

## **Enzymes of Biotechnological Interest Prospected from a Small Insert Metagenomic Library Constructed with Amazon Soil Microbial DNA.**

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Carbohydrates such as cellulose and starch from plant matter are abundant and can yield high levels of energy. However, the processes for obtaining energy from this source are expensive. Therefore, bacterial enzymes could be used as biocatalysts to transform plant matter into biofuels, such as bioethanol, in a more cost effective manner. A small insert metagenomic library of 70,000 clones was constructed with DNA from the microbial community found in Amazon soil. The library was screened for several enzymatic activities, including amylase, protease, lipase, beta-glycosidase and cellobiohydrolase. So far, 13 clones with positive enzymatic activity were isolated; of these, 12 express beta-glycosidases and only 1 expresses amylase. These clones are undergoing sub-cloning so that the genes that encode the enzymes can be identified and their kinetic parameters can be determined. In the future, these clones will also be sequenced.

**Keywords:** Metagenome, Amazon soil, beta-glycosidase, amylase.

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