学術セミナー

日時：2019 年 1 月 30 日（水）16:00～

場所：病院中央棟 3 階、中会議室 3

演者：Alexander Hoffmann 教授

Professor of Microbiology, Immunology, and Molecular Genetics, UCLA
Director of the Institute for Quantitative and Computational Biosciences (QCB)

Hoffmann 博士は David Baltimore 博士（1975 年度ノーベル生理学医学賞受賞者）の下でのポスドク時代以来、NF-κB に関する研究に携わっておられます。特に、システムバイオロジー的手法を取り入れ、シグナル伝達と転写制御に関するネットワークのモデル化を通して、免疫応答や細胞運命の調節機構についての研究を推し進められています。今回のご来日の機会に本学にて最新の研究成果等についてお話し頂く機会を得ました。

Alexander Hoffmann

From Wikipedia, the free encyclopedia
https://en.wikipedia.org/wiki/Alexander_Hoffmann

Alexander Hoffmann is an American biologist. He is the director of the Institute for Quantitative and Computational Biosciences (QCBio) and the Thomas M Asher Professor of Microbiology in the Department of Microbiology, Immunology, and Molecular Genetics (MIMG) at the University of California, Los Angeles (UCLA). His research interest is the development of a predictive understanding of how cellular and molecular networks regulate immune responses.

主催：
金沢医科大学・細胞治療プロジェクト

連絡先：
下平 滋隆（プロジェクト推進 WG 委員長：shimodai[a]kanazawa-med.ac.jp）
加藤 友久（プロジェクトマネージャー：tkato[a]kanazawa-med.ac.jp）
（[a] は @に変換）

Cell Therapy Project
Kanazawa Medical University

学術セミナー

Molecular network dynamics control hematopoetic output

Alexander Hoffmann
Institute for Quantitative and Computational Biosciences
and Department of Microbiology, Immunology, and Molecular Genetics
University of California, Los Angeles,

Substantial research efforts on hematopoiesis have revealed many molecular regulators of differentiation pathways of the hematopoietic lineage tree. However, a healthy hematopoietic output of > 100 billion cells per day, spread over a dozen cell types in proper proportions, requires that differentiation transitions are coordinated with cell proliferation phases. We have undertaken systems biology studies of iterative experimentation and mathematical modeling to address the roles of NFκB regulators in the production of mature B-cells in the bone marrow, and of antibody secreting plasma cells upon immune stimulation. We have identified novel, but paradoxical roles for NFκB RelA in the former and cRel in the latter, that may be resolved by considering their dynamic regulation. Thus a common emerging theme is that the coordination cell differentiation and population expansion critical for determining B-cell output is controlled by the dynamics of the NFκB signaling network. I will present our recent results supporting this emerging theme.

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