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Supporting Information

A highly sensitive endotoxin sensor based on redox cycling in a nanocavity Kentaro Ito¹, Kumi Y. Inoue^{1*}, Kosuke Ino², Tomokazu Matsue¹, Hitoshi Shiku^{2**}

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Scheme of the nanocavity device fabrication

A Ti/Pt bottom electrode (Fig. 1S(i)), Cr sacrificial layer (Fig. 1S(ii)), and Pt top electrode (Fig. 1S(iii)) were sequentially deposited onto a glass slide via sputtering over a pattern of positive photoresist S1818G. After the lift-off process, an insulation layer was fabricated on the device, except for sensor area, using negative photoresist SU-8 3050 (Fig. 1S(iv)). Subsequently, the Cr sacrificial layer was removed by an etching solution to form a nanocavity (Fig. 1S(v)).



Fig. S1. Scheme of the fabrication of the nanocavity device

Endotoxin assay using LGR-AMF with nanocavity device

The result of the endotoxin assay using LGR-AMF substrate with the fabricated nanocavity device is shown in Fig. S2. Detailed discussion is described in the main text.



Fig. S2. Amperograms obtained from the bottom electrode of fabricated device for the endotoxin assay using LGR-AMF after 1 h of LAL reaction time. The top electrode was stepped from 0 to 0.5 V versus Ag/AgCl at 10 s while the bottom electrode was biased at 0 V.