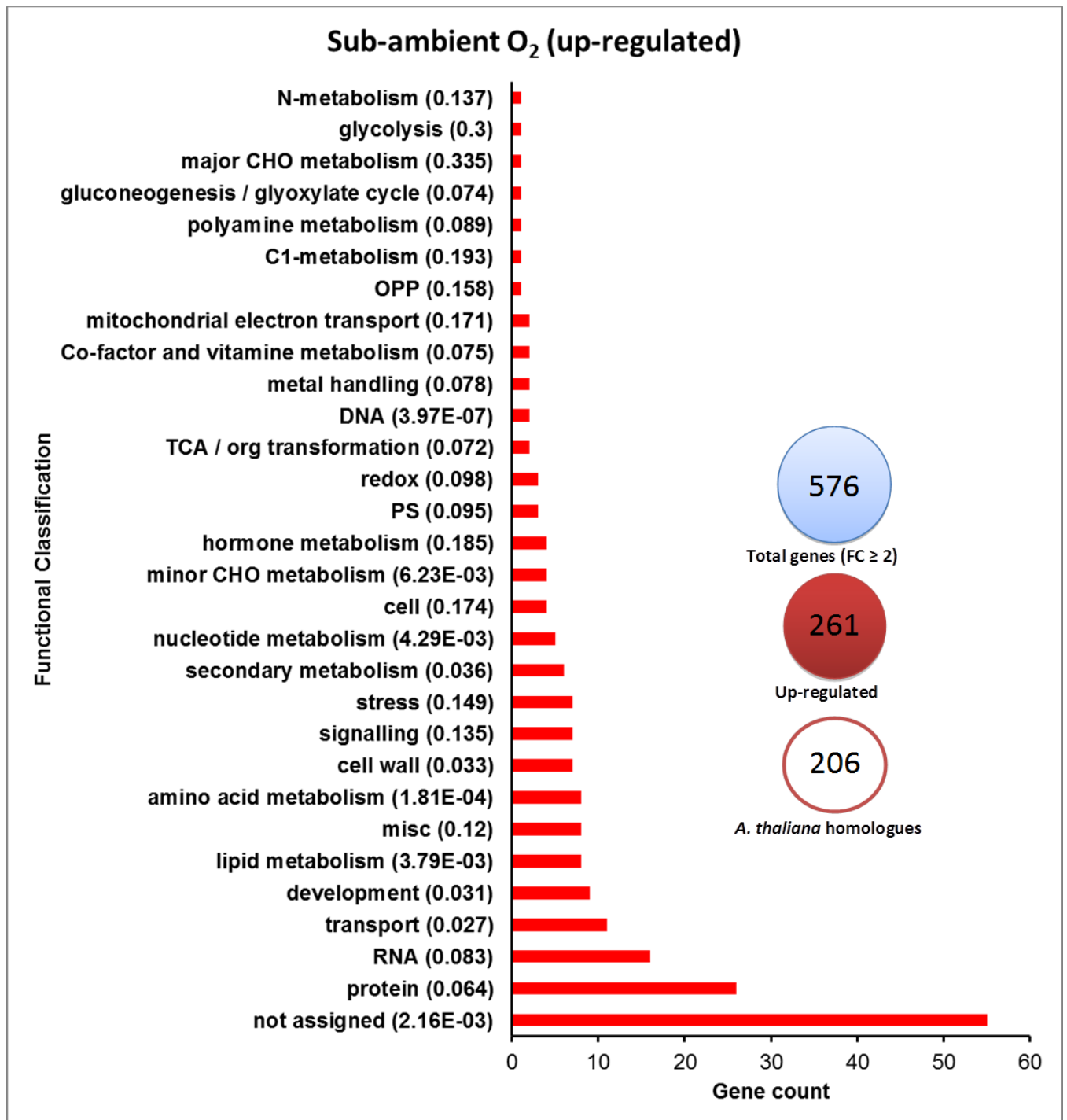
