

Team 20: Insane in the Membrane

Proteins are composed of twenty natural amino acids. However, additional unnatural amino acids can serve important roles in the development of novel pharmaceutical targets. Our team is designing a chemical plant to produce aliphatic unnatural amino acids to serve as materials in the research and development of peptide fragments targeting cell membrane components such as proteins that break down bioactive molecules or serve as cell-cell signaling receptors.



From Left to Right: Carson Warners (ChemE), Isaac Timmer (ChemE), Dane Hubers (ChemE)

Specifically, we plan to produce FMOC-2-amino-heptanoic acid (a), FMOC-2-amino-octanoic acid (b), and FMOC-2-amino-nonanoic acid (c). The varying length in the hydrophobic tail leads to diversity in the specific membrane target desired.

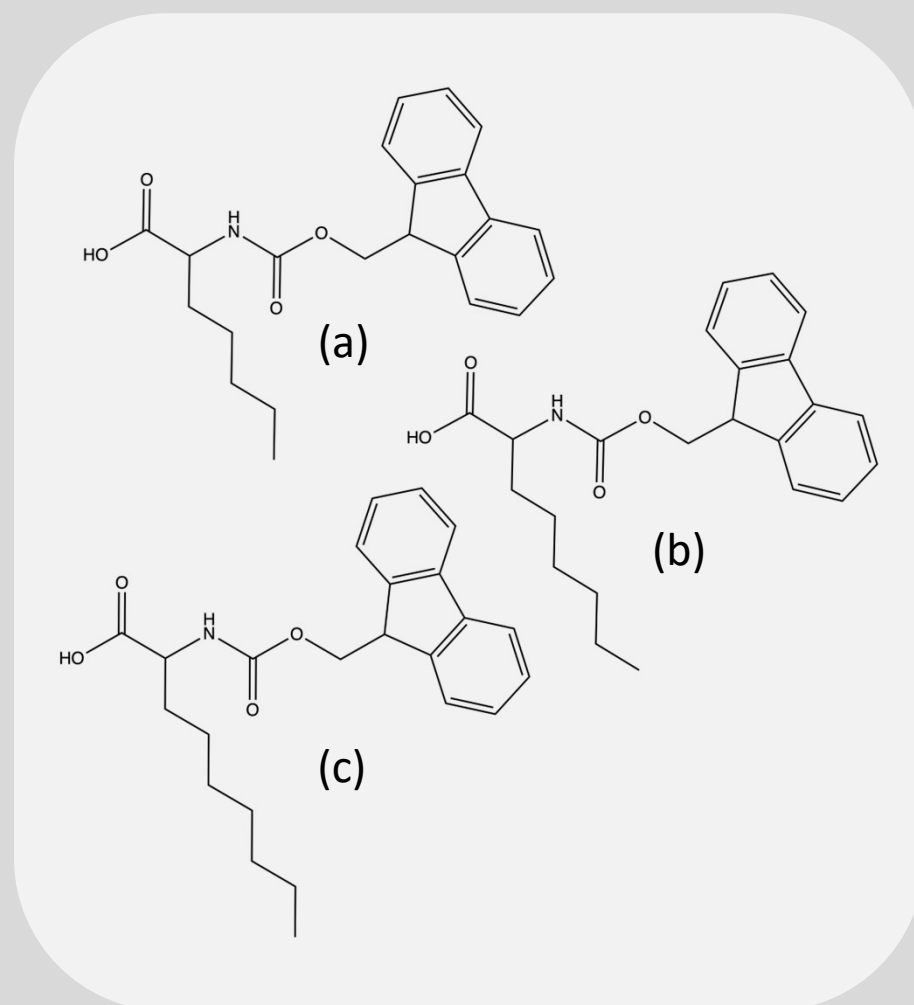


Figure 1: Molecular Structure of the three unnatural amino acids to be synthesized