ENGINEERING *ESCHERICHIA COLI* FOR BIOFUEL PRODUCTION

Metabolic Pathway and Theoretical Yields

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Problem Statement

After reading the case study "Engineering *Escherichia coli* for Biofuel Production" [1], answer the following questions:

1. What are the maximum theoretical yields for propanol, ethanol, acetate, lactate and succinate on glycerol (in g P/g S)?

2. What assumptions have you made in calculating your maximum theoretical yields?

3. What fraction of the maximum theoretical yields have you achieved in the culture?

References

[1] Kajan Srirangan, Lamees Akawi, Lyndia Stacey, Cheryl Newton, Perry Chou and Marc Aucoin, Module 01. "Engineering *Escherichia coli* for Biofuel Production". Waterloo Cases in Design Engineering (WCDE), University of Waterloo.