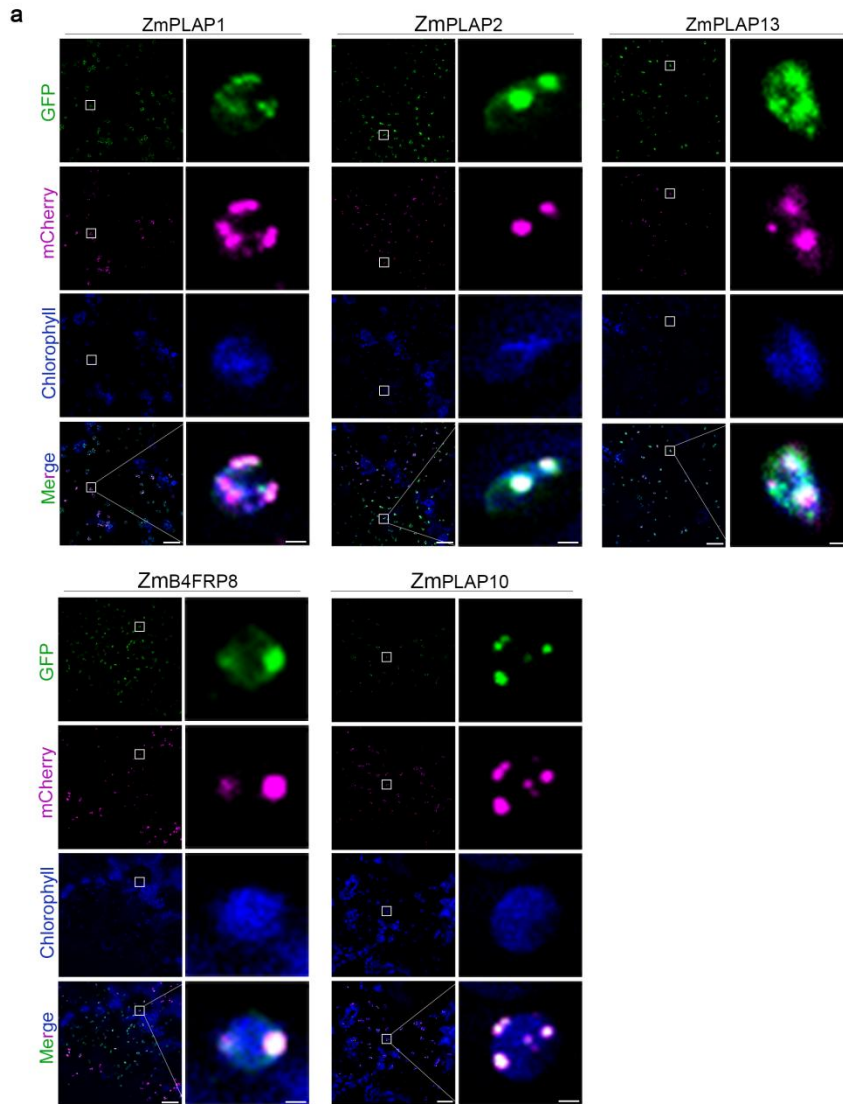

Supplementary information

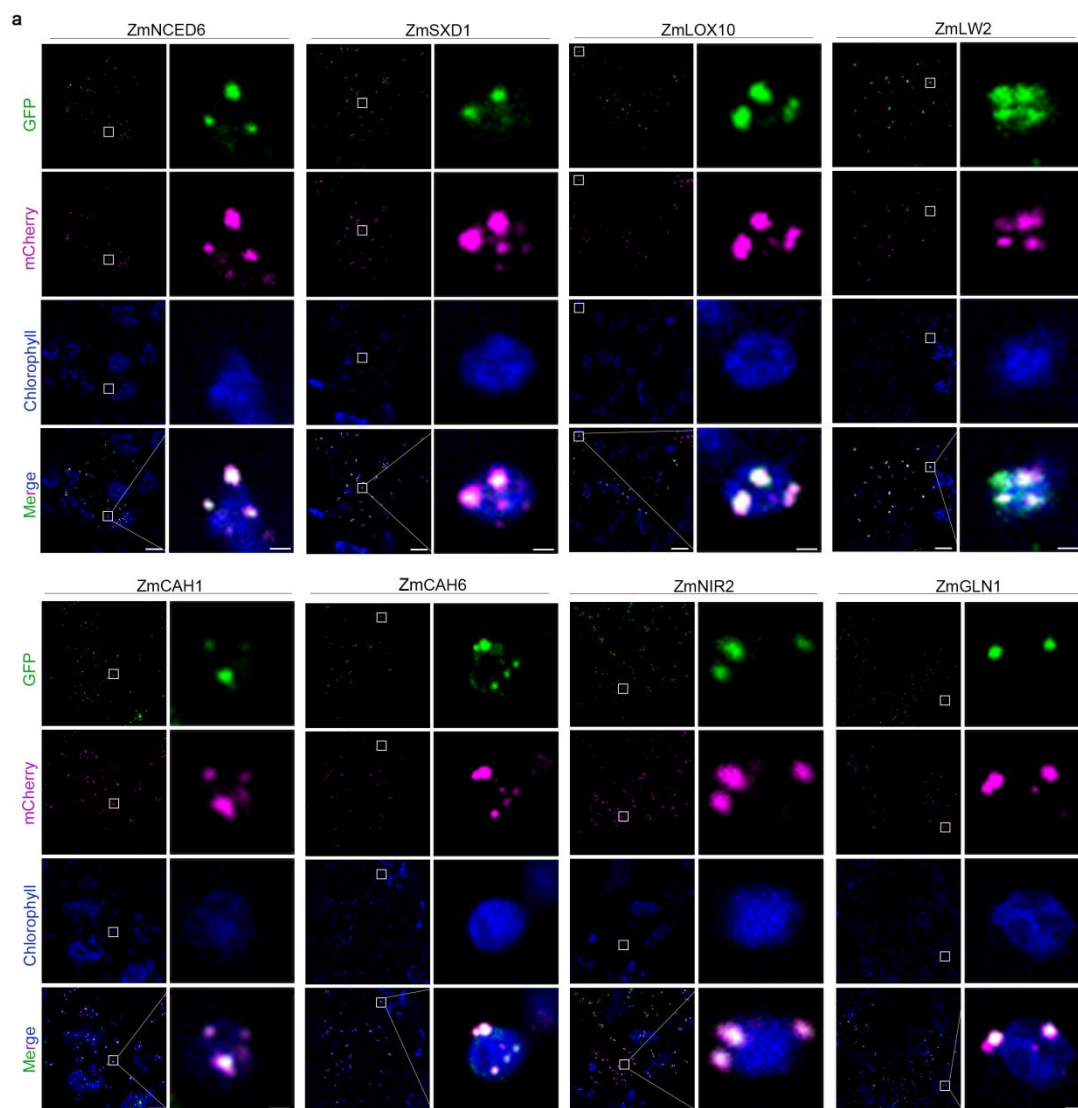
Plastoglobules compartmentalize nitrogen assimilation in maize

In the format provided by the
authors and unedited



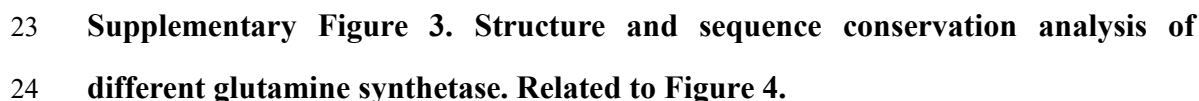
Supplementary Figure 1. | Subcellular localization of fibrillin proteins in PGs. Related to Figure 2.

a, Subcellular localization of fibrillin proteins (ZmPLAP1, ZmPLAP2, ZmPLAP13, ZmB4FRP8, and ZmPLAP10) identified in PGs. Representative fluorescence images show these proteins fused with eGFP tag in tobacco epidermal cells, and their co-localization with the PG-localized marker ZmPSY3-mCherry. Scale bar, 1 μ m (partial images), 20 μ m (complete images). Observations were made on at least 10 cells from 3 independently transformed tobacco leaves.



