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(54) Title: PHA-PRODUCING GENETICALLY ENGINEERED MICROORGANISMS

(57) Abstract: The present invention is directed at genetically engineered form of a naturally PHA producing microorganism, which has an increased number of copies, compared to the wild type microorganism, of at least one gene coding a polyhydroxyalkanoate (PHA) synthase, wherein said increased number of copies provides a balanced overproduction of said PHA synthase, and eventually causing the microorganism to overproduce medium- or long-chain-length PHAs in an amount of at least 1.2 times compared to the wild type after 24 h, wherein the reference condition for assessing the overproduction is modified MM medium containing 15 mM sodium octanoate. The production of PHAs in the microorganism can in addition be favourably influenced by the inactivation of genes encoding for proteins involved in the degradation of PHA, resulting in an even increased production of the microorganism of this compound without a decline in the PHA content over time. The inventive microorganisms are useful in the commercial production of PHAs. The present invention further relates to a method for the production of PHA.



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