

Transgenic plants producing polyhydroxyalkanoates

ABSTRACT

Currently, the polyhydroxybutyrate (PHB) copolymer, polyhydroxy-co-valerate (PHBV) is being produced commercially using a two-stage glucose / propionate fed batch fermentation process using *Ralstonia eutropha*. The economics of the manufacturing process are still a major barrier to the widespread use of polyhydroxyalkanoates (PHAs) and intensive efforts are being made to reduce the cost of production by means of bioprocess design and metabolic engineering of production strains. However, despite these improvements, the production costs are still high compared to petroleum-derived commodity plastics. An alternative strategy for lowering production costs that has been proposed is to develop transgenic plants that produce PHAs. This strategy is considerably cheaper because the PHAs production from plants does not require expensive fermentation equipment and processing facilities.

Keyword: Polyhydroxyalkanoates; Polyhydroxybutyrate; Polyhydroxy-co-valerate; Plastid; Transgenic plants