*Supporting information*

# Determination of Amino Acidity in Japanese Sake Based on the Voltammetric Measurement of Surplus Acid by Quinone Reduction

Akira KOTANI,*,§ Jumpei WATANABE, Koichi MACHIDA, Kazuhiro YAMAMOTO, and Hideki HAKAMATA

*Department of Analytical Chemistry, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences, 1432-1 Horinouchi, Hachioji, Tokyo 192-0392, Japan*

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* *Corresponding Author:* kotani@toyaku.ac.jp

§ ECSJ Active Member

A. Kotani, orcid.org/0000-0002-0113-3353

H. Hakamata, orcid.org/0000-0002-2964-9685

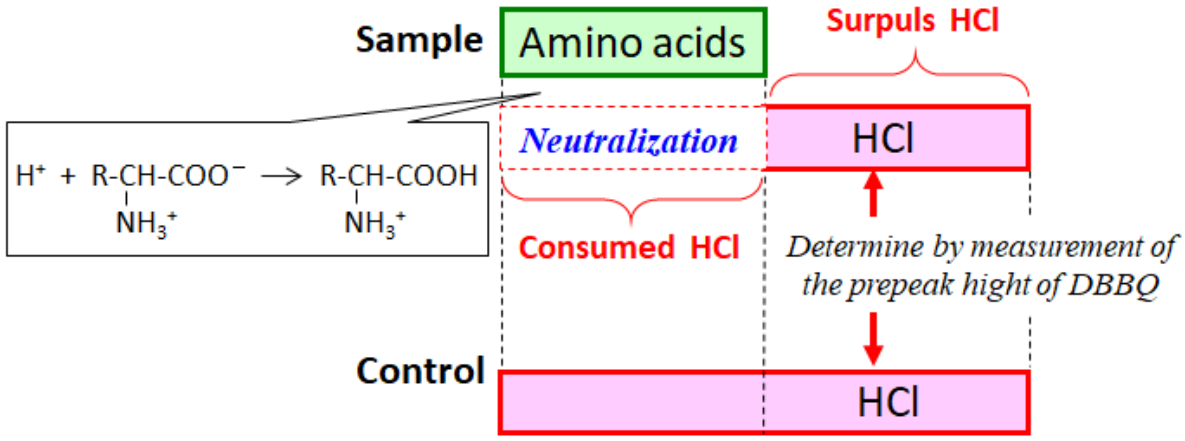
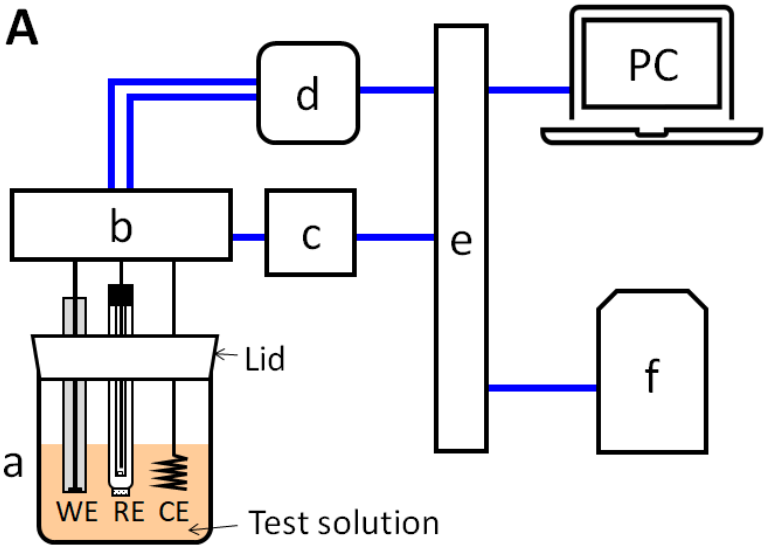



**Figure S1.** The voltammetric method coupled with a concept of back neutralization titration and the voltammetric sensing of acids by the reduction of DBBQ. The concentration of consumed HCl, which was reacted with amino acid in the sample, was calculated by subtracting the concentration of HCl in the control from the surplus HCl in the sample. As such, an equivalent concentration of amino acid in the sample was converted from the concentration of the consumed HCl.



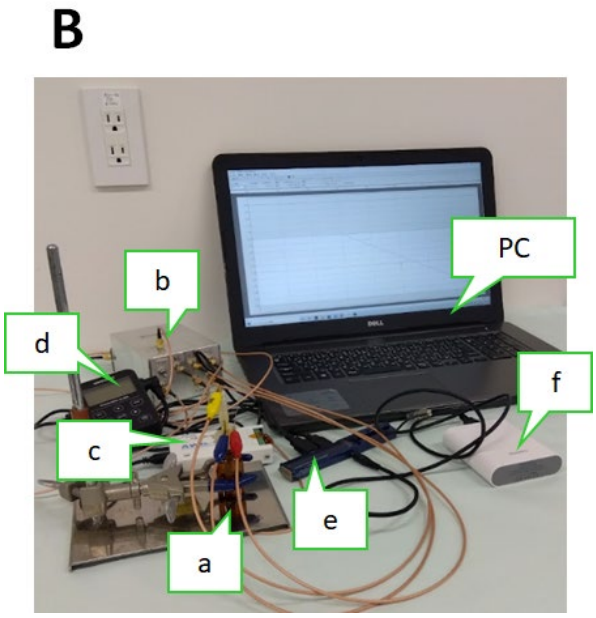




**Figure S2.** (A) A schematic diagram and (B) a photograph of the prototype mobile device with a notebook computer.

a, electrochemical cell; b, homemade potentiostat; c, function generator; d, recorder; e, multi-universal serial bus (USB) ports; f, mobile lithium-ion battery; WE, working electrode; RE, reference electrode; CE, counter electrode; PC, the notebook computer.

