Abstract Submitted for the SES19 Meeting of The American Physical Society

Stabilizing Apoa Protein Folding in Various Potassium Chloride Concentrations HANNAH HOLMBERG, LUIS SANCHEZ-DIAZ, University of Tennessee at Chattanooga — Apopliprotein or Apoa1 is a complex lipoprotein that functions in the removal of cholesterol from the blood and in removing cholesterol from area around white blood cells and promoting the excretion of lipids through the lymphatic system. Previous research has found that Apoal shows both folded and unfolded conformations depending on the concentration of NaCl in the solution around it. The protein was studied using molecular dynamics simulations. Once this state of equilibrium was reached, various structural properties of the protein were measured including the radius of gyration and the radial distribution function. The goal of the project was to confirm the results of previous research and to set the basis for phase two of the research in which we will determine if potassium chloride allows for the same conformations of apoa to be formed. We have determined that in a range of concentrations from 0.5M to 2.0M Apoa has both folded and unfolded conformations. We are now working to study Potassium Chloride in these concentrations to determine if the radius of gyration results will be the same as the ones found in studying the sodium chloride. This research will determine if the healthier salt potassium chloride, allows for the same folded and stable conformations of apoa.

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Date submitted: 30 Sep 2019

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