CIHR Team Grant:
Molecular basis for Zika virus pathogenesis

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Zika virus (ZIKV) pathogenesis and unanswered questions

Lazear and Diamond, 2016
Objective 1: How tight junctions are affected by ZIKV

Objective 4: Biomarkers for pregnancy outcomes
Neurons and glial cells of newborns and aborted fetuses are infected by ZIKV

Brasil et al, 2016

Driggers et al, 2016

Mlakar et al, 2016
Astrocytes are the most abundant brain cell type.
Model of ZIKV persistence in primary human fetal astrocytes

Limonta et al, Submitted
ZIKV-host cells interactions

Objective 5: ZIKV-host protein interactome
Multiple ZIKV proteins inhibit type-I interferon production and downstream signaling

IFN: Interferon
IFIT1: Interferon-induced protein with tetratricopeptide repeats 1
ISRE: Interferon-stimulated response element

Kumar et al, 2016
ZIKV infection induces degradation of STAT2

ZIKV inhibits type-I interferon production and downstream signaling (cont.)

STAT2: Signal Transducer and Activator of Transcription 2
HFA: Human Fetal Astrocytes

Kumar et al, 2016
ZIKV mouse models

Lazear et al, 2016

Miner et al, 2016

Miner et al, 2016
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