Electronic Supplementary Material (ESI) for Analyst.

Supplementary Information

Bio-inspired highly selective enzymatic glucose sensor using red blood cell membrane

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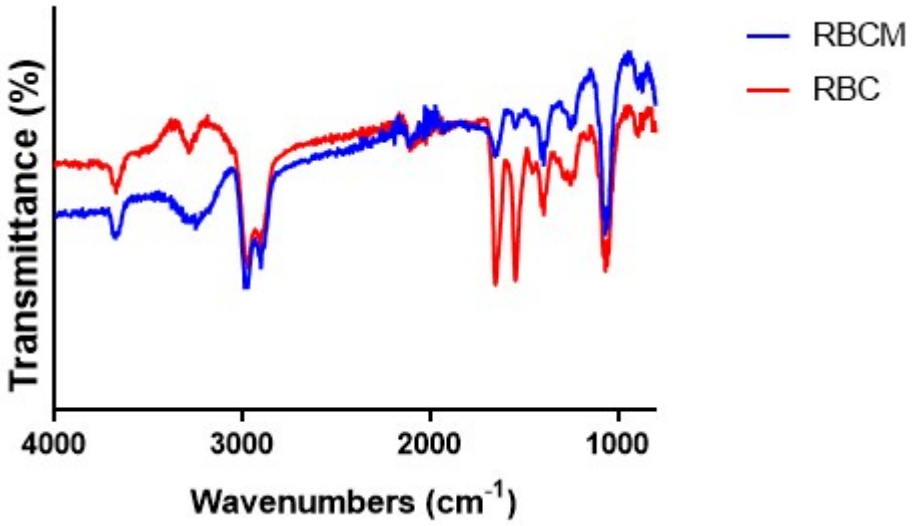


Figure S1.

ATR-FTIR spectrum of RBC and extracted RBCM.

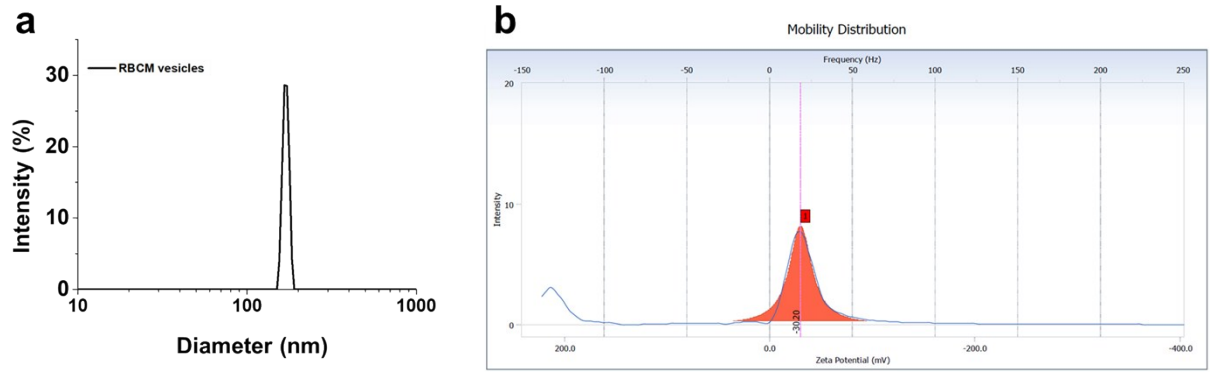


Figure S2.

(a) Hydrodynamic diameter and (b) zeta potential of RBCM vesicles.

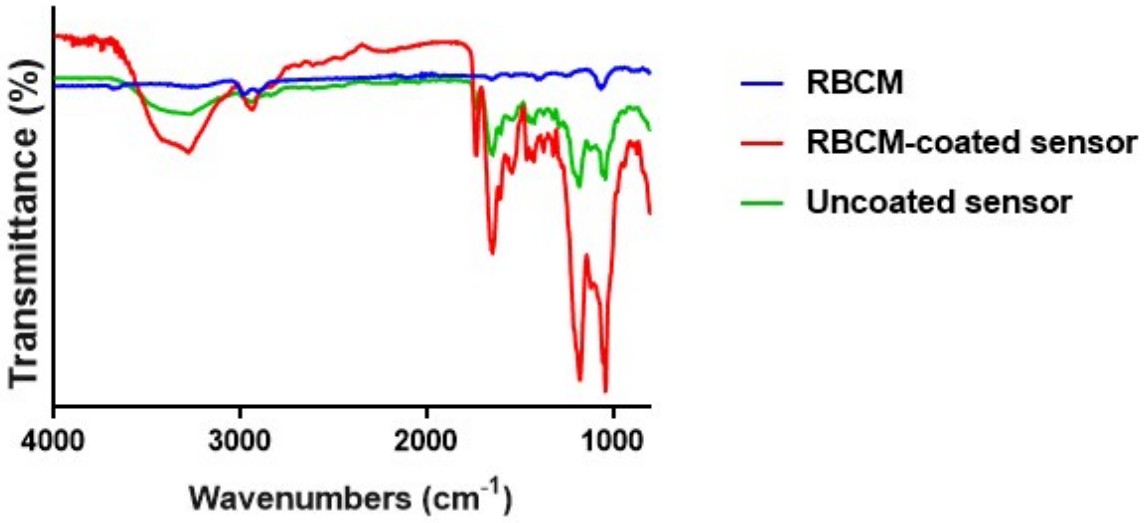


Figure S3

ATR-FTIR spectrum of RBCM, RBCM-coated sensor and uncoated sensor.

