

## Supplementary Material

### A molecular lateral flow assay for SARS-CoV-2 quantitative detection

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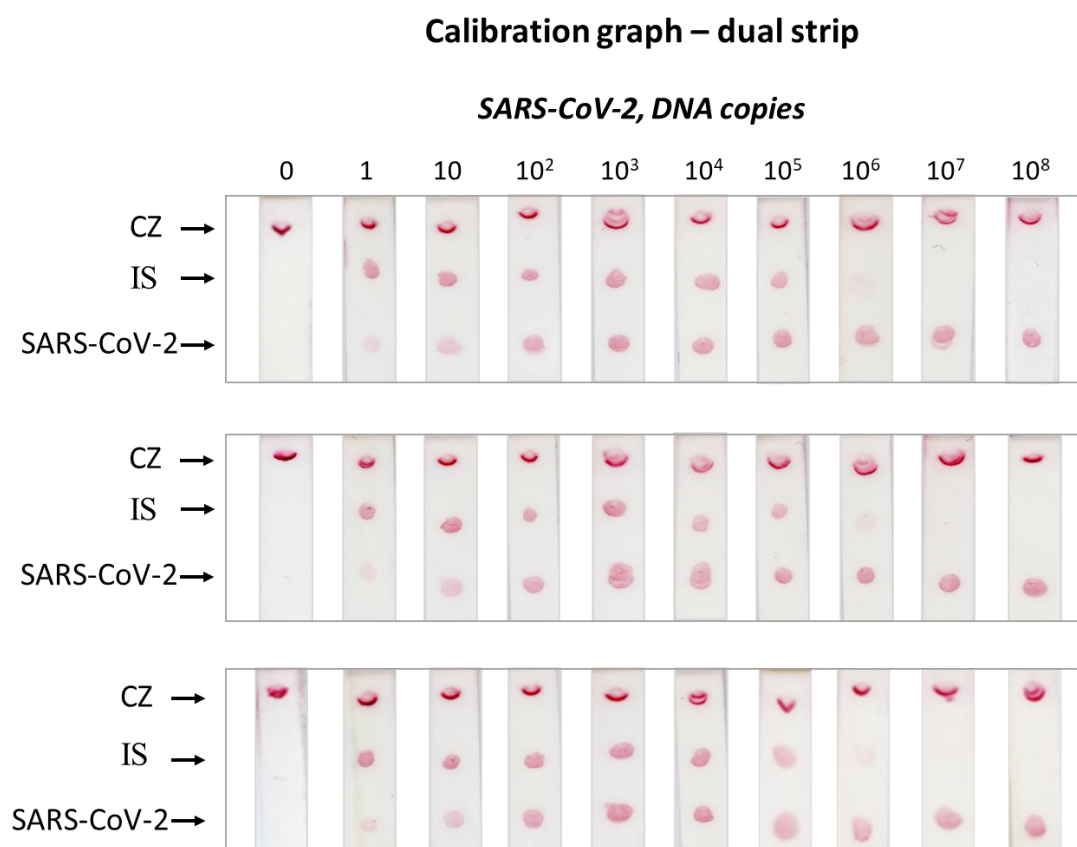
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**Figure S1.** Calibration graphs using the dual molecular LFA (n=3). Different amounts of plasmid copies for SARS-CoV-2 DNA sequence, ranging from 1 to 10<sup>8</sup> copies, were amplified by PCR in the presence of 10<sup>3</sup> DNA copies of IS. Both sequences are then detected and simultaneously identified by the dual strip test. The ratio of the signal for SARS-CoV-2 over the IS is plotted versus the plasmid copies of SARS-CoV-2. IS: internal standard; CZ: control zone.

**Table S1.** Contains the densitometric analysis for different concentrations of the target for SARS-CoV-2 and the ratio of the target versus the internal standard (IS), the mean value and the standard deviation (SD) (n=3). The value of the blank sample has been subtracted from all values.

| Copies          | SARS-CoV-2 |      |      | Mean±SD  | SARS-CoV-2/ IS |      |      | Mean±SD   |
|-----------------|------------|------|------|----------|----------------|------|------|-----------|
| 1               | 8.3        | 8.6  | 11.1 | 9.3±1.6  | 0.2            | 0.2  | 0.2  | 0.20±0.02 |
| 10              | 17.5       | 18.1 | 19.7 | 18.4±1.2 | 0.4            | 0.4  | 0.4  | 0.38±0.04 |
| 10 <sup>2</sup> | 32.8       | 32.6 | 35.4 | 33.6±1.6 | 0.8            | 0.8  | 0.8  | 0.82±0.02 |
| 10 <sup>3</sup> | 46.0       | 44.0 | 47.2 | 45.7±1.6 | 1.1            | 0.9  | 1.0  | 0.99±0.08 |
| 10 <sup>4</sup> | 36.8       | 36.3 | 48.4 | 40.5±6.8 | 1.1            | 1.3  | 1.1  | 1.17±0.09 |
| 10 <sup>5</sup> | 41.5       | 41.1 | 39.4 | 40.7±1.1 | 1.3            | 1.4  | 1.3  | 1.34±0.05 |
| 10 <sup>6</sup> | 36.9       | 44.7 | 35.8 | 39.1±4.8 | 4.8            | 5.1  | 3.9  | 4.6±0.5   |
| 10 <sup>7</sup> | 38.0       | 38.9 | 43.8 | 40.2±3.1 | 38.5           | 30.8 | 20.8 | 30.0±8.8  |
| 10 <sup>8</sup> | 49.2       | 47.1 | 50.1 | 48.8±1.6 | 87.7           | 65.6 | 70.9 | 74.8±11.5 |

### Comparison of quantitative dual strip test with real-time PCR

For comparison with the dual strip test, we performed real-time PCR to the same samples using SYBR-Green I for the detection. For quantification, we also constructed a calibration curve by serial dilutions of the SARS-CoV-2 plasmid and  $1 \times 10^8$  DNA copies were subjected to PCR, in parallel with the samples. The results from the quantification with the dual LFA and with real-time PCR are presented in Table S2.

**Table S2.** Quantitative data of samples obtained by the quantitative molecular dual LFA and real-time PCR (SYBR-Green I).

| <i>Sample</i> | <i>DNA Copies</i> |                      |
|---------------|-------------------|----------------------|
|               | <i>Dual LFA</i>   | <i>Real-time PCR</i> |
| S18           | negative          | negative             |
| S19           | $1.7 \times 10^3$ | $8.6 \times 10^3$    |
| S20           | $1.1 \times 10^3$ | $5.7 \times 10^3$    |
| S21           | $1.9 \times 10^4$ | $2.5 \times 10^4$    |
| S22           | 52                | 21                   |
| S23           | $1.8 \times 10^3$ | $6.0 \times 10^3$    |
| S24           | $4.1 \times 10^3$ | $9.7 \times 10^3$    |
| S25           | <10               | <10                  |
| S26           | <10               | <10                  |
| S27           | $>10^8$           | $>10^8$              |
| S28           | $>10^8$           | $>10^8$              |
| S29           | $3.4 \times 10^4$ | $7.0 \times 10^4$    |