

## Supplementary Information for 'Metallic iron in cornflakes'

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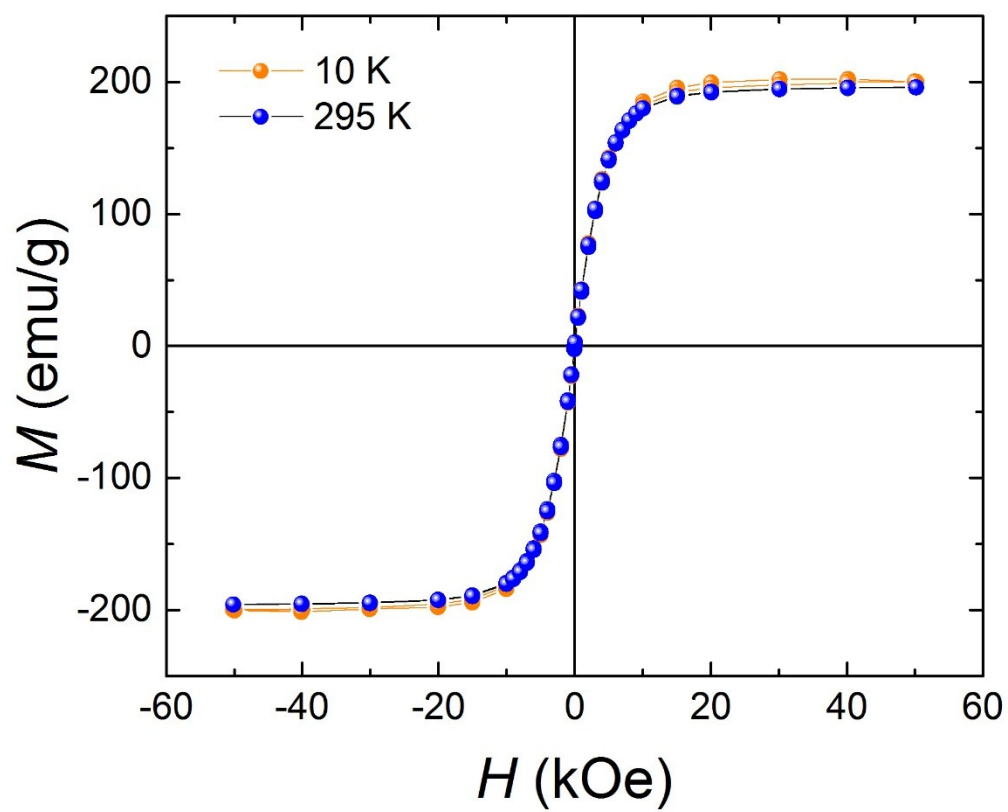
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Samples of cornflakes, cornflake residue after iron extraction, and the extracted iron particles, were investigated using magnetometry.

