

## 國立清華大學 109 學年第 1 學期新開課程課程大綱

科號	10910LSBS524200	組別		學分	2	人數限制	須與老師討論後加簽選課
修課年級							
上課時間	TaTb			教室	生二 207		
科目中文名稱	植物自噬作用特論一						
科目英文名稱	Special Topics on Plant Autophagy I						
任課教師	劉姿吟						
擋修科目				擋修			

一、課程說明	<ol style="list-style-type: none"> <li>To explore the role of plant autophagy in nutrient remobilization and recycling during senescence and nutrient deficiency</li> <li>To discuss methods for assessing autophagy activity in plant cells</li> </ol>
二、教學方式	<ol style="list-style-type: none"> <li>Teacher will select a series of updated research papers related to the field of plant autophagy</li> <li>Two-way interaction in this class; students have to read the text before class and actively participate in discussions in the class.</li> <li>Deliver midterm and final oral presentations</li> </ol>
三、教學進度	<ol style="list-style-type: none"> <li>Methods for analysis of autophagy in plants. <i>Methods</i>. 2015 Mar;75:181-8</li> <li>Dissection of autophagy in tobacco BY-2 cells under sucrose starvation conditions using the vacuolar H(+)-ATPase inhibitor concanamycin A and the autophagy-related protein Atg8. <i>Plant Signal Behav</i>. 2015;10(11):e1082699.</li> <li>Ultrastructure of autophagy in plant cells: a review. <i>Autophagy</i>. 2013 Dec;9(12):1922-36</li> <li>New Insight into the Mechanism and Function of Autophagy in Plant Cells. <i>Int Rev Cell Mol Biol</i>. 2015;320:1-40.</li> <li>Identification of transcription factors that regulate ATG8 expression and autophagy in Arabidopsis. <i>Autophagy</i>. 2020 Jan;16(1):123-139. doi: 10.1080/15548627.2019</li> </ol> <p><b>Midterm Oral Presentation</b></p> <ol style="list-style-type: none"> <li>Negative regulation of autophagy by UBA6-BIRC6-mediated ubiquitination of LC3. <i>eLife</i> 2019;8:e50034 DOI: 10.7554/eLife.50034</li> <li>Regulation of LC3B levels by ubiquitination and proteasomal</li> </ol>

	<p>degradation. Autophagy 2020,  <a href="https://doi.org/10.1080/15548627.2019.1709766">https://doi.org/10.1080/15548627.2019.1709766</a>.</p> <p>8. Application and interpretation of current autophagy inhibitors and activators. Acta Pharmacologica Sinica volume 34, pages625–635(2013)</p> <p>9. Arabidopsis SINAT Proteins Control Autophagy by Mediating Ubiquitylation and Degradation of ATG13. Plant Cell. 2020 Jan; 32(1): 263–284.</p> <p>10. COST1 regulates autophagy to control plant drought tolerance. PNAS March 31, 2020 117 (13) 7482-7493.</p> <p>11. COST1 balances plant growth and stress tolerance via attenuation of autophagy. Autophagy, DOI: 10.1080/15548627.2020.1752981</p> <p><b>Final Oral Presentation</b></p>
四、學習評量	<p>In-class discussion: 40%</p> <p>Midterm oral presentation: 30%</p> <p>Final oral presentation: 30%</p>