

2024 Fall – NMR Spectroscopy-based Metabolomics

Credits: 2

Lecturer: Der-Lii Tzou 鄒德里老師 tzougate@gate.sinica.edu.tw

Classroom: A507, Institute of Chemistry, Academia Sinica

Class hour: Thursday, 10:00-12:00

Major Topics:

- Basics of NMR spectroscopy
- Detections and analyses of metabolites in urine and serum samples
- NMR spectroscopy-based metabolomics applications
- Hand-on practice

Course Syllabus:

Week	Date	Topic	Professor
1	9/05	Introduction	Der-Lii Tzou
2	9/12	NMR Spectroscopy – Fundamental and Principle I	Der-Lii Tzou
3	9/19	NMR Spectroscopy – Fundamental and Principle II	Der-Lii Tzou
4	9/26	Detection and analysis of metabolites I	Chung-Ke Chang
5	10/03	Detection and analysis of metabolites II	Chung-Ke Chang
6	10/10	National day	
7	10/17	Detection and analysis of metabolites III	Chung-Ke Chang
8	10/24	Detection and analysis of metabolites VI	Chung-Ke Chang
9	10/31	Applications of metabolomics I – Preface	Ming-Shi Shiao
10	11/07	Applications of metabolomics II – Cancers	Ming-Shi Shiao
11	11/14	Applications of metabolomics III – Diabetes	Ming-Shi Shiao
12	11/21	Applications of metabolomics IV – Cardiovascular and Neurodegenerative diseases	Ming-Shi Shiao
13	11/28	Midterm	Der-Lii Tzou
14	12/05	<i>In vitro</i> diagnosis report (IVDr)	Yuan-Chao Lou
15	12/12	Hand-on practice (NMR lab in Biopark)	Yuan-Chao Lou
16	12/19	Final Presentation and Report	Der-Lii Tzou

Grading: Midterm Exam: 50% Final Presentation: 40% Attendance: 10%