

ECMTB2014: June 15-19, 2014

Gothenburg, Sweden

Mini-symposium's title: Modeling Viral Hepatitis Dynamics: from bench to bedside

Organizers (title): Harel Dahari^{1,2*} (Assistant Professor/Staff Scientist) and Jeremie Guedj^{3,4 **} (Staff Scientist)

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Summary: Since the approval in 2011 of two protease inhibitors (PI), telaprevir and boceprevir, the landscape of Hepatitis C virus (HCV) therapy has been rapidly changing. Dozens of direct antiviral agents targeting all stages of viral replication are currently in clinical development, holding the promise that a universal cure can be achieved. New compounds against HBV and HDV are in early development as well. In this highly dynamical context, there has been an increasing appeal from industry and academics to use viral kinetic mathematical modeling to anticipate, evaluate and rationalize the effectiveness of these new antiviral strategies. Very recently, models that couple both intracellular and extracellular dynamics of viral hepatitis infection have been developed and provide further insights into viral-host dynamics, drugs mode of actions and their effectiveness.

Purpose: This mini-symposium will gather together experts in modeling viral dynamics who deal with various contemporary challenges in the field. We will discuss the future challenges in the field including other viral infections such as Hepatitis B and D. Our mini-symposium combines mathematical modeling and biology and fits well the aims of the conference.

Audience: This mini-symposium is targeted to young and established modelers or experimentalists who are interested in hepatitis viral dynamics.

Date: Sunday June 15, 9:00 to 13:00

List of speakers:

first name	last Name	Affiliation	Country	Title
Wojciech	Krzyzanski	Buffalo University	USA	A mRNA Structured Population Model of Hepatitis C Virus Dynamics
Shingo	Iwami	Kyushu University	Japan	Mechanism-based analysis of drug combination effects on HCV replication in Huh-7
Frederik	Graw	Heidelberg University	Germany	Spatial spread of HCV in vivo and in vitro - analyzing single cell dynamics
Eva	Herrmann	Frankfurt School of Medicine	Germany	Modelling ribavirin mode of action in a specifically designed clinical trial in patients with hepatitis C
Tje Lin	Chung	Frankfurt School of Medicine	Germany	Modeling of HBV infection and treatment in SCID mice with humanized livers
Stanca	Ciupe	Virginia Tech	USA	Mathematical models of immune responses to hepatitis B virus infection
Harel	Dahari	Loyola University Medical center & Los Alamos National Lab	USA	Detailed viral kinetics during liver transplantation indicates that the liver plays a role in HCV clearance
Lars	Kaderali	Dresden University	Germany	Modeling HCV replication and immune response
Dimitra	Bon	Frankfurt School of Medicine	Germany	Modelling HCV viral kinetics of new interferon-free treatment combinations
Jeremie	Guedj	INSERM	France	Modeling ALT kinetics during HCV treatment
Avidan	Neumann	Humboldt	Germany	Evolutionary dynamics approach to HCV resistance and evolution