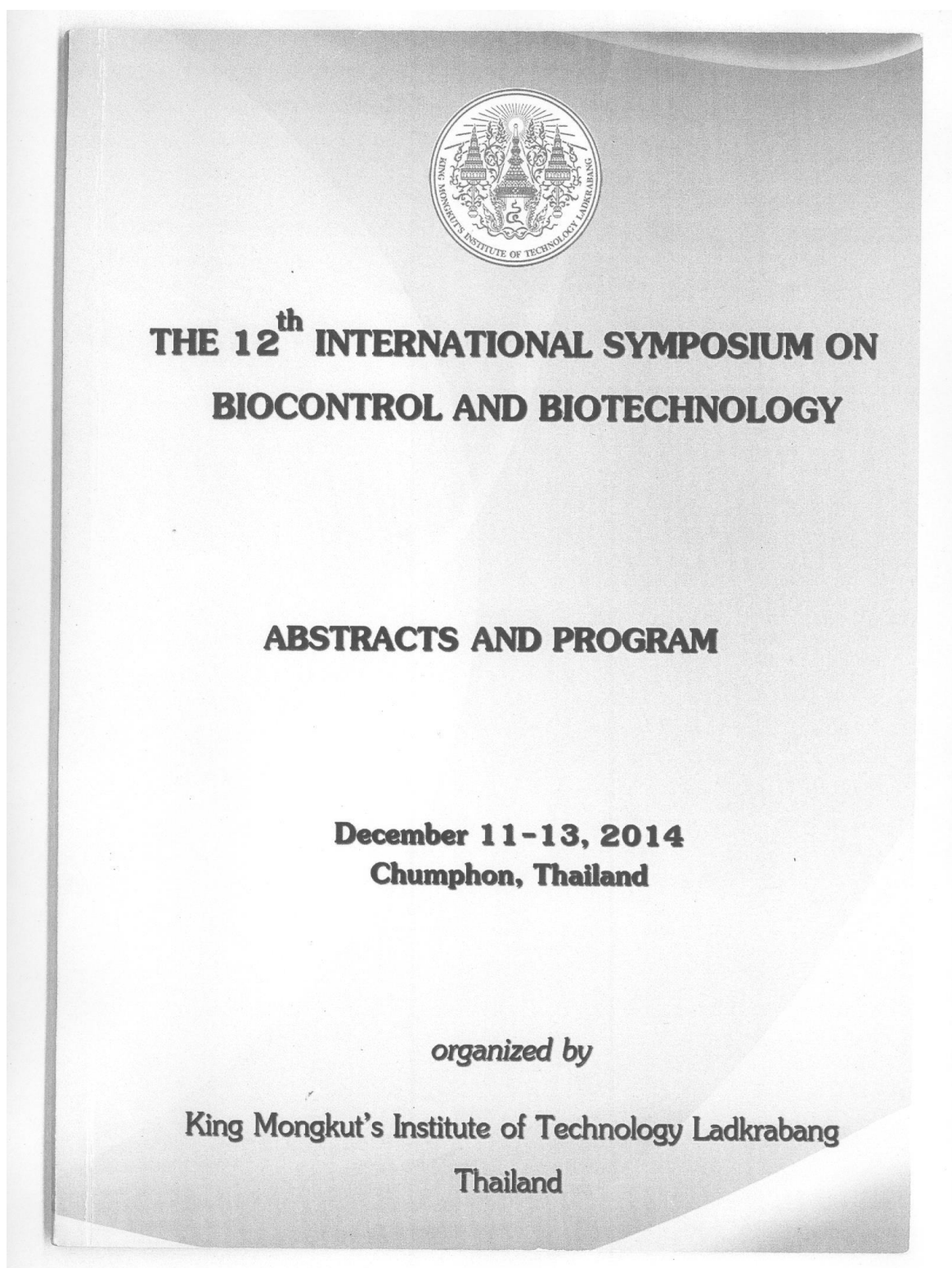


## ภาคผนวก

ภาคผนวก ก

หลักฐานเอกสารอ้างอิงสำหรับรายละเอียดผลผลิตงานวิจัยที่ผลิตได้ทั้งหมด



P-024

### Isolation and Screening of Microorganisms with Potential for Bioconversion of Glycerol to 3-Hydroxypropionic Acid

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#### Abstract

3-Hydroxypropionic acid (3-HP) is a value-added chemical, which can be used to produce a wide range of chemical derivatives, and that can be produced from renewable glycerol by microbial bioconversion. For enhancing 3-HP production, this work aimed to isolate and select strains with potential to perform as the cell factory for bioconversion of glycerol to 3-HP. One hundred and ninety eight natural source samples were collected, cultivated and screened for 3-hydroxypropionic acid-producing microorganisms. Only 26 isolated strains were found with the ability to bioconvert the substrate to 3-HP. One of them was selected because it gave the highest 3-HP production, and it was identified as *Klebsiella pneumoniae* by