

Electronic Supplementary Information

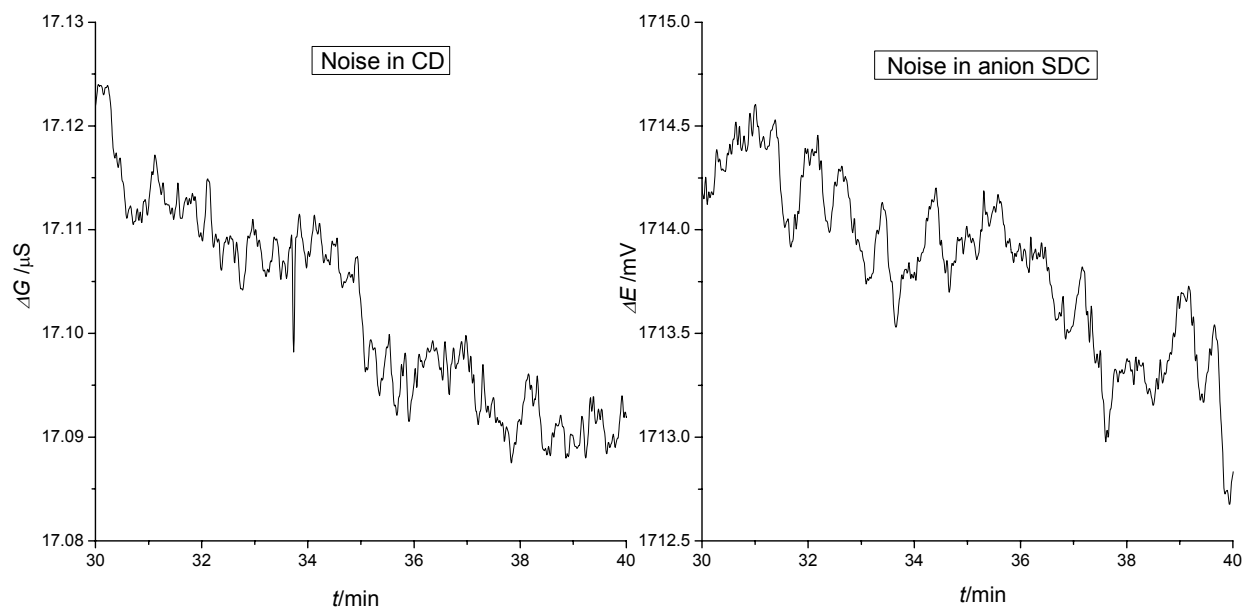


Fig. S1 Noise levels in an anion SDC and a Dionex CD, respectively.

To demonstrate the anion SDC's efficient suppression capability, a Dionex CD was connected after the SDC to simultaneously monitor the baseline responses in both detectors. A suppression current of 35 mA was applied to the suppression chamber for 40 min and then switched off for another 60 min, and another set was repeated. An increased voltage response (detection current was set at 2.0 μA) and correspondingly a decreased conductivity background were obtained immediately when the suppression current was applied, as shown in Fig. S2. In just 10 min, an eluent of 3.5 mM $\text{Na}_2\text{CO}_3/1.0$ mM NaHCO_3 was thoroughly suppressed to a conductivity response of ~ 15.5 $\mu\text{S}/\text{cm}$. A conductivity response of ~ 17.0 $\mu\text{S}/\text{cm}$ (the suppression current was set at 50 mA) was observed when the SDC was replaced with a Dionex ASRS suppressor.

