

**Figure S5**. Concordance of replication shown as the ranges between biological replicate measurements of mRNA abundances (RPKM) values for 4492 genes at each steady-state condition for which species resolved gene expression was analyzed; binary cultivation of *T*. *elongatus* and *M. ruber*. Specific turbidostat steady-state conditions are designated with the following abbreviations: high-light (1995 µmol photons  $m^{-2} s^{-1}$ ; HL), medium-light (1190 µmol photons  $m^{-2} s^{-1}$ ; ML), low-light (197 µmol photons  $m^{-2} s^{-1}$ ; LL), high-O<sub>2</sub> (pO<sub>2</sub>=0.6 ATM; HO), medium-O<sub>2</sub> (pO<sub>2</sub>=0.3 ATM; MO) and low-O<sub>2</sub> (pO<sub>2</sub>=0.0 ATM; MO). Replication of transcriptomic analyses was performed in duplicate with the exception of condition HL-LO which was performed in quadruplicate.