

Production of Poly(3-hydroxybutyrate) from Wood Hydrolysate by Recombinant Escherichia coli with heterologous Response Regulator dr1558
Production of Poly(3-hydroxybutyrate) from Wood Hydrolysate by Recombinant Escherichia coli with heterologous Response Regulator dr1558

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In this study, an increase in Poly(3-hydroxybutyrate) [PHB] production in recombinant Escherichia coli was confirmed due to overexpression of the response regulator dr1558 in MR medium supplemented with hydrolyzate of wood. Recombinant E. coli in the medium to which the wood hydrolyzate was added had a low cell concentration and a PHB content, but the cell concentration increased by more than 10% and the PHB concentration by more than 70% by the expression of dr1558. As a result of transcript analysis, it was confirmed that the expression of TCA cycle-related genes and PHB biosynthesis genes was increased by overexpression of dr1558. The results of this study are thought to be useful for fermentation production technology of biodegradable polymer PHB and other biological materials using low-cost hydrolyzate of wood.