

(B) Chromatin structure and dynamics

(C) Energy production and conversion;

(D) Cell cycle control, cell division, chromosome partitioning

(E) Amino acid transport and metabolism

(F) Nucleotide transport and metabolism

(G) Carbohydrate transport and metabolism

(H) Coenzyme transport and metabolism

(I) Lipid transport and metabolism

(J) Translation, ribosomal structure and biogenesis; (K) Transcription

(L) Replication, recombination and repair

(M) Cell wall/membrane/envelope biogenesis

(N) Cell motility

(O) Posttranslational modification, protein turnover, chaperones

(P) Inorganic ion transport and metabolism

(Q) Secondary metabolites biosynthesis, transport and catabolism

(R) General function prediction only

(S) Function unknown

(T) Signal transduction mechanism

(U) Intracellular trafficking, secretion, and vesicular transport

(X) Mobilome: prophages, transposons

(V) Defense mechanisms

**Fig. S6** Clusters of orthologous categories (COGs) of 747 up- and 575 downregulated genes in FAs1, 638 up- and 567 downregulated genes in GAs1 compared with CGs1 (Note: Since COGs are sometimes overlapped, the sum of COGs-annotated genes is larger than the number of the total DEGs.