Supplementary Figure 2. Subcellular localization of secondary metabolite and carbon-nitrogen metabolism proteins in PGs. Related to Figure 2.

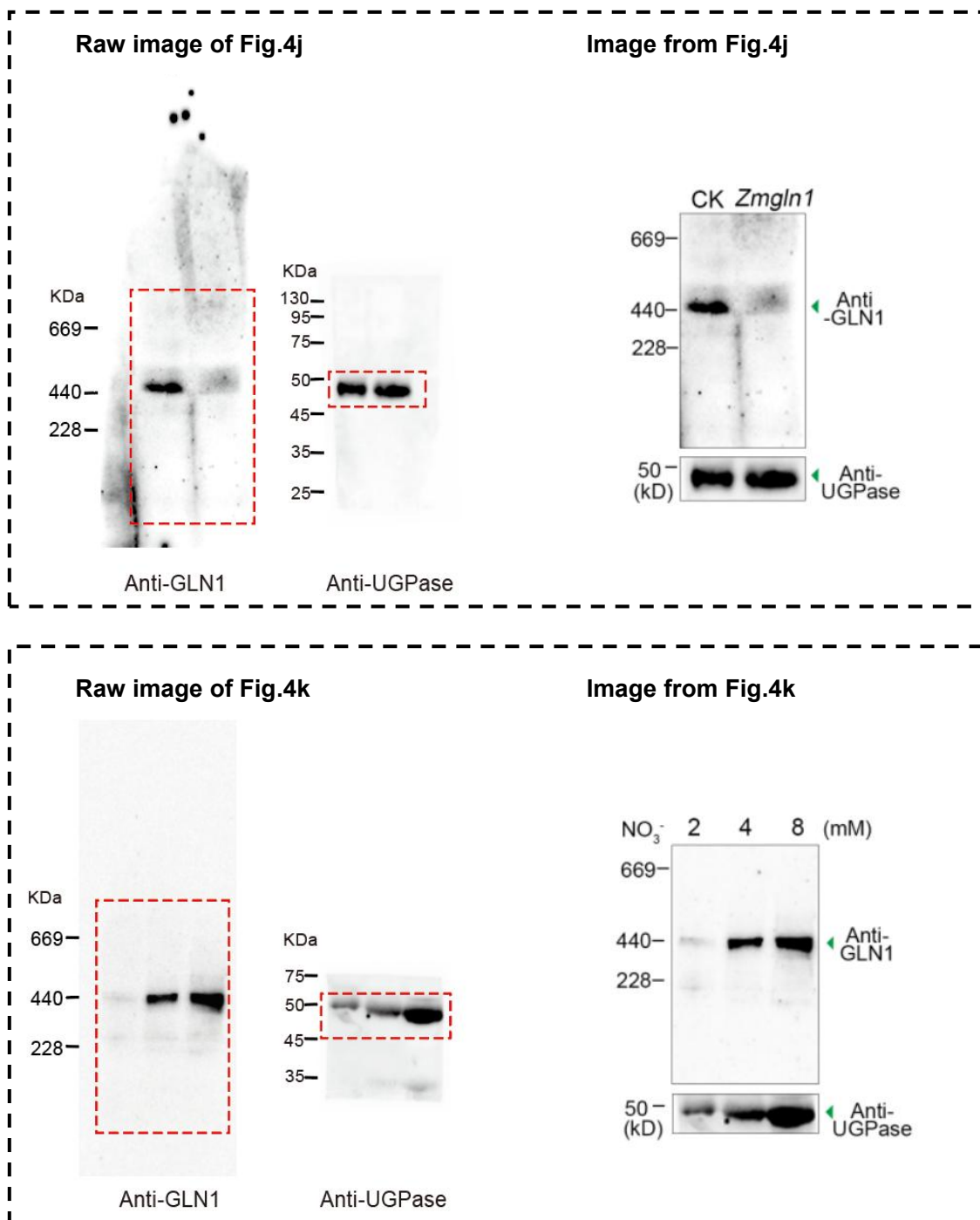
a, Subcellular localization of secondary metabolite biosynthesis enzymes (ZmNCED6, ZmSXD1, ZmLOX10, ZmLW2) and carbon-nitrogen metabolism-associated proteins (ZmCAH1, ZmCAH6, ZmNIR2, ZmGLN1) identified in PGs. Representative fluorescence images show these proteins fused with eGFP tag in tobacco epidermal cells, and their co-localization with the PG-localized marker ZmPSY3-mCherry. Scale bar, 1 μ m (partial images), 20 μ m (complete images). Observations were made on at least 10 cells from 3 independently transformed tobacco leaves.

