

## [Seminar – Bộ môn Hóa]

**Báo cáo viên: TS. Phạm Duy Toàn**

### **Silk fibroin hydrogel containing *Sesbania sesban* L. extract for rheumatoid arthritis treatment**

#### *Abstract*

Rheumatoid arthritis, a chronic and progressive inflammation condition in the joints, has significantly reduced the patient quality of life and life expectancy. Crucially, there is no complete therapy for this disease, and the current treatments possess numerous side effects. Thus, novel therapeutic approach is necessary. To that end, this study developed novel silk fibroin hydrogel containing *Sesbania sesban* L. extract, a plant with high anti-inflammatory actions that are beneficial for rheumatoid arthritis treatments.

The study contains 04 main sections:

- *Sesbania sesban* L. extraction
- Hydrogels formulations
- Hydrogel characterization
- Hydrogel anti-inflammatory action in in-vitro model

**Báo cáo viên: TS. Nguyễn Quốc Châu Thanh**

### **Macrophage biomimetic nanotherapies for anti-inflammation and targeted antiviral treatment: New insight into therapy for COVID-19**

#### *Abstract*

The worldwide pandemic of COVID-19 is a major global public health crisis with considerable mortality and morbidity that remains a serious public health menace as the lack of efficacious treatments. Recently, many studies indicated that cytokine storm syndrome (CSS), characterized by elevated inflammation and multi-organ failure is strongly correlated with the bad outcome of COVID-19. Therefore, a therapy that inhibits the CSS process by controlling excessive inflammation is considered one of the most promising ways to treat COVID-19.

To develop a comprehensive therapy for COVID-19, a highly compatible macrophage biomimetic nano carrier-based drug delivery system was investigated to target anti-inflammatory and antiviral. To that end, this report clearly illustrated the potential of developing a research direction of biodegradable nano-based drug delivery that can be easily controlled by releasing drugs and is suitable for application in therapies to treat various diseases.

Main sections:

- Preparation and characterization of PLGA@M and PLGA-LPV@M
- Neutralizing proinflammatory cytokines by PLGA@M
- Inhibiting proinflammatory factors of COVID-19 in vitro
- Targeted delivery in the coronavirus-infected mouse model
- Therapeutic efficacy of PLGA@M in the coronavirus infected mice