Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B

Supporting Information for

Artificial Magnetotactic Probiotics: A Promising Treatment for Both Antimicrobial-Susceptible and Antimicrobial-Resistant Pathogens

Xiaolei Wang, Hui Zhu, Xuexia Liu and Xiurong Yang*

State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, 5625 Renmin Street, Changchun Jilin, 130022, China

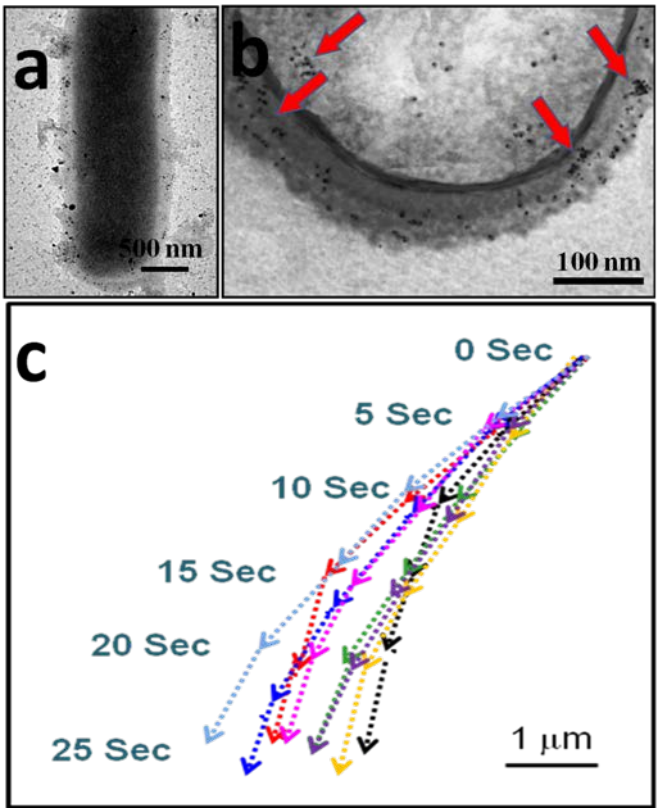

Figure S1a a high resolution image of the AML;
S1b The cross section view of the AML, the magnetic nanoparticles located into the bacterial membrane were indicated by red arrows;
S1c The motion trajectory of 8 AMLs driven by the same magnetic field at 0s, 5s, 10s, 15s, 20s and 25s, respectively.

The distance between the magnet and AML (cm)	**The concentration of agar (g/L)**	**The average speed of AML (μm/s)**
4	0	2.1
4	10	1.7
4	20	0.8
8	0	0.6
8	10	0
8	20	0
16	0	0
16	10	0
16	20	0

Table S1 The influence of magnetic field strength and medium environment on the mobility of AML. The magnetic field strength was controlled by the distance between the magnet and AML, while the viscosity of the medium was adjusted by adding approapriate amounts of agar. At least 5 individual AML cells were monitored for each study.

The distance between the magnet and AML (cm)	**The substrate material**	**The average speed of AML (μm/s)**
4	SiO_2	2.3
4	ITO	4.5
4	PVC film	0.3
8	SiO_2	1.2
8	ITO	1.5
8	PVC film	0
16	SiO_2	0
16	ITO	0
16	PVC film	0

Table S2 The influence of magnetic field strength and surface properties on the mobility of AML, The magnetic field strength was controlled by the distance between the magnet and AML. At least 5 individual AML cells were monitored for each study.

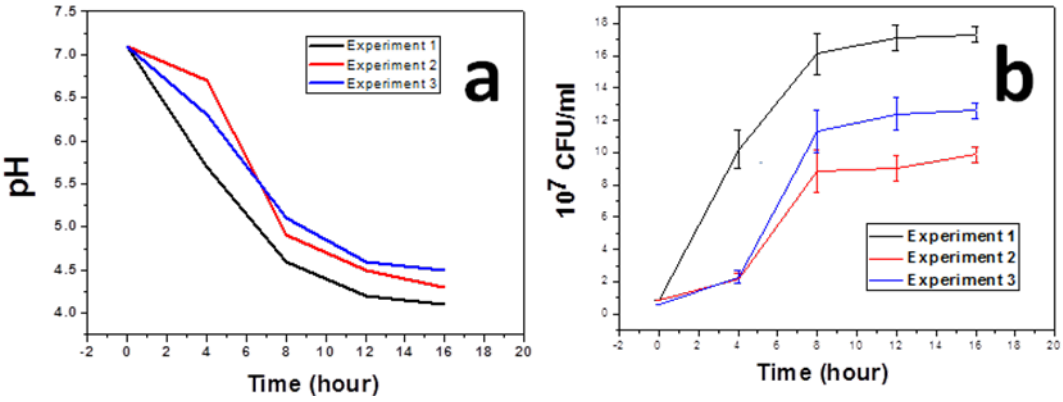

Figure S2 The variation of pH and bacterial concentration (CFU/ml) after ALM migrated to the target area. Experiment 1, 2 and 3 is related to the *In vitro* studies in Figure 3(a-d), (e-h) and (i-l) respectively. Error bars show the standard deviations of six values.