Office of Technology Management

The Bacterial Expression Vector for Human Group V Phospholipase A_2

Technology Reference

CX014

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Field

Cell Biology

Immunology

Key Words

hVPLA2

Bacterial Expression vector

License Status

Seeking licensing partner

Patent Status

Protected by trade secret

Overview

Human group V phospholipase A_2 ($hVPLA_2$) has been shown to be involved in several inflammatory responses in several inflammatory cells, including macrophages, mast cells, and neutrophils. Several reports have also indicated that high levels of $hVPLA_2$ are detected in different tissues and exudates under inflammatory conditions. Thus, an insight on the regulatory mechanism of $hVPLA_2$ and the detection of $hVPLA_2$ level in serum and exudates are important for the understanding and diagnosis of some forms of acute and chronic inflammatory diseases. However, the study and detection of this $hVPLA_2$ has been extremely difficult.

Technical Summary

To overcome the aforementioned problem, Dr. Cho has developed a bacterial expression vector for hVPLA2 that allows large-scale production of pure recombinant protein. He has designed a mutant, Tryptophan-73 to Alanine (W73) that is functionally equivalent to the wild type protein but has much improved stability.

Benefits

- The expression system offers higher yield expression of fully active protein and long term storage of protein, owing to the improved stability of the mutant.

Areas of Application

- Research Tool: Allows for the investigation of the regulatory mechanisms of hV-PLA_2

Publication

Han SK, Yoon ET, Cho W. Bacterial expression and characterization of human secretory class V phospholipase A2. Biochem J. 1998 Apr 15;331 (Pt 2):353-7

Stage of Development

- Monoclonal antibodies for hV-PLA_2 already made