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FLUOROGENIC PROBES FOR ENZYME ACTIVITY

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Everyone has their own unique microbiota that live on and inside of us. Although we can identify these bacteria by name, not much is known about how they function chemically. Preliminary data from our lab has shown that individual strains of bacteria display unique enzyme activities. Additional data has shown that complex samples containing a variety of different strains also show unique profiles.

On the basis of the above observations, we tested to see if complex bacterial samples from mouse models with different metabolic disorders displayed unique profiles. Using a panel of 15 fluorogenic substrates to measure different types of enzyme activity, we tested fecal samples from three cohorts of mice each with their own metabolic disease. We then determined their activity profiles.

Each of the three cohorts tested displayed their own unique enzyme activities. A second batch of samples is being tested along with additional blinded samples to further validate this method.

These initial results show that fecal samples from different mouse models display unique activity profiles. With further development, this method may prove to be a simple and effective means of identifying certain diseases.