Reagent composition	Percentage (%)
potassium ferricyanide	6.72
Quinoprotein glucose dehydrogenase	15.27
Pyrroloquinoline quinone	0.14
Buffer	34.66
Stabilizer	0.54
Non-reactive ingredients	42.66

Figure S4

The composition of enzyme complex of our glucose sensor.

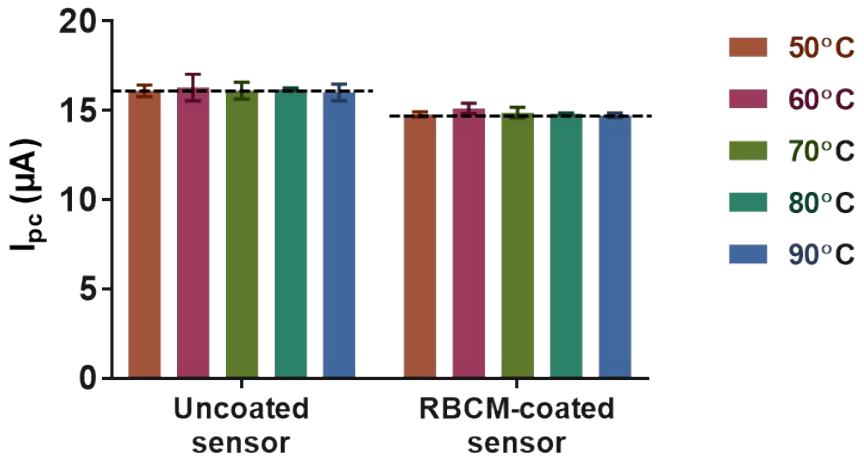


Figure S5

Thermal stability of both uncoated and RBCM-coated sensors.

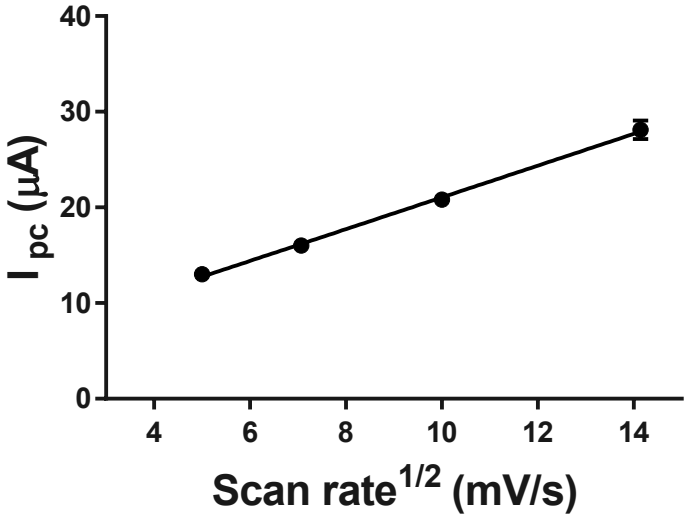
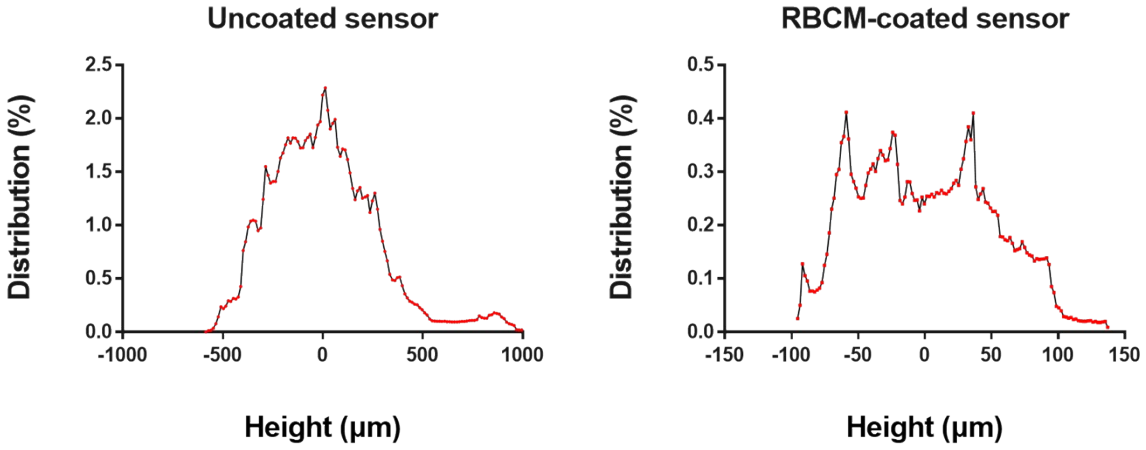


Figure S6

Peak cathodic current of different scan rate of cyclic voltammetry.



