

Expression, Purification and Electron Spin Resonance Studies of Fatty Acid-Binding Protein B-FABP.

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Fatty Acid-Binding Proteins, FABPs, have function as the storage and / or transport of hydrophobic ligands such as intracellular fatty acids, which are essential components of phospholipids and glycolipids in membranes. B-FABP, which is found in highest concentration in the brain, is a 15-KDa protein, whose bound fatty acid remains in a highly curved conformation inside the protein. The ligand is thought to bind to FABP via a portal region, composed by helices A1 and A2, forming a helix-loop-helix motif on the surface of the protein. It was observed that the delivery of fatty acids by FABPs to the membrane can occur by collisional mechanism, where effective interaction of the protein with membrane takes place. Determination of the structural elements, their location and dynamics responsible for guiding the specific membrane-protein interaction could have important physiological consequences, as these elements dictate the intracellular trafficking of fatty acids. Electron Spin Resonance (ESR) was used to monitor B-FABP interaction with DOPC or DOPG lipid model membranes. Our results in membranes containing the spin labels DPPTC, 5- and 7-PC demonstrate there is no change in mobility of the label at protein/lipid ratios of 1/100, 1/50, 1/25 and 1/10. This could characterize a peripheral interaction without insertion of the protein into the vesicle core. KeyWords: EPR, FABP, Membrane. Acknowledgements: CNPq, FAPESP.