Preface

E.	Elio	Cacciola
E.	Emma	Cacciola
R.R.	Rossella R.	Cacciola

Catania

In the last years several lines of evidence have been brought forward on the critical role played by adhesion molecules in either normal or abnormal hematopoiesis. It is already an acquired notion that the different forms of the adhesion molecules at the hematopoietic microenvironmental level are crucial for the regulation of development, proliferation, differentiation and survival of progenitor hematopoietic cells. It has also been proven that cell-cell and cell-extracellular matrix (ECM) interactions are all processes mediated by cell-surface adhesion molecule expression. However, even if the adhesion molecules involved either in the cell-cell or the cell-ECM interaction are of different types, their role remains prominent not only in the regulation of self-renewal, proliferation and differentiation of hemopoietic progenitor cells but also in the regulation of their trafficking between hematolymphopoietic tissues and the blood stream. In this regard, it is important that in the process of the cell-cell or cell-ECM interaction the adhesion molecules expressed on the cell surface function as receptors to counterreceptors or ligands that, of course, have different structures in respect to the type of adhesion molecules to which they have to bind. On the other hand, binding between receptors and compatible ligands represents a prerequisite for the induction of several intracellular events which, in turn, through activation of kinase phosphorylation, control the functional activity of a definite cell. In this regard, it is also of interest that there is experimental evidence showing the possible role played by cytokines such as SCF, IL-3 or PDGF in the functional activation of cell adhesion molecules in the mechanism of the interplay between adhesion molecules and ligand binding. All of these results have

been obtained in in vitro and in vivo experimental models, especially long-term bone marrow cultures and the employment of specific antibodies against either cell-surface receptor adhesion molecules or their compatible ligands.

This survey is concluded by a contribution concerning the pathophysiologic significance of some adhesion molecules, especially those belonging to the integrin family, which are implicated in the platelet activation process in hemostasis control.

Many aspects concerning the pathophysiologic role of adhesion molecules in normal and pathological hematopoiesis, as summarized above, are reported by outstanding experts in this special issue devoted purely to 'adhesion molecules in hematology'. The reviews by Wilson, Coulombel, Tuszyński, Pals, Franklin, Sackstein, Ver-faille, Papayannopoulou, Jewell, Liesveld, Schlegel, Gu-glielmo, Santucci, Rosenfeld, and Gralnick are all extremely interesting because they present up-to-date knowledge on the biology and clinical aspects of hematopoiesis.

However, many other aspects still remain to be defined on this exciting subject.

Prof. Elio Cacciola, MD Dr. Emma Cacciola, MD Dr. Rossella R. Cacciola, MD

Acknowledgements

We wish to thank very much Mr. Giulio Palumbo and Mrs Maria Grazia Fazio from the Institute of Hematology, University of Catania for their secretarial assistance.

KARGER

E-Mail karger@karger.ch Fax + 41 61 306 12 34 <http://www.karger.ch>

©1996 S. Karger AG, Basel