Supporting Information

Micromotor-Assisted Human Serum Glucose Biosensing

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S1. Supporting figures

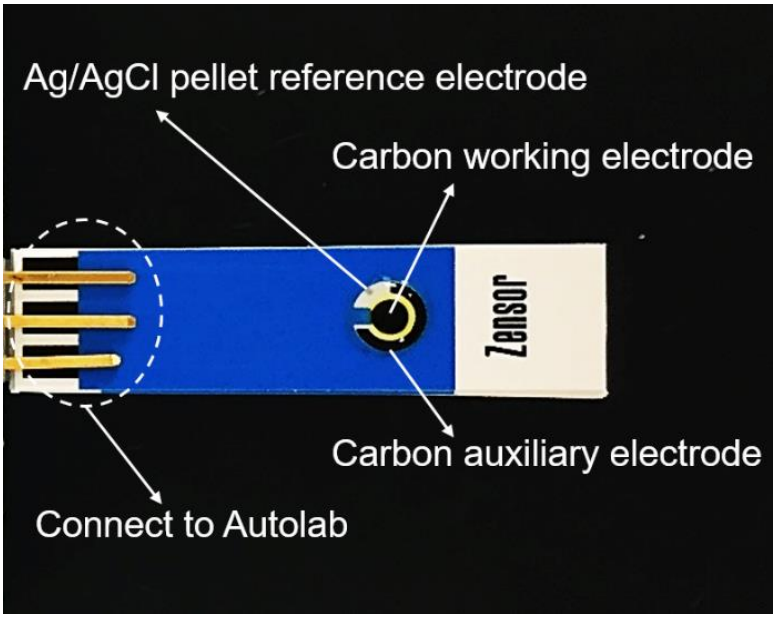

Figure S1. Digital photograph of screen-printed electrode (SPE) and experimental setup.

