CORRELATION BETWEEN CD11B EXPRESSION AND SOMATIC CELL COUNT ON MILK NEUTROPHILS

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The migration of polymorphonuclear neutrophil leukocytes (PMNL) into the mammary gland provides the first line of cellular defense against invading MASTITIS. Migration of PMNL across endothelial cells is almost completely dependent on extent on CD11b, one of the β2 integrin chain and CD18, the β-chain of the β2 integrin. The purpose of the present trial was to evaluate the correlation between the CD11b expression and somatic cell count on milk neutrophils. To evaluate the CD11b expression, 12 milk samples were collected and diluted with phosphate-buffer saline at a proportion 1:1. Firstly, the separation of milk cells was performed after centrifugation steps. Then, the neutrophils were identified by flow cytometry using anti-bovine granulocyte monoclonal antibody (CH138A) and FITC secondary antibody. The expression of CD11b was evaluated by flow cytometry using anti-bovine CD11b monoclonal antibody and PE-Cy5 secondary antibody. The mean fluorescence intensity of CD11b was calculated after plotting fluorescence histograms using the Flow Jo Tree Star software. Milk samples were also collected for somatic cell count (SCC) using bronopol, as the preserving agent. The SCC was examined by an automatic cell counter. The correlations were determined by Pearson's correlation. The correlation between somatic cell count and the percentage of PMNL was r = 0.80 (P = 0.002). Indeed, the correlation between CD11b expression on bovine PMNL and somatic cell count was r = 0.76 (P = 0.004). Thus, this study strengthens the role of CD11b expression on bovine PMNL against MASTITIS invading pathogens, especially regarding that newly migrated PMNL are functionally more efficient.