



ENGINEERING *ESCHERICHIA COLI* FOR BIOFUEL PRODUCTION

Organism Design

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Problem Statements

After reading the case study “Engineering *Escherichia coli* for Biofuel Production” [1], you know that bio-butanol can be made by *Clostridium acetobutylicum* or genetically modified *E. coli*. In groups, answer the following questions:

1. What is bio-butanol? How does it differ from butanol? Are there different forms of butanol? Draw out the different molecular arrangements of butanol.
2. Using any means at your disposal, highlight as many differences as possible between *C. acetobutylicum* and *E. coli* that could ultimately influence your decision on which organism to use.
3. What other information do you need to make your decision? Clearly state where you are going to find that information and how you would proceed to find it. For all information, state its source (if it is a website, please include the web address).

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.