Electronic Supplimentary

Implementation of conductivity cell electrode as ion chromatographic detector

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Table S1 Specification of conductivity cell electrode.

Specifications	
Product name	3574-10C Conductivity Cell (Flow Type)
Manufacturing Company	HORIBA Advanced Techno Co., Ltd.
Cell Constant (cm^{-1})	10
Measurement Range	10 μS/cm to 100mS/cm
Sample Volume Required (mL)	0.25
Temperature Sensor	---
Temperature Range (°C)	0 to 80
Cable Length (m)	1.0
Cell Material	Platinum coated with platinum black, glass body

Table S2 Analytical results of natural mineral water by using CCE and CD. [13]

Natural mineral water	Type of detection equipment	Ion concentraton (mM)							
		SO_4^{2-}	Cl^-	NO_3^-	Na^+	NH_4^+	K^+	Mg^{2+}	Ca^{2+}
Sample 1	CCE	0.142	0.307	0.0523	0.283	—*	0.0218	1.10	2.29
	CD	0.141	0.306	0.0634	0.247	—*	0.0257	1.08	2.20
Sample 2	CCE	0.118	0.162	0.0491	0.527	—*	—**	0.0945	0.226
	CD	0.116	0.148	0.0517	0.482	—*	—**	0.109	0.228
Sample 3	CCE	0.0255	0.164	0.0596	0.272	—*	0.0847	0.107	0.154
	CD	0.0245	0.165	0.0623	0.253	—*	0.0788	0.100	0.156

*Under the detection limit of NH_4^+ (33.1 μM), **Under the detection limit of K^+ (42.5 μM)

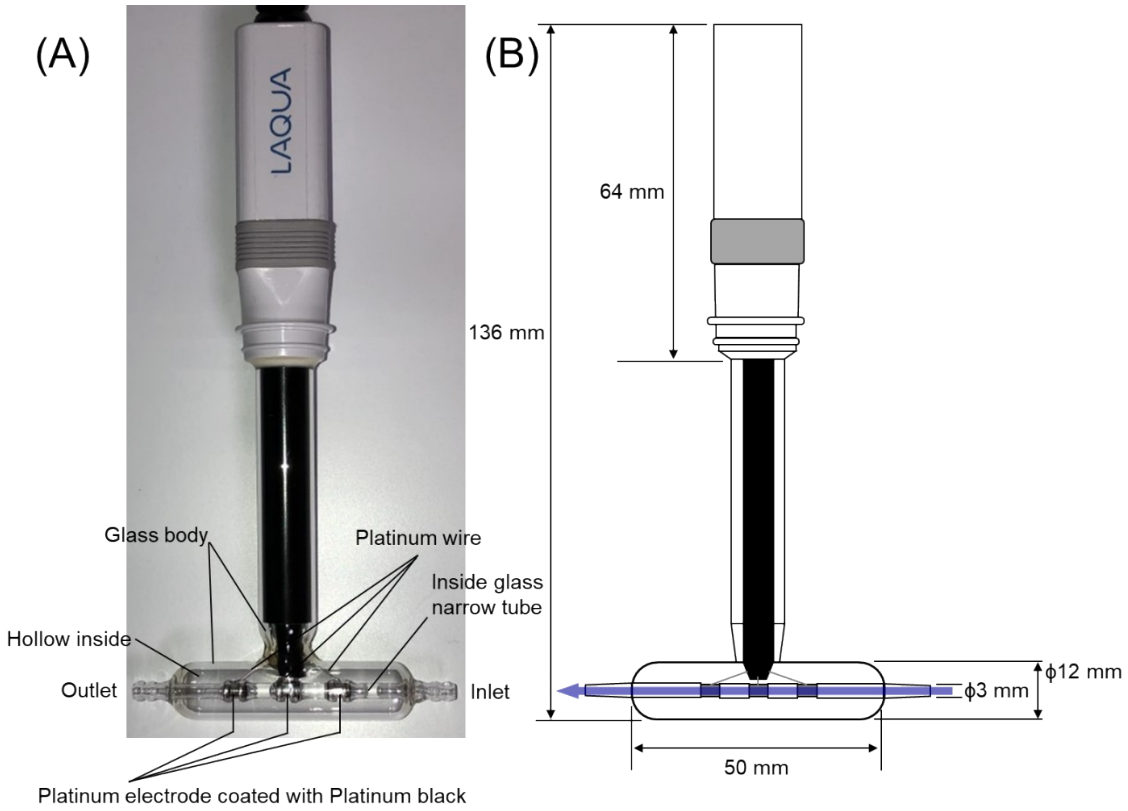

Fig. S1 (A) Detail structure and (B) dimensions of the conductivity cell electrode.

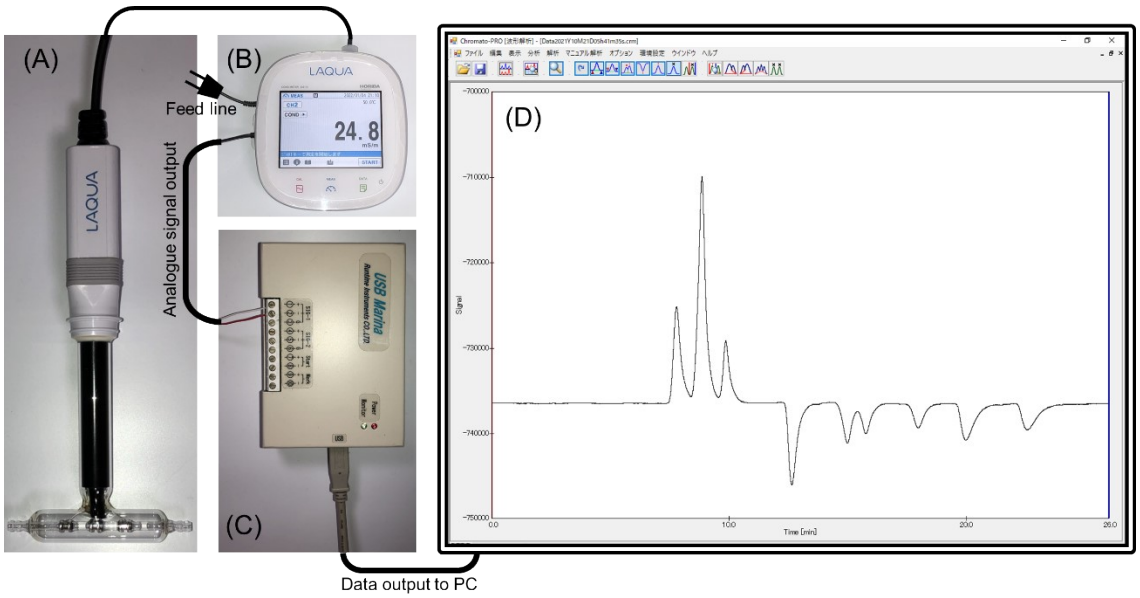

Fig. S2 Data transfer from the conductivity cell electrode to the chromatography workstation. (A) Conductivity cell electrode (LAQUA 3574-10C, Horiba Ltd., Kyoto, Japan), (B) conductivity cell electrode monitor (COND METER DS-72, Horiba Ltd., Kyoto, Japan), (C) analogue signal receiver (USB Marina, Runtime Instruments, Co. Ltd., Tokyo, Japan), and (D) chromatography workstation (Chromato-PRO, Runtime Instruments, Co. Ltd., Tokyo, Japan).