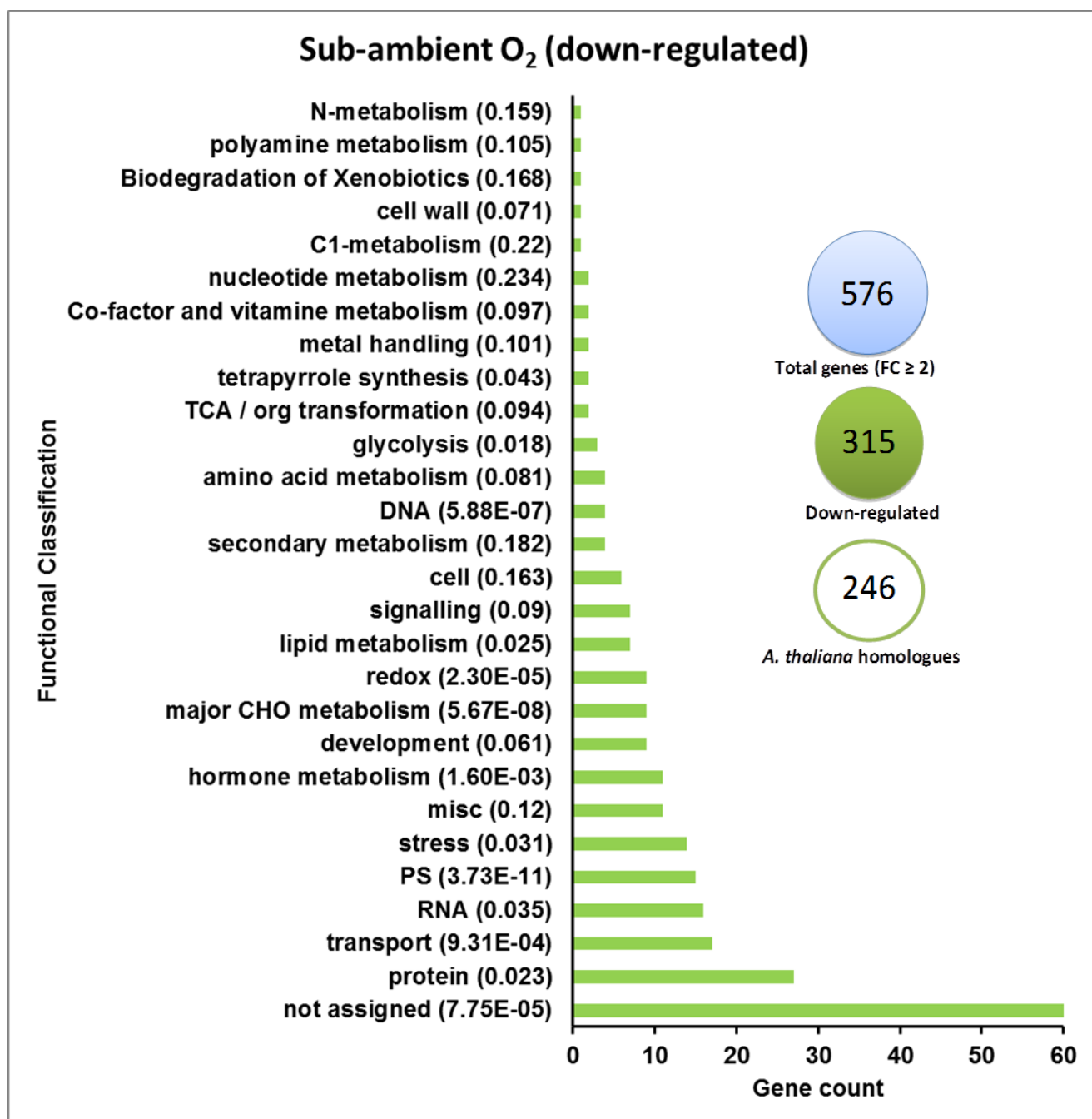


