



Modulation of catalysis activity on peptide modified microwell and microbead surface

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Invention Description

Commercial enzymes are required to function in a variety of challenging conditions. High throughput screening is widely used in drug discovery and diagnostics. Many enzyme-based applications and processes could be improved if there were means to increase the activity of an enzyme or stabilize and maintain its catalytic activity over time.

Researchers at the Biodesign Institute of Arizona State University have developed a method to modulate the activity of a catalyst on modified bead surfaces or microwell surfaces. This method involves binding a peptide-based enzyme modulator to a microwell or bead, and improves enzyme activity at a wide range of conditions (temperature, pH, salt, solvent, etc.).

Microwells or beads so modified will have the advantages of higher modulation ability, applicability to a wide range of enzyme classes, lower R&D cost, and industrial compatibility. The modified surface can be also used to control orientation of proteins and used for high throughput screening of drug candidates and diagnostics.

Potential Applications

- Commercial enzymes
- High throughput screening
 - drug discovery
 - diagnostics

Benefits and Advantages

- Enzyme activity is modulated and stabilized over time
- Improves enzyme activity at a wide range of conditions (temperature, pH, salt, solvent, etc.).
- Applicable to a wide range of enzyme classes
- Lower R&D cost
- Able to control orientation of proteins