Department of of Life Science Application of Neural Image Analysis Systems in Drug Screening for Relieving Neurodegenerative Diseases

Our Lab interests neuroscience (including neurophysiology, neuroethology, neuroanatomy, and neuroimaging) and Chinese herbal medicine science (including the physiological mechanism of traditional Chinese medicine in the nervous system, cardiovascular system, reproductive system, urinary system, exercise system, metabolic system and their alternative medicine). From 2014 to 2019, Dr. Wu has published more 20 SCI papers and 35 conference papers for novel applications of Chinese herbal medicine in neurodegenerative diseases such as Alzheimer's disease, Huntington' disease, Parkinson's disease and spinocerebellar ataxia. Recently, Currently, Dr. Wu is also committed to comparatively physiological research in the efficacy of Chinese herbal medicines in the reproductive, exercise and metabolic systems-related diseases.

Techniques used in study

Stem cell culture / nanoparticle labeling / digital holographic microscopy / therapeutic evaluation of Chinese herbal medicines

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Background:

Ph.D. of Neuroscience, University of Missouri, USA

Funding: Ministry of Science and Technology





Our research achievements in the aspects of application of neural image analysis system in drug screening for relieving neurodegenerative diseases

Publications (corresponding author)

- Wu et al., (2019)Reproductive Regulation and Oxidative Stress Alleviation of Chinese Herbal Medicine Therapy in Ovariectomised Mouse Model. Evidence-Based Complementary and Alternative Medicine Volume 2019, Article ID 5346518 (SCI)
- Chung et al., (2018) Traditional Chinese herbal formula relieves snoring through modulating activities of upper airway related nerves in aged rats. Drug Design, Development and Therapy 12: 1165–1171.
- Huang et al., (2017) Protective effects of wogonin against Alzheimer's disease by inhibition of amyloidogenic pathway. Evidence-Based Complementary and Alternative Medicine Volume 2017, Article ID 3545169, 13 pages,
- Lu et al., (2017) Characterization of an iron oxide nanoparticle labeling and MRI -based protocol for inducing human mesenchymal stem cells into neural-like cells. *Scientific Reports* 7: 3587, DOI:10.1038/s41598-017-03863-x.

Hsiao et al., (2016) Comparisons of MRI images, and auditory and vocal related protein expressions in the brain of echolocation bats and rodents. *Neuroreport* 27:923–928.

- Lai et al., (2015) Resolution enhancement of spectrum normalization in synthetic aperture digital holographic microscopy. Applied Optics 53 (1): A51-A58
- Wu et al., (2014) Applications of digital holographic microscopy in therapeutic evaluation of Chinese herbal medicines. Applied Optics 53(27):G192-197



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