

BCHM 421/422 – 2019/2020

Project Title: Dissecting the inflammatory component of spinal cord injury pain

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Project Outline: Our lab has shown that severe chronic pain is likely mediated by the infiltration and activation of inflammatory cells (e.g., macrophages/microglia) in the spinal cord after injury. We have identified a series of genes and pathways controlling spinal cord injury pain from a population using GWAS analysis and are now seeking to validate these findings in our mouse model. Once specific genes/pathways are validated, they will be targeted in an effort to identify new therapeutics to help treat chronic spinal cord injury pain.

Project Goals: Identify specific genes/pathways activated after spinal cord injury, and targeting validated genes using FDA-approved drugs.

Experimental Approaches: qPCR; flow cytometry; immunohistochemistry; pain behaviour

References: David S, Zarruk JG, Ghasemlou N. [Inflammatory pathways in spinal cord injury](#). Int Rev Neurobiol. 2012;106:127-52.

Ghasemlou N, Lopez-Vales R, Lachance C, Thuraisingam T, Gaestel M, Radzioch D, David S. [Mitogen-activated protein kinase-activated protein kinase 2 \(MK2\) contributes to secondary damage after spinal cord injury](#). J Neurosci. 2010 Oct 13;30(41):13750-9.