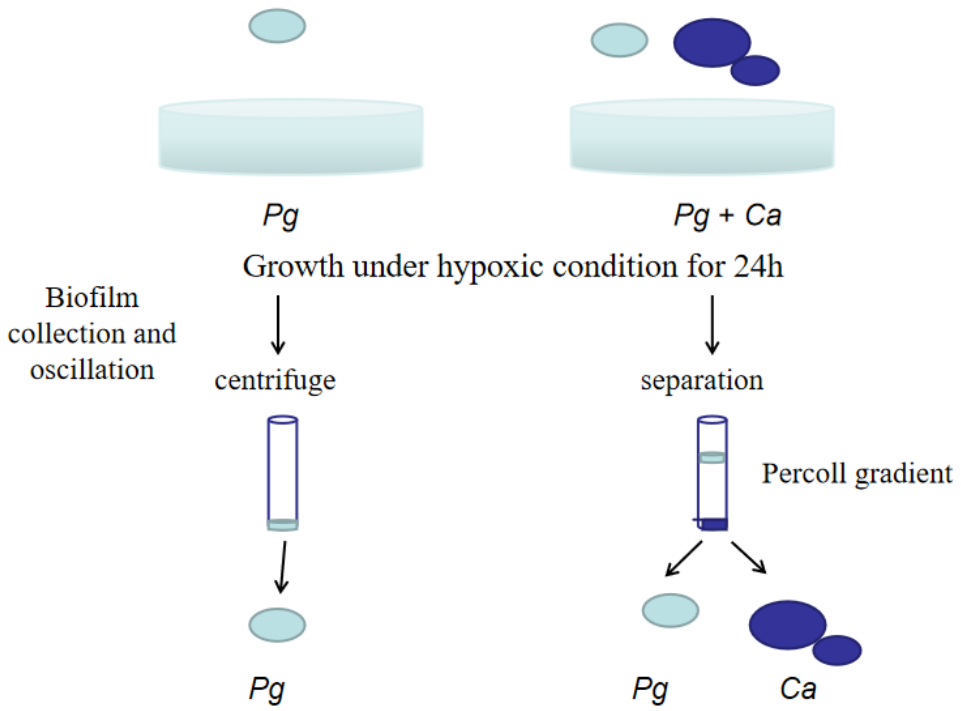
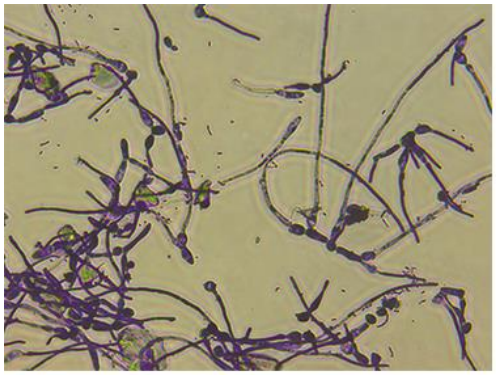
Supplemental Materials

1. *Separation of P. gingivalis and C. albicans*

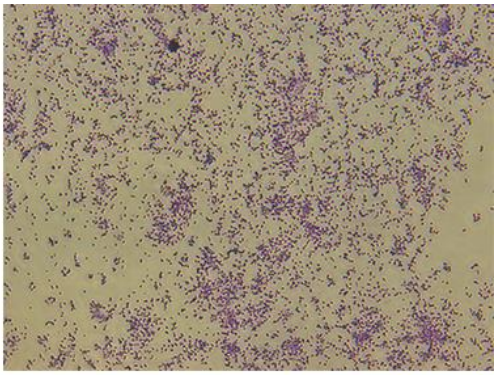
The microbes were separated by Percoll gradient centrifugation (Percoll, Sigma Aldrich, P1644). The four stock solutions of 50, 60, 70 and 80% Percoll were prepared with PBS, and 2ml of each solution was manually layered after wetting the centrifuge tube with FBS. The mixed biofilm of *P. gingivalis* and *C. albicans* was collected, dissolved in 2 ml of ice-cold stop buffer, and ultrasonically oscillated for 10 s. The solution of dual-species biofilm was placed at the top of the gradients, which were centrifuged at 300 ×*g* for 5 min and 8,000 ×*g* for 10 min using a fixed-angle rotor at 4 °C. Finally, the top (*P. gingivalis*) and lower (*C. albicans*) fractions were collected and washed twice with 5ml PBS.



2. *Gram stain of C. albicans and P. gingivalis*



C. albicans



P. gingivalis

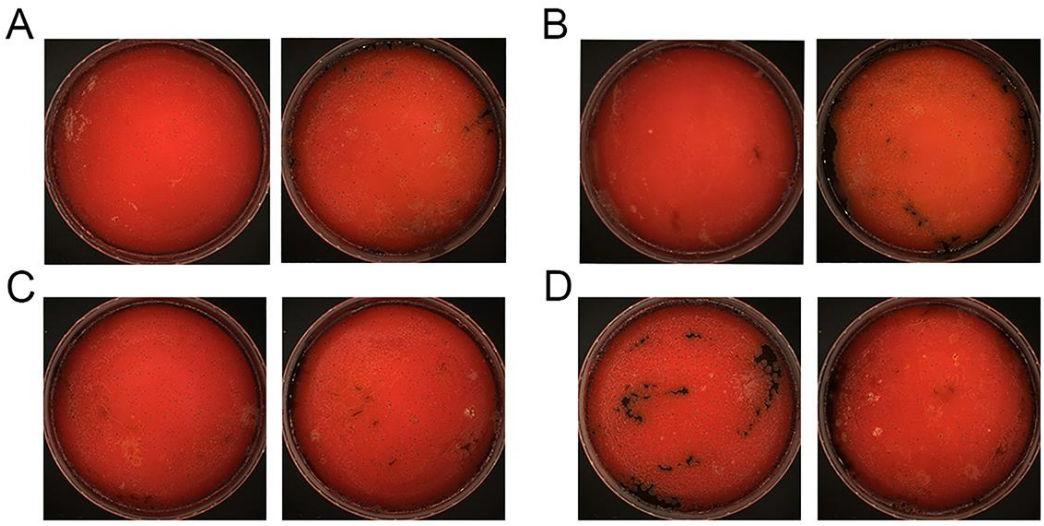
Microoranisms were separated from the dual-species biofilm and stained with Gram. Microscopic images of *C.albicans* (Left) and *P. gingivalis* (Right) were shown above.

3. Statistical data of Candida albicans

In Figure 1A, CFU of ***C. albicans*** decreased at 36h and 48h, with statistical difference （$P < 0.05$）.

Time	Mean ± s.d	P
36h	6.812 ± 0.027	P=0.0299
48h	6.652 ± 0.034	

4. CFU of P. gingivalis after serum treatment



P. gingivalis separated from biofilms were treated in serum and cultured on BHI plates for 7 days. Growth of *P. gingivalis* treated with heat-inactivated serum（left） or serum from healthy volunteers（right）. (A) *P. gingivalis* in dual-species biofilm under low heme condition. (B) *P. gingivalis* in single-species biofilm under low heme condition. (C) *P. gingivalis* in dual-species biofilm under high heme condition. (D) *P. gingivalis* in single-species biofilm under high heme condition.