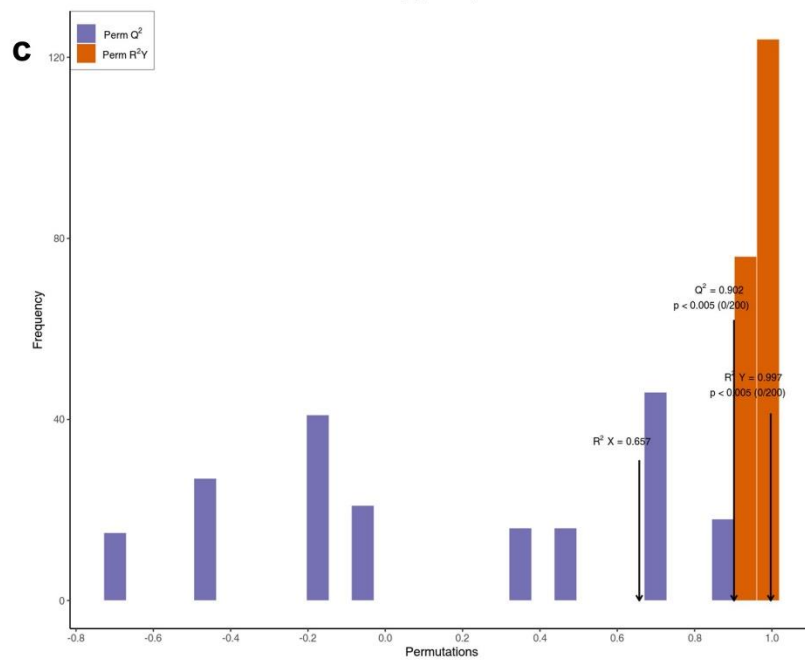
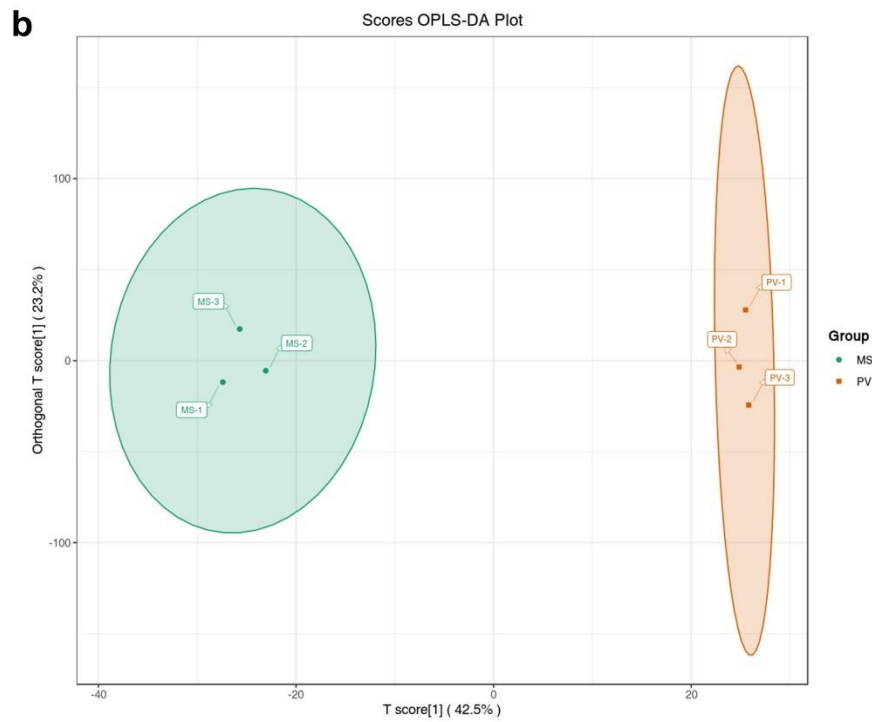
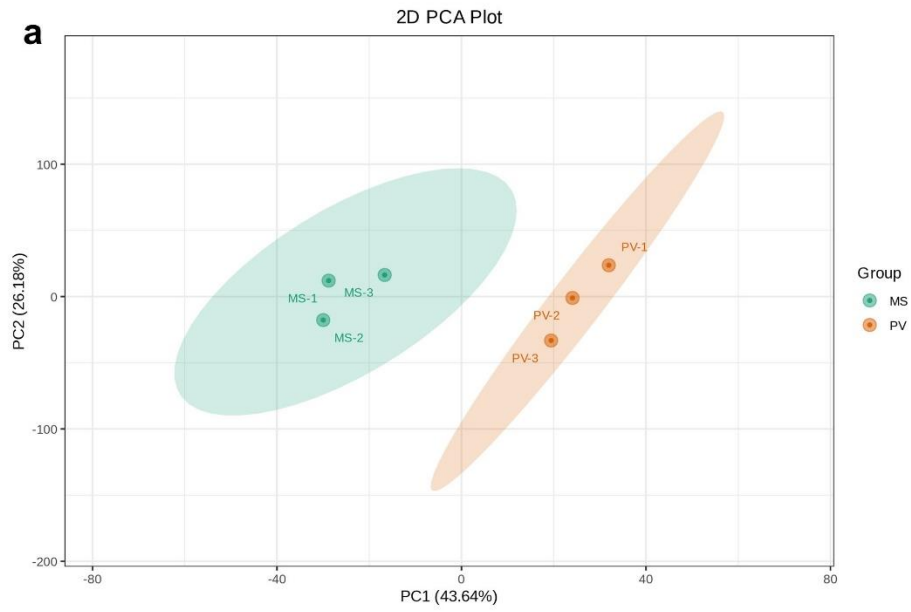
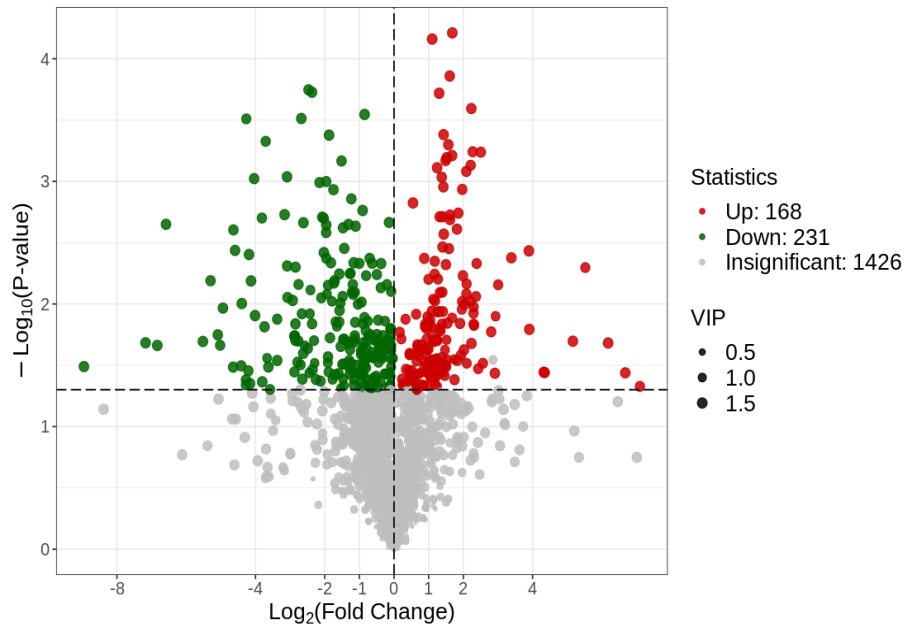


