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# Influence of the bacterial growth phase on the magnetic properties of magnetosomes synthesized by *Magnetospirillum gryphiswaldense*

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**Background:** The magnetosome biosynthesis is a genetically controlled process but the physical properties of the magnetosomes can be slightly tuned by modifying the bacterial growth conditions.

**Methods:** We designed two time-resolved experiments in which iron-starved bacteria at the mid-logarithmic phase are transferred to Fe-supplemented medium to induce the magnetosomes biogenesis along the exponential growth or at the stationary phase. We used flow cytometry to determine the cell concentration, transmission electron microscopy to image the magnetosomes, DC and AC magnetometry methods for the magnetic characterization, and X-ray ab-

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