

Table S1

Table S1. Growth of lipid metabolism mutants on plates with the indicated carbon sources.

| Genotype ¹ | Aerobic ² | | | | Anaerobic + 25 mM nitrate ³ | | | |
|--|----------------------|------------------|----------------|----|--|-------|-----|----|
| | Glu | C18:1 | C10 | C8 | Glu | C18:1 | C10 | C8 |
| Wild Type | | | | | | | | |
| Wild Type (pRB-273c) | 1 ⁴ | 2 | - ⁵ | - | 3 | 6 | 8 | 10 |
| Δ <i>fadR</i> ⁶ | 1 | 2 | 4 | 6 | 3 | 6 | 8 | 10 |
| Δ <i>fadL</i> <i>fadL::kan</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>fadL</i> (pRB3- <i>fadL</i>) <i>fadL::kan</i> (pRB3- <i>fadL</i>) | 1 | 1-2 | - | - | 3 | 6 | 8 | 10 |
| Δ <i>fadD</i> <i>fadD::kan</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>fadD</i> (pRB3- <i>fadD</i>) <i>fadD::kan</i> (pRB3- <i>fadD</i>) | 1 | 2 | - | - | 3 | 6 | 8 | 10 |
| <i>ydiD::kan</i> | 1 | 2 | - | - | 3 | 6 | 8 | 10 |
| Δ <i>fadD</i> ; <i>ydiD::kan</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>yafH</i> <i>yafH::kan</i> | 1 | - | - | - | 3 | 6 | 8 | 10 |
| <i>ydiO::cm</i> | 1 | 2 | - | - | 3 | - | - | - |
| Δ <i>yafH</i> ; <i>ydiO::cm</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>fadBA</i> <i>fadBA::kan</i> | 1 | 3-4 ⁷ | - | - | 3 | 6 | 8 | 10 |
| <i>yfcYX::kan</i> | 1 | 2 | - | - | 3 | 14 | - | - |
| Δ <i>fadBA</i> ; <i>yfcYX::kan</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>aceA</i> <i>aceA::kan</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>aceA</i> (pRB3- <i>aceA</i>) <i>aceA::kan</i> (pRB3- <i>aceA</i>) | 1 | 2 | - | - | 3 | 6 | 8 | 10 |
| Δ <i>aceB</i> <i>aceB::cm</i> | 1 | - | - | - | 3 | - | - | - |
| Δ <i>aceB</i> (pRB3- <i>aceB</i>) <i>aceB::cm</i> (pRB3- <i>aceB</i>) | 1 | 2 | - | - | 3 | 6 | 8 | 10 |

¹ Strains with lesions in the same gene had identical phenotypes and are therefore recorded in the same row.

² Bacteria were grown on M9 minimal plates containing the indicated carbon sources solubilized using 1% igepal CA-630; other supplements are listed in the methods. No growth was observed on plates lacking a carbon source. Import mutant strains are black (canonical) or orange (secondary); β -oxidation mutants are blue (canonical) or red (secondary); glyoxylate shunt mutants are green.

³ Nitrate was added as an alternative electron acceptor; no anaerobic growth was observed on plates lacking nitrate.

⁴ Growth is recorded as the day on which colonies were discernible by eye; data are from two independent biological replicates.

⁵ No colonies were discernible for up to two weeks.

⁶ *fadR* encodes a transcriptional repressor of canonical lipid metabolism genes that prevents aerobic growth on medium-chain fatty acids in the absence of long-chain acyl-CoA molecules.

⁷ Strains lacking *fadBA* grow on oleate due to compensation by *yfcYX*.