Supporting Information

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Fig. S1. Aleuria Aurantia Lectin (AAL) staining is not reduced in cells homozygous for O-fut1^{4R6} in vivo. (A–C) Late third-instar wing imaginal discs carrying somatic clones homozygous for O-fut1^{4R6} were stained with AAL. (A and C) Regions lacking GFP (green) were O-fut1^{4R6} homozygous cells. (B and C) AAL-staining (magenta). C is a merged image of A and B. White broken lines indicate the borders of clones. (Scale bar in A, 50 μ m, applicable to A–C.)



Fig. 52. Expression of Wg is not reduced in somatic clones homozygous for *Gmd* or *Gmer*. Late third-instar wing imaginal discs carrying somatic clones homozygous for *Gmd*^{H78} (A-C), *Gmer*^{SH} (D-F), or *Efr*¹ and *Gfr*¹ (*G*-I) were stained with an anti-Wg antibody (magenta). (A, C, D, F, G, and I) Regions lacking GFP (green) were somatic clones of the indicated mutants. C, F, and I are merged images of A and B, D and E, and G and H, respectively. *Insets*: Higher magnifications of the regions indicated by a white square in B, E, and H. Boundaries of the somatic clones are indicated by white broken lines. (Scale bar in A, 50 μ m, applicable to A-I.)



Fig. S3. Intercellular delivery of GDP-L-fucose is limited to a given organ. (*A–J*) Late third-instar wing imaginal discs stained with AAL (*A*, *C*, *E*, *G*, and *I*, magenta), and their optical images (*B*, *D*, *F*, *H*, and *J*). (*A*) UAS-Gmd was driven by dpp-Gal4 in a Gmd^{H78} homozygote. (*B*) UAS-Gmd was driven by dpp-Gal4 in a Gmd^{H78} homozygote. (*C*) UAS-Gmd was driven by btl-Gal4 in a Gmd^{H78} homozygote. (*C*) UAS-Gmd was driven by btl-Gal4 in a Gmd^{H78} homozygote. (*D*) UAS-Gmd was driven by GMR-Gal4 in a Gmd^{H78} homozygote. (*E*) UAS-Gmd was driven by lsp-Gal4 in a Gmd^{H78} homozygote. (Scale bar in A, 50 µm, applicable to A–J.)



Fig. S4. A different RNAi against *inx2* gives similar results. (*A*) *ptc*-Gal4 drove the expression of UAS-GFP (green) where hairpin dsRNAs were produced (shown in *B–J*) in late third-instar wing imaginal discs. (*B–J*) Hairpin dsRNAs against *Gmd* (*B–D*), *inx2* (v102194) (*E–G*), or *Gmd* and *inx2* (*H–J*) were produced under the control of *ptc*-Gal4. (*B*, *E*, and *H*) AAL staining (magenta). (*C*, *F*, and *I*) Anti-Cut antibody staining (green). (*D*, *G*, and *J*) Merged images of *B* and *C*, *E* and *F*, and *M* and *I*, respectively. White arrowhead indicates the region of reduced *cut* expression in *I* and *J*. (Scale bar in *A*, 50 µm, applicable to *A–J*.)



Fig. S5. Knockdown of *Gmd* and *ogr*, *inx3*, or *inx4* does not affect the expression of *cut* or AAL staining. (*A–I*) Late third-instar wing imaginal discs stained with AAL (*A*, *C*, *D*, *F*, *G*, and *I*, magenta) and anti-Cut antibody (*B*, *C*, *E*, *F*, *H*, and *I*, green). Hairpin dsRNAs against *Gmd* and *ogr* (VDRC7136) (*A–C*), *Gmd* and *inx3* (VDRC39095) (*D–F*), or *Gmd* and inx4 (VDRC33277) (*G–I*) were synthesized under the control of *ptc*-Gal4. *C*, *F*, and *I* are merged images of *A* and *B*, *D* and *E*, *G* and *H*, respectively. (Scale bar in *A*, 50 µm, applicable to *A–I*.)

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