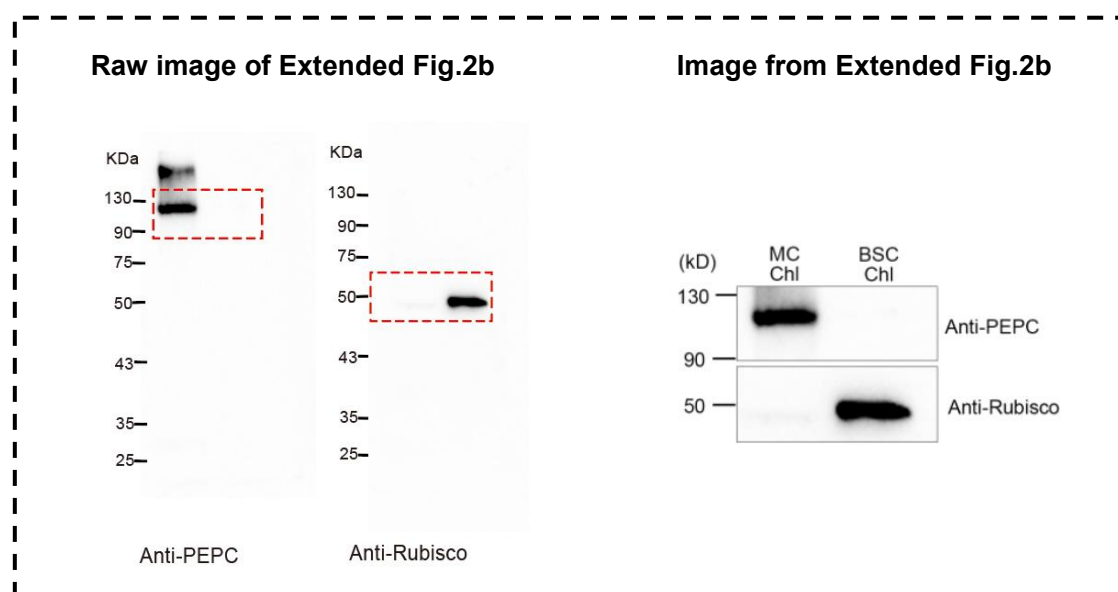
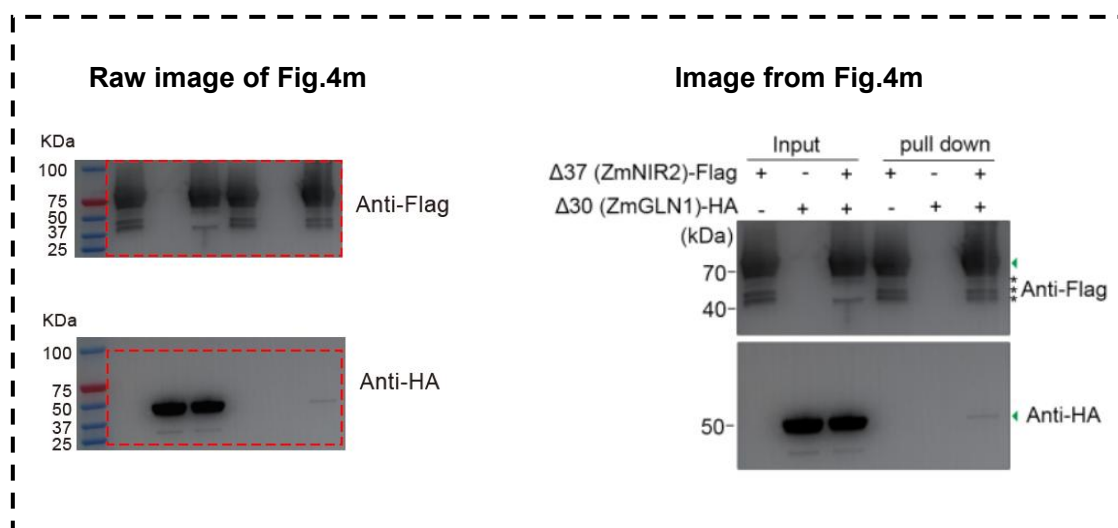
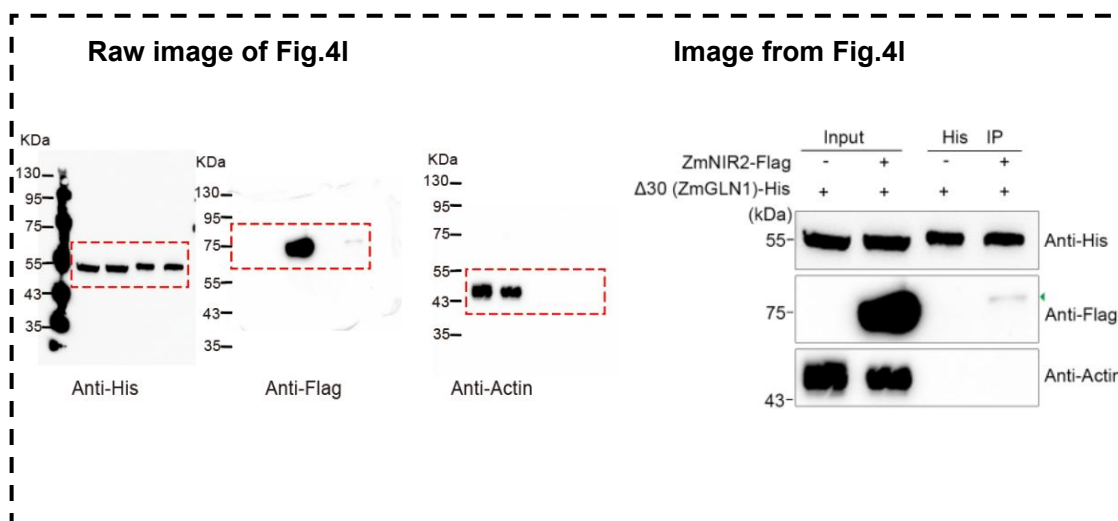


