

## Educational model: Apoferritin with octahedral symmetry



Stefan Huber

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## Summary

This is a model of the apoferritin protein from *Pyrococcus furiosus* at a scale of 1 to 10,000,000.

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This is a model of the apoferritin protein from *Pyrococcus furiosus* at a scale of 1 to 10,000,000 and at roughly 6 Angstrom resolution. One millimeter in the printed model is roughly the size of a hydrogen atom. A very similar, human version of this protein is responsible for transporting iron around our bodies.

Ferritin exhibits octahedral symmetry. It consists of 24 asymmetric units. The model has to be printed 24 times. Two units are glued together to form a dimer, and 12 of these dimers can be assembled using the sticks and holes in the model.

Assembly can be tricky. (Tip: Assemble three dimers around the 3-fold axis first. Do this four times and then assemble everything)

Printing is possible with single perimeter, no infill, no top and bottom layers. Modifier slab for the first millimeter of the print with 10 perimeters will help with first-layer adhesion and stability. Modifier with 2 perimeters for the sticks make them more stable.

The model is based on this 3D density: <https://www.ebi.ac.uk/emdb/EMD-12901> and this atomic model <https://www.ebi.ac.uk/pdbe/entry/pdb/7ohf>

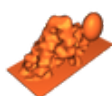
## Model files

**dimerwithattachmentsv2\_sculped2.stl**



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**dimerwithattachmentsv2\_sculped2\_withmodifiers.3mf**



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