

114-1 Neuroimmunology (神經免疫學)

2025/06/25

Class Time: 2:10 ~ 4:00 PM, Monday

Classroom: Rm 13215 at NCKU Medical College Bio-Medicine Building(生醫卓群大樓)

Instructors: Dr. Chun-Hsien Chu 朱俊憲老師 (Ext. 3592、E-mail: z11108008@email.ncku.edu.tw),



Course Descriptions /Objective :

The objective of the course for students is to introduce neuroendocrine-immune circuitry from the view of brain immune privilege, neuroendocrine system, brain nerve-driven immunity, innervation of immune system, meningeal lymphatic system, circumventricular organs, barriers and the neurovascular unit of brain, cerebrospinal fluid system, glymphatic system, and the interstitial system in pathophysiological conditions. Students will be able to understand that basic knowledge that the brain interacts with peripheral endocrine and immune system, to maintain physiological homeostasis or progress brain diseases.

Course Materials:

The Wiley-Blackwell handbook of psychoneuroimmunology / Alexander W. Kusnecov and Hymie Anisman, 2014; An introduction to neuroendocrinology / Michael Wilkinson, Richard E. Brown, 2015; Glia / Ben A. Barres, 2018; Neuron-Glia Interaction in Neuroinflammation, Akio Suzumura / Kazuhiro Ikenaka, 2013; The relevant published materials.

Grading Criteria:

Student participation and punctuality (70%) and PBL assignment and panel discussion (30%)

Course Progress Outline

| Week | Date | Topic | Lecturer |
|------|-----------------------------|---|------------------------------------|
| 1 | 9/8/2025 | Introduction | Chun-Hsien Chu |
| 2 | 9/15 | Brain immune privilege | Chun-Hsien Chu |
| 3 | 9/22 | Barriers and the neurovascular unit of brain | Chun-Hsien Chu |
| 4 | 9/29 | Teacher's Day-make-up workday 教師節 | |
| 5 | 10/06 | Mid-Autumn Festival 中秋節 | |
| 6 | 10/13 | Circumventricular organs | Chun-Hsien Chu |
| 7 | 10/20 | Cerebrospinal fluid system | Chun-Hsien Chu |
| 8 | 10/27 | Meningeal lymphatic system | Chun-Hsien Chu |
| 9 | 11/03 | Interstitial system | Chun-Hsien Chu |
| 10 | 11/10 | Glymphatic system | Chun-Hsien Chu |
| 11 | 11/17 | Neuroendocrine system | Chun-Hsien Chu |
| 12 | 11/24 | Brain nerve-driven immunity | Chun-Hsien Chu |
| 13 | 12/01 | Innervation of the immune system | Chun-Hsien Chu |
| 14 | 12/08 | Neuroimmunology and ageing | Chun-Hsien Chu |
| 15 | 12/15 | Neuroimmunology and Alzheimer's Disease | Chun-Hsien Chu |
| 16 | 12/22 | Neuroimmunology and Parkinson's disease | Chun-Hsien Chu |
| 17 | 12/29 | Neuroimmunology and neuropsychiatric disorders | Chun-Hsien Chu |
| 18 | 01/05/2026 (09:00~16:00) | Visiting Small Animal MRI Facility (Department of Pharmacology); Visiting Artificial Intelligence Lab (Miin Wu School of Computing) | Sheng-Min Huang, Yi-Yu Alan Hsu |