the 16S rRNA gene analysis system, and named Y26. Product optimization conditions were also studied and the best experimental condition for bioconversion of glycerol to 3-HP was established using a rich medium containing 8% (w/v) glycerol as the sole carbon source at 37°C in a rotary shaker at 150 rpm, yielding  $7.9 \pm 1.0$  g 3HP/L.

**Keywords:** Bioconversion, Glycerol, 3-Hydroxypropionic acid, *Klebsiella pneumonia*, Screening

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# Isolation and Screening of Microorganisms with Potential for Bioconversion of Glycerol to 3-Hydroxypropionic Acid



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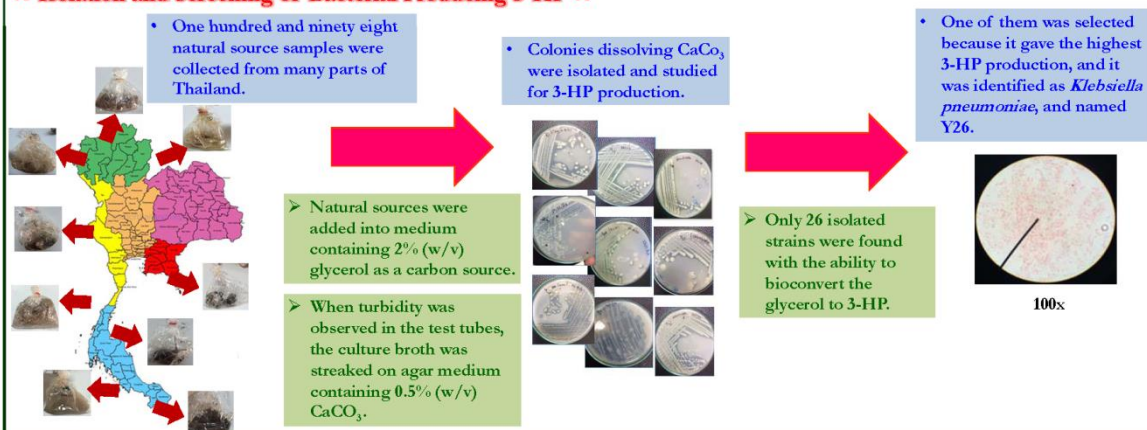
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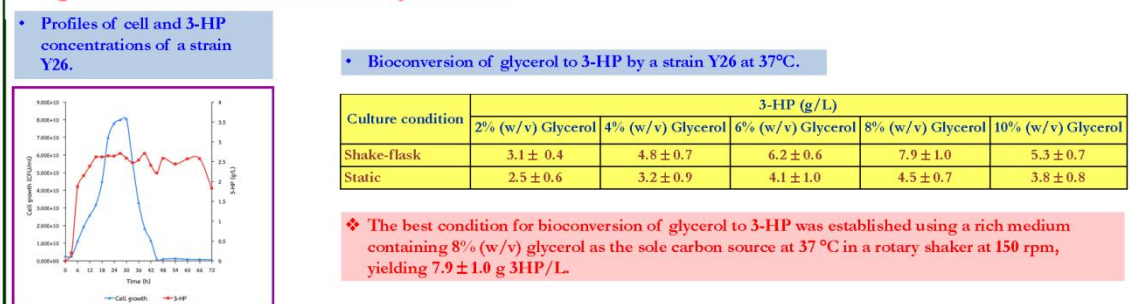
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## ★ Isolation and Screening of Bacterial Producing 3-HP ★



## ★ Optimization of 3-HP Production by Strain Y26 ★



## ✿ Acknowledgements ✿

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