Supporting Information for

Fluid-permeable enzymatic lactate sensors for a micro-volume specimen

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The number of PU coating	Current density at 20 mM lactate [uA/cm^2]	Linear range [mM]
0	295	<1
1	85.4	10-25
2	30.7	0-40
5	7.85	0-70

Table S1 Current densities at 20 mM lactate and linear ranges for the anodes at different polyurethane coatings.

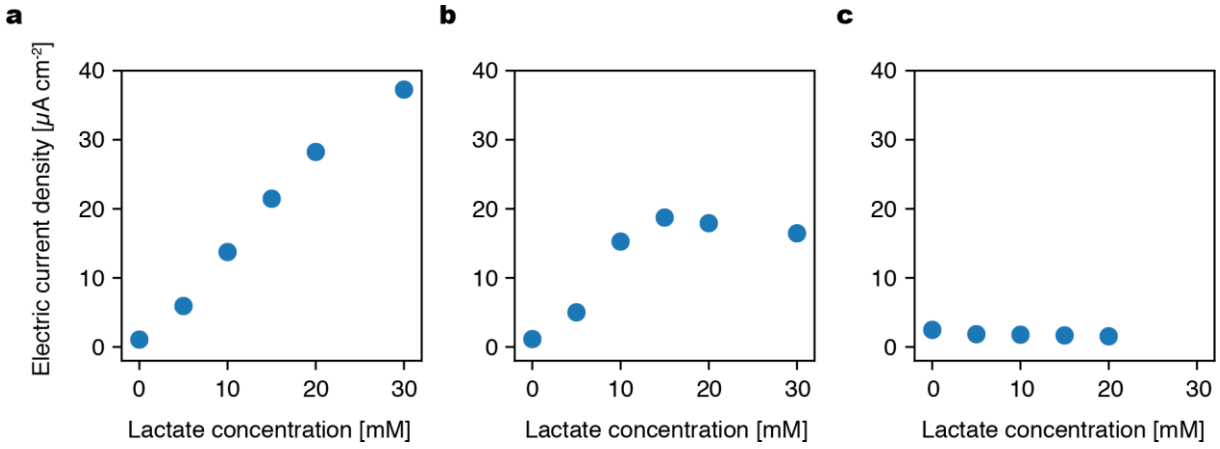

Fig. S1 Amperometric response of the LOx anode in pH7.0 phosphate buffer solution with 100 mM KCl (a) and pH5.5 artificial perspiration (b), and the anode using LOx denatured by heating at 70 °C for 1 h, measured in pH7.0 phosphate buffer solution (c).

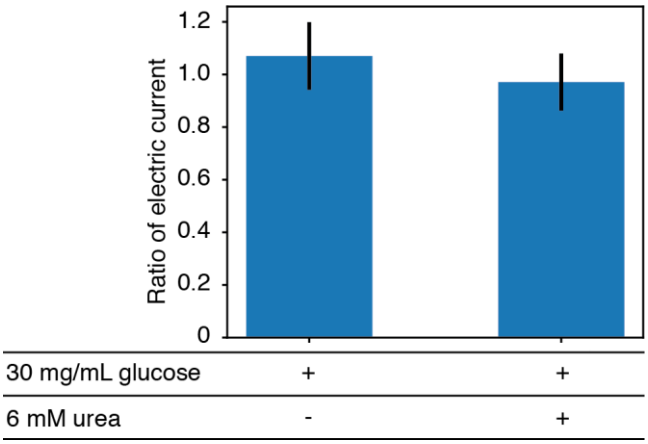

Fig. S2 Effects of common components of perspiration on the LOx anode response. Glucose (final concentration: 30 mg/mL) and urea (6 mM) were added to the pH7.0 phosphate buffer solution.

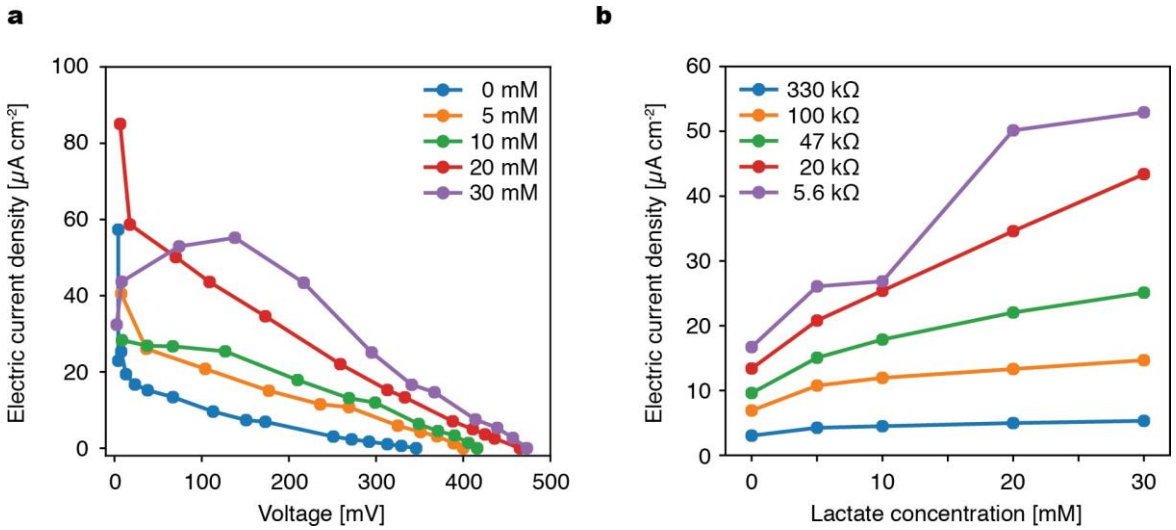

Fig. S3 (a) Polarization curves of an EBFC made of a LOx anode and a BOx cathode at various concentrations of lactate. (b) Relationship between the lactate concentration and the electric current of the EBFC for various external resistances. The measurement was carried out in pH 7.0 100 mM phosphate buffer solution (0 mM) or on a hydrogel with pH 7.0 100 mM phosphate buffer solution (5-30 mM).