SANS STUDY OF NATIVE HORSE SPLEEN FERRITIN AT DIFFERENT CONTRAST VARIATION

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Horse apoferritin has been studied with small-angle scattering techniques for a long time [1]. At the same time, native ferritin has been less characterized [2]. Here we present results of SANS study of native horse spleen ferritin with the use of contrast variation.

Ferritin was purchased from Sigma-Aldrich. Experiments were conducted at YuMO spectrometer of IBR-2 reactor [3] (JINR, Dubna). SAS curves were processed in BioXTAS RAW software [4], and *ab initio* model was built in MONSA [5] (here we also used SAXS data of apoferritin from the previous experiments (SASBDB ID: SASDWV6)).

The final structure demonstrated several interesting features: the cage were underloaded, and the mineral core was positioned at the part of inner surface of protein cage; a part of core pseudoatoms was out of the cage, this fact can be interpreted as presence of mineral structures on the outer surface of the protein shell. These outcomes could be compared with curious results of anomalous SAXS study of native ferritin [2] — the mineral core also intersected with the protein shell, albeit in a different way, and, unlike our model, there was an iron overload.

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