Antifungal Drug Development Summit

Duke University Medical Center

Sponsored by the Tri-Institutional (Duke, UNC-Chapel Hill, NC State Universities)
Molecular Mycology and Pathogenesis Training Program, the Center for Host Microbial Interactions, the Center for AIDS Research, and the Department of Molecular Genetics and Microbiology

Thursday, January 29, 2015

Session 1: Targeting Trehalose and Mitochondria
Moderator: Maurizio Del Poeta

7:45 am – 8:45 am Registration and Breakfast

9:00 am – 9:30 am John Perfect, MD – Duke University Introduction and talk
http://infectiousdiseases.medicine.duke.edu/faculty/details/0113110
New antifungal development: What are the needs and do we have the answers?

9:30 am – 10:00 am Yi Miao – Duke University
http://dukebrennanlab.com/index.html
Biochemical and structural dissection of the trehalose biosynthetic pathway in pathogenic fungi

10:00 am – 10:30 am Yoshiko Fukuda, PhD – Toyama Chemical Co., Ltd
A Novel Arylamidine Antifungal Drug, T-2307

10:30 am – 11:00 am Coffee break

Session 2: New Antifungals
Moderator: Ameeta Agarwal

11:00 am – 11:30 am Ed Garvey, PhD – Viamet Pharmaceuticals Inc.
http://www.viamet.com/
Identification of potent fungal CYP51 inhibitors for treatment of Coccidioidomycosis
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11:30 am – 12 noon
Emily Derbyshire, PhD – Duke University
https://chem.duke.edu/faculty/emily-r-derbyshire
Discovering molecules to probe and treat malaria

12:00 pm – 2:00 pm  Lunch and poster session
MSRB 001

Session 3: Novel targets and leads
Moderator: Bill Steinbach

2:00 pm – 2:30 pm
Dennis Thiele, PhD – Duke University
http://thielelab.duhs.duke.edu/
The Cryptococcus neoformans copper homeostasis machinery as a therapeutic target in fungal pathogenesis

2:30pm – 3:00 pm
Yong-Sun Bahn, PhD - Yonsei University
http://www.bahnlab.com
Discovery of novel antifungal drug targets by systematically profiling virulence-regulating signaling networks in a global human fungal pathogen

3:00 pm – 3:30 pm
Maurizio Del Poeta, MD – Stony Brook University
http://www.mgm.stonybrook.edu/delpoeta/index.shtml
Identification of a new class of antifungals targeting the synthesis of fungal sphingolipids

3:30 pm – 4:00 pm  Coffee break
Session 4: Combination Approaches
Moderator: Leah Cowen

4:00 pm – 4:30 pm  **Terry Roemer, PhD** – Merck & Co., Inc.

*Chemical genomics-based antifungal drug discovery: targeting glycosylphosphatidylinositol (GPI) precursor biosynthesis*

4:30 pm – 5:00 pm  **Gerry Wright, PhD** – McMaster University

*Antifungal drug combinations*

5:15 pm – 6:30 pm  Discussion
MSRB 001

7:00 pm – 9:00 pm  Dinner at Torero’s Mexican Restaurant
Oak Creek Village Shopping Center
4600 Durham-Chapel Hill Blvd #40
Durham, NC, 919-489-6468
Friday, January 30, 2015

Session 5: Targeting FKBP12, cyclophilin, calcineurin-calmodulin, and their targets
Moderator: Andy Alspaugh

7:45 am – 8:45 am  Registration and Breakfast

9:00 am – 9:30 am  **Damian Krysan, MD, PhD** – University of Rochester
[http://www.urmc.rochester.edu/people/26750682-damian-j-krysan/researchers](http://www.urmc.rochester.edu/people/26750682-damian-j-krysan/researchers)

*Identification and characterization of novel antifungal small molecules*

9:30 am – 10:00 am  **Soo Chan Lee, PhD** – Duke University
[http://mgm.duke.edu/faculty/heitman/lab/lee.html](http://mgm.duke.edu/faculty/heitman/lab/lee.html)

*Dimorphism, virulence, and calcineurin in Mucor*

10:00 am – 10:30 am  **Bill Steinbach, MD** – Duke University
[http://pediatrics.duke.edu/labs/steinbach-lab/biography](http://pediatrics.duke.edu/labs/steinbach-lab/biography)

*Targeting a novel phosphorylated domain in calcineurin to generate an Aspergillus-specific antifungal*

10:30 am – 11:00 am  Coffee break

11:00 am – 11:30 am  **Mitchell Mutz, PhD** – Amplyx Pharmaceuticals, Inc.

*Exploring fungal calcineurin as a therapeutic target*
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11:30 am – 12 noon

Mike Peel, PhD – Scynexis, Inc.
http://www.scynexis.com/
The discovery of new, orally-active inhibitors of β-1,3-glucan synthesis as anti-fungal agents

12 noon – 2:00 pm  Lunch and poster session
MSRB 001

Session 6: Targeting Hsp90, glucan synthase, Ras and more with natural products
Moderator: Dennis Thiele

2:00 pm – 2:30 pm
Leah Cowen, PhD – University of Toronto
http://individual.utoronto.ca/cowen/
The fungal Achilles Heel: Targeting Hsp90 to cripple fungal pathogens

2:30pm – 3:00 pm
Ken Yokoyama, PhD – Duke University
http://www.biochem.duke.edu/modules/biochem_yokoyama_lab/index.php?id=1
Biosynthetic studies of antifungal natural products and their genome mining opportunities

3:00 pm – 3:30 pm
Ameeta Agarwal, PhD – University of Mississippi
http://pharmacy.olemiss.edu/blog/team/dr-ameeta-agarwal/
Discovery of natural products that potentiate the activity of current antifungal drugs

3:30 pm – 4:00 pm  Coffee  break

4:00 pm – 4:30 pm
Gerald Bills, PhD – University of Texas
https://www.uth.edu/imm/profile.htm?id=6f31c1cb-f584-48ec-895b-f40b58576ecd
The evolutionary history and chemical diversity of the echinocandin lipopeptide antifungal metabolites

4:30 pm - 5:00 pm
Lorena Beese, PhD – Duke University
http://www.biochem.duke.edu/modules/biochem_beese_lab/index.php?id=1
Targeting protein prenyltransferases for the development of antifungal molecules
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5:00 pm – 5:30 pm
Andy Alspaugh, MD – Duke University
http://medicine.duke.edu/faculty/details/0067974
Targeting Ras-like proteins: a novel approach for antifungal therapy

6:30 pm
Group Dinners

6:45 pm Revolution conf. # 847264078: Bill Steinbach, Andy Alspaugh, Lorena Beese, Ken Yokoyama, Anna Lksztejn, Mike Peel, Mitchell Mutz, and Len Spicer

6:30 pm Watt’s Grocery confirmed: Joe Heitman, Leah Cowen, Gerry Wright, Damian Krksan, Terry Roemer, Ameeta Agarwal, Gerald Bills, and Sun Bahn

7:00 pm Parizade conf. # 847417421: John Perfect, Dick Brennan, Ed Garvey, Dennis Thiele, Maria Schumacher, Chris Lambros, and Maurizio del Poeta