Supplementary Fig. S1. MapMan molecular functional classification of *P. patens* genes (using Arabidopsis homologues as a reference) where the expression levels were significantly up- and down-regulated following a 7-day exposure to (A) sub-ambient O₂ (up-regulated), (B) sub-ambient O₂ (down-regulated), (C) elevated CO₂ (up-regulated), (D) elevated CO₂ (down-regulated), (E) Low O₂- high CO₂ (up-regulated) and (F) Low O₂- high CO₂ (down-regulated). Molecular function class (on Y-axis) are organized in increasing order of the number genes (gene count on X-axis). Significance/ confidence (*p*-value) for each class is given in bracket. The values in the blue circle represents total number of genes with altered expression (with fold change (FC) ≥ 2), the values in red and green circles indicates the number of up or down regulated genes respectively. Values in empty circles with red and green border represent the number of corresponding *A. thaliana* locus IDs (AGIs) used for MapMan molecular functional classification (Provart and Zhu, 2003).

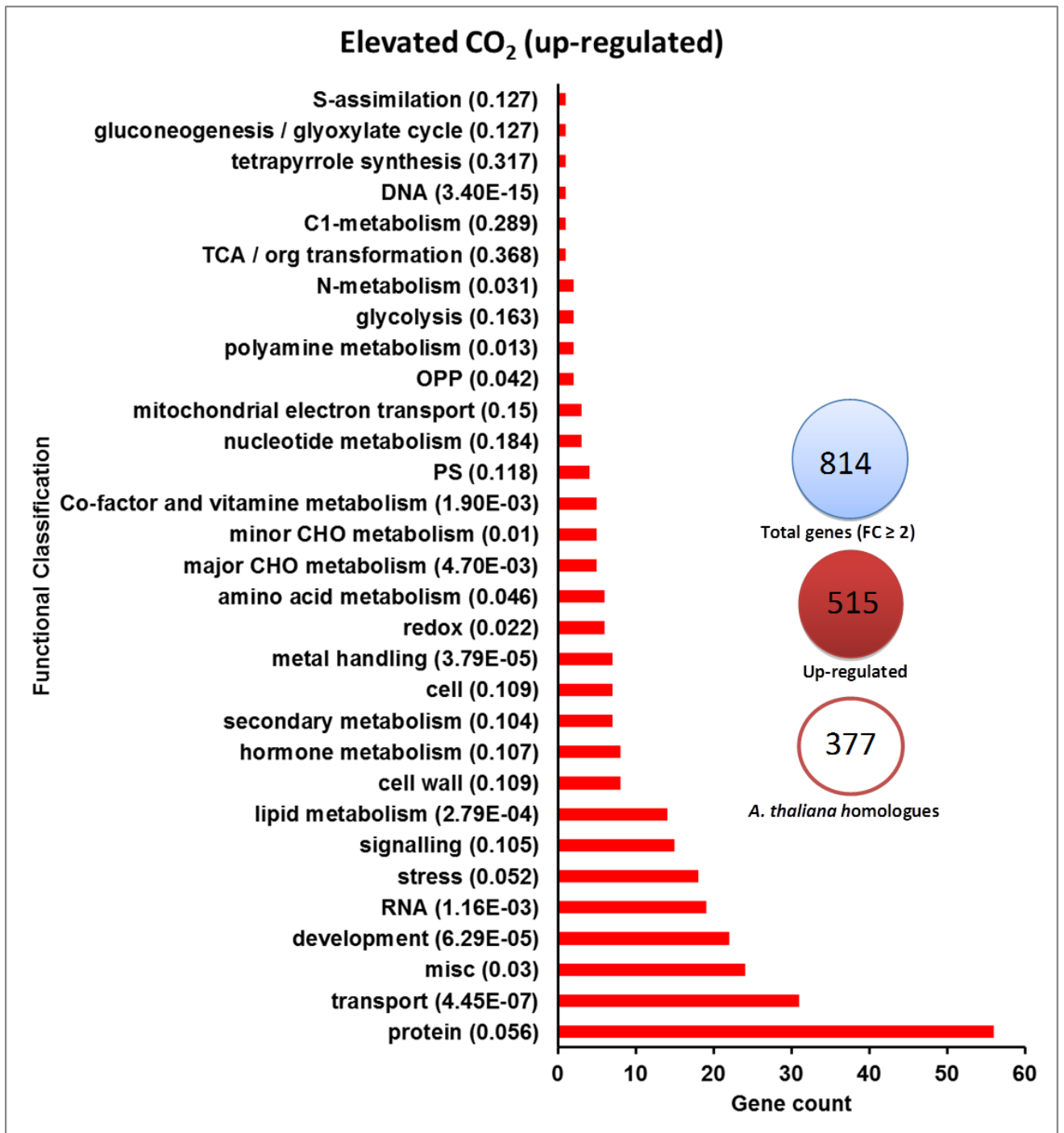
(A)



