Claims:

1. A genetically modified fungal cell useful for producing fatty alcohols that comprises:

(a) a nucleic acid construct for overexpression of a heterologous fatty acyl-CoA reductase (FAR), wherein the nucleic acid construct for overexpressing the heterologous FAR comprises multiple copies of a nucleic acid encoding the heterologous FAR, wherein each copy of the nucleic acid encoding the heterologous FAR is operably linked to a different strong constitutive promoter, wherein the heterologous FAR has the amino acid sequence set forth in SEQ ID NO: 14, and wherein the overexpression of the heterologous FAR is in comparison to the corresponding non-genetically modified fungal cell;

(b) a deletion in an endogenous gene encoding a type 1 acyl-CoA:diacylglycerol acyltransferase (Dga1);

(c) a deletion in an endogenous gene encoding a type 2 phospholipid:diacylglycerol acyltransferase (Lro1);

(d) a deletion in an endogenous gene encoding an acyl-CoA:sterol acyltransferase (steryl ester synthase, Are1); and

(e) a deletion in an endogenous gene encoding a type 3 soluble acyltransferase (Dga3), wherein the fungal cell is from a *Rhodosporidium* species or a *Rhodotorula* species.

2. The genetically modified fungal cell of claim 1, further comprising a deletion in an endogenous gene encoding an acyl-CoA oxidase 1 (Pox1).

3. The genetically modified fungal cell of claim 1, wherein the fungal cell is a strain of *Rhodosporidium toruloides*.

4. The genetically modified fungal cell of claim 1, wherein FAR is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:13.

5. The genetically modified fungal cell of claim 1, wherein the nucleic acid construct comprises three copies of the nucleic acid encoding the heterologous FAR.

6. The genetically modified fungal cell of claim 5, wherein the strong constitutive promoters are a *RtPLN1*$_{in}$ promoter having the nucleotide sequence set forth in SEQ ID NO:15, a *RtGPD1* promoter having the nucleotide sequence set forth in SEQ ID NO:16, and a *RtTEF1*$_{in}$ promoter having the nucleotide sequence set forth in SEQ ID NO:17.

7. The genetically modified fungal cell of claim 3, wherein the strain of *Rhodosporidium toruloides* is *Rhodosporidium toruloides* ATCC 10657.

8. The genetically modified fungal cell of claim 2, wherein the fungal cell is a strain of *Rhodosporidium toruloides*.

9. The genetically modified fungal cell of claim 8, wherein the strain of *Rhodosporidium toruloides* is *Rhodosporidium toruloides* ATCC 10657.

10. The genetically modified fungal cell of claim 2, wherein the nucleic acid construct comprises three copies of the nucleic acid encoding the heterologous FAR.

11. The genetically modified fungal cell of claim 10, wherein the strong constitutive promoters are a *RtPLN1*$_{in}$ promoter having the nucleotide sequence set forth in SEQ ID NO:15, a *RtGPD1* promoter having the nucleotide sequence set forth in SEQ ID NO:16, and a *RtTEF1*$_{in}$ promoter having the nucleotide sequence set forth in SEQ ID NO:17.

12. The genetically modified fungal cell of claim 1, wherein Dga1 has the amino acid sequence set forth in SEQ ID NO:6, Lro1 has the amino acid sequence set forth in SEQ ID NO:8, Are1 has the amino acid sequence set forth in SEQ ID NO:10, and Dga3 has the amino acid sequence set forth in SEQ ID NO:12.

13. The genetically modified fungal cell of claim 12, wherein Dga1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:5, Lro1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:7, Are1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:9, and Dga3 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:11.

14. The genetically modified fungal cell of claim 2, wherein Dga1 has the amino acid sequence set forth in SEQ ID NO:6, Lro1 has the amino acid sequence set forth in SEQ ID NO:8, Are1 has the amino acid sequence set forth in SEQ ID NO:10, Dga3 has the amino acid sequence set forth in SEQ ID NO:12, and, Pox1 has the amino acid sequence set forth in SEQ ID NO:61.

15. The genetically modified fungal cell of claim 14, wherein Dga1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:5, Lro1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:7, Are1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:9, Dga3 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:11; and Pox1 is encoded by a nucleic acid having the nucleotide sequence set forth in SEQ ID NO:60.

16. A method of producing fatty alcohols comprising culturing the genetically modified fungal cell of any one of claims 1-15 under conditions suitable for growth of the modified fungal cell and for production of fatty alcohols.

17. The method of claim 16, wherein the culturing is performed using a medium comprising glucose, yeast extract, K_2HPO_4, NH_4NO_3, $MgSO_4 \cdot 7H_2O$, and $CaCl_2 \cdot 2H_2O$.

18. The method of claim 17, wherein the culturing is performed using a medium comprising per litre: 100 g glucose, 22.5 g yeast extract, 0.75 g K_2HPO_4, 0.7 g NH_4NO_3, 0.4 g $MgSO_4 \cdot 7H_2O$, and 0.4 g $CaCl_2 \cdot 2H_2O$.