TECHNOLOGY

Thermostabilization of DNA Polymerase with Novel Chaperones

OVERVIEW

Dr. Frank Robb has considerable expertise in the study of microbes found in extreme environments and their mechanisms of survival. These astonishing organisms have protein chaperone systems that enable them to survive and even thrive in extreme heat and harsh chemical conditions. An important application for these chaperones is to enhance protein folding and increase enzyme or microbial resistance to heat. The hyperthermophilic organism Pyrococcus furiosus grows optimally at 100 degrees C. Dr. Robb found that the thermo-stability of Taq polymerase was significantly improved by combinations of P. furiosus chaperones, showing ongoing protein folding activity at elevated temperatures and during thermal cycling. These properties may be exploited to enhance the durability and cost effectiveness of high temperature biocatalysts.(FR-2010-087; & FR-2010-089)

APPLICATIONS

Enhance protein expression and stability in high-temperature systems.

ADVANTAGES

Novel composition & method to protect enzyme activity, in particular DNA polymerase.

STAGE OF DEVELOPMENT

Well characterized as research tool with industrial applications.

R&D REQUIRED

Adaptation to a specific product.

LICENSING POTENTIAL

UMB is seeking partners to develop and commercialize multiple applications of this technology.

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Additional Information

INSTITUTION

University of Maryland, Baltimore

PATENT STATUS

US patent 9,416,408 issued 8/16/16

LICENSE STATUS

Available for licensing

CATEGORIES

- Research Tools, Antibodies, & Reagents
- Engineering
- Chemical

INVESTIGATOR(S)

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ATTACHMENTS

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