

# DNAzyme-Amplified Electrochemical Biosensor Coupled with pH Meter for $\text{Ca}^{2+}$ Determination at Variable pH Environments

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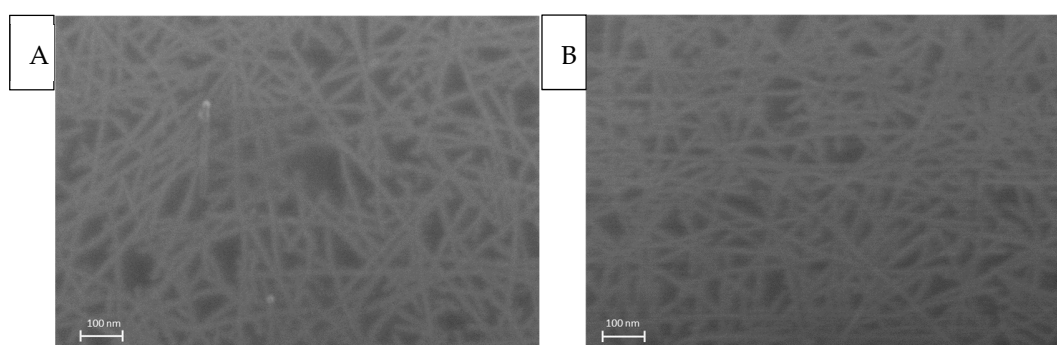


Figure S1. SEM images of GCE/SWNT(A) and GCE/SWNT/DNAzym(B)

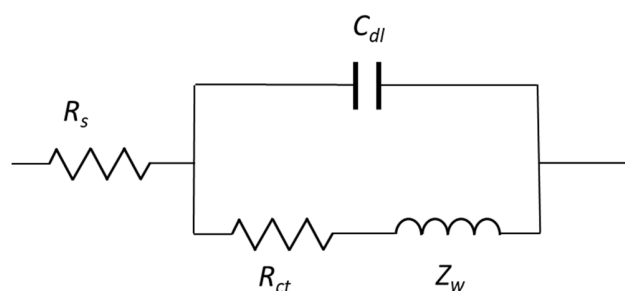
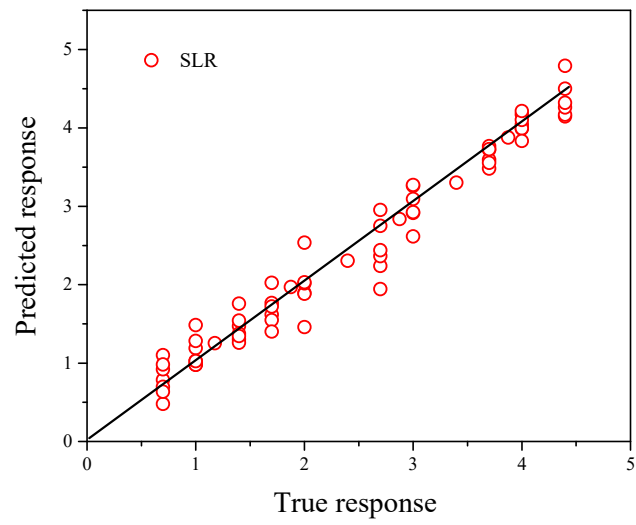
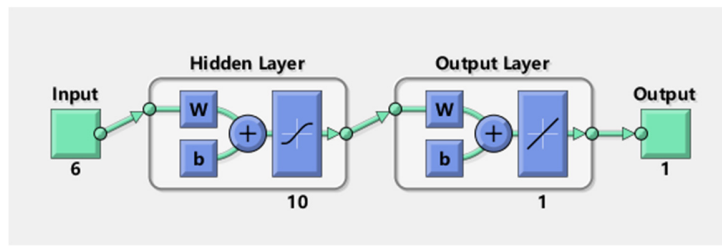


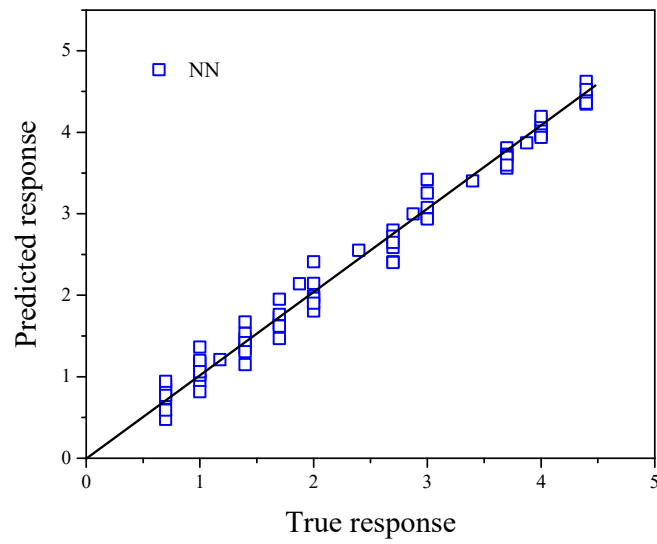
Figure S2. Randles equivalent circuit



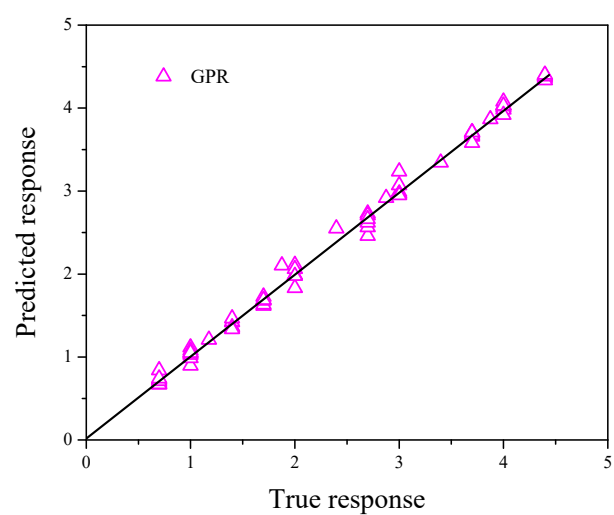
**Figure S3.** Predicted  $\text{Ca}^{2+}$  concentration against true  $\text{Ca}^{2+}$  concentration using the stepwise linear regression.



**Figure S4.** Overall structure of the NNF model with the LM algorithm.



**Figure S5.** Predicted  $\text{Ca}^{2+}$  concentration against true  $\text{Ca}^{2+}$  concentration using the established NNF model.



**Figure S6.** Predicted Ca<sup>2+</sup> concentration against true Ca<sup>2+</sup> concentration using the established GPR model

**Table S1.** Related indexes in dairy blood

Metal	Ca	Na	K	Mg	Zn	Cu	Fe	Fe	Cr
Total Value (mM)	2.1-2.8	135-148	4.0-5.8	0.7-1.2	0.012-0.018	2.3-3.1	12.8-42.9	12.8-42.9	-