

Study on the Neurotransmitters and Digestion of Amino Acids Affecting Psychological Chemical Imbalance

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Abstract : With technological advances in the computational biomedical field, the ability to measure neurotransmitters' chemical imbalances that affect depression and anxiety has been established. By comparing the thermodynamics stability of amino acid supplements, such as glutamine, tyrosine, phe-nylalanine, and methionine, this research analyzes mood-regulating neurotransmitters, amino acid supplements, and antipsychotic substances (ie. Reserpine molecule and CRF complexes) in relation to depression and anxiety and suggests alternative complexes that are low in energy to act as more efficient treatments for mood disorders. To determine a molecule's thermodynamic stability, this research examines the molecular energy using Avogadro, a software for building virtual molecules and calculating optimized geometry using GAFF (General Amber Force Field) and UFF (Universal Force Field). The molecules, built using Avogadro, is analyzed using their theoretical values and atomic properties.

Keywords : amino acids, anxiety, depression, neurotransmitters

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