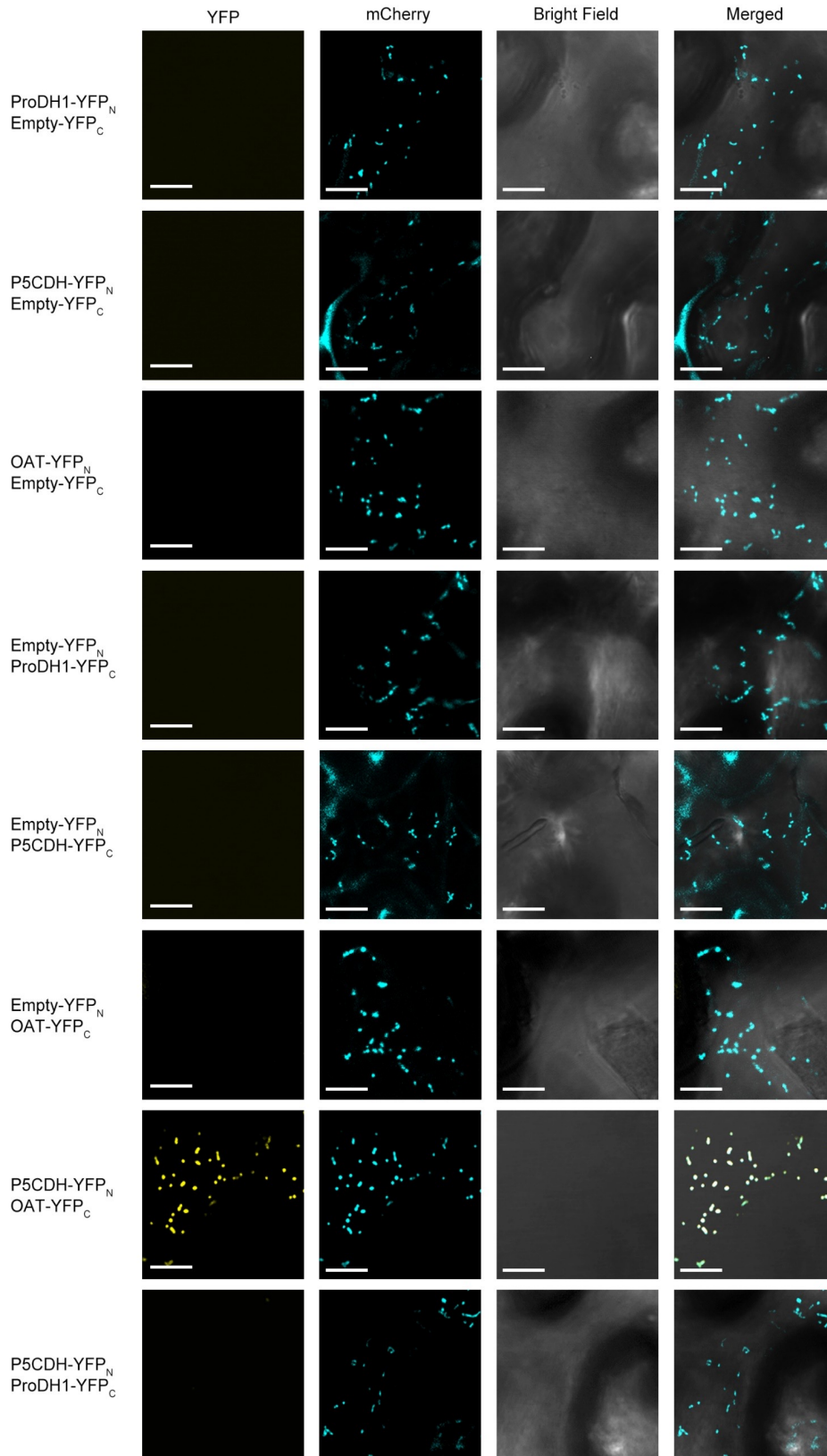


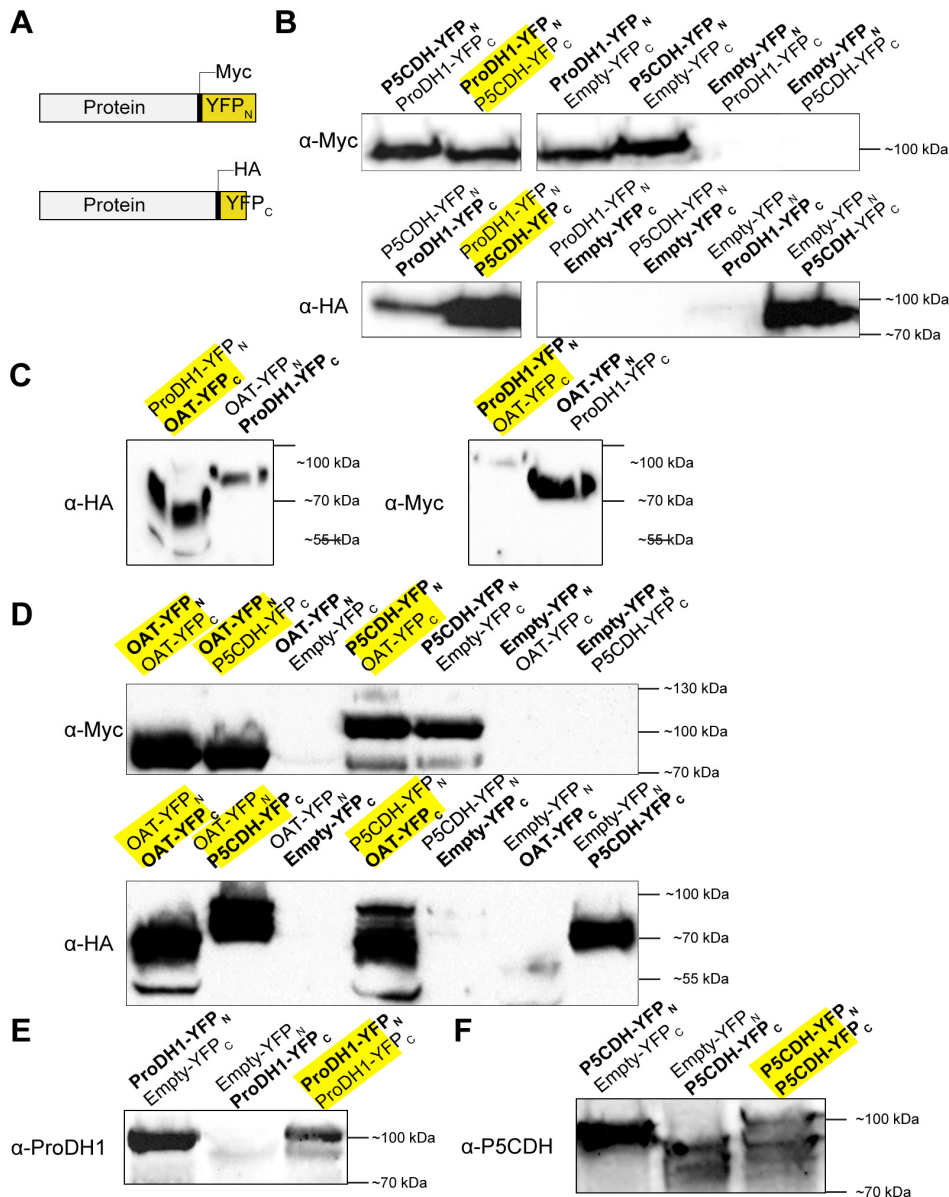
Supplementary Fig. S1. Proline sensitivity of *p5cdh* was complemented in *35S:P5CDH-tGFP/p5cdh* plants.

Seeds of different genotypes (as indicated in the Figure) were sterilized, stratified at 4° C for 72h and grown onto a MS/2 medium supplemented without (A) or with 25 mM proline (B) for 7 days.