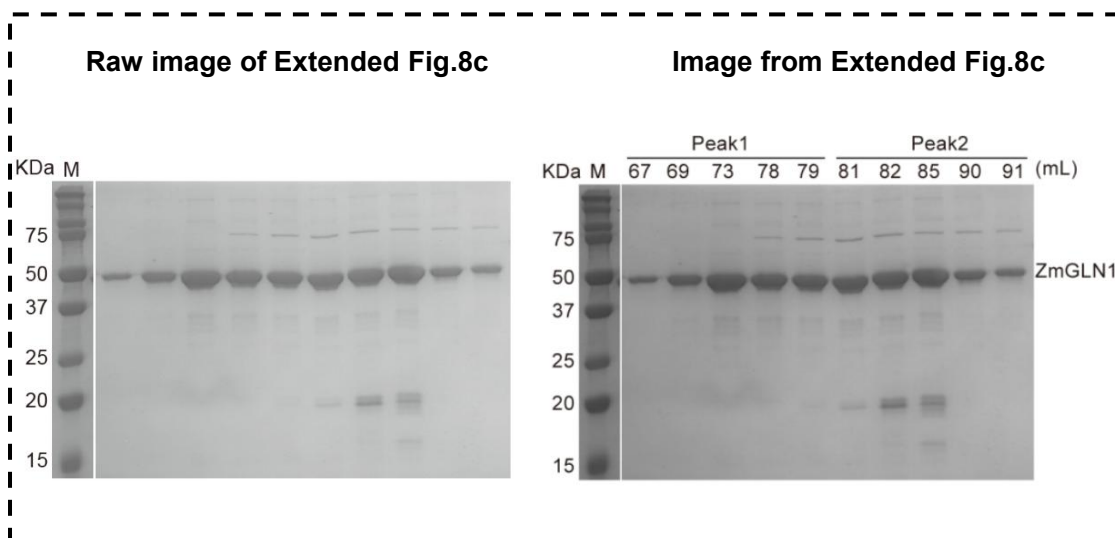
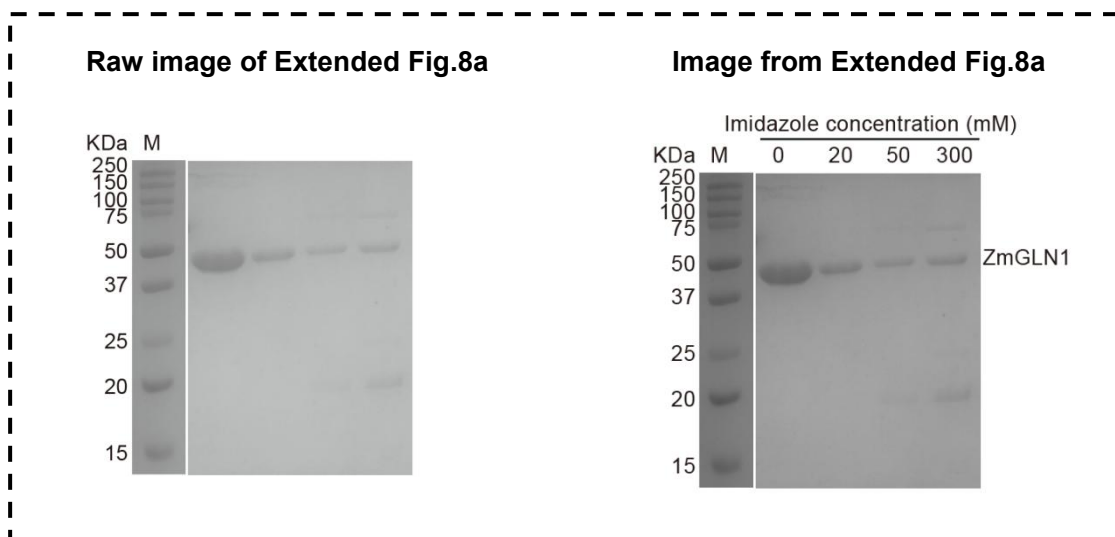
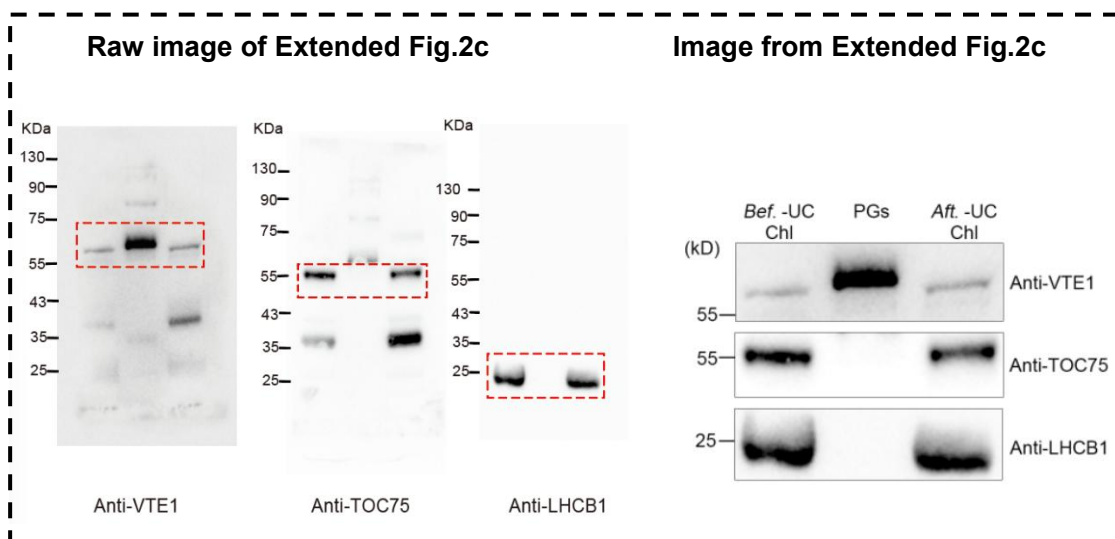
a, Structure of Cyanobacterial glutamine synthetase (PDB: 3NG0). **b**, Structure of maize cytoplasmic glutamine synthetase ZmGS1a (ZmGLN5) (PDB: 2D3A). **c**, Structure of maize chloroplast glutamine synthetase ZmGS2 (ZmGLN1) (PDB : 9WP6). **d**, Structure superimposition of maize ZmGS1a (ZmGLN5) and ZmGS2 (ZmGLN1), highlighting the conserved amino acids involved in substrate binding in maize cytoplasmic ZmGS1a (ZmGLN5) and chloroplast ZmGS2 (ZmGLN1). **e**, Sequence conservation analysis of residues involved in substrate binding in maize cytoplasmic ZmGS1a (ZmGLN5) and chloroplast ZmGS2 (ZmGLN1). The magenta

