



## Potomac Affinity Proteins

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health



National Institutes of Health Commercialization Assistance Program  
(NIH-CAP)

## Company Profile

**Industry Sector:** Biotechnology

**Company Overview:** Potomac Affinity Proteins, LLC, is a Rockville, Maryland (USA) based R&D company developing proprietary, engineered proteins with novel properties for use in protein expression and rapid purification, therapeutics, molecular detection including diagnostics and sensors, and biomolecule analysis.

**Target Market(s):** Pharmaceutical Companies  
Enzyme Manufacturers  
University Laboratories  
Government Laboratories  
Nonprofit Institutes

## Key Value Drivers

**Technology\*:** Our purification system comprises two basic components: 1) a target protein fused to the C-terminus of an engineered prodomain (protagged protein); 2) a subtilisin mutant (psub) which is virtually inactive in the absence of fluoride as a triggering agent. The ability to isolate the binding and processing steps with a triggering mechanism creates a processing system with a virtual on-off switch and allows psub to be used as both the affinity ligand and processing enzyme for affinity purification and processing of proteins fused to protag.

**Competitive Advantage:** Potomac's technology integrates tag removal into the purification step thus allowing the system to produce completely native proteins, to be less expensive, and to complete the purification process more quickly.

**Plan & Strategy:** Seeking strategic partners

\*Technology funded by NIH/NIGMS and being commercialize under the NIH CAP.

## Management

### Leadership:

Dr. Philip N. Bryan, Founder & Technical Science Consultant  
Professor, Center for Advanced Research in Biotechnology  
University of Maryland  
Dr. Biao Ruan, Chief Scientific Officer  
12 years experience in Protein Engineering and Directed  
Evolution of Proteases  
Dr. Natalia Oganessian, Research Scientist  
15 years experience in Protein Expression  
Bonnie A. Bryan, President  
Ten years experience in Information Technology

## Product Pipeline

### Phase I

Vectors for introducing the affinity tag onto target proteins

### Phase II

Chromatography columns and resin of immobilized processing protease for the purification and processing of tagged proteins

Simple detection systems for tagged proteins

A multi-well plate system for high throughput protein detection and purification

### Phase III

Custom process scale columns using second-generation tags optimized for specific target proteins

