Supporting information

Nonwoven-fabric-based microfluidic devices for solution viscosity measurements

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1.

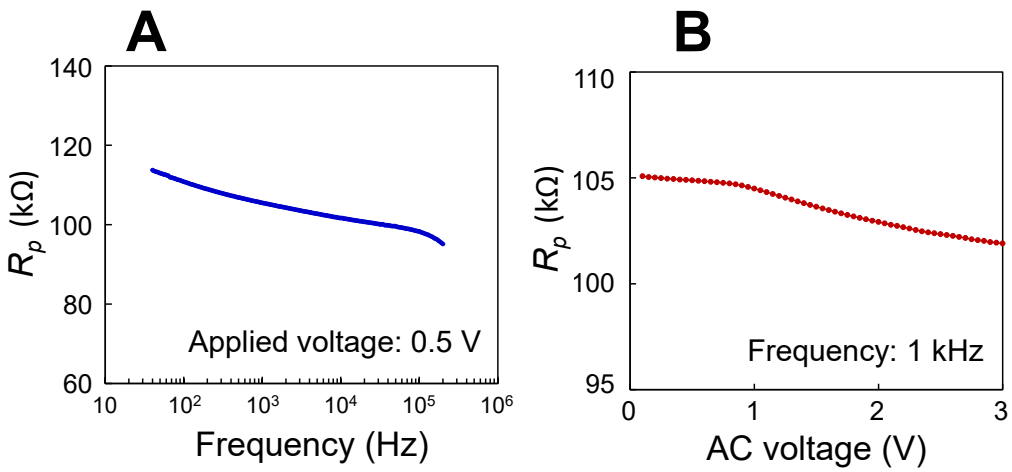

Fig. S1 *Rp* of saline solution in a flow channel with a channel length of 5 mm and width of 2 mm under different AC voltage application conditions; dependence of *Rp* (A) at the frequency of 40–2 kHz (effective AC voltage is 0.5 V) and (B) with AC voltage of 0.1–3 V at 1 kHz.

2. The AC resistance *Rp* of Ch.1 was measured with different concentrations of sodium chloride solution, applying 1 kHz and an AC effective voltage of 0.5 V. Measurements were made on three devices from different lots and these results are shown in Table S1, with the mean values and standard deviation; Fig. S2 shows the values of *Rp* at different sodium chloride concentrations. Errors are shown as standard deviations and the error values are within the size of the plots for 0.3–1.1 wt%.

Table S1 η_{dP} and Ch. 1 resistance measured with three devices at different concentrations of sodium chloride solution.

NaCl (wt%)	η_{dP} (mPa·s)	*Rp* of Ch.1 (MΩ)			Average (MΩ)	Standard deviation (MΩ)
		n=1	n=2	n=3		
0.1	(0.891)*)	2.59	1.83	2.00	2.14	0.325
0.2	(0.891)*)	0.840	1.10	0.933	0.956	0.106
0.3	(0.891)*)	0.612	0.599	0.654	0.622	0.0234
0.6	(0.891)*)	0.406	0.403	0.401	0.403	0.00179
0.7	0.878	0.356	0.383	0.324	0.354	0.0243
0.8	0.884	0.323	0.301	0.324	0.316	0.0109
0.9	0.882	0.213	0.223	0.239	0.225	0.0107
1.0	0.869	0.267	0.242	0.264	0.258	0.0109
1.1	0.882	0.214	0.185	0.159	0.186	0.0224

*) The viscosities at sodium chloride concentrations of 0.1-0.6 wt% in Fig. 4D were substituted by the values for pure water; the values at 0.7-1.1 wt% were measured.

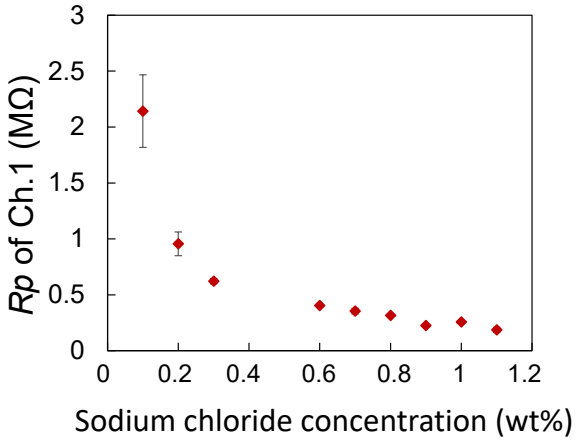

Fig. S2 *Rp* of Ch.1 at different concentrations of sodium chloride solution.