



**Supplementary Figure S1.** Design and operation of real-time asymmetric five-primer OSD-LAMP. **A.** Schematic of fluorescent one-step strand displacement probes (OSD) for real-time sequence-specific signal transduction of LAMP. **B.** Schematic depicting positions of the OSD probe and the loop primer (LP) on the opposing loops of LAMP amplicons generated from MERS-CoV RNA.