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Study on the Neurochemicals Affecting Psychological Chemical Imbalance YOONAH LEE , PETER S. LEE, Choice Research Group — In recent years, treatment for depression, anxiety, and mental disorders impacted by chemical imbalances in neurotransmitters has been analyzed through advanced computational biomedical technology. To determine the relationship between chemical imbalances and psychological disorders, it is critical to establish the functionality of each neurotransmitters that carry the information between neurons and their target cells through the synaptic cleft. Using the computational biomedical technology, chemical analysis of different amino acid sup-plements such as glutamine, tyrosine, phenylalanine, and methionine potentially leads to an op-timal solution in balancing neurotransmitters and mood regulations. To analyze the potential relationship between neurotransmitters and amino acid supplements, this research models selected neurotransmitter and amino acid supplement molecules using chemical softwares designed to build virtual molecules and calculate optimized geometry using the density functional theory. The optimization of modeled structures is measured using their theoretical values and the molecules atomic properties. The efficiency of these molecules is determined by assessing their thermodynamic stability.

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