

“16:3” plants –Arabidopsis, spinach

The diagram illustrates the lipid metabolism pathways in the absence of FAD2, FAD3, and FAD4. The pathways are shown for the conversion of G3P to PA, DAG, and PC, and the subsequent breakdown of PA, DAG, and PC into various lipids. Mutations in *fad2*, *fad3*, and *fad4* are indicated by red text and arrows.

Top Pathway:

- G3P → PA (18:1 18:1 (16:0))
- PA → DAG (18:1 18:1 (16:0))
- DAG → PC (18:1 18:1 (16:0))
- PC → PC (18:2 18:2 (16:0))
- PC → PC (18:3 18:3 (16:0))

Left Pathway (A):

- PA (18:1 16:0) → DAG (18:1 16:0)
- DAG (18:1 16:0) → PG (18:1 16:0)
- DAG (18:1 16:0) → MGDG (18:1 16:0)
- DAG (18:1 16:0) → DGDG (18:1 16:0)
- DAG (18:1 16:0) → SL (18:1 16:0)
- PG (18:1 16:0) → PG (18:1 16:1 (16:0))
- MGDG (18:1 16:0) → MGDG (18:1 16:1 (16:0))
- DGDG (18:1 16:0) → DGDG (18:1 16:0)
- SL (18:1 16:0) → SL (18:1 16:0)
- PG (18:1 16:1 (16:0)) → PG (18:2 16:1 (16:0))
- MGDG (18:1 16:1 (16:0)) → MGDG (18:2 16:2 (16:0))
- DGDG (18:1 16:0) → DGDG (18:2 16:0)
- SL (18:1 16:0) → SL (18:2 16:0)
- PG (18:2 16:1 (16:0)) → PG (18:3 16:1 (16:0))
- MGDG (18:2 16:2 (16:0)) → MGDG (18:3 16:3)
- DGDG (18:2 16:0) → DGDG (18:3 16:0)
- SL (18:2 16:0) → SL (18:3 16:0)

Right Pathway:

- PA (18:1 18:1 (16:0)) → DAG (18:1 18:1 (16:0))
- DAG (18:1 18:1 (16:0)) → MGDG (18:1 18:1 (16:0))
- DAG (18:1 18:1 (16:0)) → DGDG (18:1 18:1 (16:0))
- DAG (18:1 18:1 (16:0)) → SL (16:0 18:1)
- MGDG (18:1 18:1 (16:0)) → MGDG (18:2 18:2 (16:0))
- DGDG (18:1 18:1 (16:0)) → DGDG (18:2 18:2 (16:0))
- SL (16:0 18:1) → SL (16:0 18:2)
- MGDG (18:2 18:2 (16:0)) → MGDG (18:3 18:3 (16:0))
- DGDG (18:2 18:2 (16:0)) → DGDG (18:3 18:3 (16:0))
- SL (16:0 18:2) → SL (16:0 18:3)

Mutations:

- fad2* (red text) is located near the PC (18:2 18:2 (16:0)) node.
- fad3* (red text) is located near the PC (18:3 18:3 (16:0)) node.
- fad4* (red text) is located near the PG (18:1 16:0) node.
- fad5* (red text) is located near the MGDG (18:1 16:0) node.
- fad6* (red text) is located near the DGDG (18:1 16:0) node.
- fad7* (red text) is located near the SL (18:1 16:0) node.
- fad8* (red text) is located near the SL (18:2 16:0) node.

Plastid