

CLAIMS

1. A variant biotin carboxyl carrier protein (BCCP) of SEQ ID NO:2 comprising an amino acid substitution at position 2 of SEQ ID NO:2, wherein said variant BCCP comprises a polypeptide sequence selected from the group consisting of SEQ ID NOS: 4, 6, 10, 14, 16, 20, 24, 32, 48, and 70.
2. The variant BCCP of claim 1, wherein expression of said variant BCCP confers to a recombinant cell an increased production of a malonyl-CoA-derived compound comprising a fatty acid derivative of any one of a fatty acid, a fatty acid methyl ester (FAME), a fatty acid ethyl ester (FAEE), a fatty alcohol, a fatty amine, a beta hydroxy fatty acid derivative, a bifunctional fatty acid derivative, and an unsaturated fatty acid derivative, preferably wherein said malonyl-CoA-derived compound is FAME.
3. The variant BCCP of claim 1, wherein said BCCP is encoded by a variant *accB* gene, preferably wherein said variant *accB* gene comprises a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 3, 5, 7, 9, 13, 15, 17, 19, 23, 25, 27, 31, 35, 39, 45, 47, 65, 69, 71, and 81..
4. A recombinant microorganism comprising the variant BCCP of any one of claims 1-3.
5. A method of producing a malonyl-CoA-derived compound, comprising culturing the recombinant microorganism of claim 4 in a fermentation broth containing a carbon source.
6. The method of claim 5, wherein the recombinant microorganism further comprises a variant operon controlling the expression of a BCCP, wherein said operon results in a change in BCCP expression in a recombinant microbial cell as compared to a wild type microbial cell.
7. A recombinant microorganism comprising a variant of the biotin carboxyl carrier protein (BCCP) of SEQ ID NO: 2 with an amino acid substitution at position 2 of SEQ ID NO: 2, wherein expression of said variant BCCP confers increased production of a malonyl-CoA-derived compound to said recombinant microorganism.
8. The method of claim 5 or 6, or the recombinant microorganism of claim 7, wherein said malonyl-CoA-derived compound is selected from the group consisting of a fatty acid derivative, a fatty acid, a fatty acid methyl ester (FAME), a fatty acid ethyl ester (FAEE), a fatty alcohol, a fatty amine, a beta hydroxy fatty acid derivative, a bifunctional fatty acid derivative, and an

unsaturated fatty acid derivative, preferably wherein said malonyl-CoA-derived compound is FAME.

9. The recombinant microorganism of claim 4 or 7, wherein said recombinant microorganism is selected from the group consisting of *Escherichia*, *Bacillus*, *Cyanophyta*, *Lactobacillus*, *Zymomonas*, *Rhodococcus*, *Pseudomonas*, *Aspergillus*, *Trichoderma*, *Neurospora*, *Fusarium*, *Humicola*, *Rhizomucor*, *Kluyveromyces*, *Pichia*, *Mucor*, *Myceliophthora*, *Penicillium*, *Phanerochaete*, *Pleurotus*, *Trametes*, *Chrysosporium*, *Saccharomyces*, *Stenotrophomonas*, *Schizosaccharomyces*, *Yarrowia*, and *Streptomyces*.

10. A method of producing a malonyl-CoA-derived compound, comprising culturing the recombinant microorganism of claim 4, 7 or 9 in a fermentation broth containing a carbon source.

11. The method of claim 10, wherein said malonyl-CoA-derived compound comprises a fatty acid derivative of any one of a fatty acid, a fatty acid methyl ester (FAME), a fatty acid ethyl ester (FAEE), a fatty alcohol, a fatty amine, a beta hydroxy fatty acid derivative, a bifunctional fatty acid derivative, and an unsaturated fatty acid derivative, preferably wherein said malonyl-CoA-derived compound is FAME.