

UNIVERSITY OF TORONTO

Microbiology & Infectious Diseases Research Days

Monday, June 3rd, 2019 – Trainee Day (Selected from Abstracts)

Tuesday, June 4th, 2019 – Invited Lectures & Poster Session

Talks in Medical Sciences Building, Room 2170

**Posters & Lunch in Medical Sciences Building,
Room 2171 (C. David Naylor Student Commons)**

Website: <http://microbeto.ca/mid-2019/>

Monday, June 3rd, 2019

9:30 - 9:40 WELCOME ADDRESS

9:45 – 10:00: Avid Mohammadi

Characterizing the impact of penile-vaginal sex on HIV-susceptible CD4⁺ T cell subsets in the female genital tract

10:05 - 10:20: Erin O. Y. Wong

Developing defined microbiota to model inflammation in the mouse gut

10:25 - 10:40: Nora Mellouk

An ATG16L1-dependent pathway promotes plasma membrane repair and limits *Listeria monocytogenes* cell-to-cell spread

10:45 - 11:15: COFFEE BREAK

11:20 - 11:35: Jean-Paul R. Soucy

Joint modelling of resistance to six antimicrobials in urinary *Escherichia coli* isolates in Quebec, Canada

11:40 – 11:55: Sarah Birstonas

EHEC utilizes two-component systems to modulate expression of major flagellar subunit protein, FliC, in response to host intestinal cues

12:00 - 12:15: Nathaniel Winsor

NLRP6 regulates the colonic mucus layer during *Trichomonas* infection

12:35 – 1:30: LUNCH

1:35 - 12:50: Samuel Salamun

Epstein-Barr Virus Protein BMRF1 Modulates Cellular SUMO and DNA Damage Response Pathways by Binding the Cellular NuRD Complex

1:55 - 2:10: Nicola Case

Elucidating the mechanism of *Candida albicans* morphogenesis in response to phagocytosis by macrophages

2:15 - 2:30: Sarah Kronheim

A small molecule anti-phage defense mechanism in *Streptomyces*

2.30 - 3:00: COFFEE BREAK

3:05 - 3:20: Alexandra Willis

Understanding inherited immunity using a *C. elegans* model of microsporidia infection

3:25 - 3:40: Genevieve Mailhot

Differentiating between protective and pathogenic neutrophil responses during *Neisseria gonorrhoeae* infection

3:45 – 4:00: Tiffany Fitzpatrick

Successes of anti-RSV prophylaxis among infants in Ontario: results from a multi-decade, population-based controlled interrupted time series analysis using health administrative data

Poster Presentations

78) Ethnopharmaceuticals for the Treatment of New World Cutaneous Leishmaniasis: A Systematic Review of Topical Application of Pepper and Allium

Anjola Ogunsina¹, Ruwandi Kariyawasam², Olamide Egbewumi³, Sonia Igboanugo⁴, Shveta Bhasker⁵, Shareese Clarke⁶, Paul Dunn⁶, Avinash Mukkala², David Harris⁷, Andrea K. Boggild^{2,7}

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New World Cutaneous Leishmaniasis (NWCL) is a neglected parasitic disease caused by members of the genus *Leishmania* primarily identified in Central and South America. Better drugs are urgently needed given the toxicity, expense and accessibility limits of first-line treatment options. Plant-based compounds with potential anti-leishmanial effects found in and around local endemic communities, particularly in and around the Amazon basin, present an opportunity to overcome the aforementioned therapeutic challenges, and many such interventions are supported by anecdotal evidence of efficacy. We aim to synthesize existing evidence around available ethnopharmaceuticals to promote drug discovery for the prevention and treatment of NWCL. PubMed (NCBI), Medline (OVID), Embase (OVID), Web of Science (BioSIS) and LILACS (VHL) were searched for from inception to July 26, 2018 using combinations of the search terms "cutaneous leishmaniasis" and "ethnopharmaceuticals". Iterative inclusion and exclusion of search terms was employed to maximize relevant article extraction. For the systematic review, we included molecular, mechanistic, and observational studies, case reports, case series, cohort studies, as well as clinical trials reporting therapeutic outcomes, if possible using the GRADE approach. A total of 13667 abstracts were retrieved, after which 7566 duplicates were removed. Of the remaining abstracts, 550 abstracts were included in the full text review, of which 176 (32%) abstracts highlighted New World species; 116 (66.0%), 33 (18.7%), and 27 (15.3%) abstracts pertained to *L. amazonensis*, members of *Viannia* subgenus, and other New World species, respectively. Of all the abstracts included in the full text review, 25 (4.5%) and 6 (1.1%) were identified for *Piper* spp. "Pepper" and *Allium* spp. "Garlic", respectively. Synthesizing the current evidence surrounding ethnopharmaceuticals for the treatment of NWCL may contribute to drug discovery pipelines and potentially lead to novel therapeutics, particularly those targeting the *Viannia* complex, where patients often develop more severe clinical manifestations.