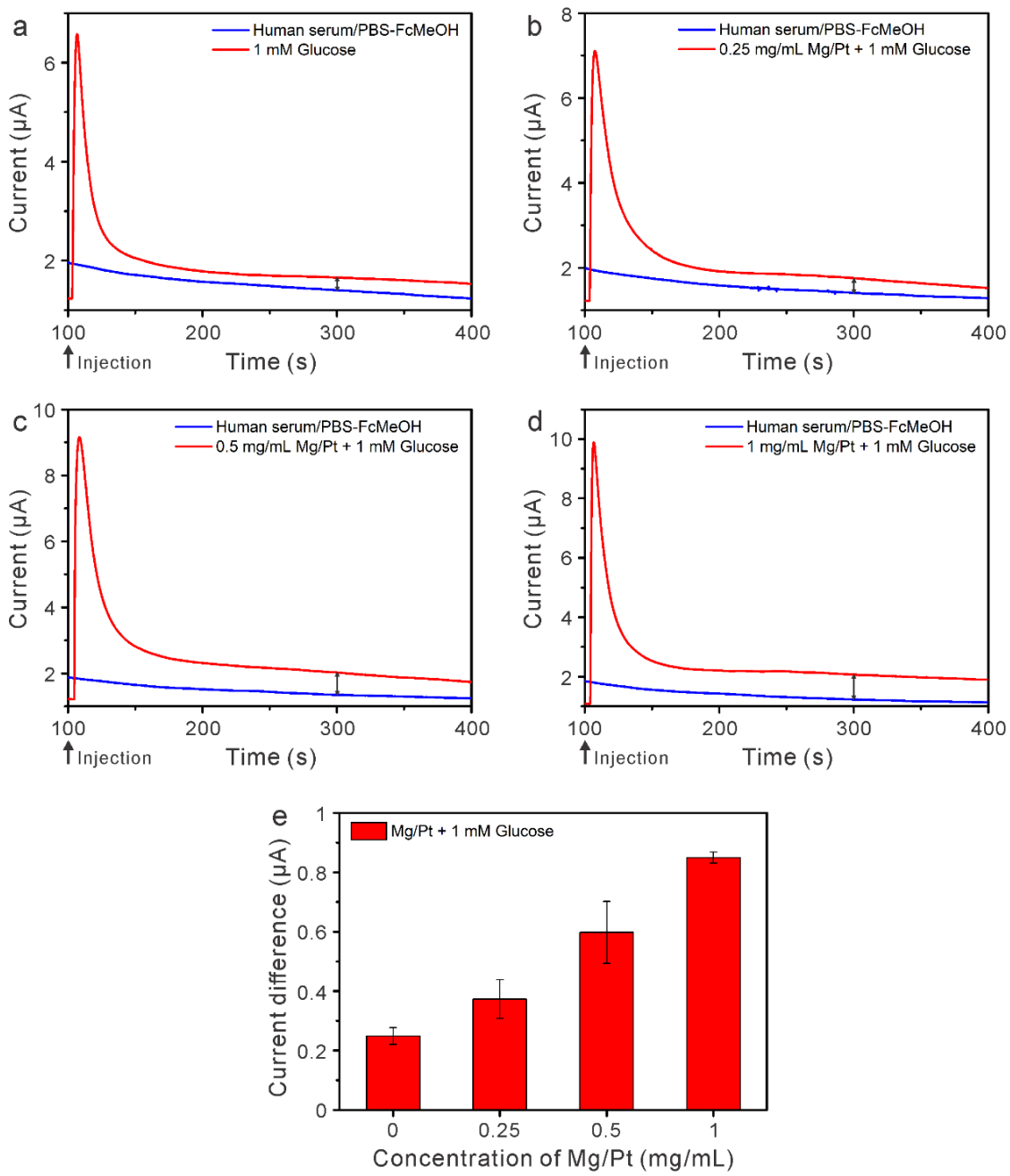

Figure S2. (a-d) Chronoamperometric measurements of HS/PBS-FcMeOH with 1 mM glucose solution and different concentrations of Mg/Pt Janus micromotors. Arrow represents the time for injection of glucose and micromotors mixture. Current signals were measured at time of 300 s. (e) Compilation of current difference (ΔI) calculated at 300 s with equation (5) at different concentrations of Mg/Pt Janus micromotors.

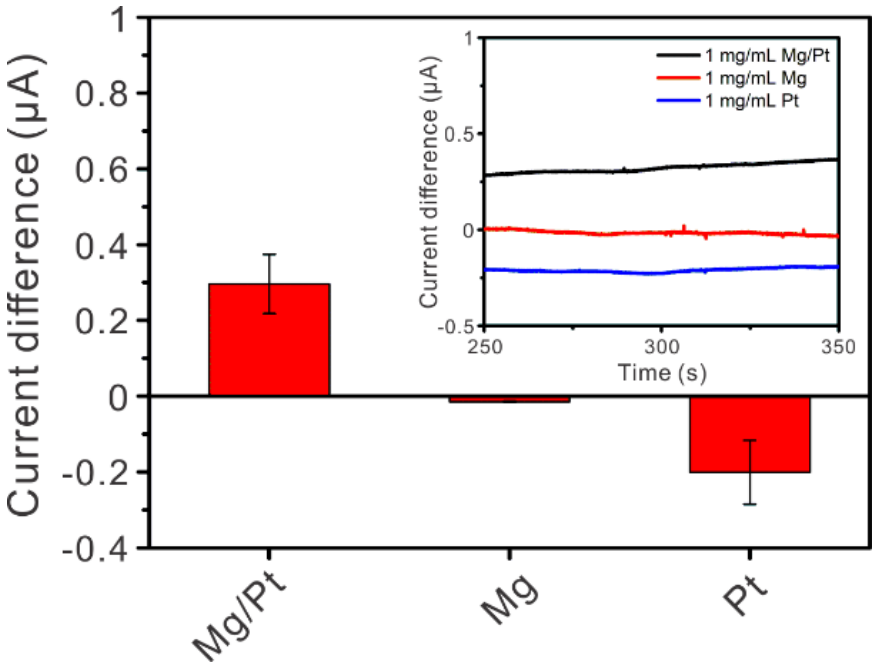

Figure S3. The current difference (ΔI) at 300 s obtained for Mg/Pt micromotors, Mg and Pt microparticles in PBS-FcMeOH. The inset shows chronoamperometric measurements obtained from 250 s to 350 s.