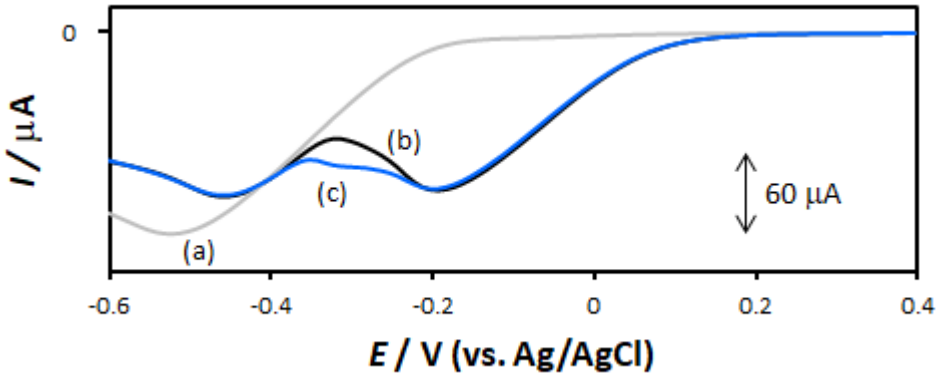



**Figure. S3** Voltammograms of DBBQ in the presence of acids.

The voltammograms of DBBQ without acids, with 5 mM HCl, and with 5 mM HCl and 2 mM succinic acid are shown as curves (a), (b), and (c), respectively. The scan rate was set at 100 mV $s^{-1}$.

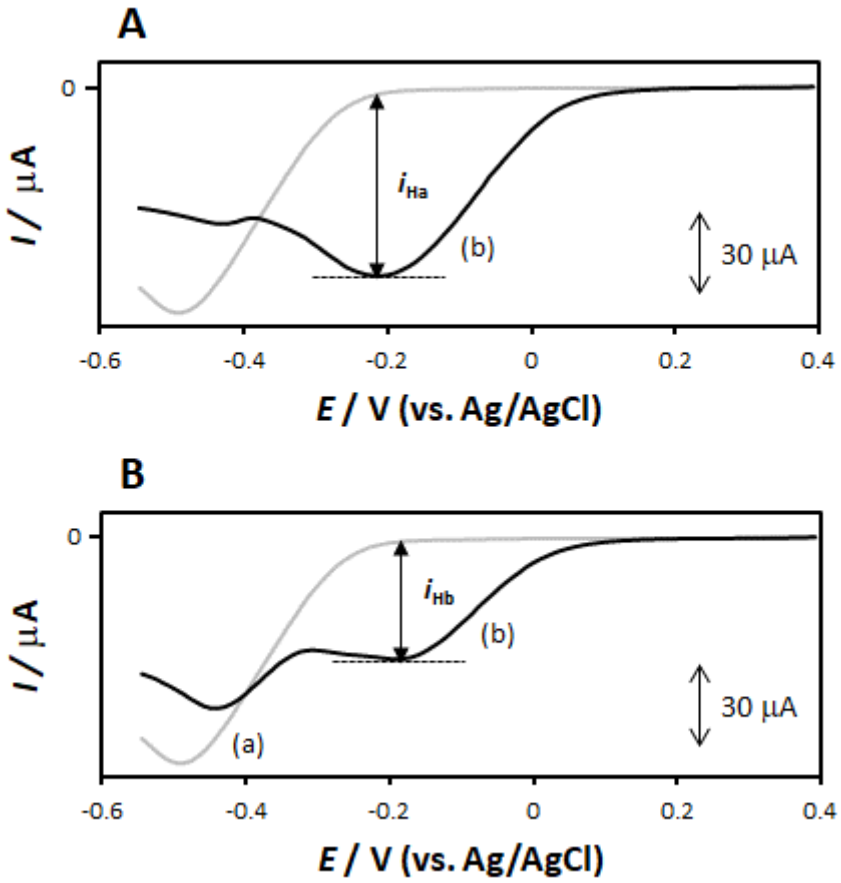



**Figure S4.** Voltammograms of DBBQ in the presence of 7 mM HCl (A) before and (B) after neutralization with Japanese sake measured using the prototype mobile device.

The voltammogram of DBBQ without HCl is shown as a curve (a), i.e. blank, and that with HCl is shown as a curve (b) in each figure. The $i_{Ha}$ means the current of the prepeak height of DBBQ with 7 mM HCl, and the $i_{Hb}$ means the current of the prepeak height of DBBQ after Japanese sake is neutralized with 7 mM HCl. The scan rate was set at 20 mV $s^{-1}$.