



POLYMER-DEGRADING ENZYMES USING YEAST DISPLAY AND METHODS OF USE THEREOF

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The Invention

UW-Madison researchers disclose an ultrahigh-throughput directed evolution platform. The platform leverages yeast display, a specially designed modular molecular probe, and fluorescence-based cell sorting (FACS). In the platform, individual yeast cells display distinct mutant enzymes and enzymatic activity is detected by a change in fluorescence upon cleavage of a Polyethylene terephthalate (PET)-mimicking synthetic probe. Upon identification, the highly active mutants are isolated using FACS and are subsequently characterized using DNA sequencing. The platform allowed the inventors to experimentally screen 40 million plastic-degrading mutant enzymes, arriving at a subset of enzymes that could be leveraged in various contexts, including the breakdown of persistent plastics, including PET. Furthermore, the platform could be modified to allow for screening other substrates of interest.

In addition, information rich data sets generated using this platform are also available for licensing.

Additional Information

For More Information About the Inventors

- [Jeffrey Martell](#)

Tech Fields

- [Clean Technology : Other clean technologies](#)
- [Research Tools : Protein interactions & function](#)

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854