Supplementary Fig. S2. Controls and additional BiFC assays in *Nicotiana benthamiana*.

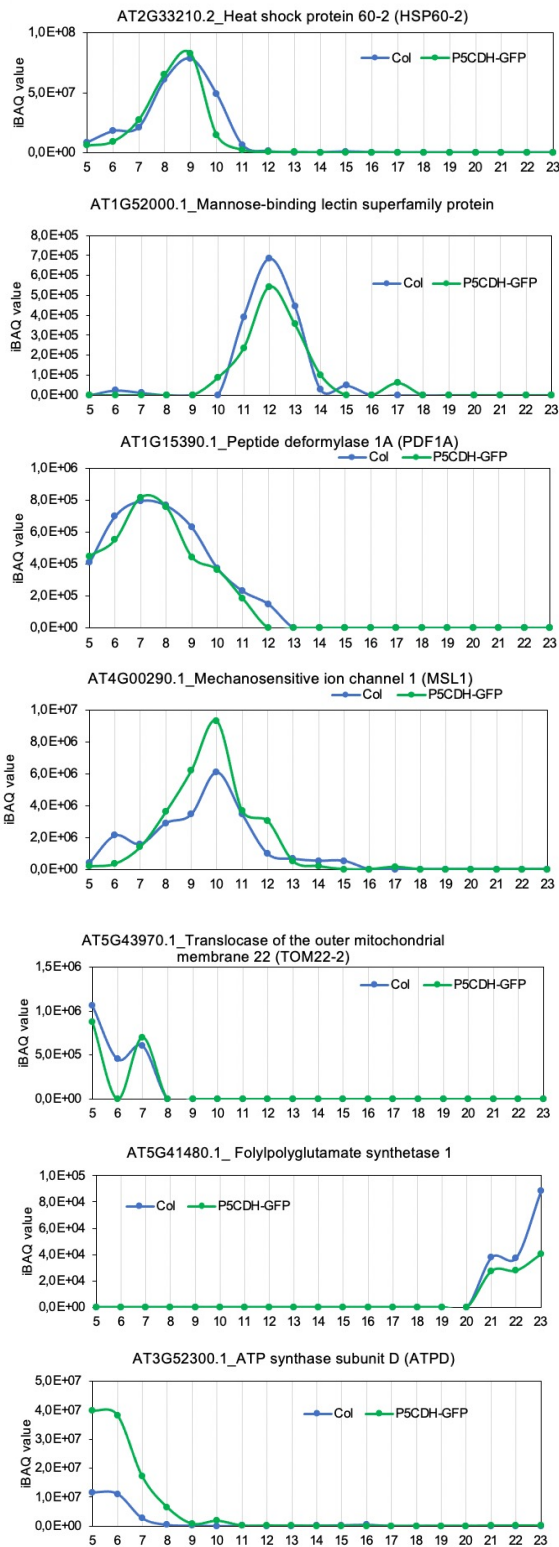
YFP channel shows YFP fluorescent signals; mCherry channel indicates the location of mitochondria; bright field channel shows the cellular structure of tobacco epidermal cell under white light; merged channel shows picture merged with other three channels. Bar = 10 μm .



Supplementary Fig. S3. Protein expression of BiFC-infiltrated *Nicotiana benthamiana* leaves.

