

Nylon synthesis from biologically prepared 5AVA by recombinant *Escherichia coli*

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As global concerns on the depletion of fossil resources and environmental pollutions increase, production of fuels and chemicals from bio-based materials has been attracting more attentions. 5-aminovalerate (5AVA) is one of the recently proposed building blocks for synthesis of bio-polyamides. Here, we report a hybrid process of nylon 6,5 synthesis from biologically prepared 5AVA. A recombinant *Escherichia coli* strain expressing *Pseudomonas putida* davAB genes encoding delta-aminovaleramidase and lysine 2-monooxygenase was employed for 5AVA production in fed-batch fermentation. By bulk polymerization of ϵ -caprolactam along with δ -valerolactam prepared by cyclization of biologically produced 5AVA, nylon 6,5 could be synthesized. Detailed results will be presented in this presentation