

An electrochemical DNA sensor for ultrasensitive detection of ARID1a targeting PD-1 checkpoint inhibitor immunological response

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Table S1. Synthetic oligonucleotide sequences in this study.

Nucleotide name	Sequence (5'→3')
PNA	Bio-Cys-O-ATC-ATC-CTG-ACT-GGC-ATC-CGG
Target DNA	CCG-GAT-GCC-AGT-CAG-GAT-GAT
Single-base mismatch	CCG-GAT-GCC-GGT-CAG-GAT-GAT
Three-base mismatch	CCG-GAT-GCC-GGT-CTG-GTT-GAT
Noncomplementary	GGC-TGA-GCC-GAC-GGC-ACT-G

Table S2. Reproducibility of the electrochemical detection of ARID1a.

ARID1a (pM)		0.01	1	100
RSD (%)	Intra-assay	3.97	3.22	3.03
	Inter-assay	4.07	4.22	2.95

Table S3. Recovery of ARID1a in human serum samples.

Samples	Added	Found*	Recovery (%)	RSD (%)
Sample-1	0.01 pM	0.877 pM	87.700	3.778
Sample-2	1 pM	0.998 pM	99.800	3.012
Sample-3	100 pM	101.21 pM	101.21	2.249

Samples (1-3) were from healthy people.

*The values shown here are the average values from five measurements.

Table S4. Comparison of the analytical performance of different DNA sensor for the determination of target DNA.

Method of signal amplification	Linear ranges	Detection Limits	References
SA-ALP/p-APP/TCEP	0.01pM-5 pM	3 fM	1
ALP/TCEP/p-NP	10 fM-0.1 nM	3.55 fM	2
AAP/TCEP/FcA	1 pM-0.2 nM	0.2 pM	3
Ru(NH ₃) ₆ Cl ₃ /MPA/Cys	10 fM-1 nM	2.8 fM	This work

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