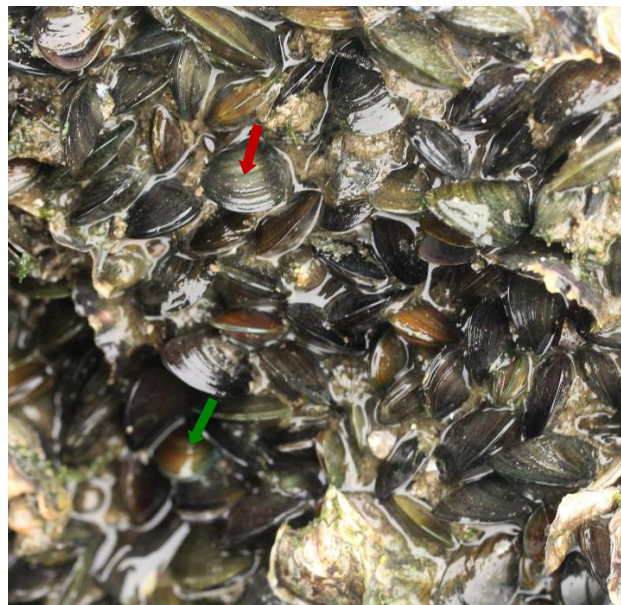
**Figure S1.** (a) Venn diagram of the observed Unigenes in *Mytella strigata* (*M. strigata*) and *Perna viridis* (*P. viridis*). (b) Principal Coordinate analysis (PCoA) of the microbiotas in *M. strigata* and *P. viridis* was generated of the Bray-Curtis distance based on phylum level. MS represented *M. strigata* group. PV represented *P. viridis* group.



**Figure S2.** (a) PCA scatter plot of the metabolite profile in *Mytella strigata* (*M. strigata*) and *Perna viridis* (*P. viridis*). *M. strigata* group was separated from *P. viridis* group. (b) OPLS-DA analyses of the metabolite profile in *M. strigata* and *P. viridis* groups. (c) OPLS-DA model test chart showed good discrimination between the *M. strigata* and *P. viridis* groups,  $R^2X = 0.657$ ,  $R^2Y = 0.997$ ,  $Q^2 = 0.902$ ,  $p < 0.005$ . MS represented *M. strigata* group. PV represented *P. viridis* group.



**Figure S3.** Volcano Plot showed differential metabolites between *Mytella strigata* and *Perna viridis*.



**Figure S4.** *Mytella strigata* (red arrow) and *Perna viridis* (green arrow) co-attached to the same reef.