

Filters with biomass were kept on dry ice and 26 μL of 100 μM $1\text{-}^{13}\text{C}$ Leucine was added as the internal standard. The label $1\text{-}^{13}\text{C}$ Leucine was chosen as the internal standard since contribution of $1\text{-}^{13}\text{C}$ Leucine from the transient labeling experiment was minimal in this time scale of the experiment. The filters were then folded and stored in 15 mL centrifuge tubes on dry ice. Extraction was performed by first adding 2 mL of precooled methanol followed by maceration till the filter was a pulp. This was followed by addition of 2 mL pre-cooled chloroform and further maceration. Once the extraction was complete with the methanol:chloroform mixture, 5 mL chloroform was added followed by 1 mL of 0.05% ammonium hydroxide ($\text{pH} \sim 10.4$) for phase separation. The extracts were then gently vortexed for a minimum of 15s followed by centrifugation at 4° C at 2500 g. The clear phase on the top was then removed and filtered using a syringe filter, diluted in acetonitrile (ACN) (3 ACN: 1 Extract) and transferred to LC-MS vials prior to injection.