

This document only includes an excerpt of the corresponding thesis or dissertation. To request a digital scan of the full text, please contact the Ruth Lilly Medical Library's Interlibrary Loan Department (rlmlill@iu.edu).


**CO-MOBILIZATION OF CD11B/CD18 (MAC-1)
AND
FORMYL PEPTIDE RECEPTORS (FPR)
IN HUMAN NEUTROPHILS**

Vicki L. Graves

**Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Master of Sciences
in the Department of Pathology
Indiana University**

December 1993

Accepted by the Graduate Faculty, Indiana University, in partial fulfillment of the requirements for the degree of Master of Science.


Kenneth W. Ryder, M.D., Ph.D.

Masters
Committee


Constance F. Danielson, M.D., Ph.D.


Diane S. Leland, Ph.D.

Abstract

Mac-1 (CD11b/CD18) and formyl peptide receptors (FPR) are protein adhesion molecules that function at the neutrophil external plasma membrane. We observed similar translocation, from an intracellular storage pool to the neutrophil plasma membrane, of Mac-1 and FPR. Plasma membrane levels of both FPR and Mac-1 were low in cells prepared at 4°C from blood cooled immediately after removal from the circulation, and proportionally higher in cells warmed to 22°C and 37°C. Exposure to fluoride ion, and granulocyte-macrophage colony-stimulating factor (GM-CSF) potentiate expression of both proteins at the neutrophil surface. Cells displaying varying levels of Mac-1 were sorted into subpopulations. After sorting, each subpopulation was held at 4°C to prevent further spontaneous Mac-1 translocation to the cell surface, concentrated by centrifugation, and assayed for FPR levels. FPR levels correlated with Mac-1 expression in each of the subpopulations. These results demonstrate that Mac-1 and FPR co-mobilize to the neutrophil plasma membrane, and that this co-mobilization occurs with similar time and temperature characteristics suggesting that Mac-1 and FPR may also be co-localized to an identical intracellular storage pool.

Table of Contents

Abstract iv

Introduction 1

Materials and Methods 10

Results 14

Discussion 17

References 21

Tables and Figures 27