綾	Aya Nonaka
6	LSBM	Genome Science	関 元昭	Motoaki Seki
7	LSBM	Genome Science	辰野 健二	Kenji Tatsuno
8	LSBM	Genome Science	山本 尚吾	Shogo Yamamoto
9	LSBM	Genome Science	梅田 高呂	Takayoshi Umeda
10	LSBM	Genome Science	藺田 幸太郎	Koutaro Sonoda
11	LSBM	Genome Science	岡部 篤史	Atsushi Okabe
12	LSBM	Genome Science	王 凌華	Linghua Wang
13	LSBM	Genome Science	佐藤 真輔	Shinsuke Sato
14	LSBM	Genome Science	菊池 弥寿子	Yasuko Kikuchi
15	LSBM	Genome Science	桑 飛	Fei Sang
16	LSBM	Genome Science	合田 哲	Satoshi Goda
17	LSBM	Genome Science	上田 宏生	Hiroki Ueda
18	LSBM	Genome Science	佐藤 輝幸	Teruyuki Sato
19	LSBM	Genome Science	野村 征太郎	Seitaro Nomura
20	LSBM	Genome Science	酒井 綾子	Ayako Sakai
21	LSBM	Genome Science	西村 邦裕	Kunihiro Nishimura
22	LSBM	Systems Biology	神吉 康晴	Yasuharu Kanki
23	LSBM	Systems Biology	飯嶋 麻里子	Mariko Iijima
24	LSBM	Systems Biology	三村 維真理	Imari Mimura
25	LSBM	Systems Biology	井上 剛	Tsuyoshi Inoue
26	LSBM	Systems Biology	前島 崇司	Takashi Maejima
27	LSBM	Metabolic Medicine	阿部 陽平	Youhei Abe
28	LSBM	Metabolic Medicine	山崎 あゆむ	Ayumu Yamasaki

29	LSBM	Metabolic Medicine	Royhan Roziqie	Royhan Roziqie
30	LSBM	Molecular Biology	堀内 恵子	Keiko Horiuchi
31	LSBM	Molecular Biology	太期 健二	Kenji Daigo
32	LSBM	Molecular Biology	川村 猛	Takeshi Kawamura
33	LSBM	Molecular Biology	穉本 智	Satoru Akimoto
34	LSBM	Molecular Biology	村上 聡	Satoshi Murakami

35	MDADD	Molecular Biology	先浜 俊子	Toshiko Sakihama
36	MDADD	Molecular Biology	望月 康弘	Yasuhiro Mochiduki
37	MDADD	Molecular Biology	増田 一之	Kazuyuki Masuda
38	MDADD	Molecular Biology	岩成 宏子	Hiroko Iwanari
39	MDADD	Molecular Biology	鈴木 信周	Nobuchika Suzuki
40	MDADD	Molecular Biology	三井 健一	Kenichi Mitsui
41	MDADD	Molecular Biology	山本 利義	Toshiyoshi Yamamoto
42	MDADD	Molecular Biology	中川 清	Kiyoshi Nakagawa
43	MDADD	Molecular Biology	高橋 一彰	Kazuaki Takahashi
44	MDADD	Molecular Biology	Nicole Hajicek	Nicole Hajicek
45	MDADD	Molecular Biology	高松 佑一郎	Yuichiro Takamatsu
46	MDADD	Molecular Biology	新井 修	Osamu Arai
47	MDADD	Molecular Biology	Christina Chow	Christina Chow
48	MDADD	Physical Biochemistry	谷中 冴子	Saeko Yanaka
49	MDADD	Physical Biochemistry	岡本 未央	Mio Okamura
50	MDADD	Inoue Lab,Osaka Univ.	門 祐示	Yuji Kado
51	MDADD	Inoue Lab,Osaka Univ.	中山 泰亮	Taisuke Nakayama
52	MDADD	Inoue Lab,Osaka Univ.	川戸 達矢	Tatsuya Kawato
53	MDADD	Inoue Lab,Osaka Univ.	妻鳥 陽子	Yoko Tsumatori
54	MDADD	Systems Biology	井原 茂男	Shigeo Ihara
55	MDADD	Systems Biology	山下 雄史	Takefumi Yamashita
56	MDADD	Systems Biology	篠田 恵子	Keiko Shinoda

57	MDADD	Systems Biology	大田 佳宏	Yohishiro Ohta
58	MDADD	Mathematical Sciences	児玉 大樹	Hiroki Kodama
59	MDADD	Nuclear medicine	高橋 美和子	Miwako Takahashi
60	MDADD	Nuclear medicine	荒井 拓也	Takuya Arai
61	MDADD	Nuclear medicine	古山 桂太郎	Keitaro Koyama
62	MDADD	Systems Biology	杉山 暁	Akira Sugiyama