

Supplementary information-Fugures

Supplementary information Figures

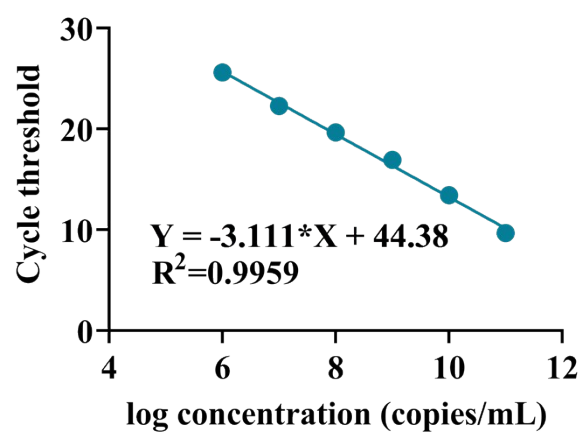


Fig. S1 The standard curve for the fluorescence quantitative qPCR detection of pCANTAB5E.

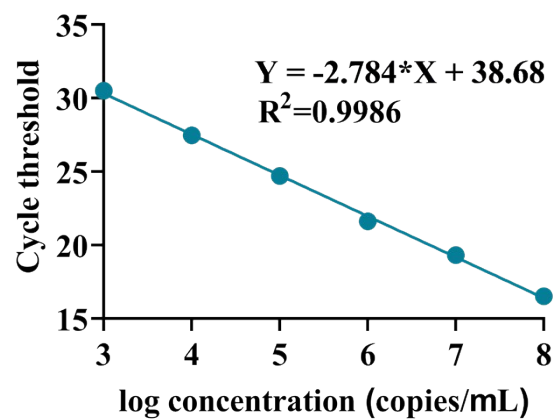


Fig. S2 The standard curve for the fluorescence quantitative qPCR detection of *S. enteritidis* C50041.

Supplementary information-Tables

Table S1 Primers for constructing and verifying the *S. enteritidis* phage single-chain antibody library.

Amplification of VH and VL primers:	
VH1B	AGGTSMARCTGCAGSAGTWGG
VH1F	TGAGGAGACGGTGACCGTGGTCCCTTGCCCC
VK2B	GACATTGAGCTCACCCAGTCTCCA
MJK1F	CCGTTTGATTTCAGCTTGGTGCC
MJK2F	CCGTTTATTTCAGCTTGGTCCC
MJK4F	CCGTTTATTTCCTCACTTTGTCCC
MJK5F	CCGTTTCAGCTCCAGCTTGGTCCC
SOE-PCR splicing primers of single-chain antibody variable region gene fragment (scFv):	
Linker	GGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTGGAGGCGGTTTCAGGCGGAGGTGGTCTGGCG GTGGCGGATCGGACATTGAGCTCACCCAGTCTCCA
VH-F-Sfi I	GTCCTCGCAACTGCGGCCAGCCGCCATGGCCAGTSMARCTGCAASAGTTWGG
VL-RI-Not I	GGAGTCATTCTGCGGCCGACGTTTGATTTCAGCTTGGTGCC
VL-R2-Not I	GAGTCATTCTGCGGCCGACGTTTATTTCAGCTTGGTCCC
VL-R3-Not I	GAGTCATTCTGCGGCCGCCGTTTGATTTCAGCTTGGTCCC
VL-R4-Not I	GAGTCATTCTGCGGCCGCCGTTTCAGGTCCAGCTTGGTCCC
Constructing a quantitative Real-Time PCR (qPCR) standard curve:	
p5E-F	TTGTTGCCGGAAGCTAG
p5E-R	CTGACAACGATCGGAGGA
invA-F	CTTCTCTATTGTCACCGTGGTCC
invA-R	CATCGCACCGTCAAAGGAACC
Amplification primers of single-chain antibody scFv-4 gene:	
4-EcoR I-F	CCGGAATCCCGTTTGATTTCAGCTTGGTC
4-Xho I-R	CCGCTCGAGATGGCCAGGTGCAACTG

Table S2 Phage-ELISA within-lot repeatability validation

Sample	OD ₄₅₀			Average	Standard Deviation	Coefficient
C50041-1	1.241	1.265	1.173	1.226	0.039	3.18%
C50041-2	1.369	1.451	1.492	1.437	0.051	3.56%
C50041-3	1.352	1.401	1.273	1.342	0.053	3.93%
J06-1	0.726	0.841	0.792	0.786	0.047	5.99%
J06-2	0.879	0.92	0.931	0.910	0.022	2.46%
J06-3	1.029	0.904	0.921	0.951	0.055	5.82%
J15-1	0.759	0.839	0.826	0.808	0.035	4.34%
J15-2	0.892	0.783	0.768	0.814	0.055	6.79%
J15-3	0.813	0.911	0.782	0.835	0.055	6.58%

Table S3 Batch-to-batch repeatability validation of phage-ELISA

Sample	OD ₄₅₀			Average	Standard Deviation	Coefficient
C50041-1	1.315	1.365	1.273	1.318	0.038	2.85%
C50041-2	1.269	1.351	1.299	1.306	0.034	2.59%
C50041-3	1.328	1.511	1.375	1.405	0.078	5.52%
J06-1	0.835	0.734	0.722	0.764	0.051	6.64%
J06-2	0.828	0.921	0.831	0.860	0.043	5.02%
J06-3	1.052	0.964	0.921	0.979	0.055	5.57%
J15-1	0.819	0.791	0.826	0.812	0.015	1.86%
J15-2	0.792	0.835	0.781	0.803	0.023	2.90%
J15-3	0.858	0.901	0.812	0.857	0.036	4.24%

Table S4 Test results of clinical samples

Farm	Number of sample	qPCR positive number	qPCR positive rate	C50041-scFv-4 positive number	C50041-scFv-4 positive rate
1	18	16	88.9%	15	83.3%
2	20	19	95%	20	100%
3	12	12	100%	11	91.7%
4	14	0	0%	0	0%
Total	64	47	73.4%	46	71.8%