論文 / 著書情報
Article / Book Information

題目(和文)	
Title(English)	Isopropanol production with CO2 reutilization by engineered Ralstonia eutropha
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出典(和文)	学位:博士(工学), 学位授与機関:東京工業大学, 報告番号:甲第12112号, 授与年月日:2021年9月24日, 学位の種別:課程博士, 審査員:福居 俊昭,田中 寛,平沢 敬,松田 知子,柘植 丈治
Citation(English)	Degree:Doctor (Engineering), Conferring organization: Tokyo Institute of Technology, Report number:甲第12112号, Conferred date:2021/9/24, Degree Type:Course doctor, Examiner:,,,,
学位種別(和文)	博士論文
Category(English)	Doctoral Thesis
種別(和文)	要約
Type(English)	Outline

Title: Isopropanol production with CO_2 reutilization by engineered *Ralstonia eutropha*

Thesis: The Gram-negative, facultative chemolithoautotrophic bacterium *Ralstonia eutropha* is a well-characterized producer of biodegradable polyhydroxyalkanoates (PHAs), which share many characteristics with petroleum-based polymers. During lithoautotrophic growth, *R. eutropha* fixes CO_2 *via* Calvin-Benson-Bassham (CBB) cycle, which was found to be partially active and functional even under heterotrophic growth on sugar. The function of CBB cycle during heterotrophic growth resulted in the reassimilation of CO_2 emitted from various intracellular decarboxylation reactions, leading to higher PHA yield up to 122% in strains with complete CBB cycle genes compared to the CBB gene knock out strains. The effect of CO_2 reutilization in the production of non-native product isopropanol by *R. eutropha* on sugar was investigated.