FHS Research Plenary
2016
Tuesday, May 17 - Thursday, May 19
Awards Reception: Tuesday, May 31
Jan and Mien Heersink Reading Pavilion
http://fhs.mcmaster.ca/grad/research_plenary.html
The 2016 Research Plenary took place on May 17 to May 19. This event allows Health Science Graduate students to showcase their research and celebrate student achievements. A list of this year’s winners can be found [here](#) and [here](#).
The co-operative roles of AP-2α and AP-2β in retinogenesis

Emily Anne Hicks, Mizia Zarević, Paula Deschamps, Mike Noseworthy, Judith West-Mays

1. Pathology and Molecular Medicine, McMaster University
2. Imaging Research Centre, St. Joseph’s Healthcare

hicksae@mcmaster.ca

INTRODUCTION

Retinogenesis begins at E11.5 and ends at post-natal day P11. During this period, a series of events involving cell proliferation, apoptosis, and positional signalling lead to the development of the retina. The role of the microenvironment in regulating these processes is well established. The AP-2 family of transcription factors, AP-2α and AP-2β, play a crucial role in retinogenesis. We have previously shown that AP-2α and AP-2β are co-expressed in early retinal progenitors and that their expression is regulated by Wnt/β-catenin signalling. In this study, we investigated the role of AP-2α and AP-2β in retinal development and function.

PURPOSE

Investigate the roles of AP-2α and AP-2β in the development of cholinergic amacrine cells.

METHODS

Co-localization of AP-2α and cholinergic amacrine cells

Figure 1. Expression of GABAAergic and cholinergic amacrine cells in the adult mouse retina. Expression of GABAAergic markers (GABA) and cholinergic markers (ChAT) in the adult mouse retina. Positive staining for GABA and ChAT in the inner plexiform layer (IPL) and ganglion cell layer (GCL), respectively.

CONCLUSION

Double conditional knockout mice demonstrate a loss of both GABAergic and cholinergic amacrine cells. Further studies are required to determine the role of AP-2α and AP-2β in the development and function of cholinergic amacrine cells.
**Background**

The world's total disease burden can be attributed to mental, neurological, and substance use (MNS) disorders. Children suffer heightened vulnerability, in low- and middle-income (LMIC) countries, where MNS disorders are exacerbated by poor living conditions.

Task-sharing is proposed to reduce the burden of unmet psychiatric needs in countries like Kenya.

**Objective**

A task-shifting model, the development and validation of the **International Mobile Psychiatric Assessment for Children and Teens (IMPACT)**, an 'app-based' tool for use by non-experts to assess pediatric mental illness.

**Motivation**

- 10% of children and adolescents have mental illness
- Not able to access care
- Expert research assistants spend 30% of their time traveling

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**Phase 1**

- Development
- Programming

**Phase 2**

- Kenya Validation
- Population
- n=197 child-parent dyads
- Age 8-20 years
- Rural School Sample (Machakos, Kenya)

**Phase 3**

- Canadian Validation
- Population

**Results**

1. Does the IMPACT yield accurate and valid results?
2. Can an non-expert use the IMPACT with minimal training?
3. Can the IMPACT be delivered successfully?

**Features**

- 36 Disorders
- DSM-5 & ICD-10
- Onset & Recency
- Severity & Duration
- Episodes count
- Demographics
- Estimated Diagnostic Output

**Measures**

- Mini International Neuropsychiatric Interview
- Yale-Vermont Adversity in Childhood
- Child Behaviour Check
- Adult Self-Report
- Progress out of Poverty
- Demographics, SES, Birth, Medical & School Records