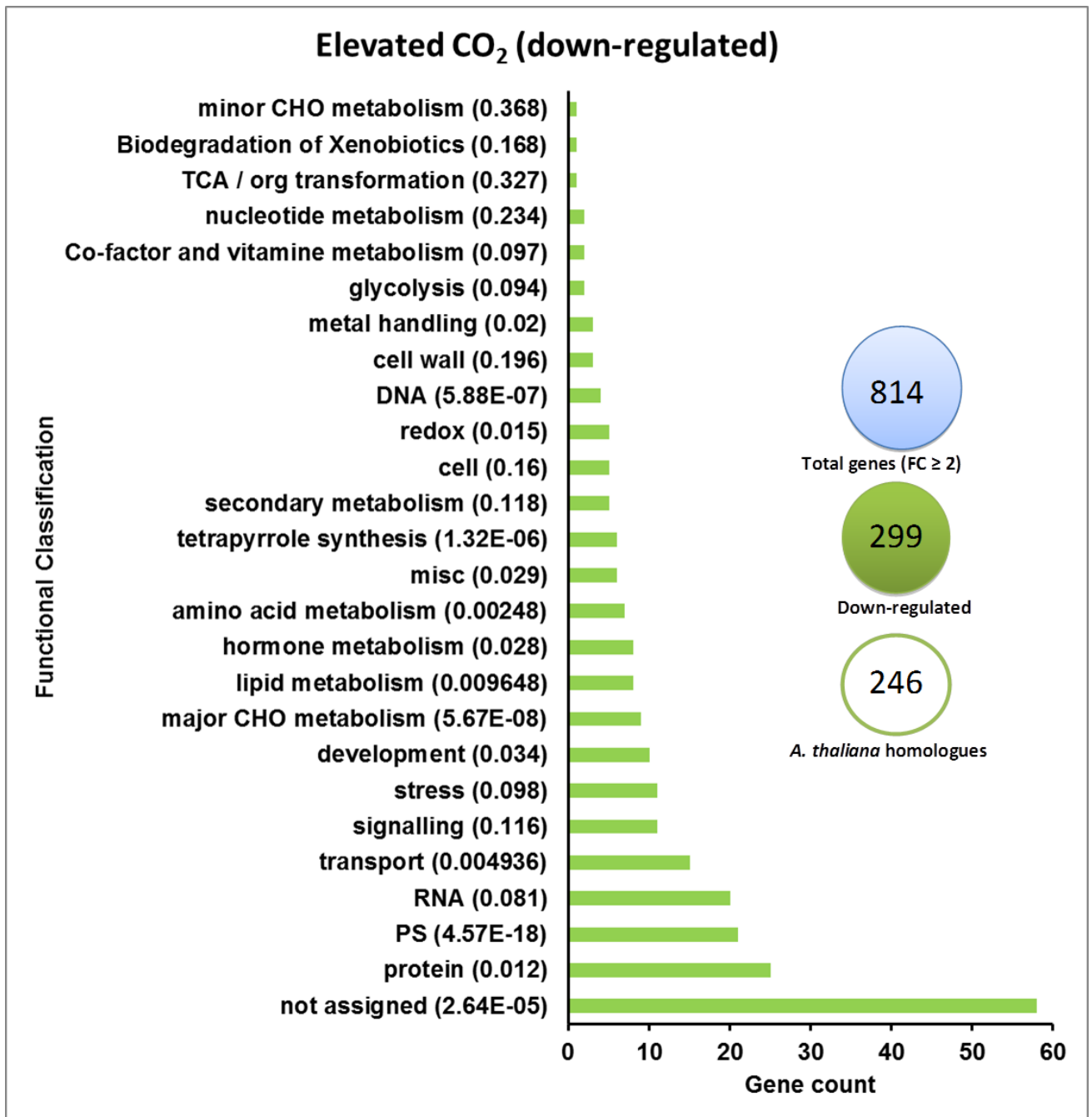
(B)



