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## ESI to: "Modifying the magnetic response of magnetotactic bacteria: Incorporation of Gd and Tb ions into the magnetosome structure"

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### Notes and references

- 1 L. Marcano, I. Orue, A. Garcia-Prieto, R. Abrudan, J. Alonso, L. Fernandez Barquin, S. Valencia, A. Muela and M. L. Fdez-Gubieda, *The Journal of Physical Chemistry C*, 2020, **124**, 22827–22838.

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† Electronic Supplementary Information (ESI) available: Fig. S1 TEM images showing the appearance of RE salts attached to the bacterial body and chain anomalies/deformed magnetosomes inside the bacteria. Fig. S2 includes the ZFC/FC  $M$  vs.  $H$  curves measured at different temperatures for the RE-doped MTB. Fig. S3 offers a comparison between the thermal evolution of  $\Delta H_C$  and  $\Delta M_r/M_s$  of the undoped, Gd [100:100], Tb [100:100], Mn [480:100] and Mn [100:100] bacterial samples. See DOI: 00.0000/00000000.

# Gd-doped

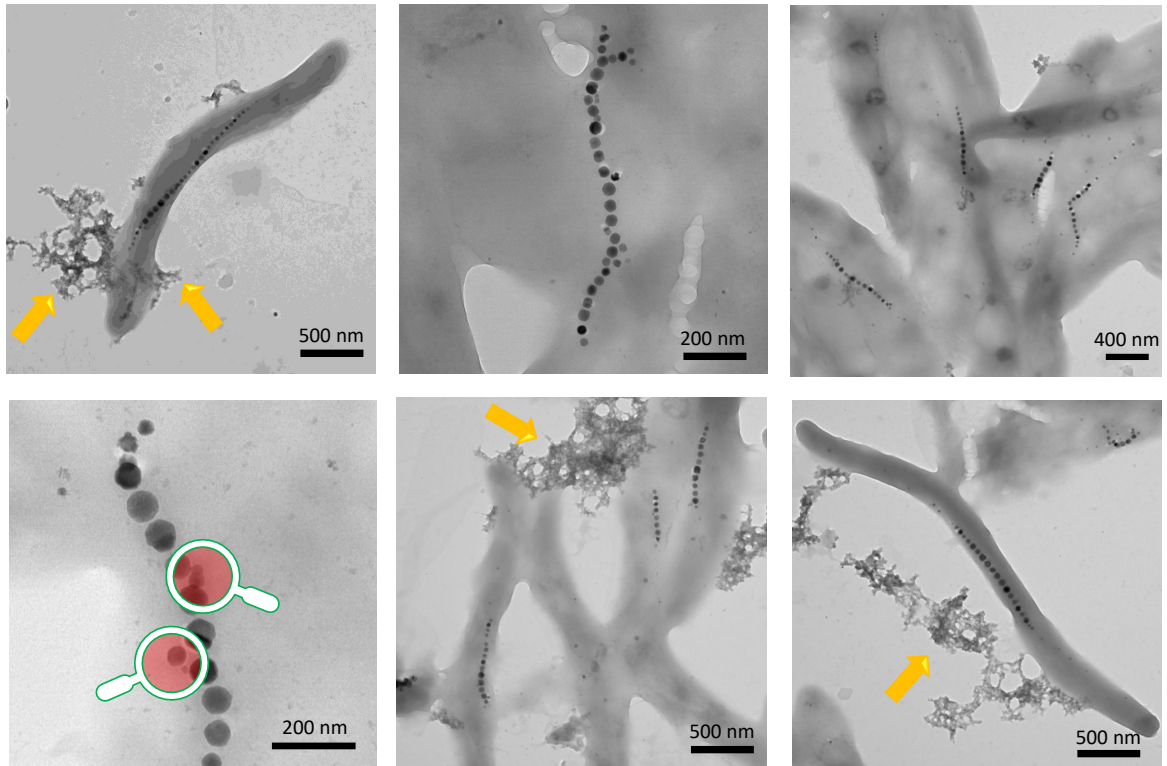


Fig. 1 Collection of TEM images corresponding to Gd-doped bacteria. Yellow arrows mark the existence of R salts attached to the bacterial body. Particular smaller or less faceted magnetosomes have been enclosed with red lens.