	Min (nm)	Max (nm)	Mid (nm)	Mean (nm)	R_{pv} (nm)	R_q (nm)	R_a (nm)	R_z (nm)
Uncoated sensor	-596.9	994.5	198.8	0.0	1591.4	267.3	206.8	1578.5
RBCM-coated sensor	-97.3	137.2	19.9	0.0	234.5	50.3	42.8	233.6

Figure S7

Height distribution graph of uncoated and RBCM-coated sensor and statistical data table from the AFM image (figure 2c and d). Min: minimum height value of the region, Max: maximum height value of the region, Mid: arithmetic average between the minimum and maximum height value of the region, Mean: arithmetic mean height value of the region, R_{pv}: peak-to-valley value of the region, R_q: root-mean-squared roughness of the region, R_a: average roughness of the region, R_z: ten point average roughness of the region.

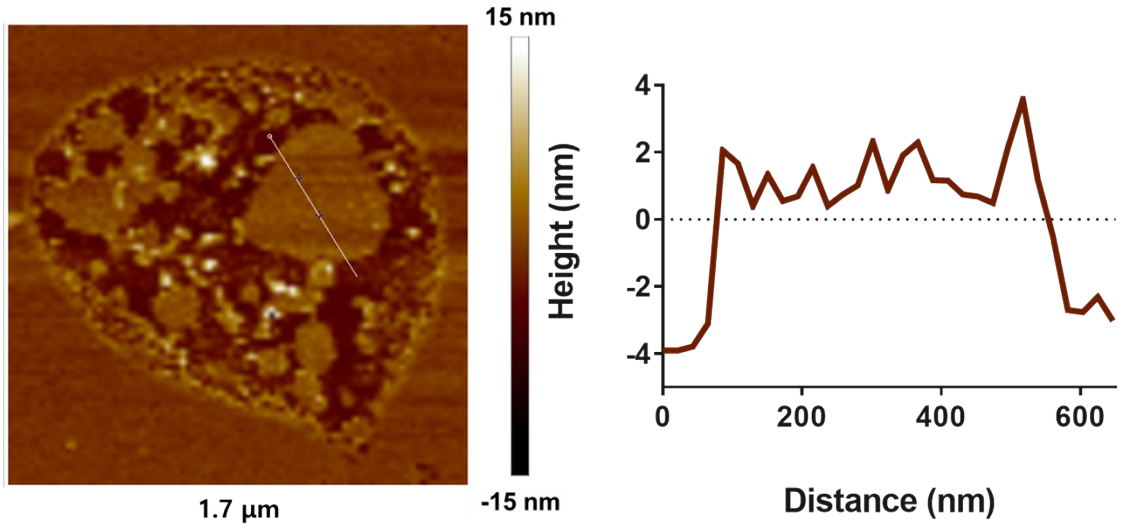


Figure S8

Single RBCM height measurement using AFM. The single layer of RBCM was obtained by incubating RBCM on freshly cleaved mica for 10 min at 50˚C.

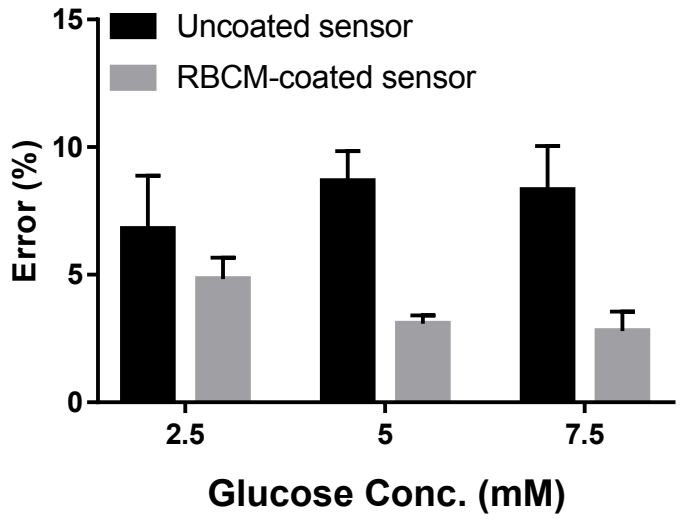


Figure S9

The error rate of four-week-stored sensors from freshly made and measured sensors.