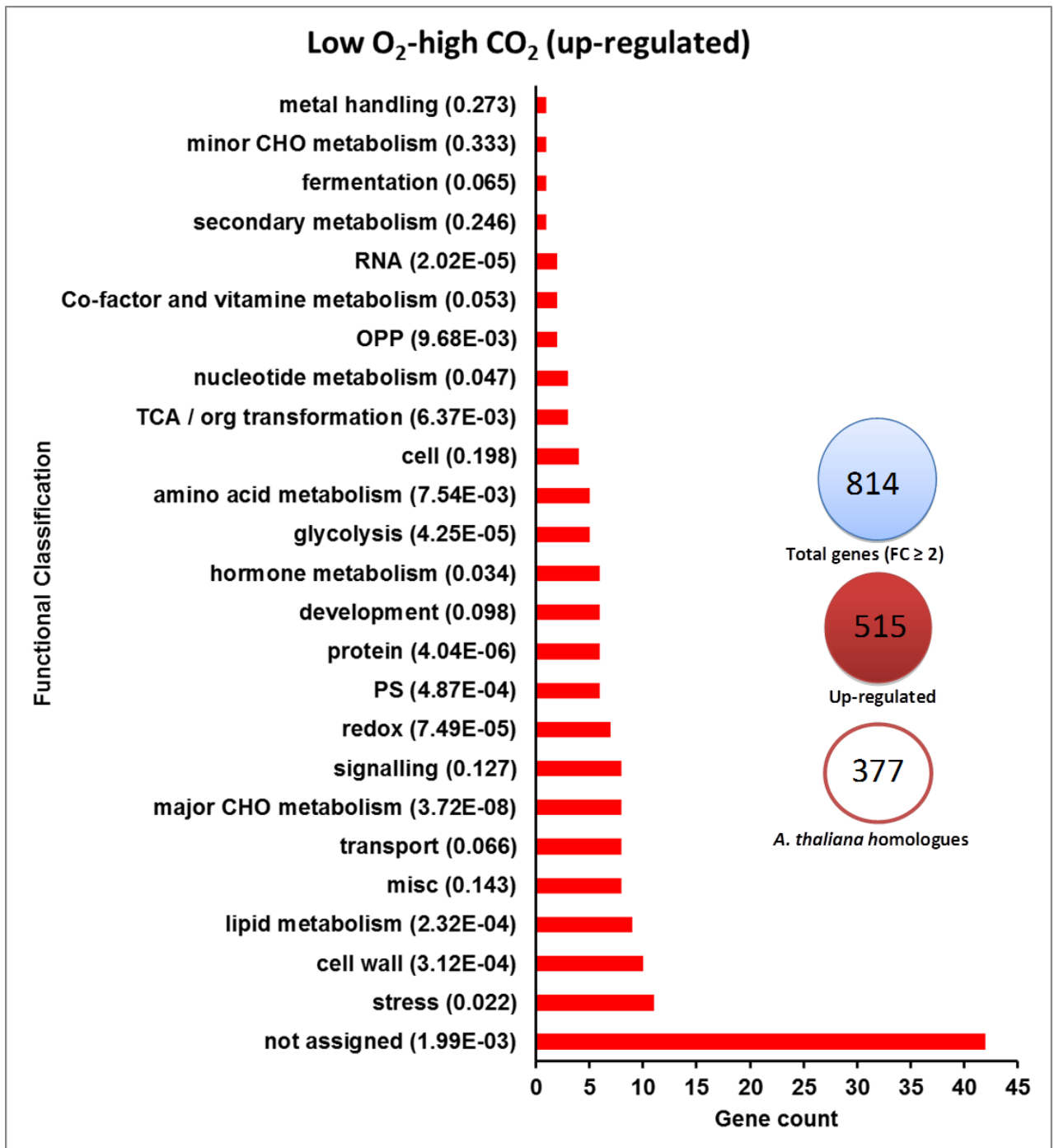
(C)



