

Reading/Writing Assignment #1

Read the following three articles (links provided on course website):

I. Martínez, J. Zhu, H. Lin, G. N. Bennett, K.-Y. San. 2008. Replacing *Escherichia coli* NAD-dependent glyceraldehyde 3-phosphate dehydrogenase (GAPRDH) with a NADP-dependent enzyme from *Clostridium acetobutylicum* facilitates NADPH dependent pathways. *Metab. Eng.* 10:352-359.

S. Centeno-Leija, J. Utrilla, N. Flores, A. Rodriguez, G. Gossett, A. Martinez. 2013. Metabolic and transcriptional response of *Escherichia coli* with a NADP⁺-dependent glyceraldehyde 3-phosphate dehydrogenase from *Streptococcus mutans*. *Ant. van Leeuwen.* 104:913-924.

S. Centeno-Leija, G. Huerta-Beristain, M. Giles-Gómez, F. Bolivar, G. Gossett, A. Martinez. 2013. Improving poly-3-hydroxybutyrate production in *Escherichia coli* by combining the increase in the NADPH pool and acetyl-CoA availability. *Ant. van Leeuwen.* 105:687-696.

Write a report which summarizes and critiques these articles. Address the following points in your report (but do not address them as bulleted points!): What is the common theme? What questions do you have that were left unaddressed? Are there any results which are not in your opinion adequately explained? What experiments would you propose as next logical steps?