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Education

BSc (Hon.)	University of British Columbia	Canada
PhD	University of British Columbia	Canada

Research Interests and Expertise

1. **Pain:** Acid causes a painful sensation when injected under the skin. This unpleasant sensation is widely experienced by patients who are injected with pharmaceutical products containing citric acid. In our lab, we are interested in exploring mechanism by which acid and other chemical irritants causes pain.
2. **Microglia:** Microglia are the predominant CNS-resident macrophages. In addition to mediating neuroinflammation, emerging evidence has demonstrated their potential role in learning and memory and brain repair. In our lab, we are investigating the role of microglia in brain health and functions.
3. **Blood-brain barrier (BBB):** The BBB, which normally regulates exchange of nutrients and metabolites, becomes disrupted upon neuroinflammation by acute brain insults or in chronic neurodegenerative diseases. This disruption of the BBB can increase intracranial pressure and lead to brain edema. In our lab, we are interested in learning how the BBB becomes disrupted.

Selected Grants:

PI:

1. Origin, Characteristics, and Role of Bi-nucleated Hematopoietic Neurons in Brain Diseases. NHRI-EX110-10803NI (2021-01-01~2020-12-31) (3/5)
2. The application of blood-brain barrier opening by carbogen gas inhalation. MOST109-2320-B-039-010 (2020-08-01~2021-10-31)

Selected Publications

1. Ya Lan Yang and **Ted Weita Lai*** (2021) Citric Acid in Drug Formulations Causes Pain by Potentiating Acid-Sensing Ion Channel 1. *Journal of Neuroscience* 41(21):4596-4606. (April 2021)
2. Ching Mei Wu and **Ted Weita Lai*** (2021) Microglia depletion by PLX3397 has no effect on cocaine-induced behavioral sensitization in male mice. *Brain Research* 1761:147391. (Feb 2021)
3. Che-Wei Liu, Kate Hsiurong Liao, Hsin Tseng, Ching Mei Wu, Hsiao-Yun Chen, **Ted Weita Lai*** (2020) Hypothermia but not NMDA receptor antagonism protects against stroke induced by distal middle cerebral arterial occlusion in mice. *PLoS One* 15(3):e0229499. (Mar 2020)
4. Kate Hsiurong Liao, Vivi Chiali Wei, Hwai-Lee Wang, Hsiao-Yun Chen, **Ted Weita Lai*** (2019) Carbogen inhalation opens the blood-brain barrier in rats without causing long-term metabolic or neurological deficit. *Brain Research* 1720:146320.