PhD SEMINAR 2024
JANUARY 14 - 17, 2025 - IBG-2

Turnover Analysis of Thylakoid Membran Fatty Acids using $^{13}CO_2$ labeling in Arabisopsis

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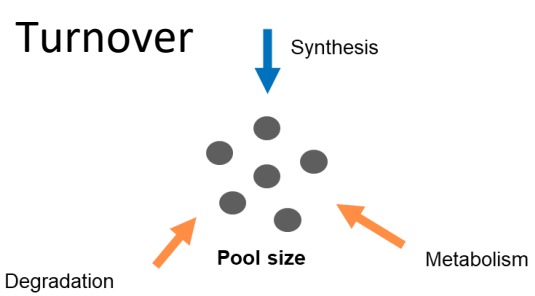
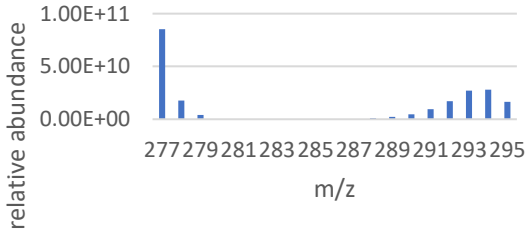
Principle of Turnover Analysis unsing $^{13}CO_2$ labeling

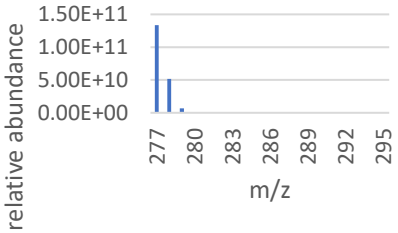


	^{12}C	^{13}C
protons	6	6
neutrons	6	7
Atomic mass (u)	12	13

MS C18:3 labeled



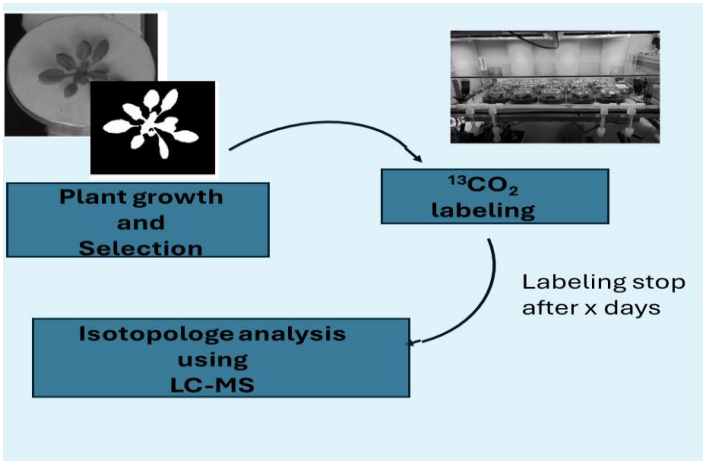
MS C18:3 unlabeled



$BPI_{i(norm)}$ = normalized base peak intensity
DoL_i = degree of ^{13}C labeling of an isotopolog with *i* ^{13}C atom
NLP = non-labeled population = sum of $BPI_{i(norm)}$ of all non-labeled isotopologs

Turnover rate calculated from NLP of each fatty acid at different time points taking into account the growth-related *de novo* synthesis

Time Course Experiment Set-up



Test Run : 5 Days of Labeling in Arabidopsis