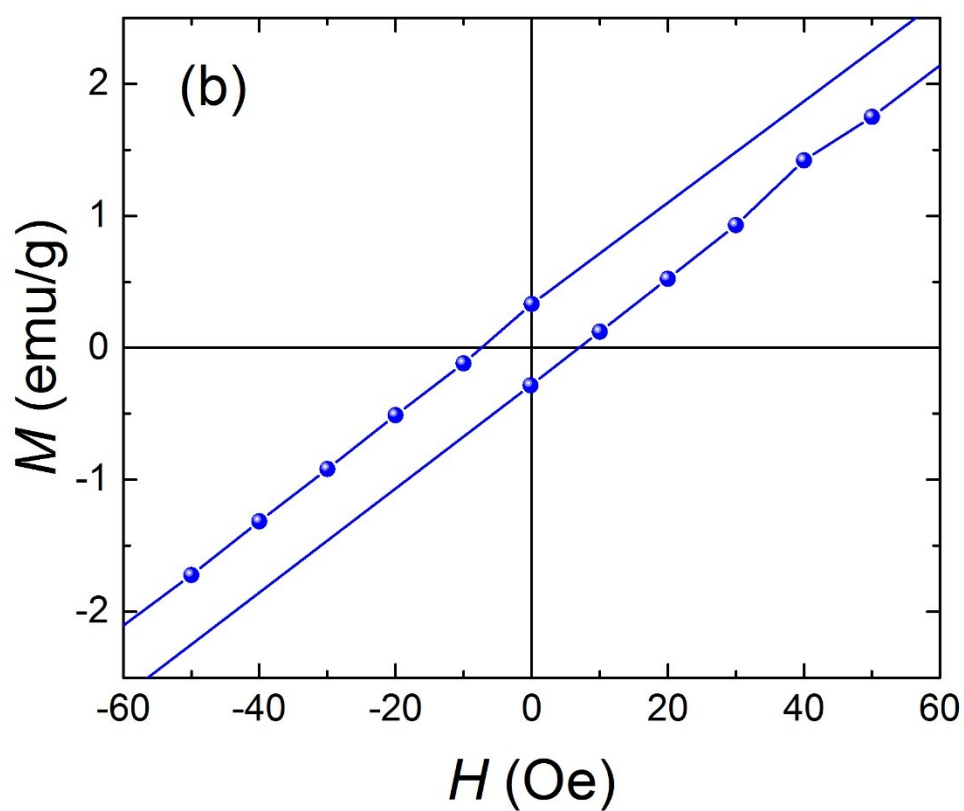
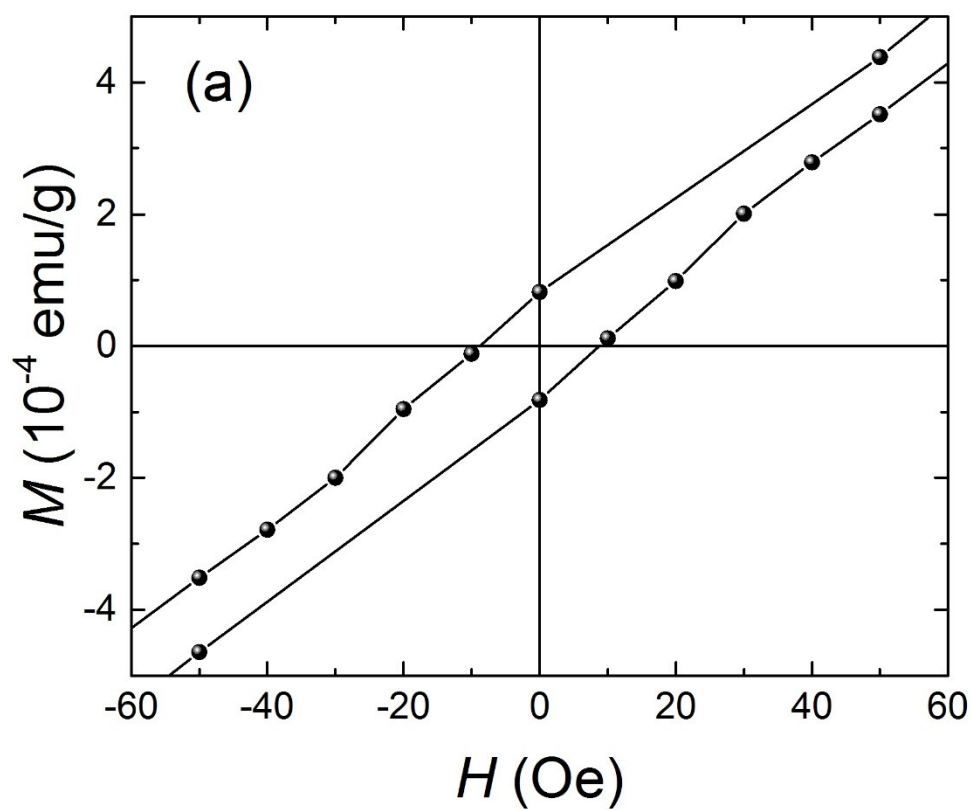
**Figure SI1** shows the magnetization versus applied field curves at 295 K (data also shown in **Figure 3b** of the main text) and 10 K for a sample of the iron particles extracted from the cornflakes. The decrease in the magnetization at 50 kOe from  $(200 \pm 1)$  emu/g at 10 K to  $(196 \pm 1)$  emu/g at 295 K is consistent with the presence of spin waves in body-centred cubic iron.