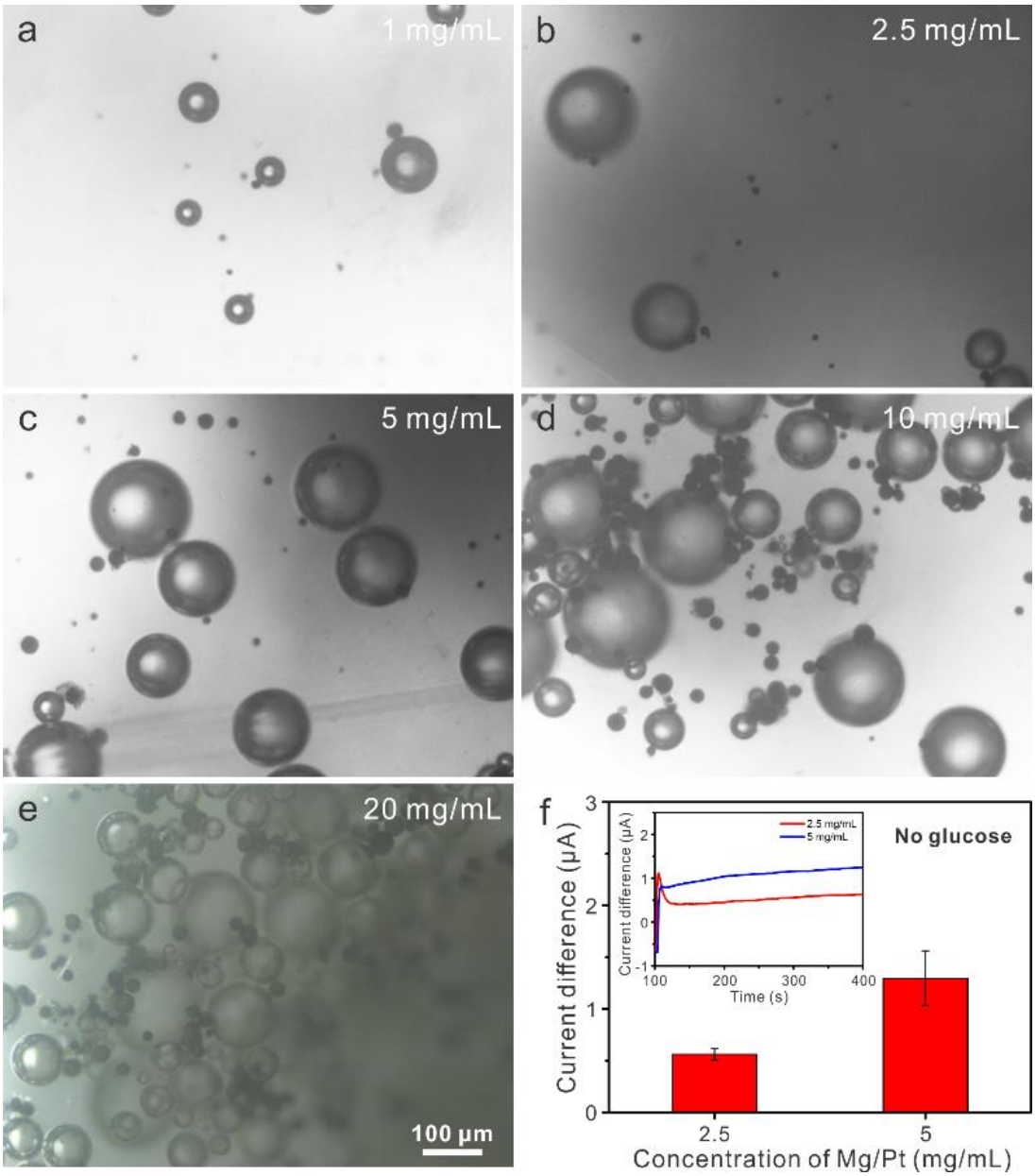

Figure S4. Optical microscope images at Mg/Pt Janus particles concentrations of (a) 1 mg/mL, (b) 2.5 mg/mL, (c) 5 mg/mL, (d) 10 mg/mL and (e) 20 mg/mL. (f) The current difference (ΔI) at Mg/Pt Janus micromotors concentrations of 2.5 mg/mL and 5 mg/mL in the absence of glucose. The inset shows the chronoamperometric measurements obtained.

