Iron and phosphate content of rat liver ferritin heteropolymers

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摘要

Abstract

An attempt was made to relate the iron and phosphate content of ferritin to its subunit composition. Ferritins from various tissues were separated according to their subunit composition by anion exchange chromatography and according to their iron content by density-gradient centrifugation. Iron and phosphate contents were not related to subunit composition. Recombinant rat liver ferritin heteropolymers of different subunit composition (1, 4, 6, 10, 15, and 17 H chains per 24 mer) were maximally loaded with iron, using ceruloplasmin and phosphate. All loaded approximately the same amount of iron and phosphate (2250 and 380 atoms, respectively). The iron and phosphate content of all ferritin, including the maximally loaded recombinant ferritin heteropolymers, fit an equation we previously reported: [Fe] = 4404 − 5.61 [Pi] (D. deSilvaet al.,1993,Arch. Biochem. Biophys.303, 451 – 455). These results suggest that the amount of iron and apparently the space within the core of ferritin were not related to different subunit composition.