**Figure SI2** shows the low-field magnetization versus applied field data collected as part of the four-quadrant  $M(H)$  scans between + 50 kOe to -50 kOe shown in **Figure 3** of the main text. **Figure SI2(a)** contains the data for a sample of Brand A cornflakes and **Figure SI2(b)** shows the data for the iron particles extracted from the cornflakes. The magnetization per gram for the cornflake sample is clearly much reduced as there is less ferromagnetic material per gram of sample, but the coercive field of both samples is  $(8 \pm 2)$  Oe, indicating that in this respect at least, the magnetic response of the iron in the cornflakes is similar to the iron after it has been extracted.

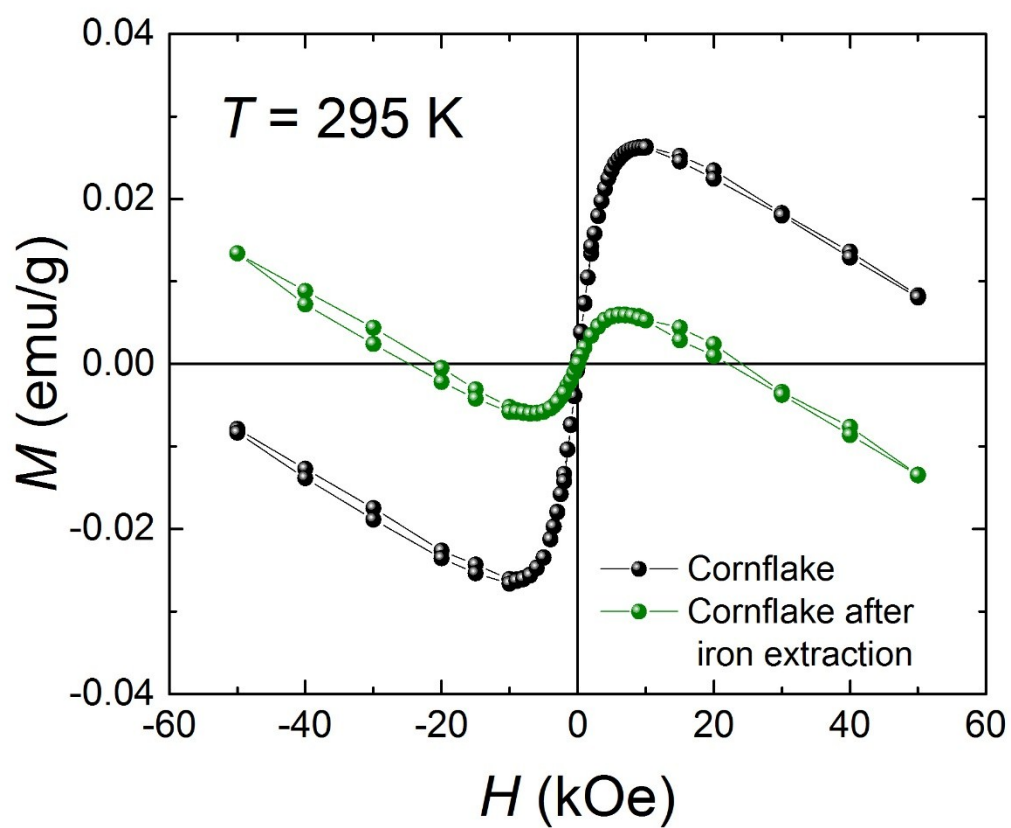
**Figure SI3** shows the magnetization versus applied field curves at 295 K for a sample of Brand A cornflakes (data also shown in **Figure 3a** of the main text) along with the  $M(H)$  curve of the cornflake residue after iron extraction. The signal is significantly reduced in the cornflake residue indicating around 80% of the iron was extracted from this sample. The magnetic field dependence of the  $M(H)$  curves at higher fields is similar for both samples, indicating that the diamagnetic response arises from the biological matter in the cornflakes and that the magnetic character of this material is not altered by the iron extraction process.



**Figure SI1.** Magnetization versus applied field curves at 295 and 10 K for the iron particles extracted from the cornflakes.



**Figure S12.** Low-field magnetization versus applied field data for (a) Brand A cornflakes and (b) iron particles extracted from the cornflakes.



**Figure SI3.** Magnetization versus applied field curve at 295 K for Brand A cornflakes and the cornflake residue after iron extraction.