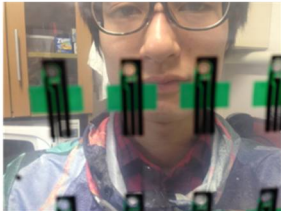


Supplementary Materials Figure S1

Features and advantages of screen printed electrodes



Mass productive, low cost, disposable



Transparent PET

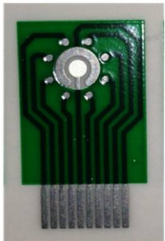


Paper

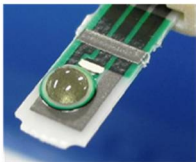
Variety of material substrates



A large number of micro chambers (nL-pL) on the electrode



Eight working electrodes



One drop retention type



Small PCR tube

Supplementary Materials Table S1

Comparison between electrochemical and culture results regarding estimate of MRSA number in clinical samples [19]

Sample	Estimated MRSA number(cells/mL)	Culture results
A	3.8×10^5	++
B	Negative	-
C	1.0×10^5	+
+: < 100 colonies /plate, ++: 100-500 colonies/plate, +++: 500> colonies /plate		

Supplementary Materials Table S2

Electrochemical RT-LAMP tests with patient samples

Patient sample	Immunochromatography	RT-LAMP	Patient sample	Immunochromatography	RT-LAMP
T1	(B+)	(B+)	M53	(-)	(-)
T2	(-)	(-)	M54	(-)	(-)
T3	(-)	(-)	M55	(-)	(-)
T6	(B+)	(-)	M57	(-)	A/H3N2+
T14	(-)	(-)	M64	(-)	(-)
T15	(A+)	A/H3N2+	M65	(-)	(-)
T16	(-)	(-)	M66	(-)	A/H3N2+
T17	(-)	(-)	M68	(-)	(-)
T18	(-)	(-)	M69	(-)	A/H3N2+
T20	(-)	(-)	M70	(-)	(-)
T22	(-)	(-)	M71	(A+)	A/H3N2+
M1	(-)	(-)	M72	(-)	(-)
M8	(-)	(-)	U1	(A+)	A/H3N2+
M10	(-)	(-)	U2	(A+,B+)	A/H3N2+, B+
M11	(-)	(-)	U3	(-)	(-)
M12	(-)	(-)	U4	(-)	A/H3N2+
M21	(-)	(-)	U6	(-)	(-)
M26	(-)	(-)	U8	(-)	(-)
M40	(-)	(-)			
M42	(-)	(-)			
M43	(-)	(-)			
M45	(-)	(-)			
M46	(-)	(-)			
M47	(-)	(-)			
M51	(-)	(-)			
M52	(-)	A/H3N2+(RT-PCRでもA+)			

Yellow boxes indicated negative by immunochromatography and positive by electrochemical RT-LAMP

Supplementary Materials Table S3

Apolipoprotein gene (ApoE) polymorphism and risk of Alzheimer disease [22]

Genotypes	SNP positions		Nucleotides				(Relative Risk of Onset)
	334 (Cys112Arg)	472 (Arg158Cys)	334		472		
			T	C	T	C	
E 2/2	—T—	—T—	+	—	+	—	(0.6)
E 2/3	—T—	—T—	+	—	+	—	
	—T—	—C—					
E 2/4	—T—	—T—	+	+	+	+	(3.2)
	—C—	—C—					
E 3/3	—T—	—C—	+	—	—	+	(1.0)
	—T—	—C—					
E 3/4	—T—	—C—	+	+	—	+	(3.2)
	—C—	—C—					
E 4/4	—C—	—C—	—	+	—	+	(11.6)
	—C—	—C—					

Supplementary Materials Table S4

Electrochemical results with real human samples [22]

Cys112Arg (T/T)				Cys112Arg (C/C)				Arg158Cys (T/T)				Arg158Cys (C/C)				ApoE genotype
Anodic peak/nA (SD)		DNA detected ^a		Anodic peak/nA (SD)		DNA detected ^a		Anodic peak/nA (SD)		DNA detected ^a		Anodic peak/nA (SD)		DNA detected ^a		
B-C				A-C				E-F				D-F				
1	78.33	2.31	+	95.64	1.55	—		106.75	6.89	—		73.32	2.47	+	E3/E3	
2	73.78	2.06	+	73.29	2.43	+		102	3.605	—		80.36	1.71	+	E3/E4	
3	79.6	1.59	+	69.95	2.94	+		98.33	1.29	—		77.22	2.43	+	E3/E4	
4	76.67	1.155	+	79.76	1.763	+		103.56	2.157	—		68.67	2.58	+	E3/E4	
5	73.77	3.276	+	69.62	2.44	+		109.4	1.357	—		58.5	1.87	+	E3/E4	
6	72.45	2.52	+	78.99	1.3	+		101.5	2.871	—		77.5	0.619	+	E3/E3	
7	73.47	2.64	+	81.31	0.814	+		80.315	1.96	+		75.87	3.85	+	E2/E4	
8	80.98	0.541	+	98.45	2.61	—		102.93	3.42	—		65.86	1.143	+	E3/E3	
9	77.24	3.19	+	75.11	0.88	+		106.26	1.686	—		72.26	3.159	+	E3/E4	
10	75.51	1.52	+	76.02	1.82	+		68.28	1.91	+		70.43	6.1	+	E2/E4	