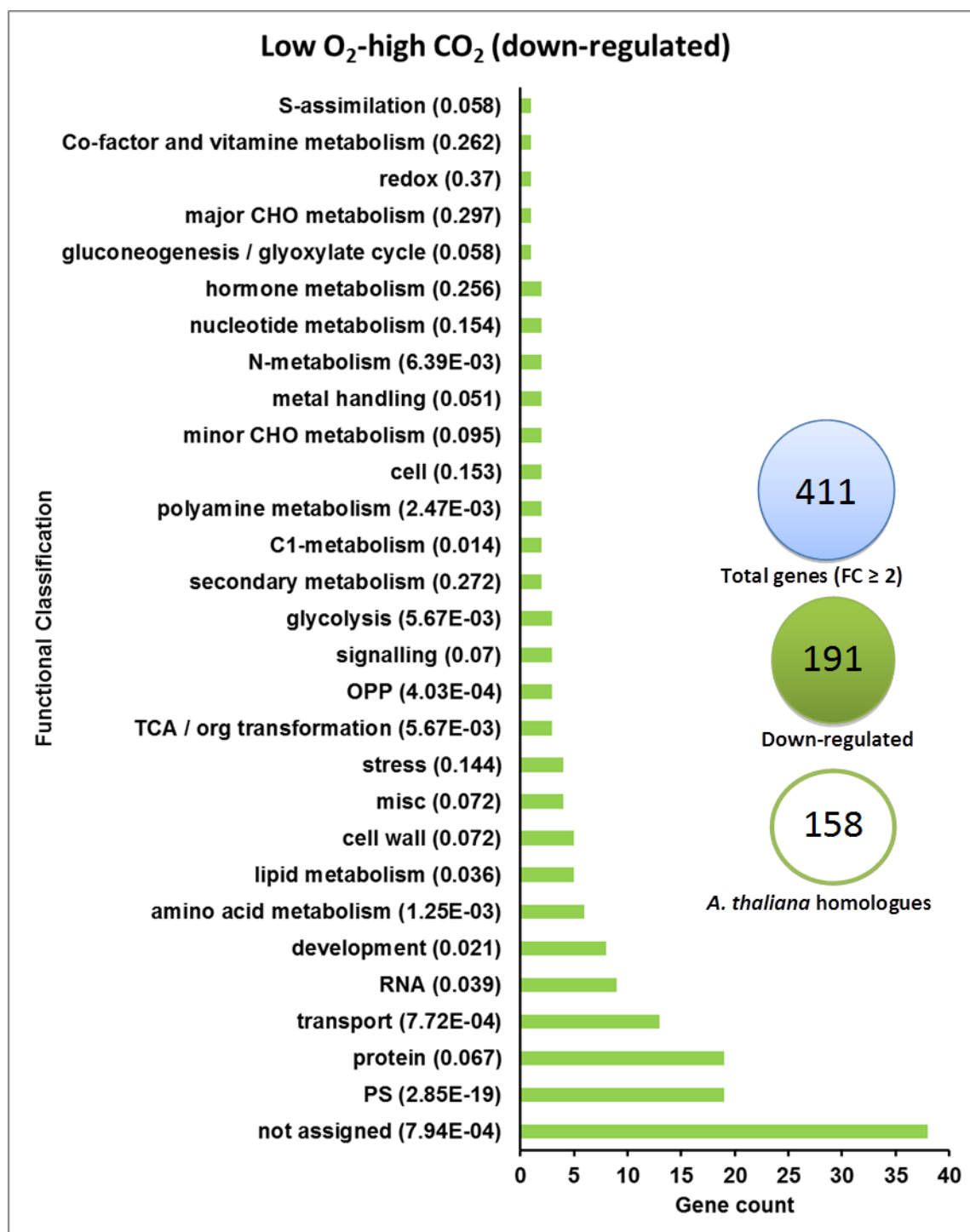
(D)



(E)

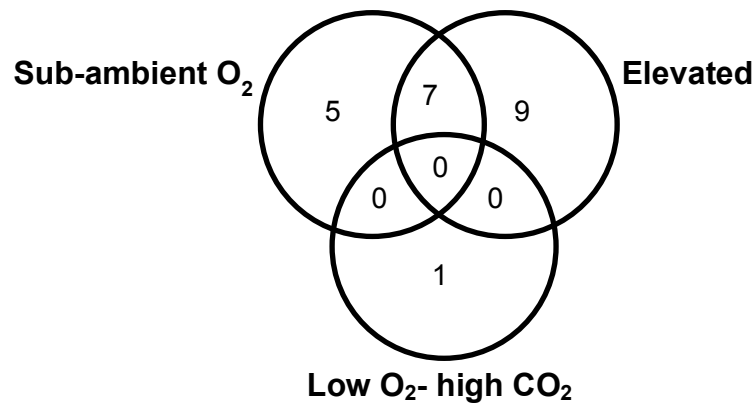


(F)

