

ABSTRACT**BIOTECHNOLOGICAL PRODUCTION OF ω - FUNCTIONALISED CARBOXYLIC ACIDS AND ESTERS THEREOF**

- 5 There is provided a microbial cell for producing at least one omega-functionalized carboxylic acid ester from at least one alkane, wherein the cell is genetically modified to increase the expression relative to the wild type cell of
- (i) Enzyme E₁ capable of converting the alkane to the corresponding 1-alkanol;
 - (ii) Enzyme E₂ capable of converting the 1-alkanol of (i) to the corresponding 1-alkanal;
 - 10 (iii) Enzyme E₃ capable of converting the 1-alkanal of (ii) to the corresponding alkanoic acid;
 - (iv) Enzyme E₄ capable of converting the alkanoic acid of (iii) to the corresponding alkanoic acid ester; and
 - (iv) Enzyme E₅ capable of converting the alkanoic acid ester of (iv) to the corresponding omega-hydroxy-alkanoic acid ester,
- 15 and wherein the cell does not comprise a genetic modification that increases the expression relative to the wild type cell of at least one of the following enzymes E₂₀- E₂₄ selected from the group consisting of:
- E₂₀ Acyl-ACP thioesterase, of EC 3.1.2.14 or EC 3.1.2.22,
 - E₂₁ Acyl-CoA thioesterase, of EC 3.1.2.2, EC 3.1.2.18, EC 3.1.2.19, EC 3.1.2.20 or EC
 - 20 3.1.2.22,
 - E₂₂ Acyl-CoA:ACP transacylase,
 - E₂₃ Polyketide synthase, and
 - E₂₄ Hexanoic acid synthase