### Supplementary Table 1. Mean Ct values achieved by all rtPCR assays and the LAMP assay.

| Animal/Sample matrix | rtPCR assay mean Ct value | LAMP |
|----------------------|---------------------------|------|
|                      | King | UPL | VetMAX | tp   |
| Pig 1                |      |     |        |      |
| Fecal swab          | 31.3 | 30.2 | 29.9   | 10:57 |
| Nasal swab          | 27.9 | 26.5 | 26.1   | 09:12 |
| Oral swab          | 27.9 | 27.4 | 27.0   | 08:57 |
| Bone marrow, humerus| 18.2 | 17.8 | 17.2   | 06:57 |
| Bone marrow, rib    | 17.1 | 17.0 | 16.9   | 07:57 |
| Ear biopsy 1        | 29.4 | 29.0 | 28.5   | 10:27 |
| Ear biopsy 2        | 28.7 | 28.1 | 27.8   | 10:27 |
| Ear biopsy 3        | 28.8 | 28.4 | 27.9   | 09:57 |
| Ear biopsy 4        | 29.5 | 29.6 | 29.1   | 10:27 |
| Ear biopsy 5        | 26.9 | 26.5 | 26.3   | 09:27 |
| Ear biopsy 6        | 29.7 | 28.8 | 28.7   | 10:57 |
| Pig 2                |      |     |        |      |
| Fecal swab          | 32.7 | 31.3 | 31.0   | 12:45 |
| Nasal swab          | 29.4 | 28.4 | 27.8   | 11:45 |
| Oral swab          | 32.4 | 32.2 | 31.4   | 14:00 |
| Bone marrow, humerus| 23.8 | 23.7 | 23.3   | 08:15 |
| Bone marrow, rib    | 19.1 | 18.6 | 18.9   | 07:30 |
| Ear biopsy 1        | 31.8 | 30.8 | 30.3   | 12:00 |
| Ear biopsy 2        | 29.7 | 29.4 | 29.3   | 10:30 |
| Ear biopsy 3        | 30.7 | 30.4 | 30.0   | 11:30 |
| Ear biopsy 4        | 29.6 | 29.7 | 29.3   | 10:30 |
| Ear biopsy 5        | 28.7 | 28.5 | 28.3   | 10:30 |
| Ear biopsy 6        | 29.5 | 29.1 | 28.8   | 12:00 |
| Pig 3                |      |     |        |      |
| Fecal swab          | 29.6 | 32.3 | 31.0   | 14:45 |
| Nasal swab          | 23.9 | 26.5 | 25.2   | 11:00 |
| Oral swab          | 23.4 | 27.1 | 25.3   | 11:00 |
| Bone marrow, humerus| 19.3 | 22.2 | 20.4   | 08:30 |
| Test                        | Pig 4       | Pig 5       | Pig 6       |
|-----------------------------|-------------|-------------|-------------|
| Bone marrow, rib            | 21.7        | 19.99       | 19.00       |
| Ear biopsy 1                | 28.6        | 31.20       | 25.82       |
| Ear biopsy 2                | 28.6        | 31.20       | 24.81       |
| Ear biopsy 3                | 27.0        | 27.45       | 27.45       |
| Ear biopsy 4                | 29.3        | 28.61       | 27.90       |
| Ear biopsy 5                | 28.8        | 30.74       | 28.16       |
| Ear biopsy 6                | 27.9        | 30.19       | 28.16       |
| Fecal swab                 | 35.8        | 35.19       | 39.49       |
| Nasal swab                 | 33.1        | 32.49       | 30.34       |
| Oral swab                  | 36.3        | 29.14       | 25.65       |
| Bone marrow, humerus        | 21.87       | 20.22       | 19.00       |
| Bone marrow, rib            | 19.99       | 19.07       | 21.53       |
| Ear biopsy 1                | 31.20       | 26.38       | 25.82       |
| Ear biopsy 2                | 27.45       | 24.81       | 30.34       |
| Ear biopsy 3                | 27.45       | 27.90       | 25.65       |
| Ear biopsy 4                | 27.90       | 28.16       | 19.00       |
| Ear biopsy 5                | 30.27       | 28.53       | 21.53       |
| Ear biopsy 6                | 29.19       | 28.53       | 25.82       |
| Bone marrow, rib            | 35.8        | 35.19       | 36.48       |
| Nasal swab                 | 33.1        | 32.49       | 30.34       |
| Oral swab                  | 36.3        | 29.14       | 25.65       |
| Bone marrow, humerus        | 21.87       | 20.22       | 19.00       |
| Bone marrow, rib            | 19.99       | 19.07       | 21.53       |
| Ear biopsy 1                | 31.20       | 26.38       | 25.82       |
| Ear biopsy 2                | 27.45       | 24.81       | 30.34       |
| Ear biopsy 3                | 27.45       | 27.90       | 25.65       |
| Ear biopsy 4                | 27.90       | 28.16       | 19.00       |
| Ear biopsy 5                | 30.27       | 28.53       | 21.53       |
| Ear biopsy 6                | 29.19       | 28.53       | 25.82       |
| Ear biopsy 1                | 28.6        | 31.1        | 30.62       |
| Ear biopsy 2  | 27.07 | 27.75 | 26.90 | 14:30 |
|-------------|-------|-------|-------|-------|
| Ear biopsy 3 | 29.32 | 30.55 | 29.37 | -     |
| Ear biopsy 4 | 27.78 | 28.91 | 28.14 | 12:00 |
| Ear biopsy 5 | 29.19 | 30.14 | 29.32 | 17:45 |
| Ear biopsy 6 | 30.55 | 31.48 | 30.53 | 16:00 |

Ct = cycle threshold; LAMP = loop-mediated isothermal amplification; rtPCR = real-time PCR; $t_p =$ time to positivity; UPL = Universal Probe Library; VetMAX = VetMAX ASFV qPCR kit; Thermo Fisher.