33 circles represent the residues in ZmGS1a (ZmGLN5) involved in substrate binding.

Supplementary Figure 4. Original uncropped autoradiographs and gels corresponding to the manuscript. Left panels show full-length uncropped raw autoradiograph membranes. Red dashed boxes indicate the exact regions cropped for display in the main text figures. Right panels show the final cropped blot images presented in the main manuscript. Blots are labeled with molecular weight markers (kDa) and antibodies; gels are labeled with molecular weight markers and loaded protein samples.







Raw image of Extended Fig.8e

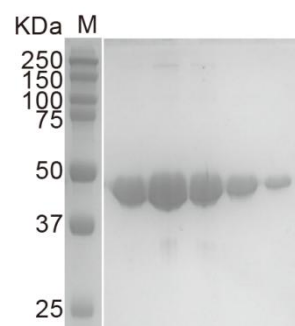
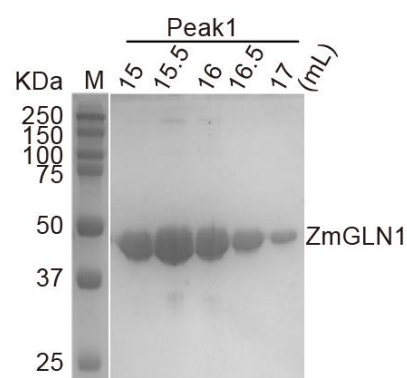


Image from Extended Fig.8e



Raw image of Extended Fig.8f

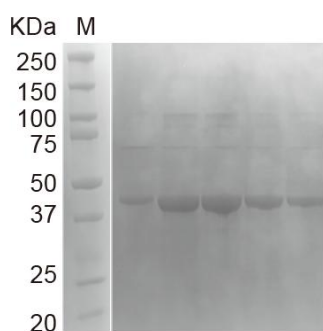
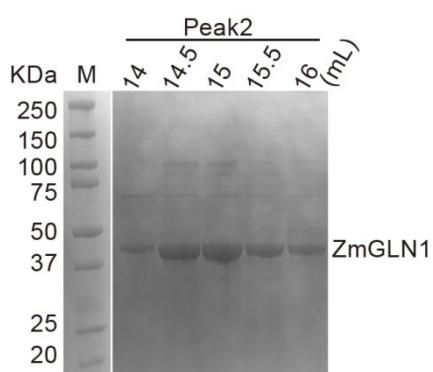


Image from Extended Fig.8f



Raw image of Extended Fig.8i

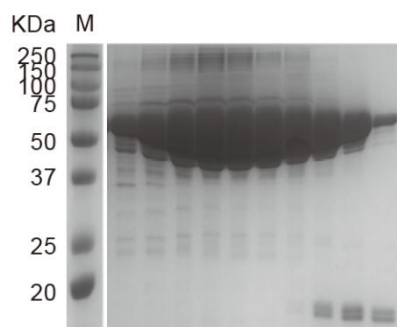


Image from Extended Fig.8i