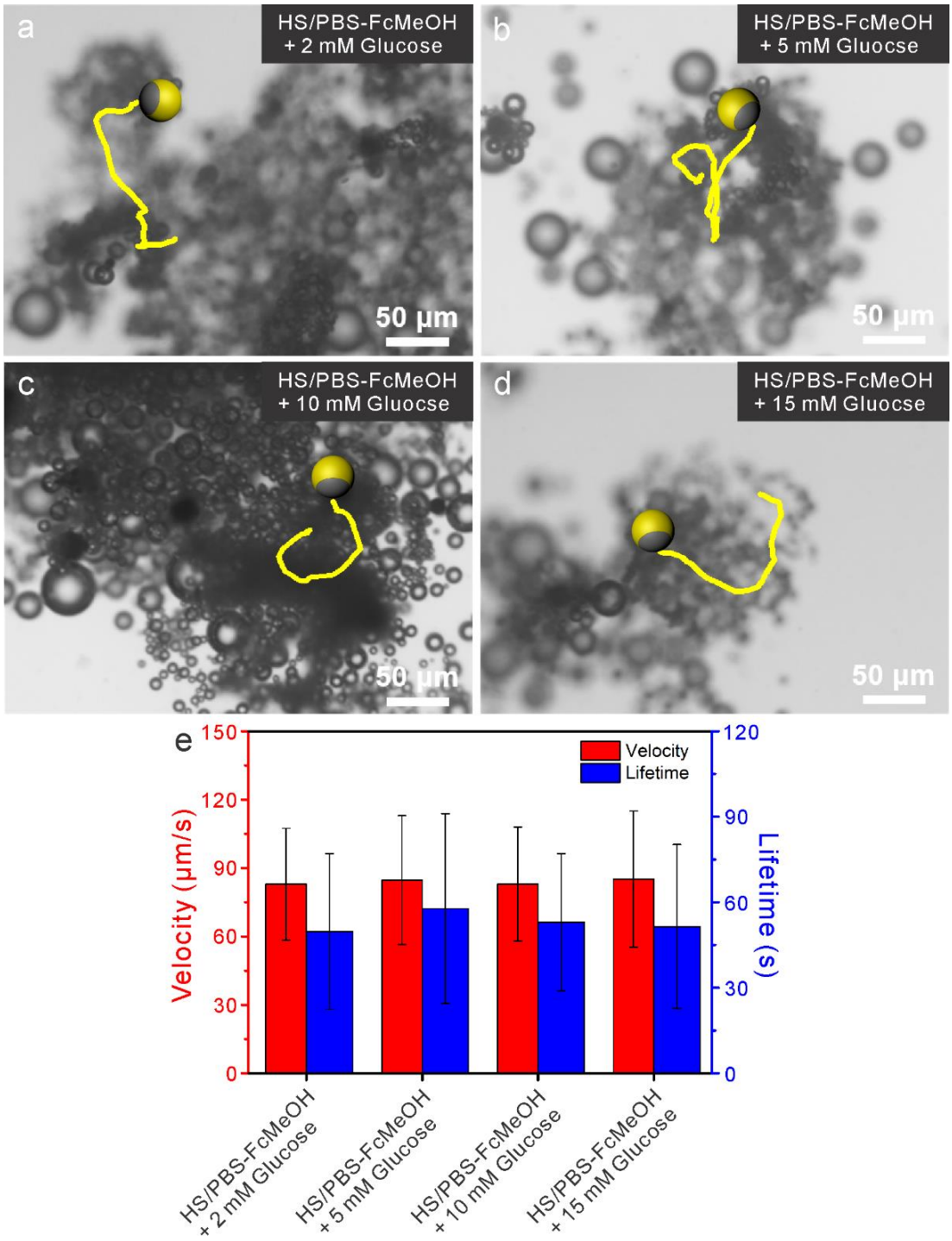

Figure S5. Trajectories of Mg/Pt Janus micromotors in HS/PBS-FcMeOH at (a) 2 mM, (b) 5 mM, (c) 10 mM and (d) 15 mM glucose concentrations for duration of 3 s. (e) The average velocities and lifetimes of Mg/Pt Janus micromotors in above experimental conditions.

Table S1. Calculated $\Delta I'$ at different concentrations of Mg/Pt Janus micromotors and glucose.

Glucose (mM)	Mg/Pt (0 mg/mL)	Mg/Pt (1 mg/mL)	Mg/Pt (2.5 mg/mL)
1	0.25	0.36	0.65
2	1.01	1.26	1.48
5	4.04	4.52	4.91
10	17.44	18.22	19.43
15	20.67	22.6	24.54

S2. Supporting videos

Video S1. Motion of Mg/Pt Janus micromotors in the running solution containing HS/PBS-FcMeOH or HS/PBS-FcMeOH with 1 mM glucose (AVI).

Video S2. Mg microparticles in HS/PBS-FcMeOH solution (AVI).

Video S3. Motion of Mg/Pt Janus micromotors in the running solution containing HS/PBS-FcMeOH with 2 mM, 5 mM, 10 mM or 15 mM glucose (AVI).