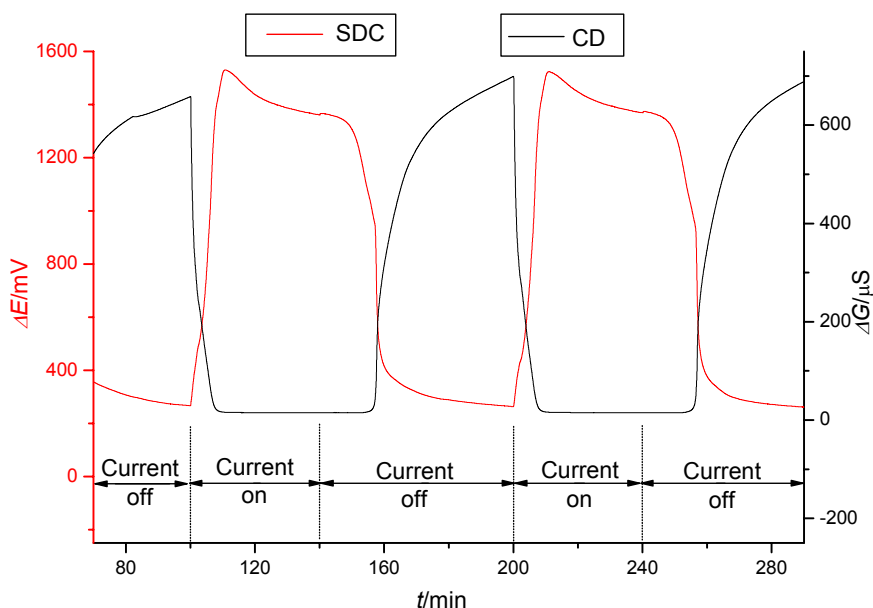


Fig. S2 Baseline responses derived from an anion SDC and a Dionex CD (connected in series), respectively, to a programmed suppression current on-off procedure.

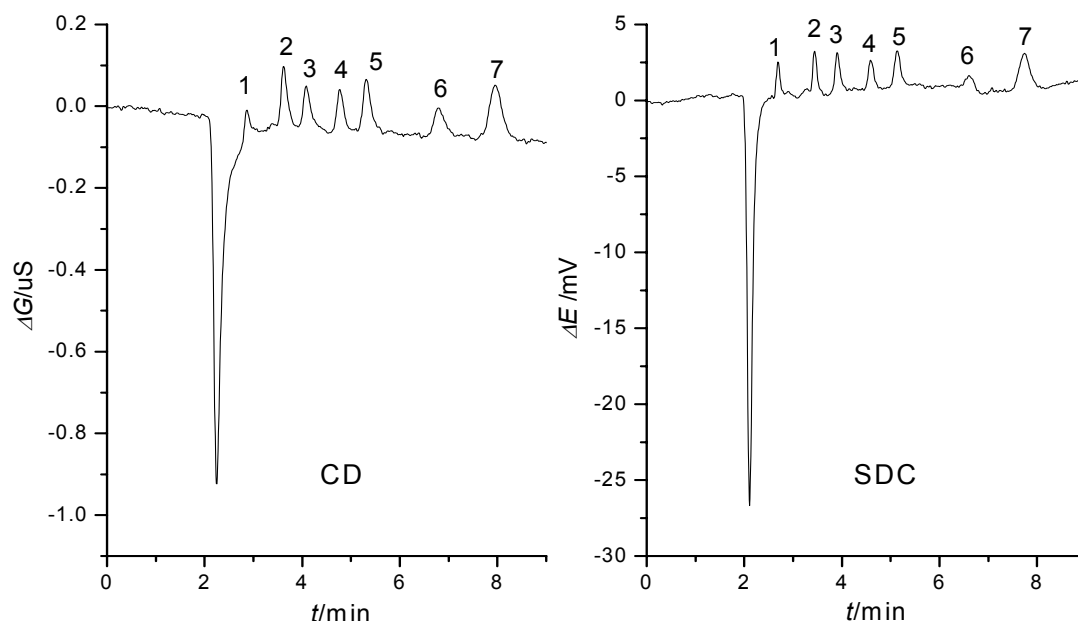


Fig. S3 Chromatographic responses derived from an anion SDC and a Dionex CD, respectively, to a same sample containing seven anions in low concentrations.

Column: AS14; suppressor: ASRS (for CD); eluent: 3.5 mM Na₂CO₃/1.0 mM NaHCO₃; suppression current: 40 mA; detection current: 2.0 μA (for SDC); flow rate: 1.2 mL/min; injection volume: 25 μL; Peaks: 1. F⁻, 0.050 mg/L; 2. Cl⁻, 0.10 mg/L; 3. NO₂⁻, 0.15 mg/L; 4. Br⁻, 0.25 mg/L; 5. NO₃⁻, 0.25 mg/L; 6. PO₄³⁻, 0.40 mg/L; 7. SO₄²⁻, 0.30 mg/L.

Table S1 Detection limits of seven anions derived from an anion SDC and a Dionex CD, respectively, in an anion suppressed IC system.

Detector	F ⁻ (mg/L)	Cl ⁻ (mg/L)	NO ₂ ⁻ (mg/L)	Br ⁻ (mg/L)	NO ₃ ⁻ (mg/L)	PO ₄ ³⁻ (mg/L)	SO ₄ ²⁻ (mg/L)
SDC	0.013	0.022	0.033	0.077	0.063	0.25	0.073
CD	0.026	0.027	0.056	0.093	0.076	0.22	0.086

The same chromatographic conditions as that in Fig. S3.