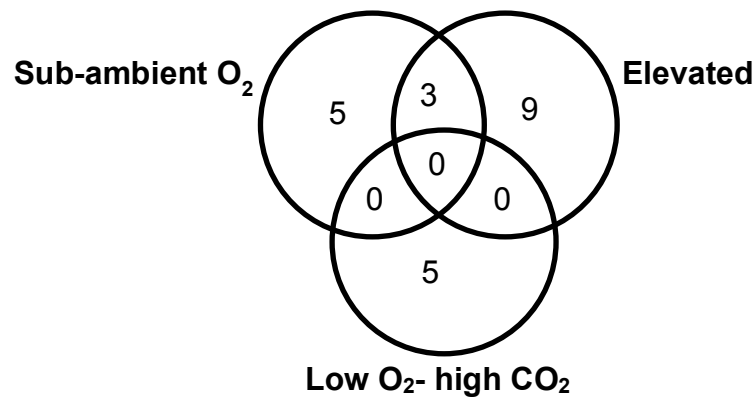


Supplementary Fig. S2. Genes encoding transcriptional regulators that were (A) up- and (B) down-regulated in *P. patens* gametophytes subjected to by elevated CO₂ (1500 ppmV), sub-ambient O₂ (13%), and low O₂- high CO₂.

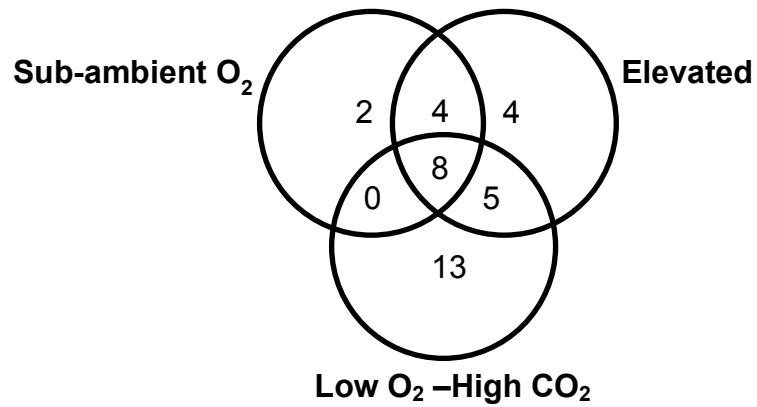
(A) Number of up-regulated *P. patens* genes



(B) Number of down-regulated *P. patens* genes

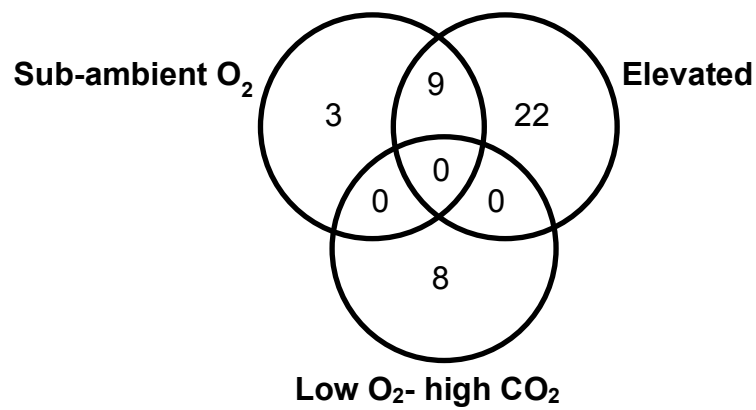


Supplementary Fig. S3. Effects of elevated CO₂, sub-ambient O₂ and low O₂-high CO₂ treatment on expression of genes encoding proteins involved in CO₂ fixation, RuBP regeneration and starch synthesis in moss *P. patens* gametophytes. Venn diagram showing the number of commonly and distinctly expressed (up and down-regulated) genes.



Supplementary Fig. S4. Membrane transport-related genes that were (A) up- and (B) down-regulated in *P. patens* gametophytes subjected to by elevated CO₂ (1500 ppmV), sub-ambient O₂ (13%), and low O₂- high CO₂.

(A) Number of up-regulated *P. patens* genes



(B) Number of down-regulated *P. patens* genes