# Tb-doped

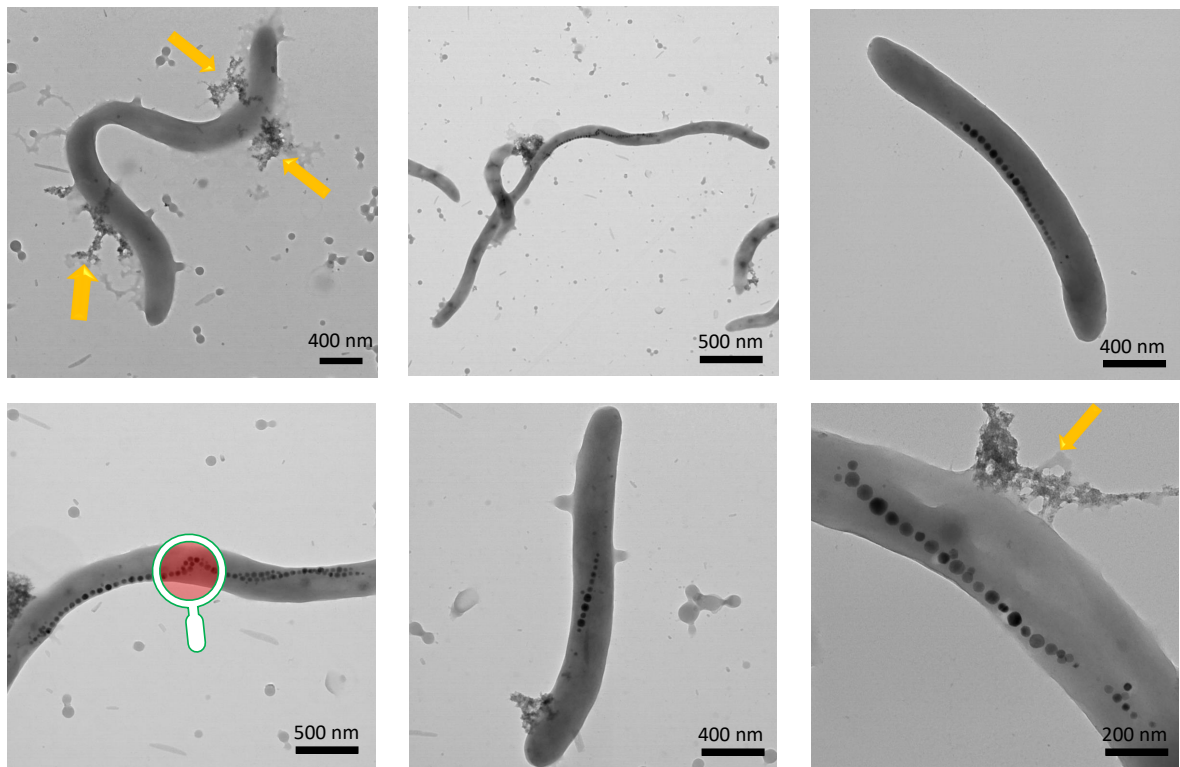


Fig. 2 Collection of TEM images of Tb-doped bacteria. As in Fig. S1, yellow arrows mark the existence of R salts attached to the bacterial body. Here, we have magnified in red the curvature found at the bottom of two chains, different from the regularly found linear shape.

