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Highly Stable Nanosized Lucigenin@PS-COOH: A Robust Chemiluminescence System for Sensitive cTnT Analysis

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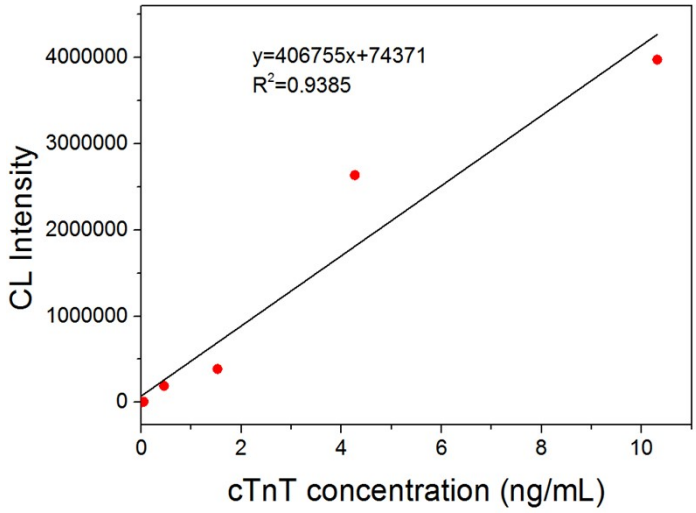

Fig S1. Standard curve of chemiluminescence (CL) intensity vs. the concentration of the cTnT calibrated substance using AE.

Fig S2. UPPER CycloneSun chemiluminescence automatic immunoanalyzer.

Table S1 Chemiluminescence (CL) intensities of lucigenin@PS-COOH and acridinium ester in response to increasing test values of cTnT calibrated substance.

	cTnT calibrated substance (ng/mL)	CL intensity of lucigenin@PS-COOH (a.u.)	CL intensity of acridinium ester (a.u.)
1	0	1106	813
2	0.046	11992	7864
3	0.454	151274	191368
4	1.523	596965	387524
5	4.269	1817255	2636882
6	10.315	4772407	3976754

Table S2 Repeated measurements of the cTnT quality control substance used to determined assay sensitivity (0.32 ng/L) and coefficient of variation (CV, 7.77%).

	Test (ng/mL）
1	0.28
2	0.31
3	0.29
4	0.28
5	0.33
6	0.32
7	0.31
8	0.35
9	0.28
10	0.30
Average	0.305

Table S3 Comparation of detection kit and this work

	detection limit	calibration range, R^2	CV
detection kit	⩽ 0. 3 ng/mL	⩾ 0.9900	⩽ 10%
This work	0.25 ng/mL	0.9988	7. 77%

Table S4 Comparation of Longhua Hospital results and this work for 50 clinical serum samples. The difference for each sample was within 15%, and the overall difference did not exceed 15%.

Sample	Longhua (ng/mL)	This work (ng/mL)	Comparation
1	7. 985	7. 707	103. 60%
2	3. 540	3. 264	108. 47%
3	6. 547	6. 239	104. 94%
4	5. 018	4. 707	106. 61%
5	6. 321	6. 010	105. 17%
6	5. 234	4. 921	106. 36%
7	7. 540	7. 250	104. 00%
8	5. 497	5. 183	106. 06%
9	4. 597	4. 292	107. 12%
10	2. 750	2. 512	109. 49%
11	4. 026	3. 733	107. 84%
12	7. 005	6. 704	104. 49%
13	1. 057	0. 971	108. 90%
14	8. 295	8. 027	103. 34%
15	1. 689	1. 531	110. 29%
16	2. 526	2. 301	109. 75%
17	4. 506	4. 202	107. 23%
18	4. 521	4. 217	107. 21%
19	2. 451	2. 231	109. 84%
20	4. 698	4. 391	106. 99%

21	1.987	1.803	110.23%
22	3.009	2.756	109.17%
23	3.210	2.948	108.91%
24	0.889	0.826	107.66%
25	4.351	4.050	107.42%
26	1.240	1.131	109.67%
27	8.015	7.738	103.58%
28	0.705	0.670	105.28%
29	1.058	0.971	108.90%
30	0.594	0.577	102.92%
31	0.720	0.682	105.53%
32	0.654	0.627	104.31%
33	0.447	0.457	97.84%
34	0.689	0.656	104.99%
35	0.508	0.506	100.31%
36	0.298	0.338	88.08%
37	0.254	0.304	83.50%
38	1.241	1.132	109.67%
39	0.702	0.667	105.22%
40	0.825	0.771	106.99%
41	0.775	0.729	106.36%
42	0.651	0.624	104.25%
43	0.334	0.367	91.11%
44	0.497	0.497	99.91%
45	0.608	0.589	103.27%
46	2.999	2.747	109.18%
47	1.442	1.310	110.10%
48	0.278	0.323	86.13%
49	0.560	0.549	101.99%
50	0.560	0.549	101.99%