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 Tritrichomonas 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

42) Validation of a Multiplex Real-time PCR Gastrointestinal Helminth Panel

Jason Kwan1, Kimberley Marks-Beaubrun1, Rachel Lau2, Filip Ralevski2, Amanda Wang2, Ruben Cudiamat2, Ellen Min Chen2, Krista Orejana2, Andrea K. Boggild1

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Microscopy is the conventional method for identification of gastrointestinal parasitic pathogens, however, it requires high technical expertise and prolonged turnaround time. Molecular methods provide higher throughput and potentially higher sensitivity and specificity. We validated a commercial multiplex parasitic real time PCR panel detecting 7 helminths: Ascaris spp. (As), Enterobius vermicularis (Ev), Hymenolepis spp. (Hy), Necator americanus (Na), Strongyloides spp. (St), Taenia spp. (Ta) and Trichuris trichiura (Tt) at Public Health Ontario, Canada. We analyzed 86 banked frozen fecal specimens including: 86 specimens without any pre-treatment and 86 specimens pre-treated with ASL buffer, containing As (n=23), Ev (n=13), Hy (n=1), Ta (n=4), St (n=33), Tt (n=10), and 3 mixed infections. A panel of protozoa and helminth specimens not covered in these assays was used for cross reactivity evaluation. DNA extraction and PCR were conducted with the Hamilton Starlet automated platform and Seegene's extraction and PCR kits. Microscopy was the reference standard for all organisms. Where fully evaluable due to sufficient numbers, sensitivity, specificity, positive predictive-, and negative predictive values without pre-treatment were: 48%, 100%, 100% and 84% for As; 77%, 100%, 100% and 96% for Ev; 57%, 98%, 95% and 77% for St; and 100%, at all metrics for Hy and Ta; and with ASL pre-treatment were: 65%, 100%, 100% and 89% for As; 100% at all metrics for Hy and Ta; and 53%, 100%, 100% and 75% for St. No cross-reactivity was observed with other protozoa or helminths. The platform had high sensitivity for detection of a small number of Ta and Hy, but suboptimal sensitivity for Ev and St. Further validation with greater numbers of specimens is required for performance determination with other helminths and those without sufficient numbers to report in this analysis.