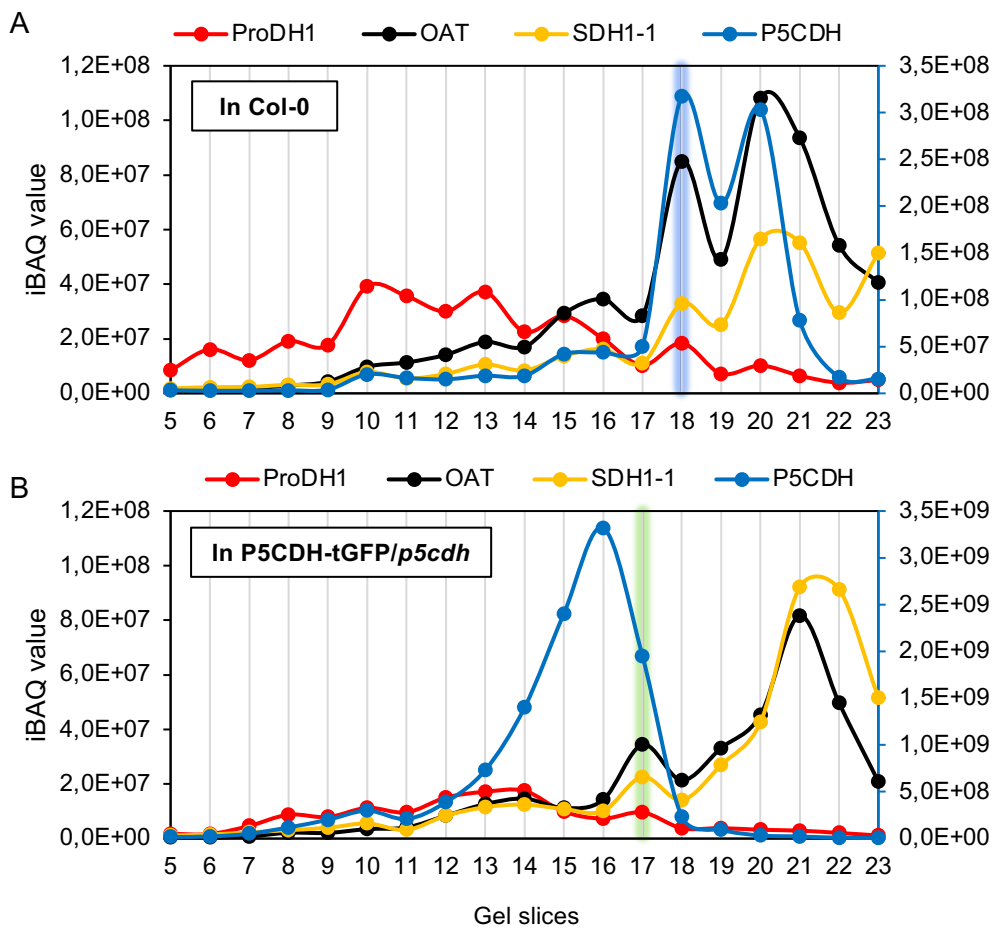
(A) Representative diagrams of constructs used for BiFC assays. Cassettes are presented in 5' to 3' direction. The size of each cassette is based on their nucleic acid sequence length. Gray box, insertion of the CDS fragment of each construction; Myc, c-myc epitope tag; HA, hemagglutinin epitope tag; YFP_N, N-terminal fragment of eYFP; YFP_C, C-terminal fragment of eYFP.

(B-F) Total proteins were extracted from tobacco leaves infiltrated with different combinations of plasmids indicated on the top of each western-blot. Same amount of proteins was loaded into SDS-PAGE gels. Proteins were then transferred onto a nitrocellulose membrane and revealed using antibodies raised against c-Myc or HA tags. Constructs with positive YFP signal are labelled with yellow backgrounds. The theoretical molecular weight of B4-ProDH1 is 73.7 kDa; B5-ProDH1, 65.6 kDa; B4-OAT, 70.9 kDa; B5-OAT, 62.8 kDa; B4-P5CDH, 80.5 kDa; B5-P5CDH, 72.4 kDa.



Supplementary Fig. S4. Migration pattern of selected mitochondrial proteins which are not affected by the presence of P5CDH-tGFP.

The iBAQ values of each protein in Col-0 and P5CDH-tGFP/*p5cdh* in different gel slices are shown.



Supplementary Fig. S5. Complexome profiling for SDH1-1.

The iBAQ value of ProDH1, P5CDH, OAT, and Succinate dehydrogenase 1-1 (SDH1-1) in Col-0 (A) and in P5CDH-tGFP/p5cdh (B) are shown. The iBAQ values of P5CDH is shown on the right y-axis, iBAQ values of the other proteins are shown on the left y-axis.