

Abstract

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Metal ion complexes of EDTA as solutes for density gradient ultracentrifugation: influence of metal ions.

Johnson JD, Bell NJ, Donahoe EL, Macfarlane RD.

Department of Chemistry, Texas A&M University, College Station, Texas 77843, USA.

BACKGROUND: In the study reported here, we study the nature of the metal ion complexes of EDTA as solute systems for analysis of lipoproteins by density gradient ultracentrifugation (DGU) by varying both the complexing metal ion and the counterion.

METHODS: Specifically, the sodium and cesium salts of complexes of Bi/EDTA, Pb/EDTA, Cd/EDTA, Fe/EDTA, and Cu/EDTA were chosen for this study.

RESULTS: We show that useful gradients can be formed within a few hours beginning with a homogeneous solution. Data are presented that provide insight into the nature of how these gradients are formed from these complexes and how the selection of a specific complex can be used to enhance particular regions of the lipoprotein density profile for clinical studies. We also examine the use of equilibrium sedimentation theory to correlate the measured density profiles generated by these complexes with their molecular weight.

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