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NYU-Poly Breakthrough Stabilizes Important Proteins
Applications Include Therapeutic Proteins for Diagnosis of Illnesses and Enzymes to Produce Bio-Ethanol and Low-Calorie Sweeteners

NEW YORK, October 8, 2009 – Scientists at the Polytechnic Institute of New York University report they have developed a novel method of stabilizing proteins, including important enzymes used to produce certain artificial sweeteners and bio-ethanol. The research will also be useful for extending the lifetime of therapeutic proteins employed to diagnose illnesses.

The NYU-Poly scientists inserted the unstable exoinulinase (EI) protein into a thermophilic scaffold protein, which is known for its stability and a propensity to protect less stable proteins. The method developed by the NYU-Poly scientists stabilizes EI without compromising its enzymatic ability; in other words, its ability to act as a catalyst to enhance certain chemical reactions. In the past, EI proteins lost their enzymatic activity too rapidly to be useful in turning the abundant plant sugar inulin into ultra-high fructose syrup or bio-ethanol.

The method can potentially be applied to a wide range of unstable proteins for therapeutic purposes, such as diagnosis of illnesses using proteins.

“Enzyme Stabilization by Domain Insertion into a Thermophilic Protein” was published in the journal *Protein Engineering, Design and Selection* (October 2009). The first author is Chung-Sei Kim, a post doctoral researcher working under Jin Ryoung Kim, an assistant professor in NYU-Poly’s Chemical and Biological Engineering Department. Brennal Pierre, a PhD graduate student in Kim’s laboratory, was one of the coauthors. They have applied for a provisional patent.

About Polytechnic Institute of New York University

Polytechnic Institute of New York University (formerly Polytechnic University), an affiliate of New York University, is New York’s most comprehensive school of engineering, applied sciences, technology and research, and is rooted in Polytechnic’s 155-year tradition of invention, innovation and entrepreneurship – i²e. The institution, founded in 1854, is one of the nation’s oldest private engineering schools.

In addition to its main campus at MetroTech Center in downtown Brooklyn, it offers programs at sites throughout the region and around the globe. NYU-Poly has centers in Long Island, Manhattan and Westchester County; globally, it has programs in Israel, China and will be an integral part of NYU's campus in Abu Dhabi opening in autumn 2010. For more information, visit www.poly.edu.

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