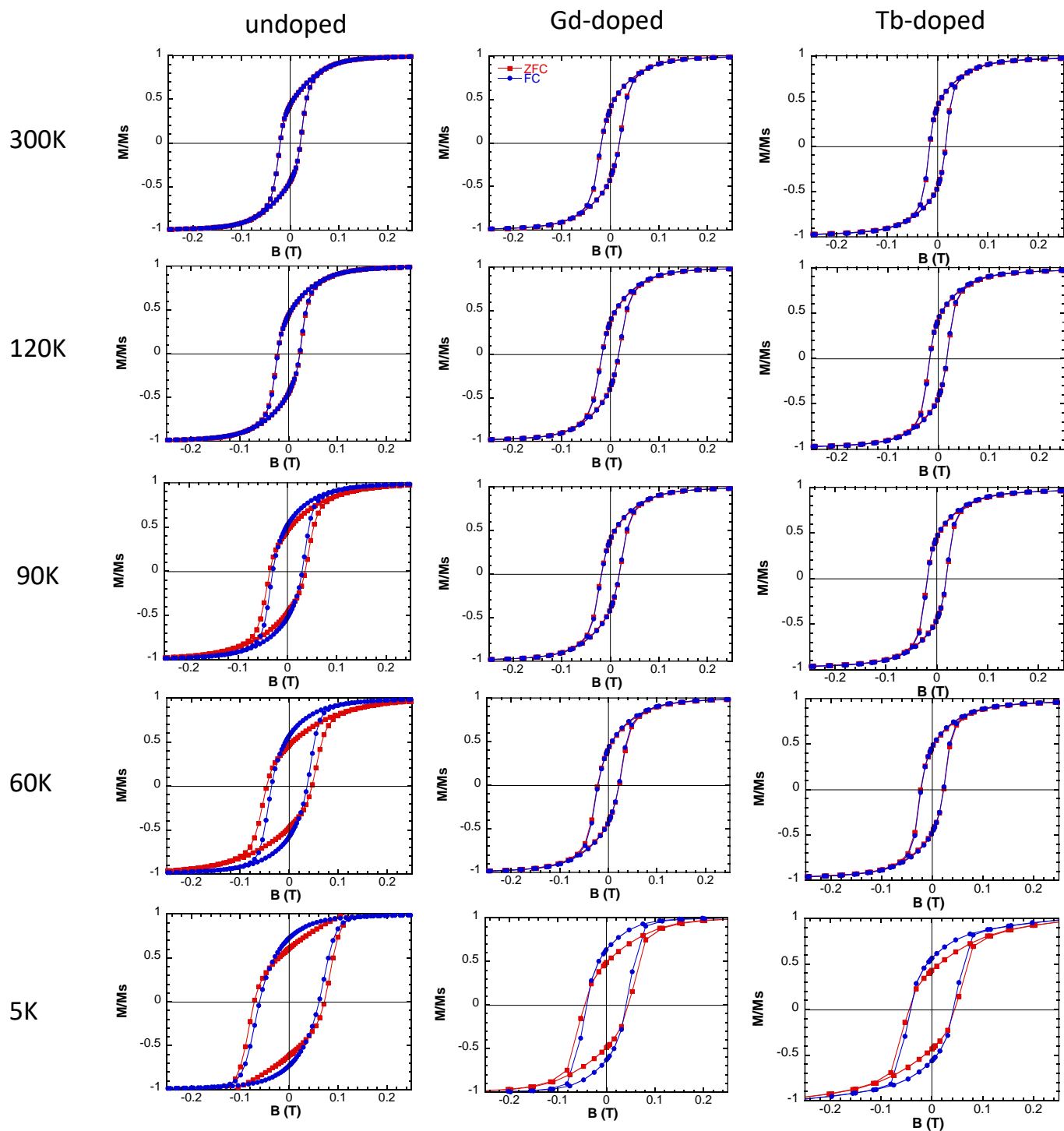


Fig. 3 ZFC/FC  $M$  vs.  $H$  curves measured at different temperatures for the RE-doped MTB. The increasing paramagnetic contribution at low  $T$  is clearly depicted.

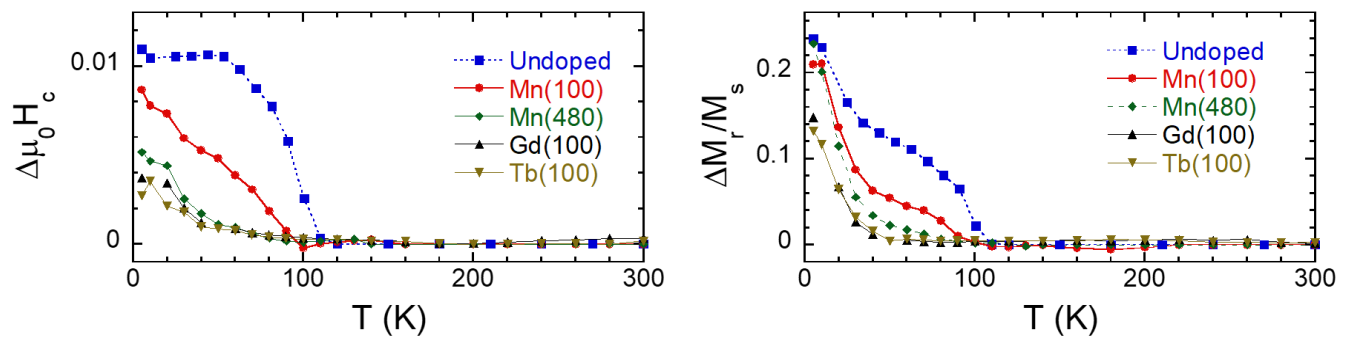


Fig. 4 Comparison between the thermal evolution of  $\Delta H_C$  and  $\Delta M_r/M_s$  of the undoped, Gd [100:100], Tb [100:100], Mn [480:100] and Mn [100:100] bacterial samples. The data for the Mn-doped bacteria have been obtained from our recent work, Ref.<sup>1</sup> (reproduced with permission).