School of Health and Rehabilitation Sciences

NHMRC Centre of Clinical Research Excellence on Spinal Pain, Injury and Health

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ISSLS Research Committee members
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RE : Final report ISSLS Research Grant sponsored by Taisho Pharmaceutical

To whom it may concern,

First of all, we would like to express our gratitude to ISSLS and particularly to Taisho Pharmaceutical for funding our study entitled *"The role of neuroimmune response on sensorimotor function in different classes of chronic low back pain".* The grant will provide the opportunity to address important questions about the impact of different classes of chronic low back pain on the function of the brain and to provide preliminary data that will be used to prepare a proposal that will be submitted to a major funding organisation.

The ISSLS Taisho Pharmaceutical grant allowed to recruit 8 participants with chronic low back pain (CLBP) and 3 healthy and pain-free controls. We expect to test 6 more participants in May 2021 (1 CLBP and 5 controls). One of the aims of the study was to stratify participants with CLBP using the pain mechanism-based classification (nociceptive, nociplastic or neuropathic pain) and compare if different classes of LBP present with different glial activation in sensory and motor brain areas. So far, we were not

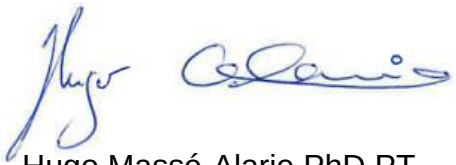
able to recruit pure neuropathic CLBP. Thus, 5 participants with nociplastic CLBP and 4 participants with nociceptive CLBP, and 8 controls were recruited and tested.

Some preliminary analyses have been undertaken although we are still waiting to complete the recruitment to finalise them. Please consider that preliminary results summarized in this report are not final and results may change considering the very small sample size. In the CLBP group only, glial activation was larger in the primary motor cortex (M1) back area compared to the M1 area of the leg or of the hand. This trend was not present in controls. Considering the small number of participants, we have not compared our results between classes of CLBP yet. Analysis of the transcranial magnetic stimulation (TMS) and quantitative sensory testing (QST) data are still being analysed.

The pandemic context delayed data collection and subsequent analysis. Indeed, it was not possible to travel inter-state in Australia for much of the last year. Indeed, PET/MRI data collection is done at Monash Biomedical Imaging center (MBI) laboratory in Melbourne, Victoria, whereas Muath Shraim, the graduate student dedicated to this project, is located at The University of Queensland, in Brisbane, Queensland.

Again, we are grateful to ISSLS and Taisho Pharmaceutical for funding the research and a proposal to major funding bodies will be prepared using our preliminary results. Results have the potential to understand better how different clinical representations of pain influence brain function and provide important insights to improve management of individuals presenting different classes of CLBP.

Sincerely,



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