

Abstract Submitted  
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**Interactions of APOA and EMI** MADELYN THOMPSON, The University of Tennessee at Chattanooga, PEDRO RAMIREZ-GONZALEZ, The Autonomous University of San Luis Potos , LUIS SANCHEZ-DIAZ, The University of Tennessee at Chattanooga — The APOA proteins role in lipid metabolism is crucial, as it contributes to the high-density lipoprotein (HDL) particles that circulate in the blood to transport fat from tissues to the liver. The conformation of the APOA protein is important in its functioning within the HDL particles. Interactions with solutes or molecules can influence the hydrogen bonding of the protein, which can alter its conformational structure and tertiary shape. These interactions can potentially increase stability but also potentially denature the protein. Our goal is to study this protein and understand how it interacts with the EMI ions. We will determine the interactions of the APOA protein with different concentrations of the ions and water by running molecular dynamic simulations using GROMACS. We hope to understand if the ion can potentially stabilize the APOA protein, making it more effective in the body.

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