

Molecular Properties of the Reassembled Coat Protein of Coated Vesicles[†]

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ABSTRACT: Clathrin has been prepared from human and bovine brains by a rapid technique which does not require sucrose gradient centrifugation. The protomer molecule which is obtained has the ability to polymerize and form protein coats, i.e., so-called cages or baskets, which resemble the structures observed in coated vesicles. The polymerization of clathrin to form cage structures in 0.2 M ammonium acetate, pH 6.8, results in two distributions of sedimenting particles in the ultracentrifuge, one centered near 300S and the other near

150S. Equilibrium sedimentation gives molecular weights of the 150S and 300S particles near 25 million and 100 million, respectively. The turbidities of the two species have been measured during centrifugation in the ultracentrifuge. When the turbidity values are combined with the molecular weight values, the radii of the 150S and 300S species can be obtained, assuming a hollow sphere as a model for the clathrin polyhedral molecules.