I. INTRODUCTION

The immune system is an important system of the body for the maintenance of health. It has evolved to protect the body from pathogens, which are present in the environment, and also plays a role in tumor protection. The basis of immunity is its ability to recognize and react to foreign molecules (antigens), and at the same time tolerant to the body's own tissue. The initial stage of the immune defense mechanism is the recognition of antigens which are carried on the surface of the invading organisms or tumor cells. This however, is only preliminary to the following reactions aiming at eliminating the source of the antigens. To achieve this, the immune system recruits a number of cells and other components resulting in the full protective ability.

Leukocytes are known to be the cells which play a major role in the immune system, they consist of lymphocytes, mononuclear phagocytes (i.e. monocytes/macrophages), granulocytes and natural killer cells (NK cells) (Lydyard and Grossi, 1993). To attain their full functional potential, cell-cell interactions and ligand-receptor interactions are required (Clevers et al., 1988, Kishimoto et al., 1989). In the recent years, several studies were performed to achieve a better understanding of leukocytes communications (Weiss and Imboden, 1987). Many results have suggested that leukocyte surface molecules are responsible for these interactions.

The production of monoclonal antibodies recognizing molecules on the surface of the various cells of the immune system has been of immense importance for defining and characterization of the antigens. In some cases functions of the leukocyte surface molecules are known. Several of them function as ligand receptors. Specific reaction of these molecules with their ligands results in signal transduction which are of critical importance in the development of the immune response (Melchers and Andersson, 1986, Cambier and Ransom, 1987). Some surface molecules on human leukocytes function as cell-cell adhesion molecules. Adhesion of various types of leukocytes to other cells is essential for the basic functions of these cells (Hemler, 1990). However, dozens of defined and characterized molecules are still awaiting a functional description to be prescribed to them as are many undefined leukocyte surface molecules.

To characterize and define new leukocyte surface molecules, several monoclonal antibodies against human leukocyte surface antigens were generated and 1B2 monoclonal antibody was one of those. Preliminary studies indicated that, 1B2 monoclonal antibody recognized an

antigen expressed on all human haematopoietic cell lines but not on resting human peripheral blood leukocytes (Kasinrerk, unpublished data). This result suggested that 1B2 mAb recognized molecule is possibly a candidate for a growth factor receptor.

Aim of this study

As the leukocyte surface molecules are quite important in involving the immune responses, the characterization of new or undefined human leukocyte surface molecules may lead to a better understanding of immune responses. Three aims of this study to characterize 1B2 molecule in detail are, firstly, to investigate the expression of 1B2 molecule on various kinds of cells including cell lines (both haematopoietic and non-haematopoietic cell lines), resting peripheral blood cells, activated blood cells and leukemic blood cells. Secondly, determination of the molecular weight of this molecule will also be carried out. The third aim is to study the involvement of 1B2 molecule on cell proliferation.